Victory over Chaos?
Constantinos A. Doxiadis and Ekistics 1945-1975

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Table of Contents

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Abstract

Constantinos A. Doxiadis (1913-1975) was an important figure in the realm of postwar urbanism, and yet his contribution has been largely neglected. This study reviews his trajectory and analyzes key projects related to different phases of his career: the housing programs of the Ministry of Reconstruction developed during the Greek Civil War and with Marshall Plan funds; the National Housing Program of Iraq in the context of the Third World modernization; and the Urban Detroit Area project developed against the suburbanization of the American city and Lyndon Johnson's Great Society. Each one of these episodes is examined against the background of the opposing but interacting "processes" that characterized the forging of the postwar world: the efforts to internationalism and the schism of the Cold War.

The first two projects reveal Doxiadis' persistence on the importance of housing as a motor of economic development and his seminal contribution to aided self-help programs. In parallel, I examine his ideas on urban-regional development in relation to the modernization theory, namely the doctrine that advanced the development of Third World countries according to the paradigm of the West. Finally, his connections with the Ford Foundation and his participation in events organized by the Congress for Cultural Freedom offer an opportunity to examine his oeuvre in relation to the Cold War cultural policies.

The second half of the thesis broadly coincides with the period 1960-1975 and focuses on ekistics, an action-oriented interdisciplinary approach to global urbanization problems that Doxiadis coined the science of human settlements. It examines the emergence of the ekistic movement, the establishment of the Athens Center of Ekistics as a hub in the European periphery "operating" between East and West, the intellectual forum of the Delos Symposia, and the journal *Ekistics*.

In a parallel line, the analysis of the ekistic research programs aims to assess Doxiadis' efforts to unite two different cultures of planning, that is, the sociological perspective with the calculative spirit of mathematics and statistics. The study of Doxiadis' plan for Detroit reveals the flaws of his comprehensive approach and discusses the ekistic methodologies

in reference to the systems approach to planning.

Altogether, Doxiadis and ekistics epitomize the transition from the heroic modernism to the visionary approaches that explored the consequences of a world turning into a global village. Doxiadis, however, sought to plan the city of the future as part of a global urban system. In his eyes, facing the urban crisis was an attainable ideal. Eventually, the contradictions between his work and theory were the outcome of his commitment to plan an inevitable development and his anxiety to put order in the urban chaos.

Acknowledgments

It is a great pleasure to have the opportunity to express my gratitude to those who have accompanied me in this endeavor. This thesis has started by examining Doxiadis' proposals for the development of Athens. Some of the issues treated herein owe a lot to the discussions I had at the early stages of this project with Professor Maria Mantouvalou. I want to thank her for showing me alternative ways to consider and understand urbanism. Several scholars and academics have advised me or have shared information, therefore contributing in one way or another to this project. I want to thank Dr. Michelle Provoost for the stimulating conversations we had on the role of Doxiadis in the postwar planning scene. Professor Maria Kaika has been a source of inspiration for developing a more critical stance on the issues involved. I feel lucky to have attended her PhD seminar. Moreover, it was a great experience to participate in the Authors meet Critics initiative of the International Journal of Urban and Regional Research (IJURR). I want to thank Dr. Penny Koutrolikou for bringing this initiative to my attention.

Another turning point in this intellectual journey has been the "Crisis and Innovation in Modern Greece" conference organized by the Seeger Center for Hellenic Studies at Princeton University. Dimitris Gondicas and the rest of the faculty are worth of mentions for their continuous support to Modern Greek studies. I had the pleasure to share this experience with Dr. Ursula Dimitriou, a fellow researcher with whom I have spent countless hours on the phone clarifying both working issues and existential doubts.

The first steps of this thesis were supported by a grant from the Greek State Scholarships Foundation (IKY). A mobility grant promoted by the Ministry of Education, Culture, and Sport of Spain and the European Union has supported part of the research to the fulfillment of the European Doctorate Mention.

I am thankful to Professor Pedro Azara for giving me the opportunity to participate in the publication that accompanied the exceptional exhibition "City of Mirage: Baghdad from Wright to Venturi". This endeavor aroused my interest in postwar planning in the Middle East. Professor Manel Guàrdia Bassols has guided me successfully throughout my years at the Polytechnic University of Catalonia and has provided the necessary institutional support for carrying out this project. Most importantly, he has directed this thesis showing great confidence in my criteria for which I deeply thank him. Though joining this dissertation at an advanced stage, the commentaries and suggestions of Professor José Luís Oyón were decisive in giving it the present shape. I want to thank him for showing a true interest in this work. Last but not least, I want to express my sincere gratitude to

List of Illustrations

CHAPTER ONE

Fig. 1.1   Athena Temple - Pergamon
[Drawing from Doxiadis' doctoral thesis *Architectural Space in Ancient Greece*.]

Fig. 1.2   Constantinos Doxiadis giving an interview on CBS (San Francisco, June 16, 1945).

Fig. 1.3   A graph depicting the reduction of agriculture during the German Occupation (1941-1944). The graph uses the Vienna method of pictorial statistics.
[Doxiadis, C. A. (1946) *The sacrifices of Greece in the Second World War [Αι Θυσίαι της Ελλάδος στο Δεύτερο Παγκόσμιο Πόλεμο]*. Athens: Undersecretary's Office for Reconstruction. Reprint, Athens: Kathimerini, 2014.]

Fig. 1.4   Doxiadis' scheme for the organization of the Greek Recovery Program Coordinating Office - GRPCO (circa 1950).

Fig. 1.5a   Doxiadis and Foreign Aid Representatives (handwritten note: "French - Dutch - American - English").

Fig. 1.5b   Doxiadis and foreign aid representatives supervising the works of the Reconstruction Program.

Fig. 1.6a   Types of Rural Dwelling Nuclei (Type 1 Sector 8).
[*Types of rural dwelling nuclei [Τύποι αγροτικών πυρήνων] (B 6}* (1949). Ministry of Reconstruction (Series of Publications from the Ministry of Reconstruction, B6).]

Fig. 1.6b   Types of Rural Dwelling Nuclei (Type 12 Sector 279).
[*Types of rural dwelling nuclei [Τύποι αγροτικών πυρήνων] (B 6}* (1949). Ministry of Reconstruction (Series of Publications from the Ministry of Reconstruction, B6).]

Fig. 1.7   Inaugural Ceremony for the Low-Income Houses in Tambouria, Keratsini, Piraeus (1949). In the presence of the Royal Couple of Greece, the Minister of Reconstruction E. Papadogiannis, the architect K. Krantonellis, and the deputy premier Al. Diomidis.

CHAPTER TWO

Fig. 2.1   Cover of *Ecumenopolis*
[Doxiadis, C. A. and Papaioannou, J. G. (1974) *Ecumenopolis: the inevitable city of the future*. New York: Norton.]

Fig. 2.2a   Total Earth Population by Settlement Sizes.
[Doxiadis, C. A. (1966) *Urban renewal and the future of the American city*. Chicago: Public Administration Service, p.76]

NOTE: All illustrations except 2.2a, 2.2b, 3.16, 4.1, 4.3, 4.6, 5.2, 5.3, 5.7, 5.8, 6.7, and 6.9 belong to Constantinos A. Doxiadis Archives, © Constantinos and Emma Doxiadis Foundation.

Introduction

Postwar optimism and Cold War anxieties

At the aftermath of the Second World War and the bombing of Hiroshima and Nagasaki, a new world order was forged inspired by the optimism for a sustained period of peace and prosperity. Two opposing but interacting "processes" characterized this transition: the efforts to internationalism and the schism of the Cold War.

International co-operation, development, and security became the objectives of newborn organizations such as the United Nations (UN) and the International Bank for Reconstruction and Development (IBRD). Nonetheless, the rivalry between the United States and the Soviet Union challenged the vision for a united world, and new division lines, but as well coalitions, emerged in international politics. Concerning the military structures, the North Atlantic Treaty Organization (NATO) was established as a response to the Soviet expansionism, which was understood as the driving force behind the creation of the German Democratic Republic. When the Federal Republic of Germany was recognized as a sovereign state and became part of the NATO in 1955, the U.S.S.R. responded with the signing of the Warsaw Pact.

The new geopolitical reality was called "the Cold War". The term initially appeared in an essay where George Orwell reflected on the anxieties of a world living under the threat of nuclear warfare.[1] In 1946, Winston Churchill accused the Soviets of raising an "Iron Curtain" across the continent, "from Stettin in the Baltic to Trieste in the Adriatic".[2] In a short time both terms became part of the political language and denoted the polarizing climate between the two superpowers. The second half of the 20th century was dominated by their rivalry.

The crisis that principally catalyzed the Cold War was the Greek Civil War.[3] It took place between March 1946 and October 1949, and it is often reckoned as the first proxy war between the U.S. and the Soviet Union. The confrontation, however, begun after the Liberation when the Communist Party of Greece contested the older parties (the Populist and the Liberal Party), but also the "percentages agreement" between Joseph Stalin and

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[1] The essay was titled "You and the Atomic Bomb", and was published on 19 October 1945 in the British newspaper *Tribune*.

[2] Winston Churchill delivered the "Sinews of Peace" address at Westminster College, in Fulton, Missouri on 5 March 1946.

[3] At almost the same time, two other crises sparked the Cold War, namely "the Iranian crisis of 1946", and "the Turkish war scare of 1946". See, Leffler, M. P. and Painter, D. S. (eds) (2005) *Origins of the Cold War: an international history*. 2nd ed. New York: Routledge (Rewriting histories).

Winston Churchill that had put Greece under the British sphere of influence. Alarmed at the prospect of a possible prevalence of communism, the U.S. responded to the failure of Britain to maintain leadership. The Truman Doctrine declared the U.S.' decision to contain the Soviet expansion, fill the power vacuum of decolonization in the Middle East and exercise of influence in Europe. In that respect, the reconstruction of Greece was heavily conditioned by the emerging "global" confrontation.[4]

During the following years, several proxy wars and crises exacerbated the ongoing tension between the two rivals. This *war* however remained "cold". Throughout the period 1947-1991 – the period broadly accepted by the historians as the Cold War - the two fronts never engaged in a direct military conflict. As it is often argued, this is due to the *Mutually Assured Destruction* (MAD) doctrine, which assumed the complete annihilation of both sides in case of full-scale use of weapons of mass distraction. This equilibrium of terror sealed an atypical agreement between the two superpowers. At the same time it was used by both sides as a mechanism to keep their satellite countries under control.

On the other hand, the status quo of the geopolitical struggle was used in many cases by countries, regional organizations, and local players as means to accomplish their own objectives. To be sure, whereas the strategies of the two rivals in Europe in no case opposed the spheres of influence agreed at the Yalta conference, in other continents the conflict took much different paths, one case being the Vietnam War. Today, the revision of these episodes challenges the monolithic and dominant narrative of two opposing fronts effectively controlled by the U.S. and the Soviet Union.[5]

The major confrontation past the military field was ideological. Since the 1929 Wall Street Crash and the years of the Great Depression, American economists and policy makers sought to craft a new narrative for development - in effect, a third way that would restore confidence in capitalism. The Stalinist methods had proved that rapid industrialization was possible as well in socialism, making the Communist model appealing to emerging nations with scarce technology but abundant labor force. The modernization theory was conceived to counteract the Soviet advancements with a historical and explanatory

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[4] For many years, the role of the Soviet Union in the Greek Civil War was an issue of controversy. In an article that examines the archives of Greek communist leaders, Sfikas analyzes the strategy of the Communist Party of Greece (KKE) paying attention to local and international factors. He concludes that "the unwillingness of the Soviet Union to furnish large-scale assistance, and the support provided to the anti-Communist forces by Britain and the United States, created extremely unfavorable conditions for the KKE". See, Sfikas, T., D. (2005) 'The Greek Civil War', in Leffler, M. P. and Painter, D. S. (eds) *Origins of the Cold War: an international history*. 2nd ed. New York: Routledge (Rewriting histories), pp. 134–152, p. 148.

[5] Examining how the Cold War was played out in Europe and Asia, Wallerstein contests the assumption "that anything important that happened in all those years was initiated either by the US or by the Soviet Union". See, Wallerstein, I. (2010) 'What Cold War in Asia? an Interpretive Essay', in Zheng, Y., Liu, H., and Szonyi, M. (eds) *The Cold War in Asia: The Battle for Hearts and Minds*. Brill (Brill ebook titles), pp. 15–24.

narrative that advocated development "made in the West". Incubated in academic institutions such as the MIT Center for International Studies and propagated by widespread writings such as Walt Rostow's *The Stages of Economic Growth*, the modernization theory became the textbook of the American diplomacy.

One of its main assumptions was that it was the interest and obligation of the U.S. to help the traditional societies "mature" and to emancipate its people from poverty, famine, and political backwardness. As such, the modernization theory provided the main explanation and basic guidelines for granting the Third World financial aid and technical assistance. Allegedly, the ultimate goal was to lift the unindustrialized nations to the economic level enjoyed by the advanced societies of the West.

Practically, the development doctrine was advanced by U.S. foreign policies and programs carried out by international organizations and private institutes. The European Recovery Program, broadly known as the Marshall Plan, supported the rebuilding of Western European economies, and the Point Four Program reached countries such as Pakistan, Israel, and Iran. Operating in a smaller scale but being more effective in overcoming domestic and international constraints, non-governmental organizations and philanthropic institutions such as the Ford Foundation and the Rockefeller Foundation promoted social and economic reforms modeled after the paradigm of the West. The use of "soft power" extended as well to the sphere of culture, where the most active institutional channel of anti-communism was the Congress for Cultural Freedom (CCF). The main objective of these policies was to extend the influence of the West and contain the spread of Communism. Altogether, the aid programs ranged from education, agriculture, and infrastructure works, to microfinance and labor. Eventually, the battle for the hearts and minds of the free people was given in every field: from the domestic one, where kitchens and refrigerators typified commodity production, to the space race and the technological euphoria of the first computer networks.[6]

One of the sectors that absorbed the financial aid and technical assistance was housing construction. Public agencies such as the British Colonial Office and the U.S. Housing and Home Finance Agency were contracted by national governments to conduct extended housing programs. The need for housing was growing, and so were the opportunities for architects and planners. Experts arrived in the developing countries along the IBRD survey missions, participated in programs sponsored by private institutes, or were directly

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[6] In 1959, Vice President Richard Nixon and Premier Nikita Khrushchev engaged in an informal however press-covered conversation popularly known as "kitchen debate". It took place at the opening of the American National Exhibition in Moscow, and in front of a model kitchen that displayed household commodities made in the U.S.A. See for example, Buck-Morss, S. (2002) *Dreamworld and catastrophe: the passing of mass utopia in East and West*. Cambridge, Mass.: MIT Press, pp. 199-205.

contracted as advisers by national governments.

Besides the need to deal with migratory movements and rapid urbanization, national governments used housing programs to regulate their territory and ease the social and political unrest. In the era of decolonization the claims of the rural-to-urban migrants were represented by independence movements, the most popular ones following Nasser's efforts to Pan-Arabism. In that sense and in several cases, the physical planning of developing nations was linked not only to local realities but also to *global* interests.

Altogether, the Cold War was a significant factor in the transformations that marked the postwar world. It was a *breeder* of conflicts but also of knowledge transfer, products, and ideas. The new geopolitical reality comprised both nuclear catastrophes and promised lands, both anxieties and opportunities.

Constantinos Doxiadis and ekistics

This dissertation examines the redefinition of urban planning and architecture vis-à-vis the socio-spatial transformation processes that marked the first three postwar decades. In particular, it focuses on the work and theory of Constantinos A. Doxiadis (1913-1975), one of the most prolific however controversial figures in the realm of urban planning and architecture.

Doxiadis' professional trajectory and intellectual endeavors are closely connected to the geopolitical phenomena and processes that form part of the Cold War narrative. The controversy surrounding Doxiadis, in fact, arose at the early days of his career, when in the midst of the Greek Civil War he headed the Ministry of Reconstruction. Throughout the 1950s, he built the reputation of a global planner taking advantage of the opportunities that arose in the developing world, often in regions that were considered hotbeds of communism.

His managerial talent and connections with high rank Marshall Plan administrators brought him on the doorstep of the wealthiest at the time American philanthropic institution, namely the Ford Foundation (FF). The funding of Doxiadis' research and educational activities with FF dollars lasted for almost two decades and became one of the most intriguing chapters in the foundation's engagement with urban planning. On the other hand, Doxiadis' relationship with U.S. institutions and experts marked his trajectory. In the eyes of some, his urban proposals were instruments of promoting American-driven modernization and values.

Doxiadis' approach to urbanization problems however was global both in conception and scope. His brainchild ekistics was a holistic framework conceived for the study and planning of human settlements. Actually, the Greek planner advanced ekistics as an interdisciplinary scientific field setting up a research-educational center, organizing an international symposium and publishing a prestigious journal. Altogether, he rallied a professional and scholar network around a world-saving purpose, that is, to plan the "city of the future" that he called Ecumenopolis.

Constantinos Doxiadis was a global planner and a planner of the global. Much alike the modernization theory, his planning discourse advocated the necessity for development and the inevitability of a universal urban future. In the end, his planning philosophy was imbued both with the anxiety to face the universal crisis and with the optimism of the development decade. This study begins with the schism of the Cold War when Doxiadis sought to reconstruct the devastated Greece, and ends with the beginnings of Detroit's decline.

The "Doxiadis' enigma" in the historiography of Modern architecture and urbanism

Doxiadis was one of the last moderns.[7] He launched ekistics in the late 1950s, the same period that the International Congresses of Modern Architecture, otherwise called the CIAM organization, was challenged by a group of younger members called Team 10. His close collaboration with Jacqueline Tyrwhitt and the participation of Sigfried Giedion in the inaugurating Delos symposium signified, to some extent, the passing of the torch. Doxiadis never joined CIAM however was connected to the newborn International Union of Architects (UIA). Eventually, he worked closely with its president Sir Robert Matthew who furthermore became a proponent of the ekistic mission together with other distinguished professionals and intellectuals of the era.

Ekistics in fact blended urban planning with scientific analysis methods, pioneering epistemological paradigms and emerging sociological currents. Advocating both development and environmentalism, Doxiadis promised the creation of cities that would preserve *human scale* and local practices, albeit being part of a global urbanized system. Altogether, Doxiadis and ekistics epitomize the transition from the heroic modernism to the visionary approaches that explored the consequences of a world turning into a global village. Their decline then marks the beginning of post-modernism.

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[7] The celebrated French geographer Jean Gottmann named Doxiadis one of the most influential architects-planners of the urbanization century, the other three being Le Corbusier, Frank Lloyd Wright, and Raymond Unwin. See, Gottmann, J. (1976) 'The ekistic philosophy of C.A. Doxiadis: a personal appreciation', *Ekistics*, 41(247), pp. 383–385.

Constantinos A. Doxiadis died on 28 of July 1975. Despite the extraordinary track record of housing projects and the creation of new towns such as Islamabad, the Greek planner is barely listed in contemporary accounts of modern architecture and urbanism. Despite the development of a significant scholar network and the dissemination of his ideas through conferences, symposia, publications, and even mainstream media, ekistics has fallen into oblivion after the demise of its father.

The recent years however have witnessed a resurgence of interest in the Greek architect-planner, especially in relation to the ongoing global urbanization. In 2008 the World Bank has confirmed Doxiadis' strongest statement: more than half of the human population lives in urban areas, a not so obvious but crucial milestone in human history. The popularization of terms such as *Megacities* or *Megaregions* calls attention to the regional patterns long debated by Doxiadis and his colleagues.

The renewed interest in the Greek planner was supported by specific institutional activities that have successfully promoted the dissemination of his intellectual legacy. Such were the opening of Constantinos A. Doxiadis Archives; the organization of the *Constantinos Doxiadis's Ekistics and the Architecture of Entopia* exhibition and the publication of the respective catalog;[8] the organization of the international workshop "Space and Progress" in 2006; and a series of conferences organized by the Friends and Colleagues of Constantinos Doxiadis in 2007, followed by the two-volume publication of its proceedings.[9] Till date, several publications and dissertations have delved into particular aspects of his work and theory. The first article to herald "Doxiadis' comeback" was Mark Wigley's "Network Fever". It analyzed the Delos Symposia, that is, a series of summer meetings organized by the celebrated planner on a boat where scholars, experts and administrators debated issues that ranged from the spatial aspects of the personal sphere to the global habitat.[10] Drawing on the antagonistic relationship of Buckminster Fuller and Marshall McLuhan, or on the collaboration of prominent intellectuals such as Margaret Mead and Barbara Ward, Wigley traces the connections between ekistics and the emerging discourses on networks and electronics. Examining as well the Delos Symposia, Ellen Shoshkes describes the relationship of the Greek architect-planner with the former CIAM secretary Jacqueline Tyrwhitt, likewise her role in developing and disseminating ekistics as a theoretical and institutional platform between East and West.[11]

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[8] See, Kyrtsis, A.-A. (ed.) (2006) *Constantinos A. Doxiadis: texts, design drawings, settlements*. Athens, Greece: Ikaros

[9] See, *Constantinos A. Doxiadis and his Work* (2009). Athens: Technical Chamber of Greece.

[10] See, Wigley, M. (2001) 'Network Fever', *Grey Room*, 4, pp. 82–122.

[11] See for example, Shoshkes, E. (2013) *Jaqueline Tyrwhitt: a transnational life in urban planning and design*. (Design and the built environment), or Shoshkes, E. (2004) 'East-West: Interactions between the United

Another introductory but comprehensive account comes from Ray Bromley who reviews the trajectory and achievements of Doxiadis, from the establishment of the Athens Center of Ekistics that fomented the academic and managerial profile of the Greek planner, to the impressive track record of his global firm.[12] Most notably, Panayiota Pyla's pathbreaking thesis examines Doxiadis' endeavors in the postcolonial context of the Middle East in tandem with ekistics' crucial role in the emergence of environmentalism.[13] The keynote of her analysis is the concept of *Ecumenokepos* (meaning "global garden"), that is, a network of reserved natural areas that complemented the Ecumenopolis, Doxiadis' vision and warning for an urbanized world. Finally, Simon Richards offers another perspective on Doxiadis' fixation with the global scale. He does so by emphasizing the planner's commitment to the smallest scales of architecture and thereafter challenging Wigley's interpretation of ekistics exclusively in terms of networks.[14]

Doxiadis' planning models and Doxiadis Associates projects have been as well subject of scholar analysis. The creation of the new capital of Pakistan, Islamabad, and its connection to the surrounding landscape is described by Ahmed Khan as an amendment of the modern urban design vocabulary.[15] A most original and critical account however is provided by Markus Daechsel that successfully examines the role both of international players such as the Ford Foundation and the Pakistani regime in shaping the conception and design of Doxiadis' grandiose project.[16] In a similar vein and using as a case study Doxiadis Associates' National Housing Program of Lebanon, Hashim Sarkis debates the relationship between planning and politics, challenging both the role of comprehensive planning as a scientific instrument and the high expectations for modernization set by

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States and Japan and their Effect on Utopian Realism', *Journal of Planning History*, 3(3), pp. 215 –240.

[12] See, Bromley, R. (2003) 'Towards Global Human Settlements: Constantinos Doxiadis as Entrepreneur, Coalition-Builder and Visionary', in Nasr, J. and Volait, M. (eds) *Urbanism : imported or exported?*. Chichester, England; Hoboken, NJ: Wiley-Academy.

[13] See, Pyla, P. (2002) *Ekistics, architecture and environmental politics, 1945-1976 : a prehistory of sustainable development*. Unpublished dissertation. Massachusetts Institute of Technology. Dept. of Architecture.

[14] See, Richards, S. (2012) 'Halfway between the Electron and the Universe: Doxiadis and the Delos Symposia', in Adler, G., Brittain-Catlin, T., and Fontana-Giusti, G. (eds) *Scale : imagination, perception and practice in architecture*. Abingdon, Oxon; New York: Routledge (Critiques: Critical Studies in Architectural Humanities), pp. 170–181.

[15] See, Khan, A. Z. (2008) *Nature and the City: the legacy of Doxiadis' plan for Islamabad*. Catholic University of Leuven. Department of Architecture, Urbanism and Planning. A chronological narrative of the project is authored by Orestes Yakas, a former DA collaborator. See, Yakas, O. (2001) *Islamabad, the birth of a capital*. Karachi: Oxford University Press.

[16] See, Daechsel, M. (2015) *Islamabad and the politics of international development in Pakistan*. Cambridge ; New York: Cambridge University Press (Studies in international planning history). Moreover, and as I shall refer below, Daechsel as well analyzes the creation of the refugee resettlement township of Korangi in Karachi.

international programs such as the Point Four.[17] Furthermore, analyzing the creation of Tema, a new town in the metropolitan area of Accra, Ghana, Viviana d' Auria assesses the implementation of the ekistic principles in the context of the postcolonial African rule and in relation to the broader movement of *tropical architecture*, while in another co-authored account she discusses the emergence of the human settlements planning paradigm.[18] The translation of Doxiadis' ideas into a master plan for Riyadh is the subject of Middleton's doctoral thesis who juxtaposes the model of Dynapolis to other planning strategies that sought to respond to the dynamics of urban growth and change.[19] Finally, Ali Madanipour assesses the ekistic planning models in the case of the Tehran Action Plan issued by Doxiadis Associates in 1972 as the last modernist ambitions before the advent of laissez-faire urban development.[20]

Other accounts have taken different theoretical directions. Andreas Kakridis explores Greece's industrialization as advanced separately by the professional communities of engineers and economists and as contested by the Left and the Right. He presents Doxiadis' program as an apolitical, scientific approach set to transcend these constraints and rebuild the country from its ashes.[21] Kostas Tsiambaos on the other hand associates the Greek architect-planner with the broader philosophical aesthetic movement of the European mid-war era, presenting the elaboration of a visual planning system that according to Doxiadis' treatise defined the spatial organization of the ancient architectural complexes.[22] Finally, Demosthenes Agrafiotis attempts to sketch the profile of this extraordinary planner and explore his perplexed relationship with the modern Greek

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[17] See, Sarkis, H. (2003) *Circa 1958 : Lebanon in the pictures and plans of Constantinos Doxiadis [Le Liban à travers les photos et plans de Constantinos Doxiadis]*. Translated by G. Tuwayni. Beyrouth, Liban: Editions Dar An-Nahar : Fares Foundation.

[18] See, D'Auria, V., Meulder, B. de and Shannon, K. (2010) 'The Nebulous Notion of Human Settlements', in *Human settlements: formulations and (re)calibrations*. Amsterdam: SUN Academia, pp. 8–27, and D'Auria, V. (2010) 'From Tropical Transitions to Ekistic Experimentation: Doxiadis Associates in Tema, Ghana', in Goldhagen, S. W., Mumford, E., and Wagenaar, C. (eds) *Grand plans*. Rotterdam; [Minneapolis]: NAi Publishers ; University of Minnesota Press (Positions, 1), pp. 40–63.

[19] See, Middleton, D. A. (2009) *Growth and Expansion in Post-War Urban Design Strategies: C. A. Doxiadis and the First Strategic Plan for Riyadh Saudi Arabia (1968-1972)*. unpublished dissertation. Georgia Institute of Technology.

[20] See, Madanipour, A. (2010) 'The limits of scientific planning: Doxiadis and the Tehran Action Plan', *Planning Perspectives*, 25(4), pp. 485–504.

[21] See, Kakridis, A. (2013) 'Rebuilding The Future: C. A. Doxiadis And The Greek Reconstruction Effort (1945-1950)', *The Historical Review / La Revue Historique*, X, pp. 135–160, and Kakridis, A. (2009) 'Deus ex machina?: Truman/Marshall Aid, Engineers, and Greece's Post-war Development Discourse', *Journal of Modern Greek Studies*, 27(2), pp. 241–274.

[22] See, Tsiambaos, K. (2010) *Structures of Vision: from Doxiadis' Theory to Pikionis' Work [Κατασκευές της Όρασης: από τη θεωρία του Δοξιάδη στο έργο του Πικιώνη]*. Athens: Potamos, or Tsiambaos, K. (2009) 'The Creative Gaze: Doxiadis' discovery', *The Journal of Architecture*, 14(2), pp. 255–275.

society.[23] The most recent and comprehensive analysis of Doxiadis' personality however is authored by Dimitris Philippides, who provides a kind of biographical account based on a thorough study of his archives.[24]

Research Questions - Methodology - Thesis Statement

Whereas the existing scholarship has covered important aspects of Doxiadis' work and theory, a great deal of his trajectory remains largely unexplored. Most importantly crucial questions remain unanswered. What accounts for the extraordinary career of the Greek planner both in entrepreneurship and intellection? How come and a Greek architectural bureau became one of the biggest international engineering and consultancy firms of its time? How it is possible for a sole man to rally a movement of prominent intellectuals with a world-saving agenda? On the other hand, what condemned an intellectual project that was omnipresent throughout the 1960s to oblivion after Doxiadis' death?

To answer the above questions, this thesis will review the trajectory of Doxiadis and ekistics from its rise to its fall. Though in no case this study aspires to provide a comprehensive account of the above, it seeks to cast its net as widely as possible by focusing on turning points and analyzing key projects from the different stages of Doxiadis' career: the European Reconstruction, the modernization of the Third World, the suburbanization of the American city and Lyndon Johnson's Great Society. In my view, the development of Doxiadis' holistic planning philosophy is inexorably linked to each one of the above contexts. Delimiting the chronological boundaries of the study would shut out important perspectives.

Another difficulty in assessing Constantinos Doxiadis' oeuvre is the definition of the diverse parts that compose his remarkable professional career and intellectual contribution. Driven by the sense of an omnipresent crisis the Greek planner advanced his projects and theory as one, committing himself to provide solutions, albeit *scientific* ones. Ekistics in fact, purposed both the analysis of the phenomena that influenced human settlements and the development of policies in respect. Theory and research became indispensable for legitimizing action. As such, ekistics can be understood as an integrated framework of methodological tools and theoretical approaches set to devise solutions and strategies to plan the urban future. Practically, the ekistic planning models and methodologies were carried out in DA projects, whereas in several cases the ekistic think tank supported with analysis and consultancy the DA commissions. The fusion of theory

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[23] See, Agrafiotis, D. (2010) *Misrecognition: 4 essays on C.A.Doxiadis*. Athens (/synapses).

[24] See, Philippides, D. (2015) *Constantinos A. Doxiadis (1913-1975): report to Hippodamus [Κωνσταντίνος Α. Δοξιάδης (1913-1975): αναφορά στον Ιππόδαμο]*. Athens: Melissa.

and practice was the kernel of ekistics and characterized each one of Doxiadis' steps.

On the other hand, a careful analysis of Doxiadis' work and theory should draw lines between the scopes of the profit oriented practice and its research-educational counterpart, or emphasize the differences between his discourse and the theoretical guidelines of ekistics. Naturally, and despite bearing the signature of the Greek planner, neither DA nor ekistics can be considered results of Doxiadis' efforts alone. The ekistic mission in fact, had a few celebrated protagonists, such as Jacqueline Tyrwhitt, Buckminster Fuller and Margaret Mead that contributed significantly to the development and dissemination of Doxiadis' *scientific* approach. By the same token, the projects of DA were defined by a multitude of actors and reasons that naturally escaped Doxiadis' control. As such, the present study seeks to offer a perspective on the complexities of the ekistic movement and shed some light on the relations between the institutional branches of ekistics and DA itself.

For that purpose, the methodological approach of this study is based principally on the analysis of archival documents: the personal correspondence, signs and memos tell a lot about the way Doxiadis managed his organization. On the other hand, the analysis of internal reports reflects the work in progress within DA and ACE. Doxiadis' beliefs and views can be found in his writings and lectures, and yet their interpretation is in no case an easy task. His discourse and writing style were methodical, almost as a bullet point presentation, and yet they were full of unresolved contradictions, assumptions about global truths, and foregone conclusions.

On the other hand, the construction and deconstruction of Doxiadis' myth inevitably involves the perspectives offered by his contemporary critics and peers, naturally some being more critical than others. Finally, a series of interviews with former DA collaborators was of paramount importance in transmitting subjective and yet insightful views on this exceptional figure, and providing if only a small idea of their working experiences in unfamiliar places.

The main criterion for arranging and using the above information has been the chronological order and the careful contextualization of the discussed issues. Theory therefore is premised on *history*, hopefully to avoid clichés and simplism. To give an example, several scholar accounts have built their narratives on Doxiadis' *strong* anti-communist record and the financial support he received from the Ford Foundation even for cases not directly connected to these facts; others have easily attributed Doxiadis' contracting by national governments in the conflictive grounds of the Middle East to his Greek nationality. As I shall analyze, these truisms are problematic if not contextualized properly and so is the understanding of the Cold War narrative as monolithic. Alternatively, I examine the complex dynamics of development by highlighting the

importance of the periphery and Doxiadis' persistence in his planning philosophy and ideals.

In that respect, examining Doxiadis and ekistics against that background poses great difficulties due to the ambiguous nature of the context. The study of the influence of the conflict between the two superpowers on areas such as culture, education, or architecture and urbanism in fact, has only recently opened a new field in the historiography of the Cold War. To understand the broader framework of these relations I take in consideration the groundbreaking study of the early Cold War years' political and cultural history by Guilbaut and the juxtaposition of socialist and capitalist utopias by Buck-Morss;[25] Wharton's analysis of the Hilton international hotels and Loeffler's account of U.S.' overseas embassy-building program have provided interesting perspectives on "making architecture" for promoting American values.[26] Finally, a massive exhibition organized in V&A museum in 2008 has strengthened further the idea that "art and design were not peripheral symptoms of politics during the Cold War"; instead "they played a central role in representing and sometimes challenging the dominant political and social ideas of the age".[27]

In Doxiadis' case in particular a most challenging (and for some controversial) account comes from Michelle Provoost, who draws on the fascinating coalition of the Greek planner with the wealthy Ford Foundation. Presenting modern urban planning as an instrument in the battle for the hearts and minds of the developing world, Provoost' analysis follows a broader theoretical current that has reflected on role of institutions such as the Congress for Cultural Freedom (CCF) in promoting anti-communism or on the covert funding of social sciences by the CIA.[28] Though certainly intriguing, in some cases such accounts fall short of providing an insight into the complexity of these processes and besides the "follow the money" tactic.[29] On the other hand, Doxiadis' financial support from the most prominent American foundation, which was as well connected to the CCF, is so intriguing that in some cases it is understood as fundamental to the expansion of his planning firm in the Third World. This is however misleading since the FF grants were

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[25] See, Guilbaut, S. (1985) *How New York stole the idea of modern art : abstract expressionism, freedom, and the cold war*. Chicago, IL: University of Chicago Press, and Buck-Morss, S. (2002) *Dreamworld and catastrophe: the passing of mass utopia in East and West*. 1. MIT Press paperback ed. Cambridge, Mass.: MIT Press.

[26] See for example, Wharton, A. J. (2001) *Building the Cold War : Hilton International hotels and modern architecture*. Chicago: University of Chicago, or Loeffler, J. C. (1998) *The architecture of diplomacy : building America's embassies*. New York: Princeton Architectural Press.

[27] See, Crowley, D. and Pavitt, J. (eds) (2008) *Cold War modern: design 1945-1970*. London: V&A Pub.

[28] See, Provoost, M. (2007) 'New Towns on the Cold War Frontier', *Archplus*, May, pp. 63–67.

[29] For a critical assessment of this theoretical current see, Engerman, D. C. (2010) 'Social Science in the Cold War', *Isis*, 101(2), pp. 393–400.

given to the ACE for its educational and research programs. Having said that, the starting point for analyzing Doxiadis' discourse and practice in the context of the Cold War is Nils Gilman's account of modernization theory.[30]

This thesis presents ekistics as an interdisciplinary and holistic system that purposed the planning of global urbanization. Doxiadis' ambition to bring the urban world in equilibrium included both the optimism of postwar internationalism and the anxieties of the Cold War. Even if the Greek planner openly supported Western ideals and models, the research and educational programs of his institute were advanced as independent initiatives *between* the East and the West. Doxiadis Associates on the other hand, grew navigating among the divergent interests, opportunities, and pitfalls of the agitated international affairs, especially against the background of the Third World. Be that as it may, both hypotheses are far from reading Doxiadis' achievements as the outcome of U.S. interventionism and his theoretical approach as a branch of modernization theory.

On the other hand, I will argue that Doxiadis sought to transcend the modernist dogma fusing its principles with emerging theoretical currents and putting emphasis on housing instead of architecture. The methodological approach to this blending was systemic. Ekistics effectively espoused the systems approach to planning. Nevertheless, even if Doxiadis sought to trace another path between dreamworlds and catastrophes - or to use his terminology, between Utopia and Dystopia - in the end he had to face the contradictions and inequalities of development. Eventually as I shall argue, the failure of ekistics cannot be explained separately from the decline of modernization theory or the problematic transcription of the systems approach to planning. The aim of the thesis is to discuss the paradoxical relationship between the ekistic theory and Doxiadis' practice *vis-à-vis* development.

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[30] See, Gilman, N. (2007) *Mandarins of the future: modernization theory in Cold War America.* Baltimore; London: Johns Hopkins University Press.

Chapter overview

The structure of this thesis unfolds to the extent possible in a chronological order structured after the main stations in Doxiadis' career. The first chapter presents his formative years when in the capacity of a public administrator he headed the Greek Reconstruction and consequently Recovery program making use of the technical assistance and scarce funds of the Marshall Plan. Doxiadis' professionalism, efficiency, and ideological alignment with U.S. interventionism were fundamental in collaborating with foreign missions and building a career thereafter. Apart from his strenuous efforts to organize from a scratch an efficient state mechanism, emphasis is put on Doxiadis' proposals for facing the housing shortage, fueling economic development and transcending the Left-Right dividing lines drawn on the issue of industrialization.

In chapter two, I analyze further the theoretical underpinnings of Doxiadis' development discourse in relation to the prevailing economic beliefs and the doctrine that provided the framework of U.S. foreign policies and aid missions, namely the modernization theory. This analysis is premised on a careful separation of ekistics - considered, in its totality, as a theoretical approach and a movement - and Doxiadis' discourse, exemplified in this case by his address at the conference organized by the Congress for Cultural Freedom in 1955 under the title "The Future of Freedom". While Doxiadis' ideological affiliation with the West is unquestionable his development model advocated housing both for its humanitarian nature and multiplier effect on national economy. In this respect, the Greek planner was one of the pioneers to advance affordable housing against poverty and to promote aided self-help programs. The chapter closes introducing one of Doxiadis' closest collaborators and a key player in promoting DA in the developing world, namely Jacob Crane.

The third chapter unfolds as a case study of the above theoretical analysis. In particular it examines the National Housing Program of Iraq, the first international experience of Doxiadis Associates and a model study for carrying out other commissions. During the period 1955-1958 the Greek firm undertook numerous projects financed by the Iraqi Development Board in tandem with a set of grandiose architectural projects that were meant to put Baghdad on the same page with European capitals. A violent coup put an end to these modernizing visions evincing only some of the difficulties of implementing housing programs in the unstable ground of the Middle East. The collision of planning strategies, urban models, and architectural design with local realities will be discussed by analyzing the housing policies and the Master Plan of Baghdad issued by DA. Finally, the study of the notorious Sadr City provides a reflection on the trajectory and fate of

Doxiadis' urbanism.

Throughout the 1960s and in parallel with the successful promotion of his firm, Constantinos Doxiadis launched several institutional activities that aimed to the dissemination of ekistics. In effect, the Greek planner was an entrepreneur and a teacher, a manager and a visionary. Chapter four provides a glimpse on Doxiadis Organization (DO) and highlights the difficulties and contradictions in directing at the same time profit oriented and academic-research activities. The focus will be on the Athens Center of Ekistics (ACE), the institution set to promote ekistics internationally. Furthermore, the analysis of the celebrated Delos Symposia and the journal *Ekistics* opens a window on the relationship of Doxiadis with some of his closer colleagues and particularly with the editors Jacqueline Tyrwhitt and Gwen Bell. Though this chapter principally unfolds as a historical account, it helps to understand the emergence of the ekistic movement and the establishment of the ACE as an educational and research hub operating in the European periphery and "between East and West".

In chapter five, I analyze further the research programs of the ACE focusing on "the City of the Future" (COF) set to corroborate with data the Ecumenopolis theory, and on "the Human Community" (HUCO) research project that aimed to define the spatial characteristics of the Human Sector, Doxiadis' version of the neighborhood unit. In effect, the ACE research had two principal objectives: to consolidate ekistics as a scientific field and to legitimize *scientifically* Doxiadis' planning models and design strategies. Research was the missing link between the ekistic theory and practice. On the other hand, by analyzing the ACE research programs I provide a case for assessing the ekistic vision of merging different epistemological perspectives under its auspices.

Finally, Doxiadis' plan for Detroit, examined in the epilogue of this thesis, exemplifies the contradictions of a quantitative approach rooted in systems theory, the dominant epistemological paradigm of the 1960s. By the same token, I reflect on the failure of macro-planning and large-scale models to come to terms with local realities, and the paradoxes or tensions of an exceptional architect committed to plan the urban future.

CHAPTER ONE

The Greek Reconstruction and Recovery 1945-1950

From the Liberation to the Civil War

The withdrawal of the German forces from the Greek mainland in October 1944 dates the end of the Axis occupation and the beginning of the Reconstruction period. For the majority of the European countries the first postwar years marked a decisive development era and the opening of an international cooperation cycle that nurtured the hope of a peaceful tomorrow. Development in Greece however took much different paths after the burst of the Civil War and the subsequent intervention of the United States that steadily rose to a global hegemon.

The power vacuum left by the Occupation forces evinced the deepening of the prewar social chasm and soon was contested by the two predominant fronts, namely the political elites of the Center-Right who had formed in Egypt the government-in-exile of King George II, and the leftist groups who had organized wartime resistance. Among the latter, the left-wing National Liberation Front (EAM), which was associated to the Communist Party of Greece (KKE) - outlawed during the (prewar) Metaxas Regime - and featured a military arm called the Greek People's Liberation Army (ELAS), had created since March 1944 the so-called "Mountain Government", effectively controlling the greatest part of the country.[1] On the return of the "Cairo government" led by Georgios Papandreou and supported by the British troops, the disarmament of all guerrilla forces became a red line for EAM. The fragile situation was violently disrupted on December 3, 1944, when the demonstration organized by the EAM was dispersed by shootings leaving more than 28 people dead. A period of full-scale fighting between leftist groups and the government along the British Army, broadly known as "the December events" (*Dekemvriana*), marked the prelude of the Civil War. Neither the Varkiza Agreement signed in February 1945, nor were the constant changes of government and prime ministers able to guarantee an amnesty to leftist partisans or contain the extensive hostilities committed in the countryside. The Greek Civil War burst in March 1946 initiating the most conflictive and bloodshed period in the contemporary Greek history.[2] The announcement of the Truman Doctrine and the militarization of foreign aid changed radically the correlation of forces and

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[1] For a contemporary standpoint and short analysis of the first years in postwar Greece see, Stavrianos, L. S. and Panagopoulos, E. P. (1948) 'Present-Day Greece', *The Journal of Modern History*, 20(2), pp. 149–158.

[2] See, Nachmani, A. (1990) 'Civil War and Foreign Intervention in Greece: 1946-49', *Journal of Contemporary History*, 25(4), pp. 489–522.

eventually in October 1949 the "Hidden War" ended.[3] At the dawn of the new era Greece was devastated, politically and socially divided, and the Cold War was simmering beneath the surface of international politics.

Greece was "arguably the most devastated country" to emerge from the Second World War.[4] The official accounts portray a country in decay and its population at the threshold of starvation. Destructions and population losses ranked among the most elevated in the European countries, Nazi looting had seized the Greek treasury, and its economy was in imminent danger of collapse as hyperinflation rendered the drachma a useless currency.[5] Starting from June 1941 and ending in January 1946, inflation marked a period of 56 months, probably the "longest such experience ever recorded".[6] Printing drachmas to meet expenditures, post-liberation governments skyrocketed the exchange currency: characteristically, between October and November 1944 the money supply was increased seven hundred times and prices peaked.[7]

Indeed, hyperinflation was a heavy burden to carry, especially against the fiscal chaos and the submerged economy established during the Occupation period. For years agricultural production, urban commerce and the surviving manufacturing activities had been operating beyond the control of the state, while all economic transactions between merchants and farmers were handled in bullion coins and therefore evaded taxation. The only valuable currency in fact after the Liberation was the British gold sovereign.[8] At the dawn of the new era, the Greek economy was premised on malfunctioning public organisms, overruled by the black market and characterized by the administrative separation of the urban centers from the agricultural regions. More than a symptom of deregulation, hyperinflation was deeply rooted in the everyday economy.[9]

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[3] *Greece: The Hidden War* is a 1986 television documentary series broadcasted by the British television and exploring British policies toward the Greek Civil War.

[4] See, Machado, B. & George C. Marshall Foundation, 2007, *In search of a usable past : the Marshall Plan and postwar reconstruction today*, Lexington, Va.: George C. Marshall Foundation, p. 58.

[5] On the wartime destructions and population loss, See, Doxiadis, Constantinos A., 1946, *The sacrifices of Greece in the Second World War*, Undersecretary's Office for Reconstruction, Athens; See also, Economic Cooperation Administration (ECA), 1949, *Greece Country Study*. Washington D.C.

[6] See, Palairet, M. R. (2000) *The four ends of the Greek hyperinflation of 1941-1946*. Copenhagen, Denmark: Museum Tusculanum Press, University of Copenhagen, p. 9.

[7] Until June 1, 1945, prices had raised up to 400% and wages up to 150%, see Porter, P. A. (2006) *Wanted: a Miracle for Greece [Ζητείται: ένα θαύμα για την Ελλάδα]*. Edited by S. Vretos and M. Psalidopoulos. Athens: Metamesonykties Ekdoseis.

[8] As a study of the Greek Board of Reconstruction reported "Greece [left] the War and the Occupation period [practically] having a new currency, that is, the gold sovereign". See the second part of the study, titled "The Greek Economy During the War and the Occupation", in *The Greek Economy by The Greek Board of Reconstruction* (1947). Document, Ref. Code 24361. Doxiadis Archives. Worth mentioning that the first government budget was submitted in the golden pound currency.

[9] See, Stathakis, G. (2004) *The Truman Doctrine and the Marshall Plan: the History of American Aid to*

In broader terms, the development of the Greek economy during the first postwar years was a slow and painstaking process that went through the following stages: monetary stabilization and the balance of the overall deficit, the restitution of production at the prewar level, and last but not least development strategies stemming from the vision for the industrialization of the country.[10] Considering Doxiadis' engagement in the state mechanism, the first two policies correspond to the **Reconstruction** period (1945-1948) including extensive programs for the construction of temporary settlements, low-cost housing, and the rebuilding of the destroyed prewar infrastructure. The **Recovery** period (1949-1950) broadly coincides with the Marshall Plan aid to Greece when the young planner was a key player in the national efforts for spatial planning and development.[11]

1.1 Constantinos Doxiadis and the Ministry of Reconstruction

The formative years

Constantinos A. Doxiadis was born in 1913, in Stenimachos of Bulgaria, a Thracian city where Greeks constituted an ethnic minority till the population exchange that followed the First World War. His father, Apostolos Doxiadis, was a paediatrician and served the Greek government as a Minister for the Resettlement of Refugees, Social Welfare and Public Health. In this capacity, he was responsible for the medical care and sheltering of approximately 1.5 million Greeks that were *repatriated* progressively in the aftermath of the Greco-Turkish War (1919-1922), in fact the biggest population influx in the recent history of Greece. All along his childhood, Constantinos, a refugee himself, faced the loss of a motherland and thereafter would continuously struggle for a secure settlement.[12]

Doxiadis graduated as an architect-engineer from the National Technical University of Athens in 1935, and one year later obtained his doctorate at Charlottenburg University

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Greece [Το Δόγμα Τρούμαν και το Σχέδιο Μάρσαλ]. Athens: Vivliorama, pp. 49-50.

[10] *Ibid*, p. 20.

[11] Though this classification serves well the purposes of this study, the two periods can hardly be narrowed within those limits as several programs were implemented progressively spanning both periods, while both the theoretical debate on industrialization and specific development measures stem from longtime and complex processes and have far-reaching scopes.

[12] Doxiadis himself explained his preoccupations with improving mass housing and living conditions saying that he "was a refugee at the age of one". Ehrenkrantz, E. and Tanner, O. (1961) 'The remarkable Dr. Doxiadis', *Architectural Forum*, 114(5), pp. 112–116, 154. Apostolos Doxiadis, the son, in the *Space and Progress* international workshop, 2006, paralleled Doxiadis' loss of motherland with the loss of his mother at the age of nine, and commented on the influence both events had on his professional and personal quests, ever since.

(Institute of Technology), in Berlin. His dissertation *Architectural Space in Ancient Greece* studied the spatial organization of the ancient architectural complexes advocating that the foundation and design of every building was premised on a system of visual connections resulting from the vantage point of the observer (Figure 1.1).[13] His dissertation opened a fervent debate within the academia and even became a discussion topic in galas of the diplomatic circles.[14] On his return to Greece, in 1937, Doxiadis was appointed Chief Town Planning Officer for the Greater Athens Area by the hand of K. Kotzias, former Mayor of Athens and Minister for the Capital District who had become an acquaintance at the Greek Embassy in Berlin.[15]

During the war years, the young architect served as a corporal in the Greek Army and participated in the resistance providing technical and classified information to the Allies for sabotaging the bridges that Germans used in their supply lines.[16] The difficulties of war did not stop the young architect from exploring his interest in urbanism and architecture, and along his close friend and lifetime collaborator John Papaioannou he organized a semi-clandestine meeting of engineers by the name "Circle of Technicians".[17] The papers of those home-gathering presentations were published in a weekly bulletin titled *Chorotaxsia*, one of the few periodicals that kept Greek professionals informed during wartime. *Chorotaxsia* in fact, was the first publication organized by Doxiadis and clearly manifested the importance of integrating knowledge and expertise.

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[13] See, Tsiambaos, K. (2009) 'The Creative Gaze: Doxiadis' discovery', *The Journal of Architecture*, 14(2), pp. 255–275.

[14] As Philip Deane describes, "The debate made him a celebrity [...] He became the prime exhibit of the Greek Embassy in Berlin, where he was lionized at party after party". See, Deane, P. (1965) *Constantinos Doxiadis: master builder for free men*. Oceana Publications, pp.24-25.

[15] Konstantinos Kotzias 1892-1951 was a controversial political figure, a journalist, a lawyer, and an athlete who competed as a fencer at the 1912 and 1924 Summer Olympics. He held important administrative positions at the dictatorial Regime of Metaxas and was one of the fervent supporters of the Italian and German fascist regimes in Greece. Doxiadis and Kotzias were acquainted at the Greek Embassy in Berlin, when the young architect was completing his doctoral thesis. According to Kyrtsis, this acquaintance - and the resulting administrative post - was crucial to Doxiadis' career, since it made him understand planning as a state policy and its political dimension. See, Kyrtsis, A.-A. (ed.) (2006) *Constantinos A. Doxiadis: texts, design drawings, settlements*. Athens, Greece: Ikaros, p.323. At the time, Constantinos Doxiadis was only twenty four years old.
[16] See, Bromley, R. (2003) 'Towards Global Human Settlements: Constantinos Doxiadis as Entrepreneur, Coalition-Builder and Visionary', in Nasr, J. and Volait, M. (eds) *Urbanism : imported or exported?* Chichester, England; Hoboken, NJ: Wiley-Academy, p.319. Apparently Doxiadis was Director in Athens of the British Intelligence Unit MO4, chief of the national resistance Group "Hephaestus" (1941 - 1945), and was honored as Member of the Order of the British Empire (OBE).

[17] In those meetings participated some of the most prominent professionals of the era, like V. Vafiadis, G. Valatas, J. Papaioannou, A. Dimitrakopoulos, A. Sokos, G. Megas, A. Konstantinidis, A. Scheepers, D. Konstas, K. Krantonellis, P. Mylonas, P. Vasiliadis, A. Chatzimichali, K. A. Trypanis, M. Triantafyllidis, S. Agapitidis, A. Spanos, A. Pappas, S. Makrakis, E. Ioannidou. Some of them continued their careers in Doxiadis Associates.
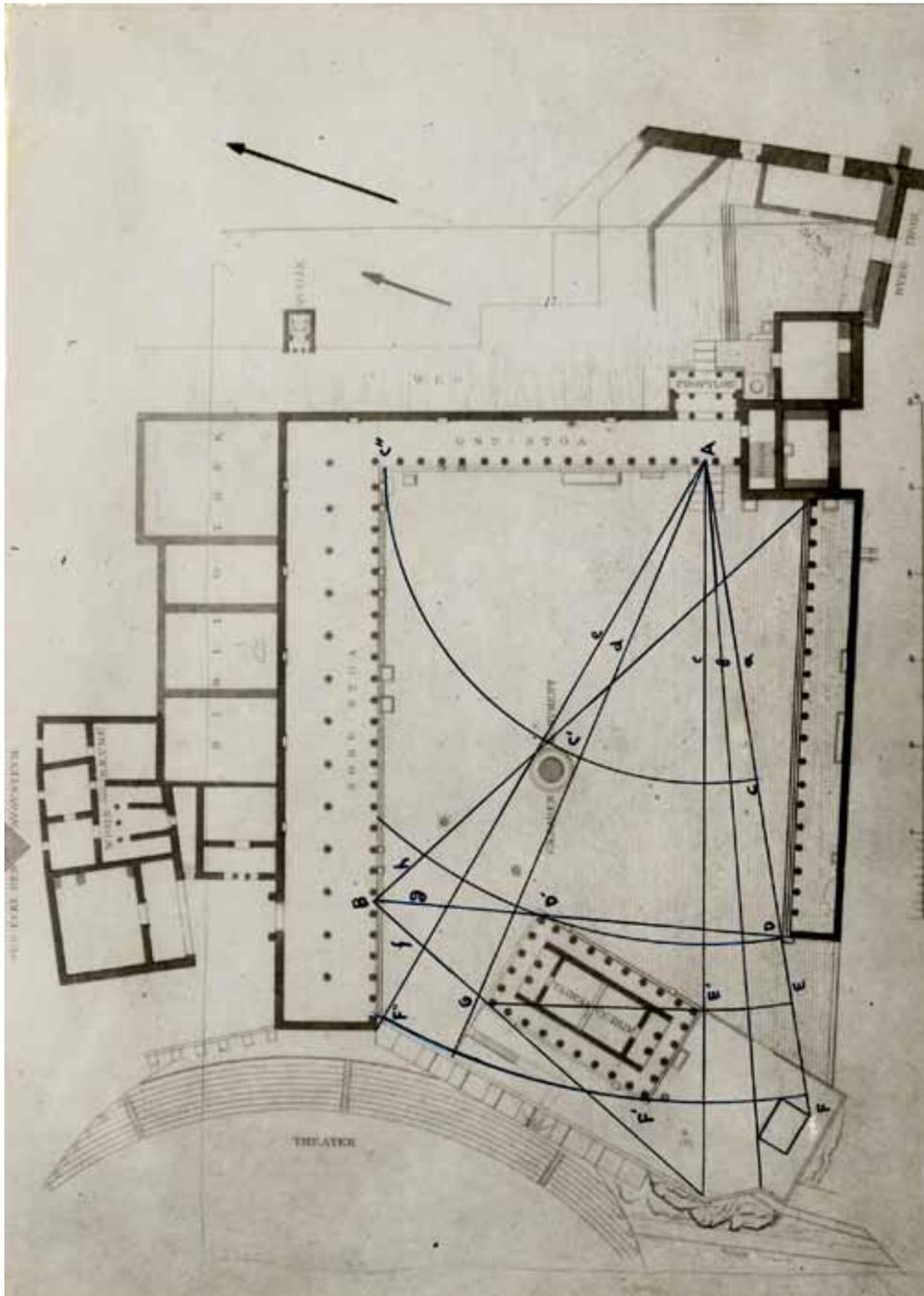
Athena Temple - Pergamon
[Drawing from Doxiadis' doctoral thesis *Architectural Space in Ancient Greece*.]
Figure 1.1

At the same time, Doxiadis directed the Department of Regional and Town Planning, a small office established within the Ministry of Public Works in 1940 that immediately undertook the documentation of the catastrophes and the changes brought about by the war.[18] In less than a two month's time after the Liberation, in a devastated country with a dismembered administrative authority, the young planner managed to produce an exhibition on wartime destructions titled *Such Was the War in Greece*. Using maps, photographs, and graphs, the exhibition illustrated the magnitude of the catastrophes, and became a powerful display of a devastated country in need of reconstruction and international aid. In early 1945, the exhibition traveled throughout Europe and ended at the United States where it was displayed at the founding conference of the United Nations Charter, held in San Francisco.[19] Doxiadis, who was at the head of the Greek delegation, lectured at the inauguration of the exhibition and as well addressed at several radio broadcasts (Figure 1.2). All along, he presented Greece as a small war-torn country, however ready and willing to promote action for the reconstruction of the world under the auspices of the United Nations.[20] A year later, a publication came to complement the exhibition and "remind" the international organizations the "Sacrifices of Greece in the Second World War", as the title eloquently suggested (Figure 1.3). The publication was printed in four languages (Greek, English, French and Russian), and used the Vienna method of pictorial statistics, that is Isotype diagrams to represent in a comprehensive way the destruction of agricultural production, the loss of human capital, or the radical reduction of animal labor.[21] Standardization and statistics became the cornerstone of Doxiadis' systemic thinking and provided the means for confronting the postwar crisis. Ekistics was born against that background soon enough to be developed as a holistic approach to the housing shortage and global urbanization problems.[22]

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[18] According to Papaioannou, "in 1939 [Doxiadis] persuaded the powerful A. Dimitrakopoulos of the Ministry of Public Works to create a small, independent office within the unit to cover research." See, Papaioannou, J. G. (1976) 'C.A. Doxiadis' early carreer and the birth of ekistics', *Ekistics*, 41(247), pp. 313–319, p. 314.

[19] This was the United Nations Conference on International Organization (UNCIO), held in San Francisco in 1945. For a detailed description of the exhibition's itinerary see, Kyrtsis, *op.cit.*, p.327-349.

[20] See, the interview that Doxiadis gave to Dan Lundberg in the capacity of the Greek delegate to the United Nations Conference on International Organization, Doxiadis, C. A. and Lundberg, D. (1945) *Radio interview on CBS, San Francisco, June 16, 1945*. Document, Ref. Code 8315. Doxiadis Archives.

[21] A few years later, from November 1949 to February 1950, another exhibition titled "Survival of the Greek People" came to show the advancements and end results accomplished to date; at that time the Greek recovery was conducted under the auspices of the Marshall Plan. On the design and use of isotype diagrams, see Tsiambaos, K. (2012) 'Isotype diagrams from Neurath to Doxiadis', *Architectural Research Quarterly*, 16(01), pp. 49–57.

[22] As Papaioannou denotes, "the concept of 'ekistics' was already clearly inherent in most of these wartime studies, especially in the team work and group discussions within this town-planning office, generally under the leadership of Doxiadis. What emerged was a tendency towards a global approach", see Papaioannou, *op.cit.*, p.315.

Constantinos Doxiadis giving an interview on CBS
(San Francisco, June 16, 1945).
Figure 1.2
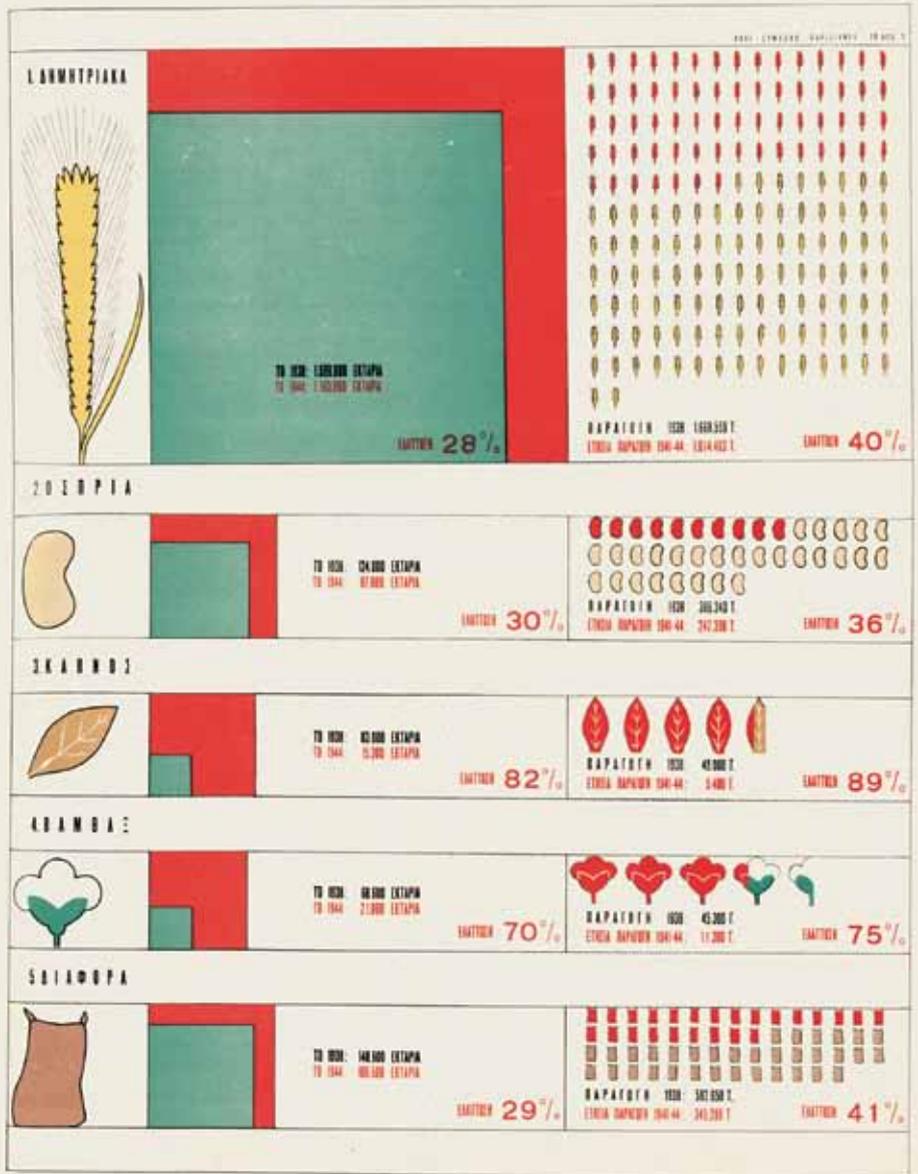
A graph depicting the reduction of agriculture during the German Occupation (1941-1944).
The graph uses the Vienna method of pictorial statistics.
[Doxiadis, C. A. (1946) *The sacrifices of Greece in the Second World War [Αι Θυσίαι της Ελλάδος στο Δεύτερο Παγκόσμιο Πόλεμο]*. Athens: Undersecretary's Office for Reconstruction. Reprint, Athens: Kathimerini, 2014.]
Figure 1.3

The establishment of the Ministry of Reconstruction

No doubt, the polarizing socio-political climate of the Greek Civil War presented a special framework for unfolding a national reconstruction program. In a series of articles published in the newspaper *Vima* in 1945 under the pen name "the Greek technician", Doxiadis analyzed the reasons obscuring the governmental efforts and denounced the political and economic interests that impeded the coordination of a joint program with the foreign aid missions. In a first place, the guerrilla warfare sabotaged the government programs by setting fire to the woods and timber reserves, and threatened the peasants who chose to work for the state.[23] At the same time, the shortage of building materials (especially of timber) and the pressing need for constructing provisional settlements turned the Greek government to the Allies. Foreign aid missions however, could hardly solve the mounting problems, for the disintegration of the governmental apparatus and its problematic and personnel-inflated departments were a thorn in their side.[24] The first months after the Liberation, chaos reigned supreme in the state departments and foreign aid representatives had to hunt down information and the people in charge, what Doxiadis characteristically called "this constant chase". While famine was rampant and the number of homeless increased, supplies disappeared in the black market, whereas the lack of coordination between foreign agencies and local administrators often resulted to the dispatching of large quantities of useless and unnecessary materials.[25] According to Doxiadis, the Greek administrations were incapable of organizing and promoting effectively their demands to foreign aid missions and institutions. At the other end, in the eyes of the British and American officials the difficulties for confronting the postwar crisis were associated with the inefficiency and corruption of the local government; "incorrigibility" became "the prevalent shibboleth" and failure "was attributed to "unalterable" Greek characteristics".[26]

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[23] See, Doxiadis, C. A. (1945) 'Reconstruction: temporary housing [Η ανοικοδόμησις: η προσωρινή στέγασις]', *To Vima*, 30 September. While in many cases the guerrilla warfare was a considerable obstacle, it could hardly account for every delay or failure, as often maintained by official representatives. Not explicitly referring to Doxiadis but contradicting his argument, Markezinis denoted: "Greek technicians who put forward the arguments that the guerrilla warfare was the cause of delays were only partly true, because areas not affected by warfare - as for example Crete - did not profit by the reconstruction programme, while in other districts where guerrilla warfare was waging, American technicians succeeded in a remarkable manner to restore and reconstruct roads or other vital technical works". See, Markezinis, S. (1970) *'Oral History Interview with Spyros Markezinis'*. By T. A. Wilson. Truman Library. Available at: http://www.trumanlibrary.org/oralhist/markezis.htm (Accessed: 14 July 2015).

[24] During the Occupation, the public sector and institutions became a kind of asylum and a shelter for the Greek population, since Germans send all unemployed persons to forced labor. See, Nachmani, *op.cit.*, p.492.

[25] See, Markezinis, *op.cit.* On the other hand, Doxiadis complained that "foreign aid would eventually manage to deliver only a small amount of the requested supplies and sometimes even inappropriate for construction", see, Doxiadis 'Reconstruction: temporary housing', *op.cit.*,

[26] See, Nachmani, *op.cit.*, p.497. As Doxiadis affirmed, after almost "ten years of [the Metaxas] dictatorship and Nazi occupation, the Greek state was in decay". See, Doxiadis, C. A. (1945) 'For rehabilitation to succeed

In January 1945, Constantinos Doxiadis who enjoyed the confidence of the Prime Minister Nikolaos Plastiras - a devoted Venizelist republican and a close friend of his father - drafted a bill for the foundation of a governmental agency set to undertake the Reconstruction endeavor.[27] In the introductory report, the young architect emphasized the need for a single organization in charge of coordinating the efforts of the Allies and the Greek government into a joint program and cited similar institutional paradigms from other countries. Collaborative organization was the first step.[28] Centralized planning and control had to follow. Every activity related to the reconstruction of the country should be centered in this new agency hopefully to transcend previous institutional efforts.[29]

The Undersecretary's Office for Reconstruction was founded under a Compulsory Law (C.L. 758) on 27 December 1945, in order to cope with "the reconstruction of settlements destroyed or damaged through the war".[30] The Office was established within the Ministry of Public Works and Constantinos Doxiadis was appointed Undersecretary, in fact the only time in his career he hold a political post.[31] After the parliamentary elections of March 1946 and the change of government however, Doxiadis resigned, only to be appointed Director General of the same office - often referred to as the Ministry of Reconstruction - receiving the support of the Minister of Public Works Stylianos Gonatas.[32] From that point onward, the all promising architect led every organization that undertook the Greek Reconstruction program, actually heading the same unit and collaborators since 1942.

After the arrival of the Economic Cooperation Administration to Greece (ECA/G), C.A. Doxiadis assumed the organization and direction of the office responsible for devising, implementing, and supervising development programs under the auspices of the Marshall

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[Για να πετύχει η Ανασυγκρότηση]', *Dimokratiki Epitheorisi*, 15 March, pp. 65–69. The young planner even denounced politically biased translators that accompanied the foreign aid representatives trying to manipulate their opinion.

[27] See, Kyrtsis, *op.cit.*, p.349.

[28] In 8 February 1945 in fact, Doxiadis submitted a report demanding the collaboration of every organization and agency operating in Greece - the foreign ones included - in order to carry out a census on the present conditions as a base for further action. See, Doxiadis, C. A. (1945) *Report on the need of a General Investigation of the problems of the country*. Document, Ref. Code 8290. Doxiadis Archives.

[29] "It is certain that neither the Agricultural Bank of Greece nor any other bank is in a position to undertake the work of reconstruction, which is not a secondary but a primary undertaking for which it will be necessary to found a special organization, a special service." See, *Economic policy for the reconstruction of the settlements of Greece* (1946). Undersecretary's Office for Reconstruction (Series of Publications from the Undersecretary's Office for Reconstruction, 3), p.29.

[30] *Ibid.*, p.5.

[31] This was the first and only time in his career that Doxiadis moved out of the civil service into a proper political post, see Papaioannou, J. G. (1976) 'C.A. Doxiadis' early carreer and the birth of ekistics', *Ekistics*, 41(247), pp. 313–319. Undoubtedly, Doxiadis was not a political figure. As Deane denotes, he "was not an elected representative of the people but a civil servant with the title of Minister". See, Deane, *op.cit.*, p. 36.

[32] Stylianos Gonatas (1876-1966) was a military officer, as well a Venizelist, and Prime Minister of Greece for the period 1922 to 1924.

Plan. As such, on 27 August 1948 he was appointed Director General of the Greek Recovery Programme Coordinating Office (GRPCO) this time at the Ministry of Coordination (Figure 1.4). A special distinction as a public servant came in October 1950, when he ascended to permanent Undersecretary of the Ministry of Coordination, the highest rank in the respective governmental department. Nevertheless, just a couple of months later and after the appointment of the prominent politician Georgios Papandreou to deputy prime minister, Doxiadis' public post was abolished. All in all, Doxiadis survived in the public service for over six years and throughout 21 government shifts before his public post was repealed in December 1950.[33]

During his public service, Doxiadis put a great effort in establishing and directing a central state agency with extended competences over juridical issues, governance, and even economic management. For state interventionism and central planning were the only means not only vis-à-vis the postwar crisis but for planning the future. The ideal Reconstruction Authority was promoted in a bill submitted in March 1946 and typified Doxiadis' hopes and expectations for a radical administrative reform aiming to amplify the Ministry's jurisdiction, overcome bureaucratic obstacles and provide a common ground for the Greeks and the Allies.[34] As stated in the second article of the compulsory law 1128 - according to Doxiadis, "the foundation stone of the future endeavor" - the aim of the Reconstruction Authority was twofold:

> A) "To draw up the plan for the reconstruction of the populated
> areas destroyed or in any way damaged by war or its
> consequences and the execution of such plan," and
> B) "To draw up the plan for the housing of the indigent and
> homeless refugees and of housing in general, and the securing
> of an inexpensive dwelling for the lower classes, and the
> execution of such plans".[35]

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[33] As Kakridis accounts, "Doxiadis' rise to prominence can be traced to his close collaboration with Stefanos Stefanopoulos, a high-ranking member of the Populist Party and Minister of Coordination between 1946 and 1950; in fact, Doxiadis' abrupt removal from office after 1950 can be attributed to the rise of a Centrist government and Stefanopoulos' own dismissal". See, Kakridis, A. (2013) 'Rebuilding The Future: C. A. Doxiadis And The Greek Reconstruction Effort (1945-1950)', *The Historical Review / La Revue Historique*, X, pp. 135–160, p.137. Naturally, and despite Doxiadis' claims to an apolitical role, he was not immune from the game of "political musical chairs". The circumstances of his dismissal - an overnight assembly while Doxiadis was hospitalized - arouse suspicions of a politically biased decision and not as a result of incompetence. Partisanship had overrode efficiency. See, Bromley, R. (2003) 'Towards Global Human Settlements: Constantinos Doxiadis as Entrepreneur, Coalition-Builder and Visionary', in Nasr, J. and Volait, M. (eds) *Urbanism : imported or exported?* Chichester, England; Hoboken, NJ: Wiley-Academy, p. 319.

[34] The report was published in Greek and English in order to keep informed both "the Greek public opinion and the Allied circles". See, *Economic Policy for the Reconstruction of the Settlements of Greece, op.cit.,*

[35] *Ibid.,*

Doxiadis' Scheme for the Organization of the Greek Recovery Program Coordinating Office - GRPCO (circa 1950)
Figure 1.4

In order to cope with these complex tasks and offer viable solutions to the housing crisis, the Reconstruction Authority was conceived as a public utility organization that "should be free, to a certain degree, from the influences resulting from each change of Government" and freed of the bureaucracy that characterized public administrative tasks.[36]

Financing the Reconstruction

The competences and bureaucratic shortcuts conceded to the Ministry of Reconstruction could hardly guarantee the implementation of a reconstruction program, for the greatest impediment was financing. While economists were struggling with rampant inflation, Doxiadis had to find the means to fund a national housing program. For that purpose, the compulsory law 1128 included fundamental articles that stipulated the assets and real estate properties ceded by the Greek State to the Reconstruction Authority in order to carry out the promulgated actions. All together, Doxiadis' administrative reform sought to draw on specific financial resources that included loans, state revenues from war reparations, remittances from wealthy expatriated Greeks, and taxation policies.

In a first place, a scarce sum of the national budget allocated to the Authority could be complemented by credits from the Bank of Greece and loans granted from foreign institutions most probably from the U.K., U.S., or Canada that, anyhow, were the principal backers of the United Nations Relief and Rehabilitation Administration (UNRRA) operating in the country since 1944.[37] In any case and despite all efforts, the raised funds were expected to be considerably low, especially the ones coming from Greek institutions or the state budget.[38]

The second financial source specified by the bill concerned the **remittances** coming from expatriated Greeks and in particular the wealthiest ones living in the United States. Notwithstanding the difficulties of such endeavor, Doxiadis proposed to mobilize the advertising means of Greek-American entrepreneurs and launch a campaign on the needs of Reconstruction.[39] A first opportunity in fact appeared when Xenophon Zolotas, former Director of the Bank of Greece and a prominent economist, traveled to the United States and Doxiadis urged him to inquire about the possibility both of obtaining a loan and

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[36] *Ibid.*, p. 30.

[37] *Ibid.,* p. 19.

[38] *Ibid.*, p. 22. As specified in the compulsory law document, these comprised "a) a small sum from the budget, […] as a loan (25 thousand million drachmae), b) Credits from the Bank of Greece from the existing monetary vacuum which [might] allow the application of a total sum of Drs. 200 thousand million".

[39] The Under-Secretary believed that "remittances […] may increase considerably if a concrete programme of reconstruction of their country become known to them", *Economic Policy, op.cit.,* p. 24

address the Greek Americans, however unsuccessfully.[40]

On the other hand, Doxiadis and the Greek government built their hopes for financing a reconstruction program on the **war reparations** that theoretically should cover the damages produced by the Axis alliance. Indemnities included machinery or industrial plants, material (German steel or timber from Bulgaria), or even labor from war prisoners.[41] Soon, most expectations proved to be in vain, especially considering the German reparations. Though Greece insisted on reclaiming 100 of the 1.500 German factories to be dismantled and transferred to Allies, no such thing happened.[42] Changes in international politics culminating in the Marshall Plan prioritized the reconstruction of Germany and the shared economic development of the Western European countries, rather than the exhaustion of the Axis economies by thorough payments and indemnities.[43] By the end of 1949, Greece had received no more than 18 million dollars "given in automobiles, some tools, and scrap iron".[44] On the other hand, war reparations from Italy had a better luck: the sum amounted to 101 million dollars was payed off as machinery for energy production, railway wagons and locomotives, and the production of a small number of ships for coasting.[45] In any case, Italian indemnities were given after 1949. At the very end, the Greek Reconstruction program heavily depended on foreign aid and therefore was subject to the ups and downs of global politics and the contrasting national interests.[46]

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[40] See, Doxiadis letter to Zolotas, 22 February 1946, in *Lending 1946-1950* (no date). Document, Ref. Code 24284. Doxiadis Archives.

[41] *Ibid.*, p. 23. Doxiadis claimed that since the Axis were responsible for the damages they should carry the burden of reparations. He drew on international law resolutions and cited the cases of England and France: "In proportion to the number of prisoners that France demands (a proportion based on population, not on damages suffered or needs felt which are of greater extent in Greece), Greece should have demanded 270.000 war-prisoners from Germany alone to work on reconstruction". In any case, he was in favor of acquiring shipping material instead of workmen.

[42] See, Stathakis, *op.cit.*, p. 212.

[43] One of the criticisms to the Morgenthau Plan that stipulated the de-industrialization and pastoralization of Germany after the First World War, was that indemnities exacerbated German economic problems eventually leading to the rise of the Nazi party.

[44] According to Spyros Markezinis (1909-2000), a prominent Greek politician who became Prime Minister during the short-lived attempt to restore the parliamentary democracy however with the *consensus* of the Greek military regime in 1973, "[t]he role of German reparations was negligible". See, Markezinis, S. (1970) *Oral History Interview with Spyros Markezinis*. Translated by T. A. Wilson. Truman Library. Available at: http://www.trumanlibrary.org/oralhist/markezis.htm (Accessed: 14 July 2015). Stathakis as well accounts that the total of German reparations did not exceed the insignificant amount of 25 million dollars. Stathakis, *op.cit.*, p. 212.

[45] See, Stathakis, *op.cit.*, p. 213.

[46] *Ibid.*, p. 304. For example, it was the ECA/G that opposed and prevented Greece obtaining three German industrial plants, namely one for energy production, one for caustic soda, and one for iron-steel. Moreover, in an unpublished interview, Papaioannou accounts that U.S. administrators objected to the transfer of blast furnaces to Greece.

Given the scarce financial means of the Greek state and the volatile international context, Doxiadis included in the bill of 1946 taxation policies and economic measures that sought to secure revenues coming from public and private real estate. As stipulated in the compulsory law 1128, the Greek State should cede to the Reconstruction Authority the properties confiscated or transferred according to postwar law provisions, and the "proceeds from the sale and the administration in general of a) the entire real property of the State [...], b) the exchanged [Muslim] real property, and c) the spoils of war devolving upon the Greek State", among other measures.[47] On the other hand, the **taxation** imposed on private real estate property targeted three different categories: a general one comprising every building in urban or rural area that had not suffered damages, persons who had acquired properties during the Occupation, and mortgagees that have profited from the monetary inflation. While the first category was a special property tax symbolizing the participation of all Greeks in the reconstruction effort, the other two categories were inextricably connected to the rise of black market practices and the emergence of groups condemned by the collective consciousness as "black marketeers and collaborators of the Germans", and specified in the penal law as "speculators of the Occupation".[48] In order to facilitate the taxation of these groups the report unfolded statistical information that demonstrated real estate transfers in the inter-war and Occupation period. The statistics, which had been collected by Doxiadis' former Office, demonstrated the magnitude of those deals that picked during the period 1941-42, the majority taking place in the region of Athens.[49] Despite the efforts, taxation measures failed and another financial source was lost. The powerful group of upper class speculators, shipowners, and industrialists proved to be unreachable, while on the other hand the diffusion of black market practices among the middle class and the poor made the operation practically impossible.[50] In fact, throughout the Reconstruction and Recovery period, taxation was a hot issue for every

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[47] See, *Economic Policy*, *op.cit.*, p. 32. Other financial revenues were expected to derive from the monopoly on salt, matches and the Naxos emery.

[48] Stathakis, *op.cit.*, p. 36. Doxiadis specified four categories of funds that "should be paid according to four principles of equity: a) Real Property of those responsible for the damage b) Real Property acquired during the period of occupation or that has profited by it, c) Real Property of families without heirs, and d) All Greek properties". In any case, the just and noble Reconstruction cause could hardly justify the passionate but to a great extent arbitrary text passage titled "Justice", where for example the Jewish properties (category c) in Northern Greece were considered national resources without further explanation or research. See, *Economic Policy, op.cit.*, p. 26.

[49] See, *Economic Policy*, tables pp. 37-41. It is worth mentioning that almost one third of the buyers effectuated more than one real estate purchase.

[50] As Stathakis denotes, "[b]lack market was a complex economic mechanism, yet primordial for the survival of the Greek population during the war years." Stathakis, *op.cit.*, pp. 64-65. On the other hand, as Vetsopoulos argues, "[t]he principal factor in the creation of an underground economy, however, was the connection of black-marketeers with merchants and industrialists", see Apostolos Vetsopoulos (2009) 'Efforts for the Development and Stabilization of the Economy during the Period of the Marshall Plan', *Journal of Modern Greek Studies*, 27(2), pp. 275–302, p. 277.

politician and government willing to implement an economic program.[51]

Eventually, the intricate connections between fiscal and monetary policies, foreign aid, and local socio-economic conditions defined the fate of the two prevailing approaches that sought to solve the Greek economic puzzle and stabilize the drachma in the aftermath of the Occupation. The first one, advanced by the prominent economist and Papanderou's choice Xenophon Zolotas, proposed to determine the national currency as the result of the sales and purchases of British gold sovereigns effectuated by the National Bank of Greece, practically letting the market economy define the devaluation of the "new" drachma.[52] Zolota's laissez-faire policy however overlooked the deplorable condition of the Greek economy, let alone the imponderable factor of black market practices. Most importantly, assuming the incapacity of the Greek State for conducting economic planning, public revenues remained scarce and the national budget was heavily premised on unrestricted imports and foreign aid.

In June 1945, against the dramatically escalating rates and the continuing printing currency to finance public spending, the Governor of the Bank of Greece Kyriakos Varvaressos was appointed Minister of Supply and was summoned to devise an economic program to halt inflation.[53] The "Varvaressos experiment" - as it is occasionally referred to - pointed to the inefficiency of the state to control its finances and the inadequacy of foreign aid as fundamental impediments to the recovery of the Greek economy, and aimed to re-establish central control over the market.[54] The proclaimed economic measures comprised the devaluation of drachma, wage raises, retail price ceilings, cuts on public expenditure, and heavy tax rules for industrialists and merchants.[55] For the purposes of

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[51] *Ibid.*, p. 282. On the other hand, describing the efforts of AMAG to address the Greek economic problem, Vetsopoulos denotes that "[m]ost Greek politicians, however, were reluctant to introduce far-reaching reforms to the existing tax structure".

[52] Xenophon Zolotas (1904-2004) was a prominent economist and a professor of Political Economy in the University of Athens. In October 1944, Zolotas was appointed co-Governor of the Bank of Greece next to Kyriakos Varvaressos.

[53] Professor Kyriakos Varvaressos (1884-1957) worked as a senior consultant to the World Bank and represented Greece both at the League of Nations and the Bretton Woods conference. He served as Governor of the Bank of Greece from 1939 to 1945 and as deputy prime minister of economics. Apparently Varvaressos was acquainted with Apostolos Doxiadis, both of them collaborating for the foundation of the so-called Superior Female Faculty, while he traveled as well to the UN founding conference in San Fransisco. See, Varvaressos, K. (2002) *Report on the Greek Economic Problem [Εκθεσις επί του οικονομικού προβλήματος της Ελλάδος]*. Athens: Ekdoseis Savvalas (Social sciences).

[54] "Successive governments exercised little control or supervision over the economy, and despite the goodwill of the Allies, relief supplies from abroad had fallen far short of the country's actual needs". See, Lykogiannis, A. (2002) *Britain and the Greek economic crisis, 1944-1947 from liberation to the Truman Doctrine*. Columbia: University of Missouri Press, p. 119.

[55] See, Varvaressos, *op.cit.*, pp. 49-50. For a thorough analysis of the "Varvaressos experiment" see, Lykogiannis, *op.cit.*, pp. 112-140.

this bold program, Varvaressos set up "a team of experts with cabinet authority to coordinate policies and issue instructions to ministries".[56] Despite the support of the British and UNRRA's representatives, and some initial signs of economic stabilization, the program was opposed paradoxically both by the Communist Party KKE and the Association of Industrialists, and was eventually discontinued in early September.[57] Varvaressos himself was politically subverted and left the country to Washington.

As might be understood from all the above, the implementation of the Reconstruction program was not just a matter of urban and regional planning but required the organization and financing of the whole endeavor. Constantinos Doxiadis promoted the establishment of a central organization with extended competences, and with the aim to overcome the political ineptness, corruption, and bureaucratic red tape that impeded taking action. On the other hand, a governmental agency able to carry out a comprehensive program, including taxation policies, would prove "Greece's sincere disposition" to put order in its financial affairs and contribute to the "common task".[58]

While Doxiadis' bill did not yield the expected results, the announcement of the Truman Doctrine added new parameters to the equation of Greece's economic problems. U.S. dollars flowed to the country as a *Deus ex machina*, for some, loosening the capital controls and the need to impose substantial taxation measures, and for others, perpetuating Greece's dependence on foreign assistance.[59] In Doxiadis' eyes, U.S. interventionism was to trace a new framework for facing the crisis and planning the future.

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[56] *Ibid.*, p. 121. The organization was named Economic Service of the Vice President within the Bank of Greece.

[57] As Vetsopoulos accounts, the Varvaressos program met great opposition both by the Communist Party KKE and the Association of Industrialists: "the former sabotaged the programme by successfully organizing strikes demanding large wage increases and the latter by refusing to sell products at fixed prices because they were afraid of losing their enormous profits". See, Vetsopoulos, A. (2002) *The Economic Dimensions of the Marshall Plan in Greece, 1947-1952: The Origins of the Greek economic miracle*. Ph.D thesis. University of London. According to Makinen, "Varvaressos did not succeed largely because he antagonized a politically powerful group with his rent tax…". See, Makinen, G. E. (1984) 'The Greek Stabilization of 1944-46', *The American Economic Review*, 74(5), pp. 1067–1074, p. 1069.

[58] *Economic Policy, op.cit.*, p. 33.

[59] "External financing would mitigate the pains of industrial accumulation, loosening the capital constraints that might otherwise mandate substantial taxation, if not an encroachment upon the properties of those who had profited from the war and occupation". See, Kakridis, A. (2009) 'Deus ex machina?: Truman/Marshall Aid, Engineers, and Greece's Post-war Development Discourse', *Journal of Modern Greek Studies*, 27(2), pp. 241–274, p. 246.

1.2 The Truman Doctrine and the Marshall Plan

> "At the present moment in world history nearly every nation must choose between alternative ways of life. The choice is too often not a free one […] I believe that it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures. I believe that we must assist free peoples to work out their own destinies in their own way. I believe that our help should be primarily through economic stability and orderly political process".[60]

The Truman Doctrine was announced on 12 March 1947, at a joint session of the Congress where President Harry S. Truman asked for $400 million in military and economic assistance to be destined to Greece and Turkey. A few days earlier, on 21 February, the British government had proclaimed the almost immediate withdrawal of financial aid to Greece, a political decision that shook the weak economic foundations of the country and instigated a substantial change in the U.S. foreign policy.[61] Presuming a Communist threat and declaring "the policy of the United States to support free peoples", the Truman Doctrine initiated America's pursuit of global leadership and ended its longstanding policy of isolationism stipulated by the Monroe Doctrine since 1823. Above all, Harry Truman's declaration initiated the enduring period of political and military tension between the United States and its NATO allies, and the Soviet Union and its satellite states, broadly known as the Cold War.

In order to get the support of the Republican Congress, Truman outlined the dramatic situation in Greece, which was presented "in desperate need of financial and economic assistance to enable it to resume purchases of food, clothing, fuel, and seeds" that would help "to restore internal order and security, so essential for economic and political recovery". Most effectively, Dean Acheson, the Undersecretary of State, placed the problem of Greece in the context of international affairs. Setting aside humanitarian purposes or the political support of British imperialism, Acheson ingeniously portrayed a potential **domino effect** and a Soviet aggression on three continents: "[l]ike apples in a barrel infected by the rotten one, the corruption of Greece would infect Iran and all the east" carrying "the infection to Africa through Asia Minor and Egypt and to Europe through

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[60] President Harry S. Truman's Address before a joint session of congress, March 12, 1947.

[61] See, Frazier, R. (1984) 'Did Britain Start the Cold War? Bevin and the Truman Doctrine', *The Historical Journal*, 27(3), pp. 715–727, p. 715.

France and Italy".[62] Acheson's speech declared loud and clear the beginning of the "containment policy", that is, a set of strategies launched by the United States aiming to stop the political alignment of the "free" nations with the Soviet Union. Under this perspective, the economic problems of a small Mediterranean country became an international issue, as a possible embrace of communism would have had grave consequences throughout the region and the U.S. itself. The Greek crisis was re-interpreted, re-designed and served anew in order to fit in the global narrative.[63]

Doxiadis' pro American stance and the future of Greece

> "...had it not been for the Truman Doctrine I do not believe that Greece would have been what it is today. And, of all the acts which have been known in relation to Greece for the last many tens of years or in the last few generations, the Truman Doctrine is the one which had the greatest importance for our nation. I think that every Greek should be grateful to this great and courageous man, who, in the middle of such confusion and opposition, had the courage to stand up and say the right thing about a small nation which was fighting for its freedom".[64]

In several occasions, Constantinos Doxiadis has praised the Truman Doctrine and the Marshall Plan aid for saving Greece from famine, recession, and the communist threat.[65] Far from being a fanatic anti-communist but grateful for the "unconditional" support of the U.S., Doxiadis was convinced for its superiority over the Soviet rival, and welcomed the coming of a new world era.[66] Throughout his life, Doxiadis remained an admirer of the

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[62] See, Guilbaut, S. (1985) *How New York stole the idea of modern art : abstract expressionism, freedom, and the cold war*. Chicago, IL: University of Chicago Press, p. 140.

[63] As Truman declared in his speech, "Should we fail to aid Greece and Turkey in this fateful hour, the effect will be far reaching to the West as well as to the East". As many analysts have pointed out, Truman's speech had little to do with the Greek situation. Senator Taylor of Idaho criticized Truman's intentions in Greece: "The objective of the Truman doctrine is not so much food for the Greek people as oil for the American monopolies-the oil that lies in the great lands just east of Greece and Turkey". *Ibid.*, p. 141.

[64] See, Doxiadis, C. A. (1964) *Oral History Interview with Dr. Constantinos Doxiadis.* By P. Brooks. Truman Library. Available at: https://www.trumanlibrary.org/oralhist/doxiadis.htm (Accessed: 14 July 2015).

[65] "Greece, without the aid, would have been, at this moment, on the other side of the Iron Curtain". See, Doxiadis, C. A., Grunebaum, G. E. and Wirth, L. (1952) *Has the Truman Doctrine Succeeded in Greece and Turkey?: An NBC Radio Discussion*. (The University of Chicago Round Table).

[66] On the other hand, Ray Bromley offers a sharper description in respect to Doxiadis' inclination and beliefs: "[t]hough Doxiadis tried to avoid petty politics by identifying himself as a planner, designer, and manager, his

U.S. political system, its foreign policy, and the capitalist economy.[67]

The months that followed the announcement of the Truman Doctrine, Constantinos Doxiadis published a series of articles analyzing the emerging political situation in Europe and the stance that Greece should take *vis-à-vis* the geopolitical confrontation of the two superpowers. Europe was scattered and no longer preserved its prewar "internal economic bonds" that gave the impression of an "equilibrated economy".[68] Having lost its colonies, the "old continent" had lost the leadership; instead of a united center the nascent geopolitical board featured "two poles of attraction" that tended to define space in terms of East and West.[69] For the first time, the future of Europe depended on "external forces" and development had to be inscribed in a global economy.[70]

By the same token, Greece was portrayed as a "small particle of a global system", a Mediterranean country caught in the middle of the escalating rivalry that divided the old continent in two spheres of influence, namely the Russian and the Anglo-American one.[71] Emphasizing the over-dependence of the reconstruction program on foreign aid and the importation of raw materials, the young architect expressed his preoccupation about the political constraints that hardened trade crossing.[72] Most importantly, the tension between the Western and Eastern bloc complicated the negotiations for the war reparations, one of Doxiadis' hopes for financing the reconstruction program.[73]

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record of resistance to the Nazi occupation combined with his disdain for communism identified him clearly as pro-Western and pro-capitalist". See, Bromley, *op.cit.*, p. 319.

[67] Doxiadis' most personal views on the American culture were published in a 1972 Daedalus issue that invited several intellectuals - among them Raymond Aron, Octavio Paz, and the architect Richard Llewelyn-Davies - to respond to the theme "As Others See the United States". Doxiadis unfolded his answer in three letters, each one supposedly written by a different person: the first letter explained the reasons for hating America, the second one for loving her, and the third one taking a more nuanced view. The "three letters" are full of anecdotes and personal opinions therefore offering an interesting reading of Doxiadis' personality. Characteristically, the third letter is "written by a Greek peasant born high up on a mountain, who came to Athens and with the help of his parents became a brick layer wanting only to build", and undersigned as "Constantinos Doxiadis". See, Doxiadis, C. A. (1972) 'Three letters to an American', *Daedalus*, 101(4), pp. 163–183.

[68] See, Doxiadis, C. A. (1945) 'Reconstruction: temporary housing [Η ανοικοδόμησις: η προσωρινή στέγασις]', *To Vima*, 30 September.

[69] See, Doxiadis, C. A. (1947) 'The Greek problem: Greece and Europe [Το ελληνικόν πρόβλημα: η Ελλάς και η Ευρώπη]', *To Vima*, 18 July.

[70] *Ibid.*,

[71] *Ibid.*,

[72] See, Doxiadis, C. A. (1947) 'Notes on reconstruction [Για την ανοικοδόμηση]', *Synetairistikon Deltion*, June.

[73] Doxiadis referred to the resolutions of the Paris conference of November 1945, where the Inter-Allied Reparations Agency (IARA) was set up (finally established on 14 January, 1946), as the most unfair and unethical. He repeated the same statement for the results of the Conference on European Economic Cooperation that took place in Paris (July - September 1947), as they failed to promote the reparations of every country in order to bring them to a common starting base. For Doxiadis the European crisis was a question of ethics. See, Doxiadis, C. A. (1947) 'European cooperation: the causes of the crisis [Η ευρωπαϊκή συνεργασία: τα αίτια της κρίσεως]', *To Vima*, 23 September. The German War Reparations to Greece remain

Doxiadis went even further and portrayed the future of Greece in a "West and East" case scenario. Since there were no developed centers in Eastern Europe, the coming years would witness the development of certain regions and cities as important nodes of the Soviet coalition. For a series of reasons however, Doxiadis assumed that Croatia would get the leading role in the Balkan area condemning its neighboring countries to an agrarian role, much alike the one "Greece was destined to have in the Nazi Germany".[74] In the West case scenario on the other hand, Greece's antagonist was Italy. Though in the Western coalition struggle over rapid industrialization and market access-control was to be founded on *free competition*, therefore on equal opportunities, Italy was considered a "dangerous adversary" willing to pursue a leading role in the Eastern Mediterranean region. In the end, the Greek Reconstruction Program was not just about spatial planning, let alone urban design, but it should take in consideration nascent geopolitical factors and international relations.[75]

At a first glance, Doxiadis' analysis may sound arbitrary or even naive, however those articles were written at the time when sixteen nations debated the acceptance of the American plan ensuing George Marshall's historic address on 5 June 1947. The United Nations' efforts for a U.S. - Russian cooperation were about to get rejected by the Soviet part, and European countries had to "choose" between the U.S. dollar injection or the nebulous counterproposal titled Molotov Plan.[76] Even if the Marshall Plan was not eventually defined till April 1948, Doxiadis advocated American interventionism based on a sole criterion: the survival of the Greek people.[77] For the U.S. could provide financial aid and machinery for the long awaited industrialization of the country. Furthermore, the Marshall Plan advanced the elimination of trade barriers and as such opened a market for the exportation of national *luxury* products, such as tobacco, raisins, and olive oil.[78]

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an open issue to date, at least for the Greek side.

[74] Doxiadis based his analysis on the announcements of the 5-year plans of Yugoslavia, Hungary and Bulgaria, and on the central position, natural resources and rate of industrialization accomplished so far by Croatia. See, Doxiadis, C. A. (1947) 'The Greek problem: Greece and Europe' p. 4.

[75] *Ibid.*, See as well Doxiadis, C. A. (1947) 'Greece and Yugoslavia: the real struggle [Ελλάς και Γιουγκοσλαβία: ο πραγματικός αγών]', *To Vima*, 19 October.

[76] According to Doxiadis, the initiatives of the United Nations were doomed to fail due to the escalating rivalry of the two superpowers whereas the separate plans were as well leading Europe to a dead end. On the other hand, the Greek planner criticized anti-communist opinions as impediments to the development of a new Europe! See, Doxiadis, C. A. (1947) 'European cooperation: the impasse [Η ευρωπαϊκή συνεργασία: το αδιέξοδον]', *To Vima*, 21 September.

[77] Doxiadis argued for Greece's alignment with the Western initiative fervently however in a banal way: "for the Greek people that their country belongs to the Western coalition, the greatest interest has the Marshall Plan". See, Doxiadis, C. A. (1947) 'European cooperation: the perspective of possibilities [Η ευρωπαϊκή συνεργασία: προοπτική δυνατοτήτων]', *To Vima*, 24 September.

[78] The young planner further justified his point of view in a two-part article, published in October 1947: what Greece needed was machinery for its industrialization, and a market to export *luxury* products, such as

Eastern countries on the other hand, were not technologically advanced enough to drive development, nor constituted a wealthy market to import its expensive goods.[79] It was therefore, "from an economic point of view and regardless of any [ideological] connotations that the Greek nation [should] collaborate with the Western world".[80]

Constantinos Doxiadis: a valuable interlocutor for the U.S. missions

Even if Doxiadis unleashed a fervent discourse in favor of U.S. interventionism and the alignment of Greece with the Western bloc, his political beliefs (or affinity…) cannot justify alone why a Greek architect enjoyed the confidence of foreign experts or how he ended up holding a central role in the implementation of the Reconstruction program and development plans for Greece. Despite his young age, Constantinos Doxiadis emerged as a practical and resourceful planner demonstrating outstanding managerial capabilities against the ineptitude, partisanship and corruption that characterized Greece's public administration and political world.[81] Unlike other public offices during the early post-liberation years, the Ministry of Reconstruction was successful in tracing a twenty-year program in tandem with addressing the multifaceted aspects of development in a series of 34 monographs, ten of them authored by Doxiadis himself. Those publications sought to register the destructions in Greek towns and villages, present an official claim to war reparations, offer technical specifications for reconstruction works, trace urban planning guidelines, and give instructions on rural housing and architectural design. Apart from a framework for action, the Ministry's plan and publications provided an overview of the Greek situation based both on statistical and empirical information. In that sense it is no surprise that the Ministry's publications became handbooks for foreign aid representatives. While some economists and politicians defended their careers and interests, the Ministry unfolded a technocratic approach to the mounting problems of the country, useful to those

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tobacco, raisins, and olive oil. See, Doxiadis, C. A. (1947) 'The cooperation of Europe: between East and West [Η συνεργασία της Ευρώπης: μεταξύ Ανατολής και Δύσεως]', *To Vima*, 12 October.

[79] As Vetsopoulos denotes, even the European countries were reluctant to buy Greek agricultural semi-luxury products during the first postwar years. See, Vetsopoulos, *op.cit.*, p. 283.

[80] Doxiadis, 'The cooperation of Europe', *op.cit.*, p. 2. Moreover, Doxiadis discarded a neutral stance considering that even if Greece bypassed the imperialistic plans of the East, it could not survive ruled out of the two global economic coalitions. Ironically, in the midst of the Marshall Plan's implementation, Greece would be outbid from the tobacco European market by the American products. See, Stathakis, *op.cit.*, p. 334.

[81] Most of the biographical accounts praise Doxiadis as an inspiring leader and as an excellent manager of people and ideas. See for example, Kakridis, *op.cit.*, pp. 136,143; Bromley, *op.cit.,* p. 319, and Papaioannou, *op.cit.* Organization was Doxiadis' "middle name", as well reckoned in the interviews I have conducted with his collaborators.

willing to study the critical situation beyond ideological barriers.[82] In regard to Doxiadis' intellectual and professional development, this integrated approach to the problems of postwar Greece constituted an early formulation of the science of human settlements some years after coined as ekistics.

Leaving aside the theoretical and research work carried out by the Ministry, and considering Doxiadis' role in the Reconstruction and Recovery period, one has to bear in mind that his practical spirit and managerial capabilities made the difference and broke the deadlock in situations often disputed between Greek officers and foreign experts. For example, when hundreds of cargo boxes with tractors and other engineering vehicles - to the despair of U.S. administrators - remained still at the Piraeus docks, Doxiadis mobilized all means and personnel in order to unblock the port, store and distribute the assets.[83] In cases where the incapacity of the Greek administration to absorb aid funds caused inflationary pressures endangering the economic stabilization, the ingenious architect came up with solutions to channel funding for public sector's needs.[84] In the eyes of foreign aid representatives, Doxiadis became a beacon of effectiveness and professionalism, a trustworthy public administrator and a valuable middleman for the purposes of the joint ventures with the Greek government. Undeniably, these were important assets during a period when the successive aid missions sought to implement unpopular policies marching against political clientelism.

Before the Economic Cooperation Administration (ECA/G), broadly known as the Marshall Plan aid, arrived to Athens in the summer of 1948, foreign aid was given by the United Nations Relief and Rehabilitation Administration (UNRRA) and the American Mission for Aid to Greece (AMAG). The UNRRA mission arrived in Greece in mid-October 1944, along the National Unity Government of Papandreou, but it wasn't until April 1945 that it officially initiated relief operations, due to the escalating confrontation between between guerrillas and government.[85] Till the end of its operations in March 1947, the Mission was responsible for the refugee and displaced persons' camps where it provided health

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[82] In this light unfolds Kakridis' analysis of the "Plan for the Survival of the Greek Nation" published in 1947. See Kakridis, *op.cit.*,

[83] See, Doxiadis, C. A. (1949) *Personal File of C. A. Doxiadis as Coordinator of The Greek Recovery Program 1949-1950*. Document, Ref. Code 24389. Doxiadis Archives.

[84] As Papaioannou reckoned in an unpublished interview, thanks to Doxiadis many public offices all over the country were stuffed with Swedish Halda typewriters in order to absorb a surplus of dollar aid that was about to be lost. As Vetsopoulos argues "…the problem of the Greek economy was not the amount of aid in question, but the ability of the Greek government to absorb it", whereas denotes that "[…] the utilization of counterpart funds caused inflationary pressures, which jeopardized the stabilization of the economy". See, Vetsopoulos, A. (2002) *The Economic Dimensions*, *op.cit.,*pp. 289, 297.

[85] See, Tsilaga, F. (2008) ''The Mountain Laboured and Brought Forth a Mouse': UNRRA's Operations in the Cyclades Islands, c.1945--46', *Journal of Contemporary History*, 43(3), pp. 527–545.

services with the help of volunteers. Furthermore, it assisted the Greek government to administrate public hospitals and conduct an extend malaria control campaign.[86] The main point of friction however between the Greek administration and the UNRRA was the utilization and distribution of aid supplies which rested in most cases with the former.[87]

In January 1947, and as Civil War confrontations intensified throughout the country, the presidential emissary Paul A. Porter arrived to Greece in order to examine the economic and political conditions. The *Porter Report* was submitted three months later and was the first document to depict the U.S. policies for Greece and the rest of the *emerging* Western world.[88] It portrayed a gloomy picture of the Greek reality and recommended an immediate financial aid, both for civilian and military purposes.[89] Following Porter's guidelines, the succeeding American Mission for Aid to Greece (AMAG) imposed a set of economic measures that bypassed the Greek government and bureaucracy and injected an important amount of funds to military supplies.[90] While UNRRA "was not a political thing", the AMAG program mirrored the aims of the American foreign policy. To a certain extent AMAG was a by-product of the emerging geopolitical confrontation.[91]

One of the base documents for the elaboration of the preliminary Five-Year Plan of the *Porter Report* was the recovery program (1948-1952) devised by the Higher Council of Coordination, an organism created in 1948 to conduct Greece's recovery in tandem with Doxiadis' Coordinating Office.[92] The latter comprised a section on the reconstruction of the

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[86] See, Millervine, J. (1946) 'UNRRA'S Health Campaign in Greece', *The Lancet*, 247(6404), pp. 789–791, and Lehman, H. H. (1945) *UNRRA Report (15 September – 31 December 1944)*. Available at: http://www.cvce.eu/en/obj/unrra_report_15_september_1944_31_december_1944-en-cf082c4c-608a-4e8d-b924-10946c1b7b61.html (Accessed: 15 July 2015).

[87] See, Tsilaga, *op.cit.*, p. 532.

[88] The importance of the Porter Mission is highlighted in W. Rountree's interview: "…this was the first program of its kind that the United States had ever undertaken. It was the forerunner of the Marshall plan, the Point IV programs, and other programs undertaken by the Truman Administration to meet the new responsibilities that had been thrust upon the United States as postwar leader of the free world. Much of what we did in Greece and Turkey was breaking new ground, and what was done was not only good, it was outstanding". Rountree was a member of the AMAG in 1947 and joined the diplomatic service in Greece the period 1948-49. See, Rountree, W. M. (1989) *Oral History Interview with William M. Rountree*. Translated by N. M. Johnson. Truman Library. Available at: http://www.trumanlibrary.org/oralhist/rountree.htm (Accessed: 14 July 2015).

[89] For an analysis of the Porter Report see, Stathakis, *op.cit.*, pp. 147-161, and Porter (2006) *Wanted, op.cit.*

[90] "New developments in the war operations increased budget expenses and changed the original distribution of AMAG Aid. In March 1948 the proportion for military supplies increased from 50% to 57% and that for reconstruction projects decreased from 16% to 7% of the 300 million dollars in total aid". See, Vetsopoulos, (2009) 'Efforts for the Development…', p. 282.

[91] See, Tsaldaris, C. (1964) *Oral History Interview with Hon. Constantine Tsaldaris*. Translated by P. Brooks. Truman Library. Available at: https://www.trumanlibrary.org/oralhist/tsaldari.htm (Accessed: 14 July 2015).

[92] See, Stathakis, *op.cit.*, pp. 154-155. Stathakis assumes that the recovery plan was prepared by Doxiadis' "Organism for Recovery" however he most probably refers to the plan issued by the Higher Council of Coordination. Apparently, the four-year plan was a compendium of reports and policies on development, whereas Doxiadis contribution is yet to be traced. The analysis of this plan exceeds the scope of this study, whereas for the sake of argument and considering the planner's central role in the state apparatus, I assume

prewar infrastructure and the development of a national power grid, while examined the prospects of the country's industrial growth. Despite sharing objectives, the gap between the financial requirements of the Greek and U.S. plan was unbridgeable.[93] When the Greek Marshall Plan Committee submitted its estimates, AMAG turned it down and characterized its figures exorbitant.[94] Soon the Greek recovery program proved to be useless to the policies promoted by the U.S. missions and was eventually shelved. Even if conceived as a proactive way to augment pressure for increasing financial aid, Doxiadis' efforts were criticized as an engineer's pretense to draw economic policies.[95] It was only natural that his multifarious actions would grant him both admirers and enemies, among the latter local and foreign administrators who were eager to promote their own interests.[96] Nevertheless, the young architect enjoyed the confidence and respect of prominent decision makers, and forged influential friendships with the AMAG and ECA experts who carried out infrastructure projects, occasionally in joint ventures with the U.S. Army Corps of Engineers. Among them Walker Cisler, the chief of public utilities at General Dwight Eisenhower's Supreme Headquarters Allied Expeditionary Force (SHAEF) who managed to rebuild electrical power plants in the war-torn Europe. Similarly, in his short stay in Greece, Cisler was the adviser of the development of a national public power network, the project considered to be Marshall Plan's most significant contribution to the modernization of the country.[97] Along Cisler, who later on became the President of Detroit Edison and financial backer of Doxiadis' most ambitious plan in the U.S., worked Ken Iverson, AMAG alumnus and Deputy Chief for Operations at the ECA/G (1951-1952). As I shall analyze in the next chapter, Iverson and Jerry Reed from the Foreign Operations Administration (the continuance of the Mutual Security Administration), were important contacts in Doxiadis' global network of experts, while key to this network was Jacob Crane, a prominent planner and *New Dealer* with whom Doxiadis was acquainted since his visit to Washington in

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that he was in accord with its principal points.

[93] The Ministry's estimates for the reconstruction approximated the 2.1 billion dollars while Porter's Report suggested the amount of 335 million dollars for the purposes of its Five-Year Program. See, Stathakis, *op.cit.*, pp. 156-157.

[94] *Ibid.*, p. 266.

[95] See, Kakridis, 'Rebuilding the Future', *op.cit.*, pp. 159-160. In Kakridis' analysis, the dispute between Constantinos Doxiadis and Xenophon Zolotas typifies the conflict between two professional castes in their effort to lead postwar development, namely the engineers and the economists.

[96] "[Doxiadis] was such a good watchdog that he earned himself the fear and enmity of those who make graft their living and of a few foreign aid experts who had their own reasons for wanting contracts granted to one firm rather than another, or things run their own way", see Deane, *op.cit.*, p. 38.

[97] For a short description of Marshall Plan's implemented projects see Machado, B. and George C. Marshall Foundation (2007) *In search of a usable past : the Marshall Plan and postwar reconstruction today*. Lexington, Va.: George C. Marshall Foundation, p. 66.

1945.[98] Other connections worth mentioning were Paul Hoffman, then administrator of the ECA (Washington) later to direct the Ford Foundation (1950-1953) and the United Nations Special Fund department, or the U.S. Ambassador George McGhee, who admired Doxiadis for his tenacity "to defy political powers and norms".[99] At the same time, Doxiadis venerated U.S. experts like Walter Packard, an agricultural scientist who carried out rice production in salty soils popularly known as the "rice miracle", or "the two Paul Porters" for understanding the problems of the Greek crisis and promoting the Reconstruction programs.[100] Paul R. Porter in fact, chief of the ECA/G mission, founded in late 1960s an international company based in Washington and jointly owned with Doxiadis Associates. Undoubtedly, the acquaintances forged during his service as public administrator proved to be of great importance when the Greek planner established his international consulting office and launched ekistics, the theoretical and research approach for the analysis and planning of human settlements (Figure 1.5a,b).

In order to understand further the importance and role of Doxiadis during the Reconstruction and Marshall Plan years one should take the perspective of a foreign administrator. An insight to the Greek crisis can be drawn from Paul A. Porter's mission and personal experience. In September 1947, while Constantinos Doxiadis advocated U.S. interventionism in the local press, Paul Porter explained to the American public his experience in the Mediterranean country. The article published in *Collier's Weekly* was titled "Wanted: A Miracle in Greece" and pictured a gloomy shadow over a country in despair.[101] The miracle that the U.S. mission was aiming at consisted in saving Greece both "from economic disintegration and the inroads of Communism".[102] To do so, the American mission had to find other ways for coping with local conditions instead of implementing the British colonization formula and collaborating with the native ruling classes. Porter in fact, was eager to put on the spot tax evaders (principally shipowners) and criticize the social lobby of Kolonaki, the wealthy and chic central square of Athens

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[98] Crane had been an adviser to the Tennessee Valley Authority, the *par excellence* New Deal project after which the hydroelectricity projects carried out in Greece were modeled.

[99] See, Tyrwhitt, J. (ed.) (1976) 'C.A. Doxiadis 1913-75: Pursuit of an attainable ideal', *Ekistics*, 41(247), pp. 309–388. P. G. Hoffman was ECA Administrator from April 1948 until his resignation on September 1950. He maintained his contacts with ECA in the capacity of a Special Consultant.

[100] See, Doxiadis, *Oral History Interview with Dr. Constantinos Doxiadis, op.cit.*

[101] Porter exemplified the hopelessness of the Greek people by an anecdotal conversation with a peasant while in continuation described the Kalavryta massacre. See Porter, P. A. (1947) 'Wanted: A Miracle in Greece', *Collier's Weekly*, 20 September.

[102] *Ibid.*, p. 14. The subtitle of Porter's article was "Nothing less will defeat economic collapse and Communist inroads".

Doxiadis and Foreign Aid Representatives (handwritten note: "French - Dutch - American - English").
Figure 1.5a

Doxiadis and foreign aid representatives supervising the works of the Reconstruction Program.
Figure 1.5b

whose residents heavily contrasted with the "starving children in the streets".[103] According to the Chief of AMAG, the "American formula" had to start from the bottom and integrate local interlocutors towards the common aim.[104] The Greek civil services should be the means to the political and economic reform of Greece and therefore efficient and impartial experts had to lead such endeavor instead of "camp followers" and "coffeehouse politicians". In that perspective, Constantinos Doxiadis and the Ministry of Reconstruction were key features not only in the development plans of Greece but as well for the geopolitical strategy of the U.S., for only the success of the Greek Reconstruction program could validate the American leadership on the threshold of a new era. As Porter proclaimed, "If we are defeated in Greece, it will be a crushing moral and strategic blow to our new international role solar plexus. But, if we can leave Greece in a state of economic and political health, we will have brought new hope and new faith to freedom-loving people everywhere in the world".[105]

1.3 The Housing Program of the Ministry of Reconstruction

Temporary settlements

The first postwar years, the Ministry of Reconstruction was found *vis-à-vis* the massive population displacement and a severe housing shortage. According to the Ministry's estimates, homeless people rose to 1.2 million, and some 700,000 to 800,000 refugees fled from the countryside to the cities in search of a shelter and a job.[106] As the "hidden war" compounded the devastated rural areas, the postwar migratory movement became the second biggest population influx in the recent history of Greece.[107] Sheltering the wartime homeless and the subsequent Civil War refugees was a critical problem in need of immediate solutions; however Doxiadis insisted that the construction of temporary

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[103] *Ibid.,* p. 106.

[104] Porter argued that the British formula was based on "buying the support by confirming [the ruling classes] in their power to exploit the masses, and relying upon them to hold the people down with gendarmery and whips". He continued saying "this formula is not only repugnant to American traditions. It is also impractical. No system would deliver the Greek people more speedily into the arms of the Russians. We must work out a formula for starting from the bottom and working up - not starting from the top and working down". *Ibid.*, p. 108

[105] See, Porter, *op.cit.*, p. 108.

[106] See, Papaioannou, J. G. (1975) 'Part I', in *Housing in Greece: Government Activity [Η Κατοικία στην Ελλάδα: κρατική δραστηριότης*. Athens: Technical Chamber of Greece, pp. 150–160, p. 154.

[107] After 1947, the Greek Government conducted population displacement operations in the areas that were controlled by the Democratic Army of Greece (DSE) - the army founded by the Communist Party (KKE). This issue has become one of the most controversial points of the period, comprising the infamous accounts of children adoption and Queens' Federica camps.

settlements should be integrated in the overall reconstruction program. The young planner in fact, criticized the fragmentation of the Reconstruction program and the commission of piecemeal projects to other governmental or financial entities, as for example was the case of the Agricultural Bank of Greece, authorized to carry out the construction of temporary family shelters.[108] In Doxiadis' eyes these organizations were incompetent of carrying technical and construction works since they employed neither engineers nor planners.[109] Moreover, the concept of temporary settlements was problematic *per se*, since those constructions were meant to be destroyed past the refugee crisis.[110] According to the young planner this idea opposed definite solutions and was an impediment to a holistic reconstruction program "for [temporary settlements] would only waste valuable construction materials".[111] His proposal instead, was to repair semi-derelict houses afterwards to be used as permanent settlements, thus contributing to the reconstruction of the urban centers.[112]

Rural housing

The largest part of the reconstruction effort inevitably took place in the rural areas that faced the most acute problems. As accounted, 1,500 villages - out of a total of approximately 10,000 villages - were completely destroyed, in effect wiped out of the map of Greece. In terms of built units, some 450,000 buildings out of a total number of 1,740,000 (1940 census) were totally destroyed, in other words, more than a 25% of the prewar building stock.[113] Against that background, the Ministry's program aimed at the construction of 200,000 housing units in the Greek countryside, certainly a complex and difficult task given the destruction of the prewar infrastructure - that is railway lines and roads - and the collapse of the administrative mechanisms.

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[108] "Since the liberation of the country, the Greek State has constructed through the Agricultural Bank of Greece, about 30.000 temporary and semi-permanent shelters for an equal number of families. Of these only about 10.000 are complete, that is furnished with doors and windows to render them habitable". See *Economic policy for the reconstruction of the settlements of Greece, op.cit.,* p. 16.

[109] See, Doxiadis, 'Reconstruction: temporary housing', *op.cit.,*

[110] According to Papaioannou, the design solutions had to incite refugees to return to their place of origin and prevent the conversion of the temporary settlements into permanent slums. Papaioannou, 'Part I', *op.cit.,* p. 154.

[111] See, Kakridis, *op.cit.,* p. 147. According to Doxiadis, the expenses on temporary settlements did not contributed "in dealing with the problem of definite reconstruction". See, *Economic Policy, op.cit.,* p. 17.

[112] "Instead, [the ministry] proposed the repair of semi-derelict houses and the construction of new ones only when necessary. These buildings would be of semi-permanent character and, after the refugees left, they could house a portion of the urban population or be put to other uses". Doxiadis, C. A. (1948) *Report of the Ministry of Reconstruction [Κείμενον απολογισμού του Υπουργείου Ανοικοδομήσεως]*. Document, Ref. Code 8509. Doxiadis Archives, p. 30, quoted in Kakridis, *op.cit.,* p. 147.

[113] Papaioannou, 'Part I', *op.cit.,* p. 154

Nonetheless, Doxiadis went even further and purposed the relocation of Greek villages, arguing that the new sites would contribute positively both to the economic development of the settlement and the growth of the broader region.[114] Echoing Walter Christaller's Central Place Theory, Doxiadis' proposal was the absolute expression of state interventionism, a technocratic approach to regional development that arguably complied with the military strategy against the guerrilla forces.[115] Be that as it may and despite the Ministry's studies, only a few of the identified settlements were eventually relocated.[116]

On the other hand, the reconstruction program considered different approaches and construction systems in order to match the housing needs of the Greek countryside given the limited resources at hand. During the first phase of the program, from 1945 to 1949 approximately, the Ministry adopted the policy of permanent **"nuclei"** or **core housing**, a variant of "self-help" techniques.[117] This was an entirely "state-planned, state-financed, and state-built" policy destined to the people who have had their house destroyed during the war and could not afford any kind of contribution. The beneficiaries were given 30- 40 sq.m. floor area houses that comprised one main room, a kitchen and a bathroom, whereas the cost of a housing unit did not exceed the amount of four hundred dollars.[118] Consequently, the owner was prompted to extend the "nucleus" building in his own financial means according to the construction and detail plans designed and published by the state (Figure 1.6a,b). Although the program as a whole was evaluated positively, the percentage of extensions remained considerably lower than initially anticipated due to the

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[114] See, Kydoniatis' appendix in Brikas, M., Doxiadis, C. A. and Kydoniatis, S. (1946) *Program and regulations for reconstruction works [Πρόγραμμα και κανονισμοί έργων ανοικοδομήσεως]*. Athens: Undersecretary's Office for Reconstruction, pp. 244-270. Kydoniatis presented a few examples of settlements' relocation principally taken from ancient Greece(!) and explained that the ideal site for establishing the new settlements was to be specified by a committee of experts including a topographer, an agronomist, a hygienist, and an expert of regional planning.

[115] In his seminal analysis of state interventionism, Scott refers to Christaller's attempt to relocate war-torn cities after joining the Communist Party of Germany. The initial studies on the economics of location had been conducted a few years earlier while serving the Nazi regime. See, Scott, J. C. (1998) *Seeing like a state: how certain schemes to improve the human condition have failed*. New Haven: Yale University Press, p .382 n29. Walter Christaller was an early influence on Doxiadis since his doctorate studies in Berlin, while the Central Place Theory was one of the few underpinnings referenced in the ekistic theory and in the Greek planner's writings.

[116] In the beginning it was proposed to relocate 300 villages. Finally no more than 150 were relocated. See, Papaioannou, J. G. (1988) *Interview with John Papaioannou*. Unpublished Interview. Doxiadis Archives, p. 51 -52.

[117] Almost two decades later, core housing was described analytically by Charles Abrams in his widespread *Housing in the Modern World* (1964). Abrams was one of the housing experts that espoused the ekistic theory in the 1960s.

[118] See, Deane, *op.cit.*, p. 39. According to the Ministry's publication *Program and regulations for reconstruction works*, the housing nucleus was 5,00x8,50m approximately. See, Brikas, Doxiadis, & Kydoniatis, *op.cit.*, p.6.
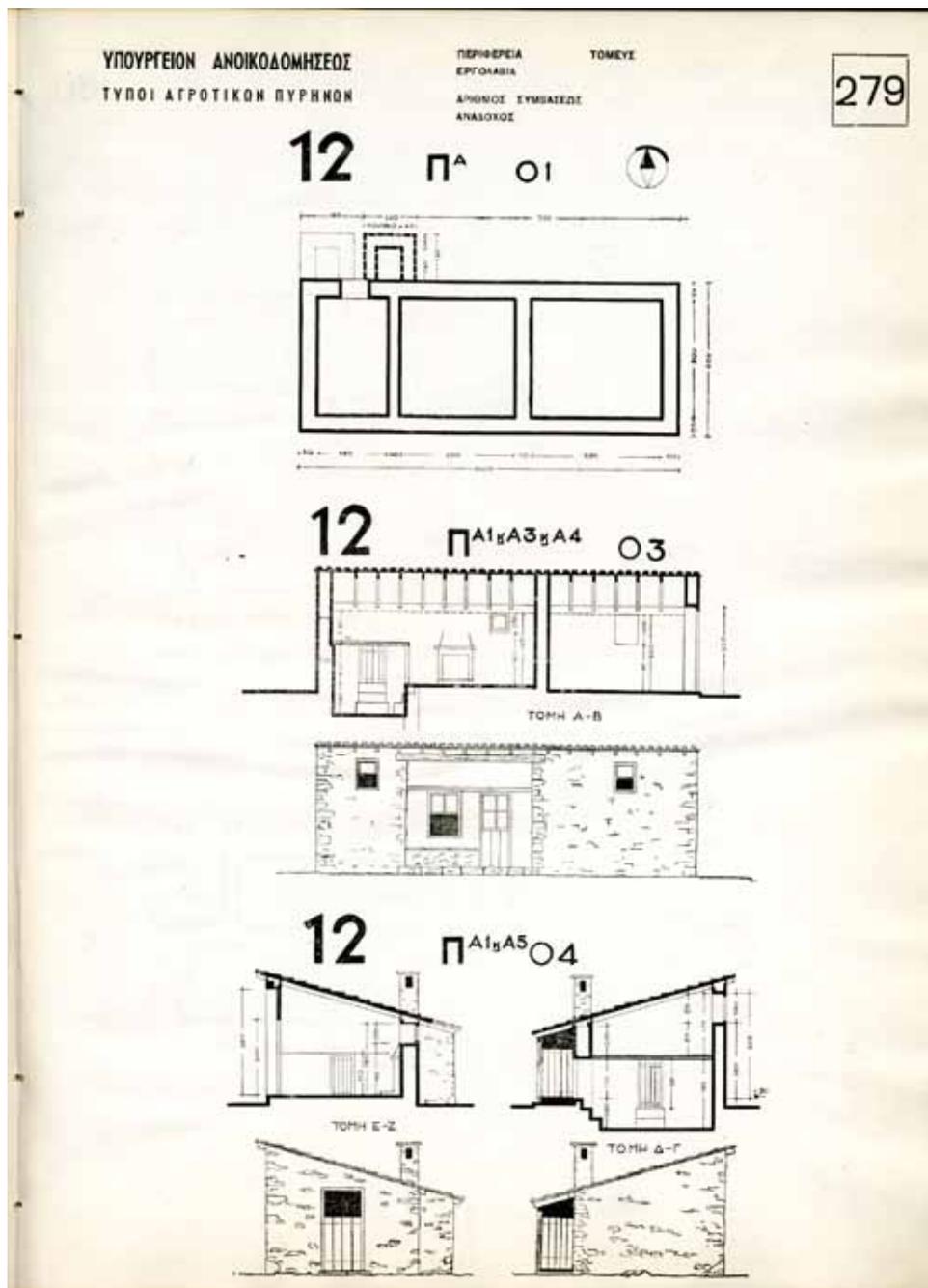
Types of Rural Dwelling Nuclei (Type 1 Sector 8).
[Types of rural dwelling nuclei [Τύποι αγροτικών πυρήνων] (B 6} (1949). Ministry of Recon-
struction (Series of Publications from the Ministry of Reconstruction, B6).]
Figure 1.6a

Types of Rural Dwelling Nuclei (Type 12 Sector 279).
[*Types of rural dwelling nuclei [Τύποι αγροτικών πυρήνων] (B 6}* (1949). Ministry of Reconstruction (Series of Publications from the Ministry of Reconstruction, B6).]
Figure 1.6b

financial difficulties of the beneficiaries.[119]

After 1949 however, the Ministry of Reconstruction unfolded another "self-help" housing policy. This time, each owner was given some building materials, money, and technical assistance in order to build his own house. This was a state-led building initiative that, however, required the participation and contribution of the owner-beneficiary in financial and sometimes in labor terms. Construction materials and money were given in installments, following the building process of the house that was supervised by civil engineers and architects. This process insured the control over the resources and their optimum use for the program's purposes. The "self-help" housing program proved to be successful and a great percentage of beneficiaries participated in the building process in order to adapt the dwellings to their needs. The result was the construction of relatively spacious houses of three to four rooms, and additions such as warehouses, stables or small spaces for rural use.

All and some, this "self-help" housing policy was embraced more than the "nuclei" construction program, whereas in some cases the whole process resulted to the establishment of small local trades such as groups of masons or carpenters who worked successively in different construction sites on the base of labor interchange therefore fomenting social cohesion between the people of the same village or region. On the other hand, in order to make the most of the available resources, the reconstruction process had to be efficient in every stage from the storage to the use of the materials. As such, the Ministry established a chain of warehouses distributed hierarchically from the regional capitals to small and remote villages, set to facilitate the storing and distribution of the construction materials. An ad hoc system of workshops and sawmills covered the production, elaboration and assemblage of building materials - mostly tile, brick and wood.[120] In this case as well the added benefits were the training and apprenticeship of the younger people next to experienced artisans and builders.[121]

Another problem that had to be solved was the transportation of the building materials to the remote and mountainous villages with no road connection. Part of the solution was the introduction of innovative "light" materials such as corrugated aluminum sheets, light timber or steel perforated trusses that were carried on mules (!) over mountain tracks and

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[119] The nuclei housing model of the Ministry is best described in Papaioannou, 'Part I', *op.cit.*, p. 155.

[120] See, Brikas, *op.cit.*, pp. 48-53.

[121] See, Deane, *op.cit.*, pp. 38-39. Deane presents Doxiadis as a Prometheus of housing construction: "Instead of building them houses immediately, Doxiadis was teaching the homeless how to be brick makers, stone masons and carpenters".

paths. As Papaioannou accounts:

> In contrast to the traditional heavy timber roofs, covered with
> heavy slates, the "new" materials represented an enormous
> improvement in weight; thermal insulation was a problem, but
> some light insulating material was used in a number of cases.
> The "new" materials became the symbol of efficient
> reconstruction in the eyes of the peasants in the mountain
> villages; they even gave them affectionate nick-names, like the
> "golden sheets" for the new, shiny corrugated aluminum
> sheets.[122]

Considering the organization of a system of importation, distribution, and even production of building materials and industrial components the "self-help" programs of the Ministry were intrepid and innovative efforts. Doxiadis' approach successfully adapted to the conditions of the Greek countryside and sought to overcome the problem of transporting construction materials especially to the mountainous areas. From this point of view, the theoretical approach and regulations described in the Ministry's publications were the result of planning practice and design solutions.

Urban housing

Compared to the extended rural programs, only a few public housing projects were constructed in the city or its confines. The most characteristic example was the Agios Georgios experimental settlement in Keratsini, destined to house the wartime homeless of the Piraeus area (Figure 1.7). This pilot project consisted of two-floor row houses and sought to implement "design strategies to enhance economy, strength, and speed of construction".[123] Innovation included urban design elements such as private garden areas for each dwelling, while the housing scheme was complemented with community facilities as a shopping center, a church and a school.[124]

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[122] Papaioannou, 'Part I', *op.cit.*, p. 156.

[123] See Pyla, P. (2002) *Ekistics, architecture and environmental politics, 1945-1976 : a prehistory of sustainable development*. Ph.D thesis. Massachusetts Institute of Technology. Dept. of Architecture, p. 32. On the other hand, in regard to the economy of construction Papaioannou argued that "the results of this experimentation were not very conclusive, the differences in cost being rather slight; still, systems using walls with medium-sized cement blocks seemed to be the most economical for similar performances," see, Papaioannou, 'Part I', *op.cit.*, p. 157.

[124] *Ibid.*, "[T]he results were spectacular: immediately the owners did develop excellent private gardens, and the whole place looked beautifully landscaped".

Inaugural Ceremony for the Low-Income Houses in Tambouria, Keratsini, Piraeus (1949).
In the presence of the Royal Couple of Greece, the Minister of Reconstruction E. Papadogiannis, the architect K. Krantonellis, and the deputy premier Al. Diomidis.
Figure 1.7

At any rate, the Agios Georgios settlement was the exception to the rule since public housing in Greece was rather narrow, almost absent, compared to the extended planning policies of the European North. State planning and housing policies in fact, were traditionally considered ad hoc responses to emergency situations, such as the refugee influx of 1922, or the extensive earthquake destructions (1928 - Corinthos, 1953 Ionian islands, 1958 Santorini) and wartime devastation. Inasmuch, since in most cases state initiatives involved aided self-help programs, the results depended on the participation of the people - either as labor or capital - for the extension, completion or improvement of the houses. As I shall analyze further, postwar housing in Greece was principally a matter of the private sector.

1.4 Development and Industrialization

Foreign aid to Greece and the vision of industrialization

> "The destiny of the Greek people will not be decided by the Sterlings and Dollars which the Greek will receive, but by the vitality, the vigour, the will and the considered patriotism they will display".
> (Extract from a speech by the British Minister Mr. Noel Baker to the Greek Financial Representation).
>
> "But capital also will be required to help once more the development of these qualities of the Greek People".[125]

The above quotes taken from the introduction to the *Economic Policy for the Reconstruction of the Settlements of Greece* perfectly portray the contradictions that characterized the programs and policies of the Ministry. Doxiadis' appeals to patriotism and his efforts for securing foreign funds have to be understood against the background of the ongoing Civil War, which undoubtedly created special circumstances for the aid transfer to Greece and a development context substantially different from other European countries. In a first place, the announcement of the Truman Doctrine signified the militarization of foreign aid and turned the Greek Civil War to the first Cold War proxy.

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[125] See, Doxiadis, *Economic Policy for the Reconstruction of the Settlements of Greece, op.cit.*, p. 8.

Only a year later, the Marshall Plan was carefully promoted as an economic assistance to the countries willing to accept U.S. funds and professed "to disregard political considerations".[126] In Greece however both interventions considered the containment of the communist threat as a precondition to reconstruction and development and therefore were perceived as a continuum.[127] As such, planning and military operations went hand in hand, while even construction works such as the reparation of the railway and road network were considered both of civilian and military importance.[128] As Doxiadis reckoned, "it was a matter to help Greece survive, and the only way was to help economic recovery and the rehabilitation of the Armed Forces. The two had to go together in Greece".[129]

The case of Greece in fact is a sound exception to the broader narrative of the Marshall Plan as motor of development in the recipient European countries. Since its very first steps the ECA/G mission was tied to the geopolitical interests of the U.S., while the actual implementation and effectiveness of its interventions varied according to local conditions. In that respect, the analysis and assessment of the Marshall Plan aid to Greece revolves around the impartial character of the relief, the economic and political allegiance of the country to foreign interests, the inadequacy of financial aid, or even the capacity of the Greek economy to absorb U.S funds. While a further reference to these debates would take this study too far, it is worth denoting that a key issue is the latent development agenda of the Marshall Plan, if ever there was one.

On the other hand, after the initial efforts for the stabilization of the drachma and along the U.S. support to Greece, the discussions for a national plan of development intensified. As such, the Recovery of Greece was understood through the prism of the prevailing stage theories and progress was associated with the transition from agricultural to industrial production. In plain words, modernization equaled industrialization, both processes guided

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[126] "While the Marshall proposal for aid by the United States toward European recovery is often called a corollary of the Truman Doctrine, they differ essentially in their aims". See, Borchard, E. (1947) 'Intervention - The Truman Doctrine and the Marshall Plan', *The American Journal of International Law*, 41(4), pp. 885–888.

[127] "In Greece, the one was a continuation of the other. Thank God, the Truman Doctrine came first, on time and quite strong as a declaration, as a spirit; and then, when the Marshall Plan was declared for all of Europe, then Greece was beginning to get on its feet. Otherwise, the Marshall Plan would have come too late for Greece". See, Doxiadis, *Oral History Interview with Dr. Constantinos Doxiadis, op.cit.*

[128] Stathakis makes this observation analyzing the operations of the U.S. Corp of Engineers. See, Stathakis, *op.cit.*, p. 209. Moreover, analyzing the early operations of the UNRRA mission, Tsilaga denotes that "in effect it was the prevalence of military objectives over relief provision that rendered assistance unproductive". See, Tsilaga, *op.cit.*, p. 528.

[129] Doxiadis, *Oral History, op.cit.*

by the hand of the state.[130] And yet, this almost teleological understanding of development was definitely colored by the ideological confrontation of the Civil War and was inextricably intertwined with the agendas of the respective political fronts.[131]

On the onset of the postwar period the Left emerged as the *par excellence* advocate of industrialization: the 7th KKE (Communist Greek Party) Congress in 1945, the leftist review *Antaios* published from 1945 to 1951, and Dimitris Batsis' seminal *Heavy Industry in Greece* (1947), constituted a solid theoretical framework anticipating an industrially developed - and independent from foreign aid and interventions - Greece.[132] On the other hand, the response coming from governmental circles remained broadly vague. For example, Xenophon Zolotas' treatise *Greece Must Become Viable* (1945) sticked to the "poverty of land" thesis, downplayed the industrial prospects of the country, and premised reconstruction and recovery on foreign aid funds.[133]

Nevertheless, the advent of the American aid changed radically the panorama and the industrialization vision was hailed alike by right wing intellectuals as the means to combat chronic financial problems and guide Greece into a new era. The *Porter Report* in particular, set the objective of a *self-supporting economy* and therefore destined explicitly the financial aid of the respective five year program to rapid industrialization.[134] Porter's programmatic approach was espoused by the government discourse who thereafter

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[130] As Kakridis explains, "Reconstruction and growth dominated economic discourse, and the late 1940s witnessed the emergence of a mainstream development consensus, emphasizing state-guided modernization and industrialization, albeit within the overarching framework of a market economy." See, Kakridis, A. (2009) 'Continuity and change: Mapping the community of economists in Greece (1944 to 1967)', *The European Journal of the History of Economic Thought*, 16(4), pp. 625–664, p. 627.

[131] According to Stathakis, "the ideological charge of the industrialization was significant." His argument is typified by the discourse of Kouvelis, an economist who - though advocating the energy resources and industrial possibilities of the country - rejected industrialization as leftist, and instead supported national territorial demands as means to economic growth! See Stathakis p.154 Andreas Kakridis as well describes how territorial claims were dragged in the political debate of the era "because of the potential political embarrassment they could cause to the Left". See, Kakridis, A. (2009) 'Deus ex machina?: Truman/Marshall Aid, Engineers, and Greece's Post-war Development Discourse', *Journal of Modern Greek Studies*, 27(2), pp. 241–274, p. 258.

[132] Born in Athens in 1916, Dimitris Batsis studied law and economics, and from 1945 to 1951 he edited the leftist review *Antaios*. His 1947 master work, *Heavy Industry in Greece*, acquired the status of Left's blueprint for economic development. Batsis was executed on 10 March 1952 along Nikos Beloyannis, a prominent resistance and communist party leader accused for treason, to whom Pablo Picasso dedicated the sketch "The Man with Carnation".

[133] What is more, much alike Kouvelis' nationalist discourse, and despite the fiasco of the Asia Minor campaign, Zolotas premised Greece's hopes on territorial expansion. See Kakridis, 'Rebuilding the Future', *op.cit.*, p. 149. Worths mentioning that the existence and exploitation of Greece's mineral resources have been subjects of debate virtually since the establishment of the modern Greek state in 1830, often linked to national overdependence on foreign aid. Both debates have revived in the recent years of the economic and financial memorandum with the International Monetary Fund.

[134] As Stathakis denotes, both in the *Porter Report* and in Truman's speech the term "self-supporting economy" accompanied the term "self-supporting and self-respecting democracy", see Stathakis, *op.cit.*, p. 153. The latter was originally used by President Franklin D. Roosevelt in his speech "A Fair Day's Pay for a Fair Day's Work," in May 1937. As I shall analyze in chapter two, within modernization theory democracy and development went hand in hand.

endorsed reports that highlighted Greece's natural resources and potential.[135] In the same vein, economists previously discarding industrial development as an illusionist's trick, adhered to New Deal ideals and rode the wave of dollar euphoria. The Truman Doctrine and the Marshall Plan had landed as a *deus ex machina*, not only to lead government troops to victory, but as well to propel governmental propaganda.[136]

Doxiadis' "third way" between Left and Right

Doxiadis' approach to the development of the Greek economy offers an interesting perspective against the much debated industrialization vision and as a retrospective view on the emergence of ekistics. In the early stage of the Reconstruction, and while the official discourse of politicians and economists alike discouraged any attempt to industrialization, the Ministry's Plan reiterated the findings of the existing studies on Greece's natural resources. In other words, Doxiadis' model for economic growth was differentiated from the governmental propaganda and was aligned with the ideas of the Left.[137] His approach offered a different perspective on the polarized debate of the country's economic viability, and practically proposed a "third way" between Left and Right. Actually, Doxiadis' path was faithful to a technocratic or apolitical understanding of development.[138]

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[135] In this case, Kakridis names the studies conducted by the United Nations Relief and Rehabilitation Administration (UNRRA) and the Food and Agriculture Organisation (FAO). See, Kakridis, 'Deus ex Machina', *op.cit.*, p. 256.

[136] *Ibid.*, p. 250. In "Deus ex machina?" Kakridis examines the basic hypotheses on the intellectual developments that led to the rise in industrial optimism in post-1947 Greece. As such he denotes that the shift in the theoretical outlook towards industrialization came along the American aid missions and the aspirations of the domestic engineering class.

[137] In this case by the term "plan" I refer to the Ministry's overarching framework for development. In particular, Stathakis characterizes the four-year recovery plan (1948-1952) issued by the Higher Council of Reconstruction as the acceptance and approval of the Left's ideas on industrialization. See, Stathakis, *op.cit.*, p. 22-23 The plan indeed contained analytical information on different industrial aspects (agriculture, mines, energy production, etc.,) taken from reports issued by the UNRRA and FAO missions, and possibly included data from Dimitris Batsis' book. Nevertheless, that period Doxiadis was director of the Greek Recovery Program Coordinating Office (GRPCO), and though he orchestrated the whole endeavor his contribution to the four-year plan is subject to further scholar research. On the other hand, Andreas Kakridis' analysis of the *Plan for the Survival of the Greek People* (1947) as well denotes the affinity of Doxiadis' ideas in regard to industrialization with the Left, however - as we shall see - concludes differently. In any case, the *Survival Plan* remained a theoretical document and did not include analytical reports on the prospects of industrial development. See, Kakridis, 'Rebuilding the Future', *op.cit*.

[138] *Ibid.*, p. 153. As Kakridis argues, "Doxiadis' Survival Plan undermines the conventional notion that in the crucial years between Greece's liberation and the announcement of the Truman and Marshall plans, the Left stood alone in championing Greece's capacity for growth and industrialization". According to Norberto Bobbio in politics the Third Way presents an alternative to the binomial Left-Right, sometimes subverting and transcending its polarized political space, in other cases identified with approaches that synthesize liberal economics and social policies. See, Bobbio, N. (1996) *Left and right: the significance of a political distinction*. Chicago: University of Chicago Press. The term is broadly used in Barbrook's *Imaginary Futures* for describing the 1950s movement of progressive intellectuals in the U.S. defined as the Cold War Left. See, Barbrook, R. (2007) *Imaginary futures : from thinking machines to the global village*. London: Pluto, p. 79. The politics of

On the other hand, when after the announcement of the Marshall Plan the turning of the tide encouraged the pursuit of industrial development, Doxiadis insisted on the necessity of a housing construction program. Without disregarding the industrial prospects of Greece, the young planner considered housing construction a cornerstone of economic growth and an impetus to the Recovery of the country. Above all, to Doxiadis' pragmatism the sheltering of the Greek population was a priority response to the deepening social crisis. At the same time, the young planner considered the development of heavy industry a pie in the sky, especially in such an early stage when the infrastructure for carrying out such plans did not exist. For those ideas "he was attacked as the man who sold Greece short".[139]

The Varvaressos Report

Even after the military victory over the communist front in October 1949, and despite the policy statements of U.S. administrators or the wishful thinking of Greek officers, the industrialization vision remained a theoretical discourse debated along political lines and beliefs. While the Marshall Plan was the first systematic effort to overcome the structural problems of the Greek economy and the state apparatus, the expectations both of foreign and local administrators for radical modernization, that is, for developing a competent and full-scale industrial sector were never fulfilled to the letter. On the other hand, the U.S. aid missions were successful in advancing economic and political stability after fiscal reforms, labor policies, food production and infrastructure projects, putting the basis for Greece's development within the emerging western world of the Organization for European Economic Co-operation (OEEC) and the North Atlantic Treaty Organization (NATO).[140]

And yet, the development agenda of the Marshall Plan remained latent and in some cases ambiguous considering the occasionally conflicting interests of the involved parts and the pattern of actions taken or ignored. A sound example to refer to would be the disputes between the U.S. embassy in Athens and the AMAG mission over the implemented measures and management of funds that debunks the myth of a common front in the U.S.'

Doxiadis' *apolitical* stance is a concept that permeates this thesis however not towards a definition of his personal political beliefs but as an attempt to analyze how the planner understood his society and times and what was the impact of his actions respectively.

[139] "[Doxiadis] told the Greeks, for instance, to abandon foolish schemes for building prestige industries at such an early stage of recovery because the raw materials and the demand were not yet there. For this he was attacked as the man who sold Greece short," see Deane, *op.cit.*, p. 40.

[140] See, Botsiou, K. E.(2009). New Policies, Old Politics: American Concepts of Reform in Marshall Plan Greece Journal of Modern Greek Studies 27(2), pp. 209-240.

foreign policy.[141] As well illustrating is the *Porter Report,* which on the one hand shared the findings of studies that supported the thesis of industrial viability, while on the other it explicitly precluded every financial aid towards industrialization. Finally, the case of war reparations typifies the hesitation and occasionally opposition of U.S. administrators to support Greek demands for developing industrial plants. The above questions demonstrate the complexity and difficulties of the Greek Reconstruction and Recovery program tied in international politics, and evince the mismatch between policy statements and actual programmatic performance. In any case, state and private investments in the Greek industry remained on paper, which for some critics signified the Marshall Plan's defeat.[142]

The last nail in the coffin of the Greek industrialization vision came with the U-turn of the U.S. foreign policy after the outburst of the Korean War, in June 1950. As the global tensions of the Cold War moved from Europe to the Asian continent the Marshall Plan financial aid was considerably reduced and the four-year recovery program was abandoned. A year earlier, in August 1949, the administrator of the ECA Paul G. Hoffman during his visit to Greece, for the first time talked about the need to renounce the industrialization program and turn anew to agriculture and tourism. Instead of drawing parallels to the popular and exemplary modernization of Tennessee, Hoffman referred to Greece as the "California of Europe".[143]

The change in the Greek economic and development program came in 1952, when Kyriakos Varvaressos submitted the seminal *Report on the Economic Problem of Greece*, commissioned by the Plastiras government the earlier year. The "Varvaressos report" was a road map to a new economic cycle, and though it barely expressed new ideas, it depicted and interpreted the financial situation that was beginning to take shape in Greece, after the changes in the U.S. foreign policy.[144] Taking as granted the radical

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[141] See, Stathakis, *op.cit.*, pp. 215-223.

[142] "In the case of Greece, the Marshall Plan was abandoned before even started". See, Stathakis, *op.cit.*, p. 333. Another sound declaration of the U.S. missions failure to achieve their objectives was the reprt of Edward A. Tenenbaum sent to Greece as an economic adviser of the Mutual Security Agency, the organization that replaced the European Cooperation Administration in 1951. The Tenenbaum report was an apologetic conclusion of the policies implemented in Greece to date: "[w]e stopped communism; but we have nothing viable instead. We gave too much help to Greece; but little ended up to the Greeks who needed it most… We restored the order; but this order is protected by successive weak governments, unpopular, unreliable, and corroded by corruption. We caused the reconstruction, but only on paper". See, Stathakis *op.cit.*, p. 382 (The translation of this passage belongs to this author).

[143] *Ibid.*, pp. 329-332. Hoffman's 1950 visit had a considerable media repercussion and was hailed by the Ministry of Coordination - Greek Recovery Program Coordinating Office (GRPCO), which published a booklet with rather folklorish photographs and sketches titled "Thank you, Mr. Hoffman".

[144] Varvaressos drew the main part of the report in Washington, where he spent the last years of his life, thus he was well informed about the nascent geopolitical scenario and certainly had no expectations for the

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reduction of foreign aid and therefore of the investments on the scale envisioned by the Recovery program, the Varvaressos report set aside the plans for industrialization, prioritizing instead measures for the stabilization of the economy, administrative reforms, and the development of agriculture and the construction sector.[145] In regard to the latter, Varvaressos was positive to the development of a social housing construction program, not only because he acknowledged the acute housing shortage but because he understood the advantages of such policy in providing employment, rising the purchasing power of the Greek society, and therefore promoting growth.[146] Varvaressos' report met a severe criticism by most of his contemporary economists and was condemned as a retrograde step in the (lineal) course of development.[147] Nevertheless, after the final efforts for economic stabilization and the currency reform along the 50% drachma devaluation in April 1953, the Greek economy finally abandoned the policy of gold sovereign and private capital (including household savings) was invested in activities embedded in small-scale entrepreneurship and ownership. Against that background, the housing construction sector became the motor of the so-called Greek economic miracle of the 1960s.

Housing development in Greece and the KH' Resolution
While the economic vicissitudes of postwar Greece were the starting point for fervent debates and rich intellectual developments, the humanitarian and reconstruction needs were acute and demanded immediate action. As said, the scarce financial means of the Greek state made impossible the implementation of a complete public housing program. Urban housing was found in a second place after the self-help techniques developed to ameliorate the critical housing conditions in the countryside compounded by the ongoing Civil War. Constantinos Doxiadis, a young architect armed with extended administrative competences, sought to provide both short-term solutions to shelter wartime refugees and promote housing policies within a broader framework of economic development. The latter aimed to advance the reconstruction of the urban centers based on private capital.

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continuation of the financial aid to Greece. Undoubtedly, the Varvaressos report converged with the objectives of the American mission. See Kostis' introduction to Varvaressos, *Report on the Greek Economic Problem*, *op.cit.*, p. 65.

[145] *Ibid.*, p. 70. Contrary to the widespread opinion, Varvaressos did not reject the country's industrialization all together, but instead premised industrial development on trickle-down policies aiming to restrict monopolies and reinforce the low and middle class entrepreneurship.

[146] *Ibid.*, pp. 74, 349-350.

[147] *Ibid.*, pp. 417-402. The second part of the 2002 publication on the Varvaressos Report includes the discussions, press, and criticism of the era.

Among the most effective measures was the so-called KH' Resolution published in the Official State Gazette on 23 August 1947, under the title "on the provision of facilities for the reconstruction carried out by private citizens".[148] The KH' Resolution principally regulated the exemption of the citizens willing to repair damaged buildings or to finance new constructions from the applicable taxation. On the other hand, it systematized the abolishment of the rent moratorium law in force since the Occupation years, therefore liberating the existing properties from rent control measures in case the owner assumed the cost of constructing a new building at the same site. In essence, the KH' Resolution overrode the established laws and acknowledged the resignation of the State from taxation revenues in favor of private investments destined to housing construction or to the reparation of small industrial units and public buildings (hospitals, sanatoriums, etc.,). Against a meager governmental budget, the KH' Resolution became the legislative means to promote urban development and inject private capital to the reconstruction of the Greek cities.

Constantinos Doxiadis' implication in the KH' Resolution is apparently indirect, since he is not mentioned in the Official State Gazette neither in the minutes of the respective parliamentary proceedings. Nevertheless, the young planner was a fervent supporter and arguably one of the authors of the measure.[149] In August 1947 and while the KH' was discussed at the parliament, Doxiadis published in the newspaper *Vima* an article where he openly advocated "The Reconstruction Resolution".[150] Admitting the inability of the Greek state to finance an integrated public housing program at least for a decade, the young planner argued that in a first place the government should provide housing to the poor, the agrarian population and the people living in the mountainous parts of the country.[151] On the other hand, the state would have to facilitate the wealthy and bourgeois classes willing to reconstruct the urban centers. Certainly such operations had elevated

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[148] The Greek title of the KH' Resolution is "Περί παροχής διευκολύνσεων δια την υπό ιδιωτών ανοικοδόμησιν". The English translation is of the author. See, Karolos (no date) *KH' Resolution [KH' Ψήφισμα], Κοινότητα Λογιστών Βήμα συζητήσεων*. Available at: http://www.taxheaven.gr/acforum/index.php?showtopic=35623 (Accessed: 15 July 2015).

[149] "Though Doxiadis hold directing capacities in every government till 1950 and devised a series of urban plans for the development of Athens till 1975, he barely managed to secure nothing but the KH' Resolution, the opening of passages and the widening of some central streets, and height increase". See, Mantouvalou, M. and Mavridou, M. (1993) *Illegal Construction: one-way to a dead end? [Αυθαίρετη Δόμηση: Μονόδρομος σε αδιέξοδο;]*. Athens: NTUA.

[150] The article was published in two parts under the title "The Reconstruction Resolution" and surprisingly it did not name the legislative measure in question. See, Doxiadis, C. A. (1947) 'The reconstruction decree [Το ψήφισμα της ανοικοδομήσεως]', *To Vima*, 17 and 19 August.

[151] *Ibid.,*

costs but also higher profitability.[152]

Leaving aside the social aspects or implications of the measure, Doxiadis was eager to emphasize the leverage effect of housing construction for the whole economy: construction activities meant more jobs, augmented the demand for industrial materials thus production, and essentially increased capital turnover. In a country of stagnated - not to say null - economic activities, housing construction was expected to set to motion the otherwise moribund state apparatus. In that sense, Doxiadis argued in favor of a legislative framework able to liberate real estate properties from legal constraints.[153] In order to start the reconstruction in a beneficiary and effective way the state should enact measures such as the eminent domain, property reallocation, and the abolishment of the rent moratorium law.[154] His discourse ended with a dramatic appeal to promulgate the Reconstruction laws as a martial law, for the lethal enemies of the Greek population were "famine, poverty unemployment, and disorder".[155]

The KH' Resolution was initially submitted in August 1947, however it was brought in anew for discussion in the parliament due to legal inconsistencies in May 1949.[156] In both cases, the opposition discredited the measure as "a resolution in despair" that practically affirmed the bankruptcy of the Greek state, whereas the minister in charge defended the KH' as the only *available* means to support the citizens in need.[157] Nevertheless, while the initial discussions evinced the governmental optimism for stimulating private investments, in the 1949 proceedings a member of the parliament on behalf of the Ministry of Reconstruction admitted that the measure had not brought the expected results due to contradictory and uncoordinated policies.[158] The debate about the efficiency of the KH'

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[152] *Ibid.*,

[153] In a 1945 article Doxiadis pointed out the difficulties of the state to intervene in the complex property status of the cities arguing that any housing policy destined to reconstruct the urban centers was doomed to fail without the necessary legislative arrangements. See, Doxiadis, C. A. (1945) 'Reconstruction: real property problems [Η ανοικοδόμησις: προβλήματα ιδιοκτησίας]', *To Vima*, 7 October.

[154] *Ibid,*

[155] *Ibid,*. In another patriotic exaltation, Doxiadis characterized the Reconstruction program a national problem and a national duty. See, Doxiadis, C. A. (1945) 'Reconstruction: national problem - national duty [Η ανοικοδόμησις: εθνικόν πρόβλημα - εθνικόν καθήκον]', *To Vima*, 11 October.

[156] Originally the KH' Resolution had been approved by an "Authorizing Committee" and was not submitted to vote till 1949. See, "Journal of Proceedings in Parliament" (Εφημερίς των Συζητήσεων της Βουλής), session 42, 17th May 1949, p. 242.

[157] *Ibid.*, and *Journal of Proceedings in Parliament [Εφημερίς των Συζητήσεων της Βουλής]* 1st August 1947, pp. 622-623.

[158] P. Garoufalias denoted that while the KH' Resolution was drafted to direct investments to housing, no other policies were taken in order to undermine the current of savings in golden sovereigns. See, *Journal of Proceedings in Parliament [Εφημερίς των Συζητήσεων της Βουλής]*, session 42, 17th May 1949, p. 246.

continued in March 1953, when the Parliament examined its prolongation. This time new objections arose in regard to the actual scope of the measure, suggesting that the beneficiaries principally remained the wealthy and privileged classes who anyway evaded or were exempted from significant taxation.[159] At a time when the pressures for establishing a reliable tax system and increasing revenues were high, measures like the KH' naturally came in the eye of the storm.[160]

Eventually, though the KH' Resolution was drafted as a provisional measure, it remained in force throughout the 1950s and 1960s, that is during the formative years that witnessed not only the reconstruction but as well the growth of the Greek cities and the consolidation of Athens as the Greek metropolis.[161] Certainly the KH' Resolution alone cannot account for the housing construction that skyrocketed after the monetary reform and economic stabilization of 1953, fueling the so-called Greek economic miracle.[162] And yet, against a more stable (or less volatile) socio-political context those legislative incentives offered a fertile ground to capital investment and directed people's savings to home ownership. While the Marshall Plan agenda and funds had little to do with development or housing construction, in the end the growth of the respective sector had multiplier effects to the overall economy.

All the above seem consistent with Doxiadis' views that bound together physical planning and economic growth, and against - as I shall discuss in chapter two - the prevailing theory that regarded housing to have a detrimental effect on development. In the case of Greece, industrialization had the lead in the minds of politicians and economists who therefore advocated the direct financing of local industries.[163] The Varvaressos report was

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[159] On the other hand, the issue of housing evictions resulting from the abolishment of the rent moratorium law was not given great importance since there was apparently a consensus in favor of new constructions. See, *Journal of Proceedings in Parliament [Εφημερίς των Συζητήσεων της Βουλής]*, session 25, 10th of March 1953, pp. 33-34.

[160] Vetsopoulos denotes the pressures of AMAG to the Greek government for tracing a just but tight fiscal policy. See, Vetsopoulos, *op.cit.*, p. 282.

[161] The KH' ordinances related to the issuances of permits for agricultural constructions were abolished in 1997, while other KH' ordinances related to municipal levies - however with significant modifications from the original form of the Resolution - are still in force. See Karolos, *op.cit.*

[162] An analysis and assessment of the KH' Resolution's results exceeds the scope of the study. Delladetsimas however presents the KH' as one of the most influential rent control measures and a form of state intervention. See, Delladetsima, P. M. (1999) 'Rent control measures of immediate postwar period (1944–1952) and their impact on urban development in Greater Athens', *European Planning Studies*, 7(3), pp. 325–338.

[163] During the discussions on the KH' Resolution, the member of the parliament P. Katzias argued that the Greek government should reinforce the relatively short-lived local steel production instead of importing such materials. See, *Journal of Proceedings in Parliament [Εφημερίς των Συζητήσεων της Βουλής]*, session 42, 17th May 1949, pp. 242-243

the exception to the rule and among other policies proposed the development of the construction sector as one of the cornerstones of national economy. Eventually, throughout the first postwar period housing construction became a catalyst for the Greek economy, even if public housing was practically null.

Several years later, Doxiadis - long dismissed from the public office - faced the challenge of urban sprawl and private housing, which proliferated in Greece after the broadly used self-construction and self-promotion practices.[164] On the other hand, as I shall analyze in chapter two, Doxiadis' ideas on housing and economic development had another end in the context of developing countries.

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[164] As observed in the parliamentary proceedings, the KH' Resolution fomented centralization, since real estate investments in the capital were far more profitable than the ones in the province. See, *Journal of Proceedings in Parliament [Εφημερίς των Συζητήσεων της Βουλής]*, session 25, 10th of March 1953, pp. 33-34. Doxiadis' involvement in the urbanism of Athens comprises interesting episodes that could be used to describe the paradoxes, contradictions, and tensions of his person and career in the context of postwar Greece. This thesis however, will follow another course and will examine the global aspects of Doxiadis and ekistics.

CHAPTER TWO

Modernization Theory, Housing, and Development: the Rise of Doxiadis Associates

Australia 1951-1953

During the Reconstruction and Recovery period Constantinos Doxiadis played an essential role in the programs that put the bases for the postwar development of Greece. He was instrumental in establishing and thereafter heading the organizations that undertook planning and construction endeavors throughout the country collaborating successfully with the foreign aid missions. Nevertheless, political rivalries subverted these efforts and in December 1950 his Cabinet post was abolished. After almost a decade of serving as a public administrator the young planner found himself in the street. Resentful about the situation, Constantinos Doxiadis moved with his wife and their three daughters to Australia, looking forward to reinvent his professional career but soon to find out that his academic titles were not recognized in the "new world".[1] Unable to work as an architect, he established the Tecton Constructors Pty. Ltd. company and sought to undertake a housing scheme of 500 poured in situ concrete houses, however the radical cut-down of state funding and credit shelved the project.[2] In the insistent efforts to exercise his profession, Doxiadis elaborated a study based on socio-demographic data under the prophetic title "The Coming Invasion of Australia". Much to his disappointment, the Australian government and local publishers turned down his study and Doxiadis turned to growing tomatoes in order to make a living and afford his return to Greece, eventually taking place in September 1953.[3]

After his dismissal from the Greek establishment and even before leaving for Australia, Doxiadis started to contact his American acquaintances in search of a job. One of the first persons to write to was Paul R. Porter, to whom he explained the circumstances under

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[1] On Doxiadis' passing from Australia, see Deane, P. (1965) *Constantinos Doxiadis: master builder for free men*. Oceana Publications, pp.47-51, and Kyrtsis, A.-A. (ed.) (2006) *Constantinos A. Doxiadis: texts, design drawings, settlements*. Athens, Greece: Ikaros, pp. 355-357.

[2] *Ibid.*, p. 357. Apparently, Doxiadis attempted as well to establish a company for construction materials and carry out land development projects on behalf of the Greek Church, see letter from Doxiadis 23 June 1952, *C. A. Doxiadis' Personal Correspondence 1951 - 1956 (A-Z)*. Document, Ref.Code 24345. Doxiadis Archives.

[3] Doxiadis was certainly a polymath. Not only he reinvented himself in order to live his family, but he wrote a manual on how to grow a kind of "wild" tomatoes. After two years time, he returned to Greece with his family to which had been added his three-month son Apostolos.

which he was dismissed, his bitterness and tight economics.[4] The first proposals discussed in correspondence with Porter, Walter H. Blucher from the American Society of Planning Officials, and George McGhee, at the time Assistant Secretary of the Department of State, contemplated options such as joining American Institutions - including teaching at the University of Chicago - or entering the United Nations technical assistance program for developing countries. On the return from Australia George L. Reed from the Technical Cooperation Administration proposed to the Greek planner to work with foreign missions in the Korean Reconstruction or in the Dong Quan Program in northern Vietnam, a village resettlement plan funded by the U.S. government.[5] Moreover, Ernest Weissmann was organizing UN housing missions however with a scarce budget, Kenneth Iverson was with the Rockefeller Foundation in Beirut, and Le Corbusier was starting his ventures in India.[6] Despite an array of options, Doxiadis announced his decision to stay in Greece and set up his private office as an architect and consulting engineer. Though at the time the idea did not excite Doxiadis, his office would grow rapidly to a multifarious organization for research and consultancy on global development.[7]

Urbanism on the Cold War home front

The establishment and growth of Doxiadis Associates, before long followed by the Athens Center of Ekistics, is closely linked to certain Cold War episodes since some of its most significant projects were developed in the Middle East and South Asia regions. In the big picture the outburst of the Korean War shifted the focus of the U.S. strategy from Europe to Asia putting a premature end to the Marshall Plan. When the Korean War ended in July 1953 with a buffer zone running along the 38th Parallel, Nikita Khrushchev had seized power after the death of Joseph Stalin, while on the other side of the Atlantic Dwight D.

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[4] See, letter from Doxiadis to Porter, 23 December 1950, in *C. A. Doxiadis' Personal Correspondence 1951 (A-Z)*. Document, Ref.Code 24344. Doxiadis Archives.

[5] Doxiadis and Reed kept up extensive correspondence and addressed each other with their nicknames Dinos and Jerry. See, letter from Doxiadis to Jerry Reed, 22 September 1953, *C. A. Doxiadis' Personal Correspondence 1951 - 1956 (A-Z)* (No Date). Document, Ref.Code 24345. Doxiadis Archives. The Dong Quan Pacification Project was funded by the Mutual Security Agency and aimed to regroup "peasant farmers of 25 surrounding villages into Dong Quan. To attract the villagers to such an arrangement, the Great Village offered a handicraft and commercial area, a residential area with subsidized housing, and an agricultural area. It also included a hospital, a Catholic church, a pagoda, a school, a market, and a river port". See, Tucker, S. (ed.) (2011) *The encyclopedia of the Vietnam War: a political, social, and military history*. 2nd ed. Santa Barbara, Calif: ABC-CLIO, pp. 307-308.

[6] See, letter from Reed to Doxiadis, 22 September 1953, in *C. A. Doxiadis' Personal Correspondence 1951 - 1956 (A-Z), op.cit.* Jerry Reed suggested to Doxiadis to write on his behalf to Henry Whitney, Care of U.S. Embassy, New Delhi, in order to get a list of contacts, since India at the time offered "unlimited opportunities."

[7] *Ibid.*, letter from Doxiadis to Reed, 20 October 1953. Doxiadis explained to Reed that he had to undertake small private commissions - a village financed by wealthy shipowners and a block of flats in Athens - in order to raise his family. Somehow disillusioned, he wrote that "this idea sounds a bit different from the old days". Doxiadis was definitely interested more in planning than in architecture.

Eisenhower was running the first year of his presidency. Most significantly, both superpowers had the hydrogen bomb and adhered to the military strategy of deterrence, a concept that brought the geopolitical rivalry to a state of Nash equilibrium called the Mutually Assured Destruction or MAD.[8] Whereas the MAD state allegedly prevented a full-scale nuclear conflict, the rivalry of the two superpowers brought about an arms race and instigated proxy wars.

On the U.S. home front, the possibility of a nuclear holocaust imbued mass media and was even showcased by social guidance films teaching students to "duck and cover" in case they would see "the flash".[9] Practiced in air raid drills and printed in advertisements for nuclear blast shelters, the omnipresence of the bomb soon permeated the way architects understood the urban future and designed buildings.[10] Against that background emerged the concept of defensive dispersal, that is, the thesis postulating the need for decentralizing major cities due to their vulnerability in case of a nuclear attack.[11] Its main proponent was Tracy B. Augur, a former Tennessee Valley Authority planner and member of the American Institute of Planners (AIP), who in 1951, and while working for the National Security Resources Board (NSRB), participated in the Industrial Dispersal Policy and the civil defense Project "East River".[12] The latter was a ten volume report that among other policies, examined measures for the *Reduction of Urban Vulnerability* in case of a bomb detonation in the Manhattan area, as its name suggested.[13]

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[8] The acronym MAD is attributed to the peculiar humor of John von Neumann who along other mathematicians like John Forbes Nash analyzed decision-making concepts and behaviors under the umbrella term of game theory. The so-called Nash equilibrium was one of them and describes a situation in a non-cooperative game where every player decides to maintain its own strategy assuming to know the strategy of the other players, since changes would not come to benefit. On the deterrence strategy see, Coleman, D. (2002) 'Deterrence', in DeConde, A., Burns, R. D., and Logevall, F. (eds) *Encyclopedia of American foreign policy*. 2nd ed. New York: Scribner, pp. 463–476.

[9] Such is the case of the "Duck and Cover" film produced in 1951, where the animated "Bert-the-turtle" advised students to take shelter in case of a nuclear detonation. Another characteristic example of mass media showcasing the nuclear horror was the controversial political advertisement "Daisy", aired in 1964 as part of Lyndon Johnson's campaign: a girl innocently counts flower petals before she gets interrupted by a missile launch count down to zero and the consequent nuclear mushroom explosion.

[10] For an account of architectural and artistic representations or by-products of the nuclear anxiety see, Pavitt, J. (2008) 'The Bomb in the Brain', in Crowley, D. and Pavitt, J. (eds) *Cold War modern: design 1945-1970*. London: V&A Pub, pp. 100–121.

[11] For an analysis of the defensive dispersal theory, see Dudley, M. Q. (2001) 'Sprawl as Strategy: City Planners Face the Bomb', *Journal of Planning Education and Research*, 21(1), pp. 52–63.

[12] *Ibid*., p. 58. Augur, who in 1939 served as a President of the AIP, analyzed the defensive dispersal thesis in an article published in 1948. See, Augur, T. B. (1948) 'The Dispersal of Cities as a Defense Measure', *Journal of the American Institute of Planners*, 14(3), pp. 29–35. The NSRB was created by the National Security Act of 1947 along the cornerstones of U.S. defense, namely the Department of Defense (DOD), the Central Intelligence Agency (CIA) and the National Security Council (NSC). The NSRB had an advisory role "concerning the coordination of military, industrial, and civilian mobilization" in case the nation came under attack.

[13] See, Norton, C. M. (1953) 'Report on Project East River', *Journal of the American Institute of Planners*, 19(2), pp. 87–94. Ironically, the research project that resulted in the development of the atomic bomb was

Though urban theories and architectural visions had long fought for decongesting overcrowded cities, the "East River" project and the defensive dispersal discourse alerted the U.S. establishment and eventually informed significant urban and regional policies, such as the 1954 Housing Act or the 1956 Federal Aid Highway Act.[14] A new era dawned for the North American city dominated by uncontrolled urban sprawl, the growth of the suburbia, the decline of the inner city and the concomitant urban renewal programs, phenomena that Doxiadis took in consideration elaborating an extended study on Detroit, in the mid 1960s.[15] On the other hand, within the theoretical framework of ekistics the concept of defensive dispersal was featured in one of the "ekistic laws" that according to Doxiadis might apply to (and account for) the characteristics of future cities. As the following excerpt describes, the need for security was considered to have a direct impact on the form of a settlement:

> "[t]he fear of an attack by an even larger force from the air - nuclear weapons - may force settlements to be even farther apart, since the vulnerable area will be much larger and entire major settlements could be eliminated during an attack. Security, therefore, develops centrifugal forces which may spread the settlement over larger areas, with a number of very small parts and many others which may become linear. Thus, from the point of view of security, modern weapons are leading us towards new types of settlements which look much more like systems of nodal points and transportation lines than the compact built-up areas that prevailed in the past. A system which depends on many nodal points and circulatory lines becomes more important than the one-nucleus compact settlement since only such a system

called "Manhattan Project".

[14] Dudley baptized the defensive dispersal movement the "mutated grandchild of Ebenezer Howard's venerable Garden City concept", while another direct reference was Frank Lloyd Wright's Broadacre city. See, Dudley, 'Sprawl as Strategy', *op.cit.*, p. 56. A noteworthy version of the dispersed city was produced by the cybernetics theorist Norbert Wiener and illustrated in December 1950 *Life* magazine as a civil defense plan for American atomic age cities. The chilling illustration of a city center isolated by "life belts" which would "provide a place for bombed-out refugees to go", was accompanied by a short interview. Apparently Weiner with two MIT collaborators had elaborated an overall plan to redesign the American city, nevertheless it remained a draft. See, Kargon, R. and Molella, A. P. (2004) 'The City as Communications Net: Norbert Wiener, the Atomic Bomb, and Urban Dispersal', *Technology and Culture*, 45(4), pp. 764–777.

[15] It is worth mentioning that among the proponents of defensive dispersal was the Detroit planner Donald Monson and his wife Astrid Monson, an economist, with whom Doxiadis apparently had discussed the prospect of collaborating for the educational and research programs of the Athens Center of Ekistics.

can survive, even if its central nucleus is completely destroyed".[16]

While it would be pointless to attempt to establish further links between ekistics and the theory of defensive dispersal, the above straightforward connection fairly denotes how deep the idea of a nuclear Armageddon had permeated the theory of urban and regional planning, even outside the States. Doxiadis on the other hand, like other architects raised in the interwar period, had long been haunted by wartime experiences. His speech and writings were imbued with warnings about "urban nightmares" and coming disasters, whereas the policies and programs he proposed were often portrayed as a matter of survival.[17] For Doxiadis, the postwar period signified the beginning of the mother of battles against the housing shortage and urban crisis.

2.1 Modernization Theory and the Development Crusade

Apart from the fact that Soviet Russia exemplifies not Communism but
National Socialism - the Communist Utopia not having yet arrived - it
remains to be proved that dollars can stem the advance of a doctrine
which finds its major source and soil in poverty and misery.[18]

On the moon the red flags fly
But cream and butter you can't buy
(The latest East German jingle)[19]

While on the U.S. home front urban theory and policies reflected the anxieties and fears of the H-bomb, urban and regional programs conducted overseas were embedded in the

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[16] See, Psomopoulos, P. and Perovic, M. R. (eds) (2005) 'A reader on Ekistics. Thirty years after C.A. Doxiadis', *Ekistics*, 72(430 to 435), p. 63 Fig. 29 c. The referenced figure was subtitled "Nuclear attack leads to the conception of a system of settlements".

[17] See, Madanipour, A. (2010) 'The limits of scientific planning: Doxiadis and the Tehran Action Plan', *Planning Perspectives*, 25(4), pp. 485–504, p. 491. In 1939, Doxiadis published a series of articles on the architecture of shelters and on the required technical works against air raids. See, Doxiadis, C. A. (1939) 'Defence against air raids and technical works [Αντιαεροπορική άμυνα και τεχνικά έργα]', *Technica Chronica*, 15(179-180), pp. 490–552, and Doxiadis, C. A. (1939) 'The latest on shelter structure (A) [Νεώτερα δια τα καταφύγια (A)]', *Technica Chronica*, 16(190), pp. 592–594. At the time of Greece's liberation Doxiadis became Captain in the Greek Army, while he was decorated the Greek Military Cross and the Order of the British Empire.

[18] Borchard, E. (1947) 'Intervention - The Truman Doctrine and the Marshall Plan', *The American Journal of International Law*, 41(4), pp. 885–888, p. 886.

[19] Taken from an article titled "Crises the reds can't hide" (7 December 1959 - unknown magazine) found at *HUCO: C. A. Doxiadis' Working File*. Document, Ref.Code 22702. Doxiadis Archives.

paramount framework for the "progress" of underdeveloped countries, namely the modernization theory. Sometimes understood as a doctrine, others as an ideology or an approach, the modernization theory presumed and propagated a development pattern based on industrialization and allegedly pioneered by the United States.[20] Built on the dichotomy between "traditional" and "modern" societies, premised on technological fundamentalism, and espousing universalism, the development doctrine posited that the only way for the underdeveloped nations to reach the economic, political, and social state enjoyed by the West was to adhere to the same pattern and pass from the same stages.[21] Most importantly, this was the only way for a society to go through the (inevitable) evolutionary process.[22]

Throughout the 1950s and 1960s, the modernization theory dominated both western social scientific thought and knowledge transfer practices. In effect, it provided a set of methodological tools and concepts that characterized the U.S. foreign aid programs and the endeavors of prominent philanthropic foundations, such as the Carnegie, Rockefeller, and above all the Ford Foundation. Its rapid propagation and popularity was rooted in the emancipating forces of modernity, a generic but rationalist discourse, and the disposition of the U.S. establishment to fund lavishly the battle against Communism. While the Manhattan project assured - even if in the MAD equilibrium - national security, western experts and spin doctors sought ways to counteract both the augmenting popularity of Marxism and the appeal of the socialist economy exemplified by the rapid industrialization of the East. During the interwar period, the latter was contested by the New Deal experience and projects such as the TVA that validated a historical transgression based on the three "R" dictum, namely Relief, Recovery, and Reform. Effectively, the postwar American economy was able to produce both more "guns and butter" and evade "Revolution".[23] Even so, the U.S. still missed a theory to convince its *future neighbors* to align with. Though the modernization theory was not a fruit of the Cold War *per se*, it

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[20] For a preliminary but complete account of modernization theory see, Cullather, N. (2002) 'Development Doctrine and Modernization Theory', in DeConde, A., Burns, R. D., and Logevall, F. (eds) *Encyclopedia of American foreign policy*. 2nd ed. New York: Scribner, pp. 477–492.

[21] For a critique and historical account of the relation between modernization theory and technology see, Adas, M. (1990) *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance*. Cornell University Press, pp. 402-418. See as well Misa's insightful account introduced by the phrase "modernization theory missed what was modern about technology", see Misa, T. J., Brey, P. and Feenberg, A. (2003) *Modernity and technology*. Cambridge, Mass.: MIT Press.

[22] According to Ali Mazrui, this perspective was imbued by a social evolutionist teleology, see Mazrui, A. (1968) 'From Darwin to Current Theories of Modernization', *World Politics*, 21(1), pp. 69–83, cited in Adas, *op.cit.*, p. 412.

[23] See, Barbrook, R. (2007) *Imaginary futures : from thinking machines to the global village*. London: Pluto, p. 133. In macroeconomics, the guns versus butter model stands for the relationship between a nation's investment in defense and civilian goods. The "guns or butter" model is generally used as a simplification of national spending as a part of GDP.

became the main vehicle for contesting Communism on ideological and cultural grounds.[24] According to its narrative, while both blocs promised the grail of industrialization, different political paths were followed to its attainment, namely communism and democracy. Within the latter, western theorists argued, development was conceived in a free but regulated by the state market. The answer of the West to socialist economics was mixed economy. In that respect, the modernization theory was not only about economic growth but was intrinsically linked to a set of social changes, including rising income, health betterment, increased literacy, urbanization, and consumerism. Compared to the imperialistic impetus of the 19th century Europe, and the exhaustive Soviet collectivization methods, Western modernizers advocated a rather mild approach to achieve the leap forward.[25]

Considering its authorship, the modernization theory is best described as an abstract framework encompassing the work of distinguished intellectuals and institutes that flourished in the fertile ground of Cold War America. Along the defense and intelligence establishment prospered social sciences and research studies focusing on the Third World mushroomed.[26] Scholarship, statistical and comparative methods became a "know the enemy" approach.[27] Characteristically, the convergence of the academia and the military-industrial complex was underscored by the emergence of interdisciplinary researches institutionalized as area studies, the Athens Center of Ekistics being such an example in the European periphery.

Originally, Talcott Parsons' social theory - constructed within the Harvard Department of Social Relations (DSR) - provided the intellectual underpinnings for understanding the sociology of modernization. One of its objectives was to anticipate the course of societies.[28] Chaired by Gabriel Almond, the Committee on Comparative Politics (CCP) of the Social Science Research Council (SSRC) integrated the Parsonian approach in exploring comparative politics and the problems of development beyond non-Western

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[24] As Adas puts it, '"[c]ritics of modernization theory, who argue that it is primarily a Cold War response, an attempt by American social scientists and policymakers to counter the appeal of Communism to the peoples of the underdeveloped world, distort the origins and significance of the tradition-to-modernity paradigm". See, Adas, *Machines as the Measure of Men, op.cit.*, p. 403.

[25] "An evangelical sensibility distinguished the American approach to development from the high-modernist ambitions of European colonizers and Asian nationalists". See, Cullather, 'Development Doctrine and Modernization Theory', *op.cit.*, p. 478.

[26] "After 1945, social science became, was forced to become, geographically integrated, so to speak", see, Wallerstein, *op.cit.*

[27] In this way the military-industrial complex gave place to the military-industrial-academic complex. See, Engerman, D. C. (2010) 'Social Science in the Cold War', *Isis*, 101(2), pp. 393–400.

[28] According to Nils Gilman, "Parsons was the first and most preeminent of modernization theorists", see, Gilman, N. (2007) *Mandarins of the future: modernization theory in Cold War America*. Baltimore; London: Johns Hopkins University Press, pp. 72-112.

areas. In doing so, it introduced the modernization paradigm in the political science.[29]

Finally, the formulation of the modernization theory as a developmental model set to counteract the Soviet appeal was advanced by the Center for International Studies (CIS), which was originally established within the Massachusetts Institute of Technology in 1951, after the completion of the State Department-funded program Project Troy.[30] The organizer of CIS was the MIT economist Max Millikan who, after spending one year as assistant director of the CIA, gathered an interdisciplinary team including communication specialist Daniel Lerner, political scientist Lucian Pye, and economist-political theorist Walt Whitman Rostow. All together, these scholars unfolded interlocking theories that sought to analyze the economic, political, and even psychological dimensions of development. On the other hand, they provided the working concepts used to support aid programs and even justify open or covert military operations in the Third World as modernizing crusades.

The stages of growth

A prominent concept within the theoretical framework of modernization was the understanding of economic development and social evolution as linear processes towards a universal end. This perspective was notably synthesized with American history and foreign policy in Walter Rostow's *The Stages of Economic Growth: A Non-Communist Manifesto* (1960). Born to a Jewish immigrant family from Russia, Walt Whitman Rostow (1916-2003) initiated an exceptional academic and professional career graduating from Yale and Oxford, and teaching at Columbia University and the MIT. During the Second World War, he joined the Office of Strategic Services (OSS), a predecessor of the CIA, and selected bombing targets in operations conducted by the Enemy Objective Unit, part of the Economic Warfare Division of the American Embassy in London.[31] After the war, Rostow worked briefly in the government for the purposes of the Marshall Plan before becoming a professor of economic history at the MIT, soon thereafter following his Yale colleague Max Millikan at the CIS. It was during the CIS decade 1951-1961 that Rostow elaborated his influential theory, also known as the Rostovian take-off model.

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[29] *Ibid.*, p. 151. According to Gilman, "with the publication of [Gabriel Almond's] *The Politics of Developing Areas*, the paradigm of modernization theory reached fruition in political science". The creation of the SSRC Comparative Politics Committee in 1953 was funded by the Carnegie Corporation, while a series of conferences were consequently funded by the Ford Foundation.

[30] *Ibid.*, pp. 156-158.

[31] See, Rostow, W. W. (1991) 'Waging Economic Warfare from London (The Enemy Objective Unit)', *Studies in intelligence*, 35(4), pp. 73–79. As Cullather accounts, Rostow argued for a systemic approach to the selection of targets - effectively "a comprehensive attack on German oil refineries and bridges" - against the "bottleneck" approach eventually opted for by General Eisenhower. See, Cullather, 'Development Doctrine', *op.cit.*, pp. 482-483

According to Rostow, economic growth occurred in five stages:

1. Traditional society
2. Preconditions for take-off
3. Take-off
4. Drive to maturity
5. Age of high mass consumption

In the opening stage, the society was bound to pre-Newtonian science and technology, where productivity and per capita income met the ceiling of harvest possibilities controlled by the feudal rule. The second stage of growth was a period of transition where an external stimulus such as technological advances sparked the "preconditions" for "take-off". During this "gestation" period, according to Rostow, societies were politically vulnerable and only "the building of an effective centralized national state" could overthrow established regional interests or colonial power, and shield them from Communism.[32] Much alike a purification process, the "take-off" was considered "the great watershed in the life of modern societies", the step where constraints to growth were to be purged. Agriculture was expected to get commercialized with the advent of new technologies and techniques, new industries were to be founded, whereas capital turnover and increasing surplus were expected to boost the growth of the private sector. In return, the expanding new class of entrepreneurs was expected to provide the financial feedback to modern sector activities, all together creating the economic and socio-political euphoria for taking-off. This self-sustained and retro-alimented process was the most appealing image of the Rostovian model, effectively described by the metaphor of an airplane getting off the ground: "[t]here is a critical ground speed which must be passed before the craft can become airborne; to taxi up and down the runway at lower speeds is a waste of gasoline".[33] Having reached the maturity stage, societies initiated a prolonged interval where previously innovative activities expanded horizontally throughout the whole spectrum of economy. Most importantly, national economies were expected to find their place in the international market, whereas dependence would no longer be a matter of "technological or institutional necessity", but an "economic choice or political priority".[34] At the final stage of the Age of High Mass Consumption, the by-then established welfare

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[32] See, Gilman, *Mandarins of the future, op.cit.*, p. 196.

[33] Rostow used this metaphor in a 1957 CIS report to the Senate titled "Objectives of the United States Economic Assistance Programs," cited in Gilman, *op.cit.*, p. 193. "Objectives" was one of the most influencing documents produced by CIS.

[34] See, Rostow, W. W. (1960) *The Stages of Economic Growth: A Non-Communist Manifesto.* Cambridge University Press, p. 10.

state was expected to manage in symbiosis with the private sector the allocation of resources to the production of consumers' goods and mass services. In the Rostovian affluent society the welfare state and the consumer's utopia went hand in hand.

Rostow's theory captured both the imagination of contemporary intellectuals and the attention of the political establishment, which in his structuralist model saw a comprehensive way to approach (and do away with) the differences and complexities of the developing world. Dealing with nations in different latitudes was possible thereafter, since all societies were to follow the same stages eventually to end in modernity. Most importantly, since the United States was about to reach the most advanced end, its past was the future of the "younger" or "immature" nations. In this regard, Rostow's theory armed with arguments and confidence the U.S. experts often advising national governments how to transit to another stage. Their know-how was not just a fruit of technological advances but above all, it was legitimized by history.

Moreover, to the approval of leftist theorists and academics, the concept of "stages" did not condemn the historical and cultural differences of societies as backwardness. Societies instead were "equal" and comparable only in the timeline of development. Difference therefore, was not about the endogenous characteristics of every society but instead was understood as a transitory phase, a lag in the development timeline. While the "stages" theory did not discuss the profound impact of "transitions" on local societies, its linear logic legitimized in the western consciousness the provision of aid. Helping other nations to advance differed significantly from the collectivization of the communist model, whose centralized control oppressed differences.

Rostow understood the *Stages* through the prism of what he called the dynamic theory of production. His approach merged Adam Smith's theory of production with Keynes' income-expenditure analysis, and introduced dynamic variables such as population, technology, and entrepreneurship.[35] Taking one step further, Rostow proposed to apply such theory for the study of socio-economic changes not only as a whole but focusing "directly and in some detail on the composition of investment and on developments within particular sectors of the economy".[36] The political implication of this disaggregated or sectoral approach was twofold: first, it made possible to put under the same theoretical roof anomalies, imperfections, and deviations from the optimal patterns of development. If needed for example, government policies, wars, and even birth rates were put on the table

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[35] Rostow, W. W. (1959) 'The Stages of Economic Growth', *The Economic History Review*. (New Series), 12(1), pp. 1–16.

[36] *Ibid.*,

in order to interpret "historical patterns" that did not correspond to the rule, or to explain "the choices made by societies […] in terms which transcend conventional market processes".[37] While theoretically such model was far more flexible than rigid classic economics, in practice it was an arbitrary way to understand the evolution of a society. After all, Rostow's doctrine was not an economic theory but a theory of economic history interrelating economic variables and socio-political factors, as himself as well acknowledged.[38]

Second, the sectoral analysis of this dynamic model warranted investment flow not only to a costly and timely industrialization but to other sectors such as agriculture, infrastructure, and education.[39] Theoretically speaking, the sector with the capacity to absorb technological innovation was the one to lead development and become an engine of economic transformation.[40] Though fairly abstract, this idea acquired a greater political significance in the U.S. Congress, where the provision of foreign aid programs was fervently debated. The policy suggestions of the CIS supported the thesis of providing unlinked financial aid in order to contain Communism. Rostow's model not only established the necessary socio-economic taxonomies for approaching underdeveloped areas, but as well theorized about the strategic choices that fitted the particular needs of every nation at the specific time. According to Rostow's model, development was tailored according to each case, therefore reducing expenses. Most significantly, by targeting a nation at the "fragile" stage of preconditions, "the United States could exercise a decisive influence without incurring an indefinite obligation".[41]

In 1961, Rostow was appointed by President John F. Kennedy Deputy National Security Advisor, soon thereafter to become chairman of the U.S. State Department's policy planning council.[42] During the Lyndon Johnson administration, he was promoted to National Security Advisor (1966-69) and became a fervent advocate of military operations in Vietnam, consequently creating a strong link between modernization theory and the

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[37] *Ibid.*, p. 3.

[38] See, Rostow, W. W. (1984) 'Development: The Political Economy of the Marshallian Long Period', in Meier, G. M. and Seers, D. (eds) *Pioneers In Development*. Published for the World Bank, Oxford University Press, pp. 227 – 261, p. 232.

[39] *Ibid.*, p. 234.

[40] As Cullather explains, the "absorptive capacity" was the principal criterion for aid to underdeveloped nations. See, Cullather, 'Development Doctrine', *op.cit.*, p. 485.

[41] Cullather, 'Development Doctrine', *op.cit.*, p. 483.

[42] Rostow was appointed policy adviser to 1960's Kennedy presidential campaign as alleged due to the impression his book *Stages* left to John F. Kennedy. The national security assistant of the Kennedy Administration was McGeorge Bundy (1919-1996) who from 1966 to 1979 was the President of the Ford Foundation! Both Rostow and "Mac" Bundy were invited and participated in the Delos Symposia

U.S. bloodshed foreign policy that still haunts public consciousness. While assessing the optimism and accomplishments of the 1960s U.S. aid programs is not an easy task, one cannot bypass the fact that their conception is intrinsically linked to "the idea that the United States had a responsibility to counter [even] militarily the Communist onslaught in the underdeveloped lands until take-off could be achieved".[43] In every respect, the development decade of the 1960s was underlined by a carefully crafted discourse that essentially justified the U.S. interventionism as a helping hand to go through societal evolution.

Private foundations and development

Throughout the 1950s, prominent American institutions and philanthropic foundations came to endorse the idea of supporting either financially or with technical assistance foreign countries. Initiated at a hesitant pace, those endeavors soon became a modernization crusade that advocated development on a global scale. The Truman Doctrine proclaimed in 1947 and the Eisenhower Doctrine announced a decade later, set the guidelines for U.S. foreign policy against International Communism, while at the same time aimed to fill the power vacuum of decolonization. As such, the Marshall Plan, the Point Four program, or the foundation of the Agency for International Development were launched to win over the hearts and minds of free nations in Europe, Asia, and the Middle East.[44] While anti-Communism was the main reason behind the U.S. commitment to foreign aid, concepts such as the expansion of the American economy along the establishment of an open market, or even national myths of emancipation and redemption, may well have fueled those policies.[45] What is certain is that the economic development of other nations with tax dollars was a far more perplexed issue than a mere account could ever suggest. During the years of McCarthyism for example, "social engineers whose New Dealism had become suspect" embarked on development missions abroad instead of been accused of supporting socialist ideas, a charge as well attributed to the Ford Foundation.[46] Be that as it may, development became the dictum of postwar U.S. foreign policy with far reaching results. As Rostow proudly defended, "in historical perspective [the

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[43] GIlman, *Mandarins of the future, op.cit.*, p. 197.

[44] The Point Four program was the fourth foreign policy objective announced by President Truman in the inaugural address of his second term, in 1949. On 5 June 1950, President Truman signed a foreign aid bill, granting nearly $3 billion for the European Recovery Plan (Marshall Plan) and the Point Four Program.

[45] See, Sibley, K. (2002) 'Foreign Aid', in DeConde, A., Burns, R. D., and Logevall, F. (eds) *Encyclopedia of American foreign policy*. 2nd ed. New York: Scribner, pp. 93–109. See as well, Cullather, *op.cit.*, p. 485.

[46] See, Cullather, 'Development Doctrine',*op.cit.*, p. 482.

embracement of the goal of modernization] is perhaps the most remarkable event since the coming of the first Industrial Revolution to Great Britain in the 1780s. It has altered irreversibly the balance and texture of international political, as well as economic, life".[47]

Rostow and his CIS colleagues were by no means alone in advocating the promotion of financial aid to foreign countries. Academic groups, philanthropic foundations, and non-governmental organizations joined the development crusade and went even further than U.S. policy programs, especially in times of congressional opposition to government spending. Against the backdrop of the perplexed interior and ever-shifting international political panorama, the nongovernmental cultural diplomacy proved to be far more flexible and efficient, carrying out programs "which the government felt compelled to refrain".[48] Freed from political strings, the Carnegie Corporation, Rockefeller, and principally the Ford Foundation launched ambitious overseas programs which reframed philanthropy through the prism of the Cold War; the Congress for Cultural Freedom (CCF) sponsored a series of events and publications that forged a strong relationship between cultural arts and the anti-communist propaganda; the Harvard University not only hosted key modernization theorists but as well organized teams of advisers that worked closely with national governments, such as in the case of Pakistan.

Representing the most prominent of their kinds, these institutional activities bore the mark of modernization theory and shared the belief in western-like progress, even if this meant to reinforce indigenous cultures and administrations "as nationalistic buffers to imported ideologies".[49] More than sharing a theoretical background, such endeavors could be traced back to the same funding sources.

One of the strongest backers of overseas and university programs that redefined the boundaries of social sciences and humanities was the Ford Foundation.[50] Taking the baton from the Carnegie Endowment for International Peace and the Rockefeller Foundation, the unprecedented wealth of the Ford Foundation came to support the strong commitment of its trustees to international cultural and economic development as means to preserve world peace.[51] From the early 1950s to the mid-1960s, the Foundation

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[47] See, Rostow, W. W. (1984) 'Development', p. 238.

[48] See, McCarthy, K. D. (1987) 'From Cold War to Cultural Development: The International Cultural Activities of the Ford Foundation, 1950-1980', *Daedalus*, 116(1), pp. 93–117, p. 99.

[49] *Ibid.*, p. 113.

[50] See, Cumings, B. (1998) 'Boundary Displacement: Area Studies and International Studies during and after the Cold War', in Simpson, C. (ed.) *Universities and empire: money and politics in the social sciences during the Cold War*. New York: New Press (Cold War and the university), pp. 159 – 188.

[51] On the formative years of the Ford Foundation see, Sutton, F. X. (1987) 'The Ford Foundation: The Early Years', *Daedalus*, 116(1), pp. 41–91.

granted "a total of $270 million to thirty-four universities for area and language studies",[52] while till 1981 about two billion dollars (of a total of nearly $ 5 billion) had been committed to international activities.[53] Beginning in 1957, Ford Foundation's resources supported as well the activities of the CCF, which on the other hand received covert funding by the CIA. To the surprise of many - but by no means all - this was not the only case of CIA funds given to cultural or academic organizations to support their anti-communist agendas. To name a striking example, the initial seed money for setting up the MIT Center for International Studies came as well from the federal government's intelligence agency fund pool. When in 1966 New York Times revealed the CIA-CCF connection, a fierce criticism was unleashed against some of the principal institutional channels of modernization theory. Walter Rostow, in retrospect, justified the CIA's covert funding as a result of the penurious and suspicious stance of the Congress, while on the other hand defended the integrity of the research projects accomplished within the CIS, claiming that the CIA had "at no time tried to influence [their] analysis or conclusions".[54] The same argument was put forward by Edward Shils, one of the key members of the Congress, in an apologetic account of the foundation, trajectory, and dissolution of the CCF.[55]

Tracing the resources of those endeavors neither falls within the scope of this thesis nor widens our understanding of their content. What it implies however, is the existence of a decentralized network of institutions operating autonomously but for complementary objectives. Going down the ladder of the institutional structure and considering the experts, intellectuals, and fellow-travelers that participated in those programs, this network becomes even more complex. Hundreds of distinguished professionals and academics have collaborated occasionally with more than one institution in programs set to map uncharted (to the West) territories and reframe their development. Even international organizations such as the World Bank engaged staff from the same professional pool for the purposes of its missions. Constantinos Doxiadis was one of them and therefore his international career is best assessed against this background.

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[52] See, Cumings, 'Boundary Displacement', *op.cit.*, p. 163.

[53] Sutton, F. X. (2000) 'The Ford Foundation's Urban Programs Overseas: Changes and Continuities', in. *Philanthropy and the City: An Historical Overview*, New York: Rockefeller Archive Center Publications (Conference Proceedings). Available at: http://www.rockarch.org/publications/conferences/sutton.pdf.

[54] "If the Congress had not been so penurious (and suspicious) they would have been more naturally financed by the Department of State". Rostow, *op.cit.*, p. 241. While the CIA funded the CIS studies of communist societies, their studies on development problems were financed by the Ford and Rockefeller Foundation.

[55] Unlike Rostow, the majority of social scientists and intellectuals collaborating with the Congress were not aware of the financial backup provided by CIA. An exception was CCF's leading member Nicolas Nabokov. See, Shils, E. (1990) 'Remembering the Congress for Cultural Freedom', *Encounter*, LXXV(2), pp. 53 – 65, p. 62.

2.2 The Development Discourse of Doxiadis

Like the majority of his contemporary experts and intellectuals, Constantinos Doxiadis used the precepts of modernization theory when referring to the developing countries and for legitimizing the need for action, often involving extended commissions for his planning firm. Despite having significant deviations from the discourse of the prominent modernization theorists, his rationale echoed the Rostovian stages-of-growth model, emphasized the inevitability of development, and presumed the apolitical role of experts for guiding progress.

According to the paternalistic perspective of modernization, experts were the godfathers of "young" or "immature" nations, the ones responsible for shepherding societies throughout a path of great difficulties and potentially dangerous bifurcations, the most significant one being Communism. For in the Rostovian rhetoric the methods of the Eastern rival led as well to industrialization thus modernization, albeit neither to the promise land of mass consumption nor to the long-awaited national liberation of the postcolonial world. Communism in fact was described as "an opportunistic virus that took out infant nations" especially during the politically vulnerable stage of "preconditions".[56] Another theorist namely Lucian Pye, based on his study of *Guerrilla Communism in Malaya* (1956), interpreted the communist appeal as a response to the insecurity of a society over the period of transition. According to Pye's political psychopathology, social scientists and experts were the ones to carry the burden of educating "properly" infant nations, in most cases as advisers to their governments on socio-economic policies often involving planning.[57]

Constantinos Doxiadis was one of the planners that embraced development and endorsed the leading role of the U.S. as promoter of modernization programs. After all, the Truman Doctrine and the Marshall Plan had saved Greece from famine and poverty, not to mention the "communist threat". Undertaking extended housing projects in developing countries and operating within the framework of foreign aid programs, his professional discourse was naturally aligned with the prevailing western beliefs and guidelines. One of the clearest examples of Doxiadis' theoretical affinity with the leading advocates of the modernization theory can be traced in his discourse delivered at the conference organized by the Congress for Cultural Freedom in 1955 under the title "The Future of Freedom".

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[56] Rostow went even further labeling Communism "an international disease". Paradoxically, Rostow's theory had many similarities with Marxism. See, Gilman, *Mandarins, op.cit.*, pp. 195-197.

[57] Political scientist Lucian Pye (1921-2008) joined the CIS in 1956 and like Rostow he became a National Security Council adviser in China-related matters. Lucian Pye along Daniel Lerner (1917-1980) studied the psychological impact of modernization on "traditional" societies and used the concept of empathy to bring closer the postcolonial world to the phased path of the West. See, Gilman, *Mandarins, op.cit.*, pp. 167-174.

The Congress for Cultural Freedom and the Milan conference (1955)

The "Future of Freedom" conference was a five-day meeting in Milan that witnessed the participation of a total of 140 delegates, among them distinguished economists, social scientists politicians, and journalists.[58] Doxiadis was most probably the only architect-planner to attend one of the most successful events organized by the leading anti-communist association in the cultural Cold War.

The Congress for Cultural Freedom (CCF) was founded in November 1950, after the organization of a major conference in West Berlin the June of the same year. The Berlin conference on the other hand was initially conceived as a response to "one of the strangest gatherings in American history" organized at the Waldorf-Astoria Hotel in New York City, in March 1949, where prominent U.S. leftists urged for peace with Joseph Stalin's Soviet Union.[59] After a year of preparations and a disappointing counter-conference in Paris, the initiatives led by the American journalist and founding editor of *Der Monat* Melvin J. Lasky (1920-2004), and Michael Josselson (1908 - 1978), a European emigre who had joined the CIA's Berlin office in 1948, finally met the support of the Office of Policy Coordination (OPC), that is, CIA's covert operations and paramilitary arm.[60] The resulting Berlin conference opened a day after the outbreak of the Korean War, a historical event that amplified the message of rising awareness and building a cultural front against totalitarian and Communist regimes.[61]

From that moment onward, the CCF became the main vehicle and backer of the cultural front to the Soviet propaganda, and sought to counteract the myth of the U.S.S.R. as a guarantor of world peace and social justice, so popular among leftist intellectuals. As Edwards Shils recounts, the CCF emerged in a perplexed and disfavored climate where "[t]hose who opposed Communist allegations about the state of intellectual and artistic

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[58] More than fifty papers were presented at the conference hosted at the Museo Nazionale della Tecnica e della Scienza, from 12th to 17th of September. The multidisciplinary participation and widespread acceptance not only from the both sides of the Atlantic but as well from the other four continents, made the Milan conference one of the most successful events of CCF.

[59] For a thorough account of the events that resulted to the Berlin conference and the establishment of the CCF see, Warner, M. (1995) 'Origins of the Congress for Cultural Freedom, 1949-50', *Studies in intelligence*, 38(5). Available at: https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/95unclass/Warner.html (Accessed: 23 September 2014). This article is an excerpt from a larger classified draft study of CIA's involvement with anti-Communist groups in the Cold War.

[60] On Melvin Lasky see Scott-Smith, G. (2000) '"A Radical Democratic Political Offensive": Melvin J. Lasky, Der Monat, and the Congress for Cultural Freedom', *Journal of Contemporary History*, 35(2), pp. 263–280. On Michael Josselson, see for instance, Nitschke, C. (2014) *Michael Josselson*, *Transatlantic Perspectives*. Available at: http://www.transatlanticperspectives.org/entry.php?rec=139 (Accessed: 24 September 2014).

[61] Inasmuch, as Wagner denotes, "[s]urrounded by the Red Army and just recently rescued from starvation by the US Air Force's heroic resupply efforts, West Berlin was an island of freedom in a Communist sea", therefore an ideal background for staging the congress. See, Warner, 'Origins of the Congress for Cultural Freedom, 1949-50', *op.cit.*, p. 92.

freedom in the Communist countries - and who rejected the claims about economic and social well-being in those countries - were denounced by these large groups of enlightened, rationalistic Western intellectuals".[62] To break the spell and reveal to the admirers of central planning the falsehoods and pitfalls of Communist regimes, the CCF brought together prominent European and American intellectuals "who understood – in most cases from personal experience – the Communist threat to intellectual and cultural freedom".[63] In that respect, the Congress' activities forged a space of intellectual debates and provided channels for the dissemination of ideas towards both ends of the Atlantic.[64] Just as the implementation of the Marshall Plan proved to be much different than its latent agenda, the alleged "acculturation" of the free world was a more complex process than its ideological motor advanced.[65]

In a few years time, the CCF operated offices in several countries, produced international events, radio broadcasts, and significant publications, such as the Australian cultural journal *Quadrant*, the British *Encounter*, the *Cuadernos del Congreso por la Libertad de la Cultura*, or *The China Quarterly*. Its scope was far-reaching and included the promotion of avant-garde artists, i.e., painters who presumably depicted in their canvases the value triptych of individualism-action-freedom. This artistic current became known as abstract expressionism.[66] Accordingly, the CCF orchestrated a sophisticated political-cultural debate while successfully managed to rally American and European intellectuals along an anti-communist consensus. Key figures in the Congress' endeavors were the American

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[62] In the United States, Shils continued, the latter called themselves "liberals". One cannot but imagine the schizophrenic and tensed context of McCarthyism where opponents of the Soviet detente propaganda were labeled "cold warriors". See, Shils, E. (1990) 'Remembering the Congress for Cultural Freedom', *Encounter*, LXXV(2), pp. 53 – 65, p. 55.

[63] "Almost all of them were social democrats. Some were former prisoners of Stalin's or Hitler's camps. Some had been Resistance fighters. Others were old refugees", see Coleman, P. (2006) 'A Note on Michael Polanyi and the Congress for Cultural Freedom', *Polanyiana*, (15), pp. 56–64, p. 57.

[64] As Shils accounts, "[t]he aim of the Congress was multiple. It wished to affirm the value of intellectual integrity and of 'cultural freedom' in Western liberal–democratic countries, strengthening the convictions of those already attached to them but rather unthinkingly. It sought to arouse intellectuals to a keener awareness of the destruction of intellectual freedom in the Communist societies which so many of them admired in a general way and which they thought showed the grandiose outlines of the progressive path which their own liberal–democratic societies should follow". Shils, E. and Coleman, P. (2009) 'Remembering the Congress of Cultural Freedom', *Society*, 46(5), pp. 437–444, p. 441. This is the second part of Shils' article - a sketch of Michael Josselson's personality and role - that was originally due to get published in *Encounter*, before the magazine was finally discontinued.

[65] As Scott-Smith argues, "it is apposite to regard the Congress, in important ways, as the intellectual equivalent of the Marshall Plan," see, Scott-Smith, *op.cit.*, p. 278.

[66] See Guilbaut, S. (1985) *How New York stole the idea of modern art : abstract expressionism, freedom, and the cold war*. Chicago, IL: University of Chicago Press. Surprisingly, Guilbaut's seminal book (originally published in 1983) provides a strong analysis for the creation and promotion of the American avant-garde without making any reference to the CCF! The book that popularized the debate on CCF's controversial funding was Saunders, F. S. (2000) *Who paid the piper?: the CIA and the cultural Cold War.* London: Granta.

philosopher Sidney Hook (1902-1989), whose anti-Communist group the "Americans for Intellectual Freedom" provided strong references and the guidelines during the first steps of the group; Melvin J. Lasky (1920-2004), who was instrumental in setting up the founding congress; the Hungarian-British physical chemist and economist Michael Polanyi (1891-1976), who organized the "Science and Freedom" Hamburg conference in 1953; the Russian-born composer Nicolas Nabokov (1903-1978), CCF's Secretary General and curator of music and cultural festivals under its auspices. Finally, the inexhaustible list of members and participants in CCF's activities included the French philosopher and sociologist Raymond Aron (1905-1983), the American sociologist Edwards Shils (1910-1995), and the Hungarian-British author Arthur Koestler (1905-1983), to name just a few.[67] Despite providing wealthy sponsorship and growing cultural roots, when in 1967 the links of CCF with the CIA saw the light of day disappointment ran among members and followers.[68] The organization was subsequently renamed to International Association for Cultural Freedom, yet the original spirit and beliefs had already started to fade away.

The "End of Ideology"

Constantinos Doxiadis was invited to the Milan conference after having met with Nicolas Nabokov in Athens, somewhere around mid-1954.[69] At the time, the Greek architect was getting a foothold in the housing and planning market of the developing countries vouched by his international colleagues and a much-promising collaboration with the powerful Ford Foundation in Pakistan. The Congress for Cultural Freedom and its publication program were as well among the principal beneficiaries of Ford Foundation's grants, a relation that lasted beyond the renaming and almost till the dissolution of the organization.[70] Doxiadis' selection for addressing a conference that in a first place had little to do with urban and

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[67] On Koestler and the CCF see Coleman, P. (2005) 'Arthur Koestler and the Congress For Cultural Freedom', *Polanyiana*, (1-2), pp. 184–202.

[68] As Shils describes, "[m]any of the associates of the Congress were humiliated. Within the staff of the Congress, there was a paralyzing embarrassment". See, Shils, (1990), 'Remembering', *op.cit.*, p. 62. Edward Shils' article is a comprehensive memoir of the CCF's activities and his own role within the organization. It was published just a few months after the fall of the Berlin Wall as a response to the voices that demonized the Congress due to CIA's covert funding.

[69] "It was a pleasure to meet you in Athens and talk with you even for a few minutes. As you already know my interest in your efforts is very big and I am looking forward in meeting you again". See letter from Doxiadis to Nabokov, 12 October 1954, in *C. A. Doxiadis' Personal Correspondence 1951 - 1956 (A-Z), op.cit.* The letter was followed by a brief bio.

[70] According to Chester, from 1957 to 1966, the Ford Foundation "allocated more than two million dollars in grants to the Congress", and all together remained its principal source of funding. See, Chester, E. T. (1995) *Covert network: progressives, the International Rescue Committee, and the CIA*. Armonk, N.Y: M.E. Sharpe, p. 52. For the links between the Ford Foundation and CCF see as well, Berghahn, V. R. (2002) *America and the intellectual cold wars in Europe : Shepard Stone between philanthropy, academy, and diplomacy*. Princeton, N.J.: Princeton University Press.

regional planning is indicative of how well his discourse matched the agenda of the CCF. Doxiadis' paper was delivered at the third session that curiously bore the same title: "Economic progress in underdeveloped countries and the rivalry of democratic and communist methods".[71] According to the father of ekistics, development was a "hard race" between two global powers fighting for leadership and representing the communist and the democratic world respectively. His analysis was grounded on the aphorism of development-at-all-costs and the inevitable global interconnectedness, both cornerstones of ekistics and driving forces behind the Ecumenopolis theory. In the global village where technological advances made impossible living "in isolation", progress was paralleled to a germ that in the form of a product, infrastructure work, or even news, would eventually find "its way across their frontiers and [create] new major problems".[72] Economic progress was inevitable, or even considered a necessary evil, and therefore remained essentially uncontested. Every country was compelled to follow the path traced by global leaders, since a lag in development would render a country and its people "the serfs of the new feudal lords of this small earth".[73] Much alike the discourse advocating Greece's alliance with the western bloc, the progress of Third World countries was regarded as well a matter of survival. Economic growth was a prerequisite to the advancement of a society on the Rostovian ladder and the only way was up!

The apolitical conceptualization of development was a common denominator in the theoretical approaches of experts born and raised in the era of technological fundamentalism. While the early efforts of the CCF evolved around a discourse that put on an equal footing Communism and totalitarianism, in the Milan conference the Soviet system was treated more as a socio-economic phenomenon to be examined, than a threat to confront.[74] The Milan conference in fact, is closely connected to the emergence of the end-of-ideology discourse, namely the thesis suggesting the decline and eventually

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[71] See, Doxiadis, C. A. (1955) 'Economic progress in underdeveloped countries and the rivalry of democratic and communist methods', in *The future of Freedom: 5th International Conference by the Congress for Cultural Freedom. The Future of Freedom*, Milan, pp. 226–240. The following page numbering corresponds to the conference paper found in Document Ref.Code 6872, Doxiadis Archives.

[72] *Ibid.*, p. 1. In this respect, "only small, self-sufficient communities which have not been touched by progress at all can overlook the need for economic progress". According to Rostow's theory, it was precisely this kind of invasions that "set in motion ideas and sentiments which initiated the process by which a modern alternative to the traditional society was constructed out of the old culture". See, Rostow, *The Stages*, *op.cit.* p. 6.

[73] Doxiadis, 'Economic progress', *op. cit.*

[74] As Scott-Smith denotes, this was a significant difference between the Berlin and Milan conference: "Whereas Berlin had been a rallying-call to the western intelligentsia to oppose Stalinism for the sake of intellectual values in particular and the 'free society' in general, Milan was detached from such a call to arms […]". See, Scott-Smith, G. (2002) 'The Congress for Cultural Freedom, the End of Ideology and the 1955 Milan Conference: "Defining the Parameters of Discourse"', *Journal of Contemporary History*, 37(3), pp. 437–455, p. 445.

demise of rivalry between the socio-political ideologies as states went through a process of modernization. This concept was principally advanced from mid-1950s to early 1960s by Seymour Martin Lipset, Edwards Shils, and Daniel Bell, however came under sharp criticism in the turn of the 1960s.[75] A major influence to the above scholar triad was *The Opium of the Intellectuals* (1955), where the French philosopher, sociologist, and political scientist Raymond Aron inverted Marx's dictum to criticize the adherence of his contemporary intellectuals to Marxism. As Aron argued in an article published at the beginnings of the same year, and towards the Milan conference, the classifying Left-Right political spectrum was becoming irrelevant and therefore the West should invent its own way and get rid of "its inferiority complex before the idea of Revolution" that for so long haunted Western intellectuals.[76] By the same token, the recount article of the Milan conference authored by Edward Shils described a growing belief among its participants of not having to justify anymore the western society *vis-à-vis* the Communist critique.[77] A few years later these ideas were picked up by Daniel Bell (1919-2011) who sought to capture the intellectual zeitgeist publishing *The End of Ideology: On the Exhaustion of Political Ideas in the Fifties* (1960). To all intents and purposes, the ideology of negating ideologies offered a blurred perspective between the established ideological lines and a fertile ground for sowing the political seeds of the mixed economy. On these grounds the West was able to challenge Marxism and the efficiency of the Soviet apparatus by presenting a democratic welfare state set to promote both economic growth and egalitarianism.[78]

Blurring or downplaying the politics of development, the end of ideology provided a solid theoretical framework for advancing the idea of "technocratic guidance" from the elites, and therefore was easily appropriated and used. As Doxiadis contended, since the ideological differences between the East and the West were to disappear, the dilemma between communism and democracy was not political but principally economic. As such, the developing countries should evaluate (before opting for) not the communist and democratic systems *per se*, but the efficiency of their methodologies for achieving

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[75] In a post-account on the end-of-ideology discourse Seymour Martin Lipset denotes that its concept first appeared in Friedrich Engels' essay on Feuerbach, included in the classic K . Marx and F . Engels, *On Religion*. See Lipset, S. M. (1985) *Consensus and conflict : essays in political sociology*. New Brunswick (N.J.); Oxford: Transaction books.

[76] See, Raymond, A. (1955) 'Nations and Ideologies', *Encounter*, IV(1), pp. 24–33.

[77] See, Shils, E. (1955) 'The End of Ideology?', *Encounter*, V(5), pp. 52–59, p. 53. Edward Schils (1910-1955) taught sociology and social thought at the University of Chicago, initially as a research assistant of Luis Wirth (1897-1952), one of the leading figures in the Chicago School and sociology.

[78] See, Gilman, *Mandarins*, *op.cit*., pp. 58-59, and Scott-Smith, 'The Congress for Cultural Freedom', *op.cit.*, pp. 442-443.

economic progress.[79] Having *stripped* progress from ideological and political interests, Doxiadis argued that the principal factors to be compared were the experts and their role in leadership, the mobilization of capital, and the mobilization of labor.

In the first place, foreign experts were the ones to head the modernization of developing nations, since they presumably understood better than anyone else "the need for, and meaning of, economic progress". Above all, experts had the know-how and therefore without them modernization would be "either impossible or dangerously slow".[80] At the same time, the primary prerequisite for development was capital, hypothetically provided by "domestic and foreign sources".[81] Since a communist regime was naturally at odds with foreign capital influx, and private capital flows within a socialist economy were insignificant to its centralized development model, capital driven modernization was more likely to happen in the case of a democratic world. This was mainly the case of the West that forged economic relations with developing nations based on financial aid programs. On the other hand, the East had its own *competitive advantage* considered no other than the mobilization of labor.[82] Since labor was "the greatest potential force available" in developing countries and the ultimate goal had to be modernization (development-at-all-costs), the mobilization of labor was a legitimate means.[83] Acknowledging that central planning as well promoted development, Doxiadis commented favorably upon the Soviet establishment for carrying out "an overall plan, under which the interests of individual countries and persons [were] subordinated to the central ideas conceived by Russia".[84] Development had to come at all costs, even by compulsion.[85] Not only that, but against the struggle for securing national territory and exploiting its resources, development was the only way for Third World countries to gain independence and in some cases democracy.[86]

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[79] Doxiadis, 'Economic progress', *op.cit.*, p. 13.

[80] *Ibid.*, p. 5.

[81] *Ibid.*,

[82] *Ibid.* In Doxiadis' speech in fact, those were inversely proportional factors: "more labor, better mobilized means less capital needed for the same development effort".

[83] *Ibid.*, p. 7.

[84] *Ibid.*, p. 13.

[85] *Ibid.*, p. 11 Typifying "the end justifies the means" proverb Doxiadis declared that "[i]n my opinion there is no doubt that development, even by compulsion, is preferable to non-development".

[86] *Ibid.* Once again, Doxiadis' rhetorics were full of puzzling and often contradictory assumptions, while his statements slipped uncritically from one theme to another for the sake of the general argument. Even within the loaded Cold War context, the guru of ekistics juggled words such as freedom, liberty, or independence, leaving behind any socio-political connotations they might had. As Scott-Smith denotes, the vagueness of the Milan debate was a proper characteristic of a congress where "*freedom* was on display and up for discussion". See, Scott-Smith, 'The Congress for Cultural Freedom', *op.cit.*, pp. 453-454.

In Rostow's discourse, the achievement of national liberation by development was fully expressed in what he called "reactive nationalism", that is, the turn of nationalism "to the tasks of economic, social, and political modernization which have been obstructed by the old regionally based, usually aristocratic societal structure, by the former colonial power, or by both in coalition".[87] The West had invented its own revolution, not only to counteract International Communism but as well to respond to the challenges of decolonization!

On the other hand, as Doxiadis emphasized in his ambiguous and generalizing discourse, neither affluent foreign capital nor compulsory labor, could surpass the *quality* of "the energy and enthusiasm displayed by each individual" participating wholeheartedly in the endeavor for progress.[88] The "great challenge" for the democratic world therefore, was the elaboration of an overall comprehensive system designed to "recruit the maximum of labor with the minimum expenditure of capital in order to achieve the greatest results with the help of the highest degree of initiative, enthusiasm and interest on the part of all concerned (*sic*)".[89]

Finally, the comparison between the communist and democratic approach was typified by the postwar development of two neighboring countries, namely Greece and Yugoslavia. According to Doxiadis, the former had "gone further along the road of development", since it enjoyed both freedom and foreign capital.[90] In a similar vein, Rostow understood the progress of the People's Republic of China and India as "a kind of pure ideological test of great significance" for the assessment of the respective rivaling systems.[91] The progress of satellite countries was one of the contested fields between the two superpowers.

In regard to its theoretical underpinnings, the discourse of the Greek planner was aligned to a broader current that advocated a third way approach to economic development, that is, a mixed economy or even state capitalism. Doxiadis asked the national governments to assume the role of "stimulator, creator and incubator," especially during the first steps of industrial development.[92] Nevertheless, in order to differentiate interventionism from socialist planning, Doxiadis stated that the exercised control should be partial and limited

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[87] See, Rostow, 'Development', *op.cit.*, p. 233. And again, since nationalism could follow several directions, "national political sentiment" should be better guided by the respective (and politically aligned) professionals.

[88] Doxiadis, 'Economic progress', *op.cit.*, p. 7.

[89] *Ibid.*, p.8.

[90] Yugoslavia was not included in the Marshall Plan, however was the only socialist country to receive American aid via the ECA in 1950, after its estrangement from the USSR.

[91] See, Cullather, 'Development Doctrine and Modernization Theory', *op.cit.*, p. 483.

[92] Doxiadis, 'Economic progress', *op.cit.*, p. 11.

only during the "infancy" of the enterprises or states.

One of the participants that were aligned with the "third way" approach was the Harvard economics professor J.K. Galbraith. In his lecture titled "Economics, Ideology and the Intellectual" Galbraith argued that if the American economy was to be shielded against stock market crashes and *laissez-faire* malfunctions, it should accept regulating norms of state-private control.[93] Throughout the five days of conferences in fact, several voices commented on the U.S. economic model and its perspectives. If the Western model was to rival the socialist economy, it had to consent to planned production and regulate the state-market relations.

Most importantly, it should be appealing to the national governments of Third World countries. After all, the first steps of modernization had to be taken by the state and for the benefit of the nation. In the era of nation-building development programs were not only state-led but also state-centered, more than society-oriented.[94] In other words, the conception of development was tied to national objectives and reflected the establishment of new sovereignties out of the colonial power. International aid and development programs therefore had a strong political character that was decisive for their implementation and in some cases more important than the accomplishment of the proclaimed humanitarian goals.

In any case, the above assumptions and political objectives interlocked with one of the basic pursuits of the U.S. foreign policy after the Second World War, namely the establishment of a global market economy.[95] As postulated by the Rostovian model, opening up domestic markets to U.S. products was essential for preserving the country's economy to the Age of High Mass Consumption. To this end, the United States was willing to provide great amounts of unlinked financial aid to spur the economic growth of developing countries. To do so, the flow of capital via aid programs required the design of international financial transactions free from "political constraints", that is, free from nationalist politics. At the time, the ascendance of Gamal Abdel Nasser in Egypt and the growing influence of the Pan-Arab movement was a major preoccupation in the western

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[93] Scott-Smith, 'The Congress for Cultural Freedom', *op.cit.*, p. 450.

[94] See, Sutton, F. X. (2000) 'The Ford Foundation's Urban Programs Overseas: Changes and Continuities', in *Philanthropy and the City: An Historical Overview*, New York: Rockefeller Archive Center Publications (Conference Proceedings). Available at: http://www.rockarch.org/publications/conferences/sutton.pdf.

[95] As the 1957 Center for International Studies (CIS) report titled "Objectives of the United States Economic Assistance Programs" stated, "the goal of American foreign policy since the war had been to create a prosperous, expanding world economy in which trade would become increasingly free and currencies increasingly convertible". See, Gilman, *Mandarins*, *op.cit.*, p. 176 The "Objectives" report in fact, traced a historical line from the Lend-Lease Bill to the Marshall Plan pointing to the aid programs destined to the post-colonial regions.

bloc, only to be confirmed a few months later by the Suez crisis.[96] After all, the "reactive nationalism" was not as easy to control as Rostow liked to theorize.

Doxiadis touched as well on the same subject warning about the "rising wave of nationalism" that "scared foreign capital" and the laws that restricted or, even worse, nationalized investments.[97] While different paths might lead to economic growth, only the guidance of experts and the use of the "correct" means could guarantee the benefits of a modern society beyond mere industrialization. Literacy, urbanization, increased in average per capita income, and eventually consumerism were some of the promised assets. For Doxiadis the way to modernization was not a *terra incognita*. Most importantly, its end was universal.

The overwhelming certainty of the coming Ecumenopolis

Before examining the kind, focus, and aspects of development prevailing in Doxiadis' planning proposals, one should draw distinctions between his "all intents and purposes" discourse, ekistics as a methodological approach to the problems of human settlements, and the theory of Ecumenopolis (Figure 2.1). The affinity of Doxiadis' thinking with modernization theory was such that his theory was, is, or could be easily confounded with modernist visions bearing the political ideology and socio-economic scope of western elites and U.S. mandarins.[98]

In the same vein, ekistics is often reckoned as the scientific approach and methodology that appealed to governments to guide their planning efforts for nation building. While these assumptions provide a general account of Doxiadis' oeuvre - sometimes deriving to sweeping views - they do not offer a compelling argument for understanding his professional trajectory in the developing world and beyond. Neither the modernity of the Ecumenopolis was "comfortable" enough for development visions to align with,[99] nor was

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[96] Against that background, Shils commented that "the full awareness that nationalization is no universal solution to economic problems…", see Shils, 'Remembering the Congress for Cultural Freedom', *op.cit.*, p. 53.

[97] Doxiadis, 'Economic progress', *op.cit*, p. 6.

[98] Apart from Gilman's analysis to which I will comment hereinafter, Kakridis refers to Doxiadis' "understanding of economic development" as a "spatial application of modernization theory"; see Kakridis, A. (2013) 'Rebuilding The Future: C. A. Doxiadis And The Greek Reconstruction Effort (1945-1950)', *The Historical Review / La Revue Historique*, X, pp. 135–160, p. 139. See, as well, Pyla, (2002) *Ekistics,* p. 72 in comparison to the original text Doxiadis, C. A. (1959) 'The Rising Tide and the Planners', *Ekistics*, 7(39), pp. 5–10. Though Doxiadis endorsed the idea of a linear path of progress, he was more cautious in presenting his proposals or theory as the means to jump from one stage to another.

[99] Ahmed Mahsud for example refers to the Ecumenopolis as "a prospect which mesmerized international donors and national governments alike". See, Mahsud, A. Z. K. (2010) 'Rethinking Doxiadis' Ekistical Urbanism', in Goldhagen, S. W., Mumford, E., and Wagenaar, C. (eds) *Grand plans*. Rotterdam; [Minneapolis]: NAi Publishers ; University of Minnesota Press (Positions, 1), pp. 6–39, p. 9.
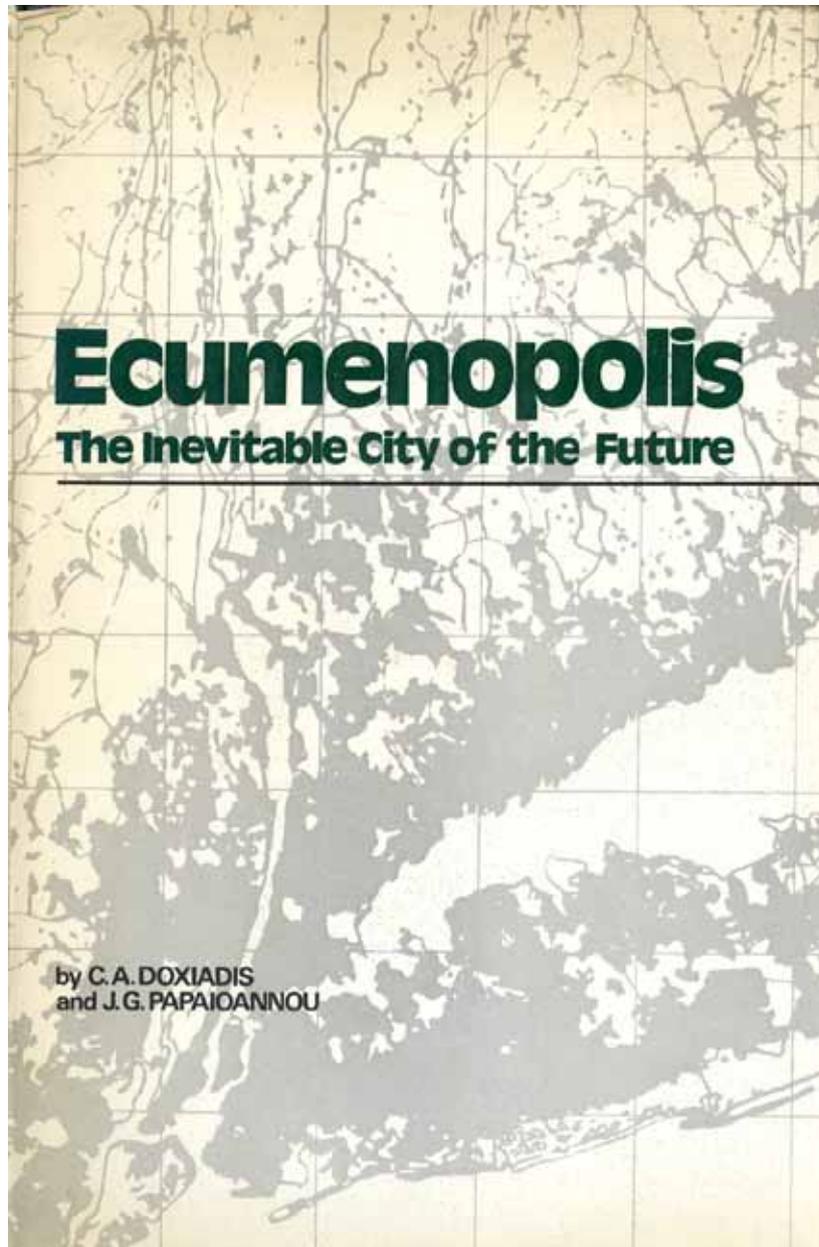
Cover of *Ecumenopolis*
[Doxiadis, C. A. and Papaioannou, J. G. (1974) *Ecumenopolis: the inevitable city of the future*. New York: Norton.]
Figure 2.1

ekistics' comprehensive framework practical enough for accommodating the often contradicting planning interests or petitions of national governments.[100] The analysis of the DA programs against the postwar development of Iraq aims to put the above issues in context and understand the actual scope of Doxiadis' ideas and proposals. In a first place however, one should bear in mind the subtle and yet essential differences between Doxiadis' theory and entrepreneurial thinking that could be used to understand the tensions and paradoxes of his personality and work.

If Rostow considered economic growth the basis and criterion of socio-political evolution, Doxiadis understood urbanization to be the key to economic growth and the main process for other social changes. Development and urbanization were interconnected processes spurred by the postwar demographic explosion. These structural changes had overwhelming (side) effects on the contemporary city, whereas the most significant symptom was modernity's Trojan horse: the automobile.[101] To all intents and purposes, ekistics was conceived as the means to harness modernizing forces in the service of humanity and shape an urbanized future in harmony with nature.

Ecumenopolis on the other hand, was the theory that blueprinted the implications of development on a global scale. Premised on the theory of demographic transition and countless population growth S-curves, Ecumenopolis illustrated the consolidated status of human settlements in a "world-city" that extended to the "available habitable space" and was expected to be reached after the peak of population explosion, somewhere around 2120 (Figure 2.2a,b).

Moreover, the Ecumenopolis theory was corroborated with comparative data from world metropolises and research studies that analyzed the emergence of regional agglomerations, considered as intermediate urbanization stages called Megalopolis. In that way, Doxiadis explained the dynamic growth of the city as a universal and historical

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[100] Analyzing Doxiadis' plans for Pakistan, Markus Daechsel denotes that "[h]is insistence on a comprehensive urban plan for all of Pakistan, conceived on Ekistics principles was sound but politically unsustainable; the subsequent endeavour of using Ekistics principles to at least solve the urban crisis of Pakistan's fastest growing and most populous metropolis, Karachi, was similarly subverted". See, Daechsel, M. (2013) 'Misplaced Ekistics: Islamabad and the politics of urban development in Pakistan', *South Asian History and Culture*, 4(1), pp. 87–106, p. 97.

[101] Doxiadis' references too the detrimental effects of the automobile to the city were constant. See for example, Doxiadis, C. A. (1968) 'Man, City, and Automobile', *Ekistics*, (146), pp. 13–16. The case of Detroit unfolded in the epilogue of this thesis is the most clear cut case of Doxiadis' rationale in relation to the "automobile invasion".

Fig. 33
Total earth
population
by settlement
sizes
(population
in billions)
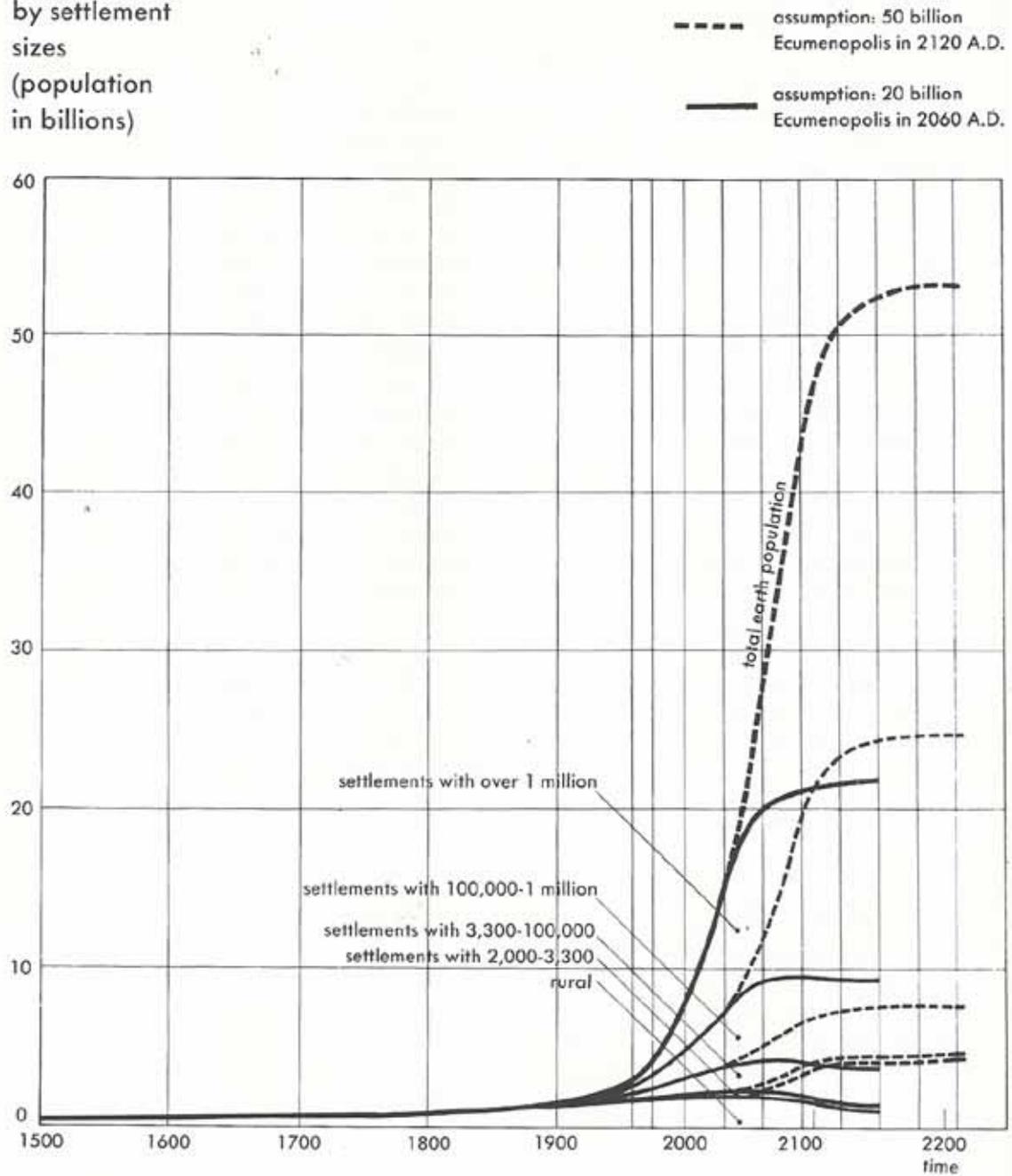
- - - - assumption: 50 billion Ecumenopolis in 2120 A.D.

———— assumption: 20 billion Ecumenopolis in 2060 A.D.

settlements with over 1 million

settlements with 100,000-1 million

settlements with 3,300-100,000

settlements with 2,000-3,300

rural

total earth population

time

Total Earth Population by Settlement Sizes.
[Doxiadis, C. A. (1966) *Urban renewal and the future of the American city*. Chicago: Public Administration Service, p.76]
Figure 2.2a

grid 500 × 500 km

0   500   1000   1500   2000   2500   3000   3500   4000   4500   5000 km

0   500   1000   1500   2000   2500   3000   miles
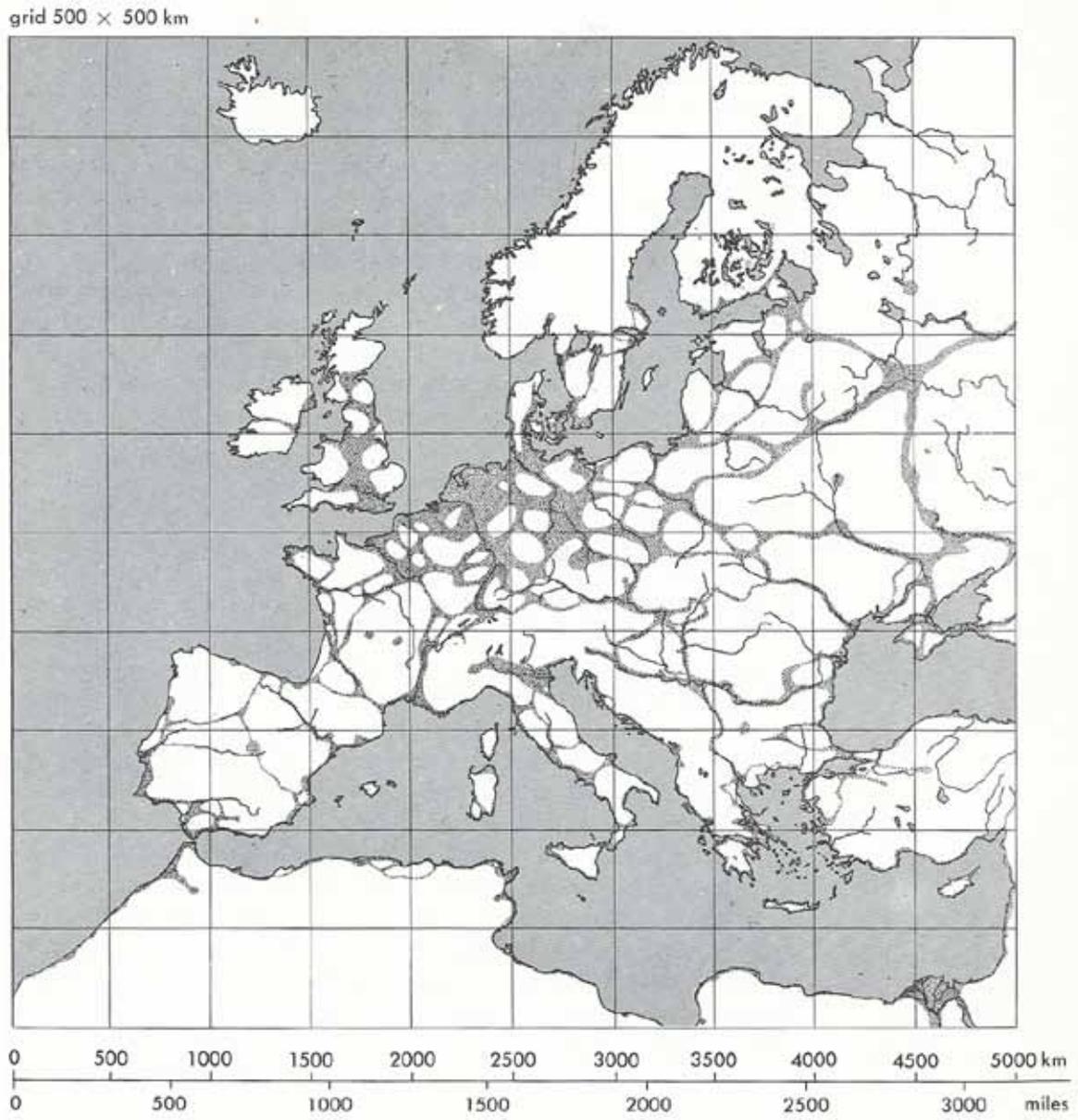
Megalopolis in Europe.
[Doxiadis, C. A. (1966) *Urban renewal and the future of the American city*. Chicago: Public Administration
Service, p. 81]
Figure 2.2b

process "ending in Ecumenopolis".[102] This was the ultimate stage of urbanization, to paraphrase Rostow, the globe in the a*ge of high mass expansion*.

According to Nils Gilman, both for its supporting methodology - that is ekistics - and optimistic nature, Ecumenopolis exemplified "social scientific modernism in full cry".[103] Doxiadis' vision in fact, took modernizing ambitions to the extreme portraying a system of urban agglomerations where national frontiers have given way to a federal government and a common market. Likewise, management and governance were based on comprehensive planning and presumed the policies of a welfare state, while political and economic decisions were to be supported (and legitimized) by the use of cybernetics. To the emerging ecological awareness of the 1960s, the urbanized Ecumenopolis was completed with a system of preserved natural areas called *Ecumenokepos.* At a time when concepts like resource depletion and global pollution entered the agenda of planners along the criticism of unrestrained and unlimited growth, ekistics offered a strategy for handling both development and environmental protection. Effectively, in Doxiadis' theory the "global garden" was in symbiosis with the global city.[104]

While the theoretical parallels established between the modernization theory and the Ecumenopolis validate Gilman's characterization, the objectives, scope and very nature of Doxiadis' theory challenge its understanding as a spatial application of the development doctrine. Ecumenopolis was merely a description of a "modernized" world that might as well be interpreted as an intention to craft an apolitical niche beyond the Cold War rivalry.[105] It portrayed a global future where political rivalries, ethnic issues, racial differences, social and economic ills were somehow transcended by the collective efforts serving the commonweal, fulfilling human needs and preserving human values. Unlike Rostow's *Stages*, Doxiadis hardly made any references to the politics of these efforts besides an alleged global federalism. That is to say that even if the processes that would bring about the Ecumenopolis were already underway, Doxiadis did not propose their reproduction in underdeveloped countries. His analytical and methodological approach

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[102] To draw some more parallels, historical analysis was the driving methodology behind A. Toynbee's master theory that as well sought to explain the evolution of civilization as a process passing from different stages ending in a universal state. Toynbee's *A Study of History* was among Doxiadis' most studied books, whereas Toynbee himself was a constant participant of Delos Symposia and collaborated with the Athens Center of Ekistics for the purposes of the research program Ancient Greek Cities.

[103] See, Gilman, *op.cit.*, pp. 203-204. Gilman refers to the Ecumenopolis and ekistics in the opening of chapter 6 where he discusses "The Collapse of the Modernization Theory". Short but insightful, his analysis serves well the purposes of his study and provides an interesting view on Doxiadis' theory that has proved influential to other scholars.

[104] See, Pyla, P. (2009) 'Planetary Home and Garden: Ekistics and Environmental-Developmental Politics', *Grey Room*, 36, pp. 6–35.

[105] See, Bromley, R. (2003) 'Towards Global Human Settlements: Constantinos Doxiadis as Entrepreneur, Coalition-Builder and Visionary', in Nasr, J. and Volait, M. (eds) *Urbanism : imported or exported?*. Chichester, England; Hoboken, NJ: Wiley-Academy, p. 327

instead, remained the same in every case study and place, including the U.S. where he carried out extended projects. Development and urbanization were global phenomena, their crisis was universal, and so were the ekistic solutions. While modernization theorists were eager to export a development model that mirrored the advanced standards achieved by the West, Doxiadis tested his universal drug in every place, even at modernity's "home".[106]

Another atypical feature in Doxiadis' vision was the role of technology. While the "compelling tangle of modernity and technology" has *traditionally* underlined modernism(s),[107] and in certain narratives communication technologies were considered the key to transforming societies, Doxiadis' visionary work was not premised on the dichotomy between tradition and modernity, neither appealed to the emancipating forces of technology.[108] Ecumenopolis instead, represented a place of historical continuity where past values were preserved in symbiosis with innovative elements. Technological advancements in fact, were not considered a priori assets, but resources whose use had to be carefully planned in order to serve human needs in the global city.[109]

In the end, Ecumenopolis was the ultimate expression of Doxiadis' optimism for a better tomorrow, essentially the *raison d'être* of ekistics. The science of human settlements on the other hand was conceived as a systematic approach set to control both the man-made and natural environment. Its comprehensive nature "embodied the modernist ambition to unify the entire system of knowledge".[110] Nevertheless, Doxiadis' theoretical framework did not focus on the state as a unit analysis but instead analyzed the world as a system, or to use the widespread and stereotyped biological metaphor of the era, an organism.[111]

According to Doxiadis, statistical analysis, painstaking population projections, and a bulk of data corroborated the coming Ecumenopolis. His scientific-wise theory left no room for

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[106] Paradoxically, Doxiadis stated that "there are no universal standards of development and many efforts at development fail because of an attempt to create such standards". See, Doxiadis, 'Economic development…', *op.cit.*, p. 2.

[107] See, Misa, Brey, and Feenberg, *Modernity and technology, op.cit.*

[108] In the seminal *The Passing of Traditional Society*, Daniel Lerner considered advanced communication technology as the key to making societies modern. See, Adas, *Machines*, *op.cit.*, p. 414. At the same time, the media guru Marshall McLuhan eagerly preached "The medium is the message" advocating technological innovation as the driving force of economic and political transformations, the reason and impetus behind social evolution itself. See, Barbrook, *Imaginary futures, op.cit.,* pp. 70-73.

[109] "Since there is no point in resisting development, we should try to accommodate technological evolution and the needs of man within the same settlement". Doxiadis, C. A. (1970) 'Ekistics, the Science of Human Settlements', *Science*, 170(3956), pp. 393–404.

[110] See, Gilman, *op.cit.*, p. 204

[111] In a narrow sense then, ekistics related to the incubating World-Systems theory that emerged as a critique to modernization theory. See, Wallerstein, I. (1998) 'The Rise and Future Demise of World-Systems Analysis', *Review*, XXI(1), pp. 103–112.

contemplating the desirability of a global urban future, only for debating how it should be planned and managed. Unsurprisingly, Doxiadis' answer spelled ekistics and suggested the empowerment of the elite of technocrats and intellectuals.

His call to shape the coming Ecumenopolis by developing the science of human settlements was received by some with enthusiasm, by others met with skepticism. The inevitability of an ecumenical - whatever that meant - urban future however, was overwhelming to the extent that became controversial. Depicted in maps and graphs, the elementary iconography of a global settlement had a haunting and unsettling effect to the imaginary of the planning profession provoking fierce reactions and criticism.[112] The Ecumenopolis was broadly understood as a built continuum premised on the "inhumanly repetitive quality of [Doxiadis] vast-scale master plans".[113] The approach that the Greek planner aspired to represent a call to action for the betterment of human settlements, was received as the acceptance of a nightmarish urban future. Characteristically, distinguished critics like Lewis Mumford criticized the fatalism of the Greek planner arguing that "trend is not a destiny".[114] Even if it epitomized Doxiadis' faith in planning for shaping a better global future, the Ecumenopolis theory - both a vision and a warning - was not shared as a paradigm. When it was eventually published in 1974, the modernization theory had collapsed and its advocates and supporting institutes were reconsidering its narrative.

Doxiadis' rationale for housing and economic development

> "Thus humanity is already fighting a losing battle, the battle of a
> growing population versus housing construction".[115]

One of the key issues in Doxiadis' theory and work was the acute housing shortage of the postwar years. European reconstruction and postcolonial nation building, population explosion, and rural-to-urban migration were processes intrinsically connected to massive population displacement, a reality that Doxiadis himself had experienced in his childhood

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[112] For an interesting discussion of the concept of iconography in the theory of geography, see, Muscarà, C. (2003) 'From Gottmann to Gottmann: Testing a geographical theory', *Ekistics*, (418,419), pp. 60–63.

[113] See, Ehrenkrantz, E. and Tanner, O. (1961) 'The remarkable Dr. Doxiadis', *Architectural Forum*, 114(5), pp. 112–116, 154, p. 116.

[114] Both Harry Anthony and Lewis Mumford adapted Albert Mayer' admonition "trend is not a destiny" (unfolded in the book *The Urgent Future*, 1967) against the *inevitable* Ecumenopolis. See, Mumford, L. (1967) 'Trend is not destiny: a review', *Architectural Record*, pp. 131–134, and Anthony, H. A. (1969) 'Ecumenopolis: solution or nightmare?', *AIA Journal*, pp. 64–68.

[115] See, Doxiadis, C. A. (1954) *Types and Densities of Housing Accommodation*. Document, Ref. Code 24965. Doxiadis Archives.

as a refugee and afterwards as an economic emigrant. Housing construction became a major preoccupation for architects and planners alike, who pursued solutions based on innovative construction systems and imagining new modes of habitation.[116] Paradoxically, it would take several years for an international organization such as the World Bank to adopt housing policies, eventually endorsing such endeavors in the early 1970s.[117]

Doxiadis emphasized the importance of housing and physical planning publicly for the first time as early as 1945, at the United Nations founding conference in San Francisco. As the young planner contended, the postwar world was about to witness "inevitable changes in the economic and social structure of societies" that would "bring about the transplanting of population" and therefore demanded extended infrastructure works for "communications, shelter and production".[118] "[T]he whole world [was to] be faced simultaneously with unprecedented housing needs" and planners had to take action in respect.[119] In the end, the crisis was global and had to be analyzed and confronted through the prism of physical planning. Most importantly, Doxiadis understood housing as a key contributor to economic growth and national development. Ekistics in that sense, was conceived both as a response to the problems of habitat and as the means to integrate housing – by definition a fundamental part of urbanization - in economic development.

Constantinos Doxiadis was one of the few voices that advocated extended construction programs in order to pave the way for further development. In the mid-1940s and along the growing importance of national economic planning both in the developing and industrialized world, the belief that housing was expenditure and a drag to growth predominated among economists. Capital formation instead, was considered the precondition for raising productivity and the per capita income, a perspective that hardly applied to the economies of developing countries where unemployment was high, wages low, and thus capital supply limited.[120] As proposed by the Dual Sector Model of Arthur Lewis in 1954, the development of these economies depended on the surplus of unproductive labor that once directed to "modern" or otherwise industrial sectors could raise income levels and accumulate capital, successively to be invested in other

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[116] See for example, Deyong, S. (2001) 'Planetary habitat: the origins of a phantom movement', *The Journal of Architecture*, 6(2), pp. 113–128.

[117] See, Harris, R. and Arku, G. (2006) 'Housing and economic development: The evolution of an idea since 1945', *Habitat International*, 30(4), pp. 1007–1017.

[118] See, 'Text of Memorandum of the Greek Delegation Concerning Implementation of the Competence of the Economic and Social Council' (1945) in. *The United Nations Conference on Internarional Organization, Doxiadis' Scrapbook 1945*. Document, Ref.Code 21957. Doxiadis Archives.

[119] *Ibid.*,

[120] See, Harris, R. and Arku, G., 'Housing and economic development', *op.cit.*, p. 1009.

sectors.[121] Both housing construction and the broader building sector required the employment of significant human capital, nevertheless they entailed far too complex processes with indirect effects and low capital return that made economists skeptical, not to say negative, about their potential contribution to economic development. Till the early 1960s housing was considered either a "'technical issue' associated with sanitation and town planning", or a social need embedded in welfare policies and benefits packages, but in no case a motor of economic growth.[122]

By the same token, the majority of modernization paradigms "exported" to developing countries postulated industrialization as a precondition to development. Rostow heralded the beginning of the "take off" with the rise of investments and savings above the 10% of the national income. Such process was expected to start only after the expansion of new industries in tandem with the establishment of a new class of entrepreneurs capable of managing profits towards a continuous growth. Housing on the other hand, was regarded as a possible leading economic sector only after the advent of the Age of High Mass Consumption. Effectively, the spread of single-family suburban housing, the proliferation of the automobile, and other durable consumers goods were unequivocal signs of private income rises, that is, of capital accumulation used to perpetuate (but not to bring about…) modernization.[123] For the developing countries, either opting for the "social engineering" methods of the Soviet bloc or for Western-like modernization, industrialization seemed normative.[124]

Throughout the 1960s however, the understanding of housing in relation to economic development gradually shifted, and the construction sector was appreciated by some as a regulator of growth and by others as a motor of development. The main advocates of such ideas were physical planners, architects, and housing experts who were aware of the alarming sheltering needs and pushed for the implementation of extended programs, undoubtedly for the benefit of their professions. Key actors in promoting housing policies

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[121] See, Lewis, W. A. (1954) 'Economic development with unlimited supplies of labour', *The Manchester School of Economic and Social Studies*, XXII, pp. 139–191.

[122] See, Harris, R. and Arku, G. (2007) 'The rise of housing in international development: The effects of economic discourse', *Habitat International*, 31(1), pp. 1–11. In this second article Harris and Arku explain the main reasons that underlined the shift in the economic thought and the reconsideration of the importance of housing for economic development. The authors principally draw on the British experience and public housing policies however imply that those views prevailed in industrialized nations.

[123] See, Rostow, 'The Stages of Economic Growth', *op.cit.*, pp. 9-12. In explaining the gap between the "maturity stage" reached by Britain by the end of the 19th century and the Age of High Mass Consumption, Rostow refers to the role of suburban housing and modern transportation technology, pointing to the difference of housing as public investment and as an asset to be consumed.

[124] In some cases however, the focus of the Cold War rivalry shifted to rural development and agriculture policies. A sound example were the Ford Foundation overseas programs in India that sought to ameliorate the living conditions of rural populations and counteract the agrarian reform and collectivization advanced by Mao. See, Sutton, 'The Ford Foundation's Urban Programs Overseas', *op.cit*.

were Jacob Crane, head of the international housing office of the Housing and Home Finance Agency; G.Anthony Atkinson, an adviser to the Colonial Office who became the Colonial Liaison Officer at the Building Research Station of the Department of Scientific and Industrial Research in British Tropical Africa; and Ernest Weissmann, a longtime CIAM delegate who directed the Housing, Building, and Planning Branch of the UN.[125] During the postwar years, this triad of experts redrew the map of international housing organizing missions promoting programs to developing countries, collecting information, publishing and lecturing on housing policies, construction techniques and materials. Constantinos Doxiadis was associated to each one of them and shared their principal objectives, however pursued by his own means. He was one of first planners not only to advocate the importance of housing for economic development and social welfare, but to promote housing schemes as part of a broader development framework. This integrated approach was the leitmotif of ekistics.

Doxiadis' rationale for housing and development is best summarized in a report prepared for the first CIB Congress in 1959 titled "Ekistics: the key to housing in developing areas".[126] Much alike other Doxiadis' writings, the report addressed the problems and its causes before presenting ekistics as the scientific approach to the solutions. At the core of this analysis however was the schism between economic and social planning. According to the Greek planner, economists failed to understand the importance of housing for economic development and overlooked its role in national programs. To his understanding however, housing policies had both economic advantages and social benefits, one of the most important ones being the increase of the employment rate both of skilled and unskilled workers. Employing local resources and engaging local contractors in construction programs theoretically strengthened the base of non-industrialized economies. As already commented, the mobilization of the local labor force was advocated theoretically by the Lewis model. And yet Doxiadis' rationale drew more on the expertise gained after the Greek Reconstruction rather than on economics. As such, he argued that a carefully drafted housing program could balance the use of local and imported materials, and therefore regulate the influx of foreign exchange and funds. Most importantly, a housing program could pave the way for the development of small manufacturing units based on raw materials, and therefore reduce foreign dependency by

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[125] See, Harris, R. and Giles, C. (2003) 'A mixed message: the agents and forms of international housing policy, 1945–1973', *Habitat International*, 27(2), pp. 167–191, p. 173. Other prominent experts analyzed by the authors were Charles Abrams, John F. Turner, and Catherine Bauer Wurster, who was instrumental in shaping the US public housing program in the 1930s.

[126] See, Doxiadis, C. A. (1959) *Ekistics: the key to housing in developing areas*. Document, Ref. Code 2525 R-GA; 169. Doxiadis Archives. The congress of the International Council for Research and Innovation in Building and Construction (CIB) took place in Rotterdam, in September 21 - 25, 1959. The CIB was founded in 1953 with the support of the United Nations as International Council for Building Research, Studies and Documentation.

developing domestic production, a policy broadly known in Latin American countries as import substitution industrialization (ISI).[127] Considering the acute housing needs and assuming that the state would have the complete control over this sector, Doxiadis was confident that investments in housing could even prevent inflationary pressures.

Beyond its economic benefits, Doxiadis advocated housing as a primary target of social policies that the state should undertake both for sanitary reasons and to prevent social unrest.[128] For the social turmoil and political instability that underlined the processes of decolonization and nation building compelled nascent governments or even dictatorial regimes to take "popular" measures. In this respect, housing programs were both a population management tool and a sound political propaganda aimed to soften the discomfort of the masses.

Doxiadis was eager to emphasize the social aspects of housing programs and even argued that development should principally fulfill human needs before complying with mere economic growth or political interests. During the days of the Greek Civil War for example, the young planner called for the development of housing policies beyond partisanship politics and against the militarization of foreign aid,[129] while some years later the global federalism of ekistics alleged to craft a space for housing away from the East-West rivalry. The humanitarian aspects of housing and its advantages for the broader economy became the flag of ekistics. As the 1960s went on, both concepts progressively gained more supporters in the academia and within distinguished institutions, till eventually in 1976 the Vancouver Declaration of the first United Nations Conference on Human Settlements acknowledged the importance of housing and the perils of "inequitable economic growth and uncontrolled urbanization".

Altogether, Doxiadis understood housing as an obligation of the state, whereas in several cases he urged the authorities to acquire the necessary land for planning the expansion of the fast growing cities. The contribution of ekistics then did not just involve the architectural guidelines for a housing construction program but was to provide the missing link between social and economic planning.[130] Based on statistical analysis and promoting a set of actions in different scales and spheres, ekistics promised to synchronize housing

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[127] As Cullather comments, "[t]he success of such strategies often depended on the state's ability to administer controls effectively and without corruption", see, Cullather, *op.cit.,* p. 480.

[128] "[Housing] is the most sound preventive measure against disease and death, social unrest and social upheaval", see, Doxiadis, *Ekistics: the key to housing in developing areas, op.cit.*

[129] As Kakridis explains, Doxiadis' series of articles published in the newspaper "to Vima" were often involved in the debate of civilian vs. military aid. See, Kakridis, 'Rebuilding', *op.cit.*, p. 153.

[130] As I shall analyze further in chapter five, ekistics was conceived as the science that encompassed and united every discipline and knowledge branch related to human settlements. Housing was a central piece of the ekistic system, much alike it was in the work and theory of other contemporary architects-planners, i.e., the "habitat for the greatest number" of Candilis-Josic-Woods.

programs with social policies and economic growth. As Doxiadis contended, this comprehensive approach should intermingle with local policies and serve national interests. Even if such proposal was difficult to carry out, it was successful in introducing ekistics as an alternative to colonial planning and architecture.[131] Nevertheless in practice and far from theoretical models and well-intentioned discourses, the implementation of housing programs invariably meshed with local realities, national politics, and even international affairs. As such, the contextualization and analysis of the DA projects has to include - if not to start with - questions such as whose interests or what kind of ideology the centralized state control served.[132]

In any case, a national program of housing construction was not an easy burden. Even when supported by central planning mechanisms, public housing could hardly deal with the acute housing crisis.[133] The elevated cost of housing construction coupled with the difficulties of architects to adapt their designs in local climates and customs rendered most of these programs problematic. Adding to the above the scarcity of building materials, the limited skilled labor force, and the absence of basic infrastructure, one can understand why public housing was more easily discredited than delivered.

Aided self-help policies

One of the alternatives for improving the housing conditions and sheltering population in the developing world was the aided self-help policy. Instead of financing completely the construction of houses, governments offered the beneficiaries financial and technical assistance in order to built or repair their own houses. This approach had its origins in the policies promoted by European governments after the First World War, the most comprehensive one being the "Stockholm Plan" otherwise called the "magic house" program inaugurated in 1927.[134] Though great differences separate the pioneering work in Sweden from the postwar programs promoted in the developing world or at the aftermath of catastrophes, the basic principle that underlined the concept of a joint venture between the state and the beneficiary remained the same: to improve the final product with a lower

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[131] Doxiadis, *Ekistics: the key to housing in developing areas, op.cit.*, "We have to start with the national interests which usually impose the mobilization of all local resources. These local resources can be in raw materials, skilled labour; they can be in local industry which can produce new materials based on the local raw ones".

[132] See, Daechsel, 'Misplaced Ekistics', *op.cit.*, p. 89.

[133] See, Harris, and Giles, 'A mixed message', *op.cit.*, p. 175. Lacking the British tradition of public housing, US and UN agencies were even more skeptical of its merits.

[134] See, U.S. Department of Housing and Urban Development (1967) *Aided Self-Help in Housing Improvement*. 18. Washington D.C.: Agency for International Development, State Department. Available at: http://pdf.usaid.gov/pdf_docs/PNAAE882.pdf.

cost. This approach capitalized on the unskilled and unwaged labor force and unfolded methods that varied to match the necessities of every situation, from the provision of specific materials and financing in installments, to the organization of groups and small trades for guiding the construction process.[135]

On the other hand, one of the most important characteristics that differentiated aided self-help from the majority of public housing programs was the promotion of home ownership. For the few experts who supported this policy in the first postwar years, helping people build their own house - even if this guaranteed only basic sanitation and the minimum living space - was the method that best approximated traditional housing, while at the same time enhanced social cohesion. Doxiadis was one of the early advocates of aided self-help and defended private ownership on the grounds that it was "keeping with the tradition of the people".[136] The programs promoted by the Ministry for the reconstruction of Greek towns and villages perfectly exemplify both hypotheses. Against a practically bankrupt state the implementation of core housing and aided self-help programs provided successful solutions to the severe housing crisis in the countryside and the mountainous parts of Greece, whereas the reconstruction of the urban centers was advanced by legislative measures such as the KH' Resolution. To a certain extent, the latter housing policy mobilized private capital investments and stimulated the growth of the internal economy based on real estate, thus counterbalancing the vision of a latent industrialization.[137]

All in all, Doxiadis was one of the experts that advocated and employed aided self-help policies both for their social and economic benefits, during an era when industrialization was theoretically normative for national development. Whereas in such cases certain aspects of housing were left to the citizens and future owners, the state maintained the control of the overall scheme through land ownership and the provision of the basic infrastructure and facilities (water, sanitation, roads, etc.,). Paradoxically, the endorsement and funding of the policies that became known as site-and-services schemes by the World Bank in the 1970s, came after the seminal work of John F. C. Turner in Peru.[138]

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[135] *Ibid.*,

[136] See, 'The National Housing Program of Iraq' (1959) *Architectoniki*, (13), pp. 42–46, p. 45.

[137] In arguing in favor of the KH' Resolution Doxiadis claimed that "[t]he ideal of a liberal economy has always been private construction, at least considering housing and commercial activity. The state has tried to support private action because of its incapacity of bearing the overall reconstruction by itself". Doxiadis, C. A. (1948) *Report of the Ministry of Reconstruction [Κείμενον απολογισμού του Υπουργείου Ανοικοδομήσεως]*. Document, Ref.Code 8509. Doxiadis Archives.

[138] See, Harris, R. (2003) 'A double irony: the originality and influence of John F.C. Turner', *Habitat International*, 27(2), pp. 245–269.

Nevertheless, the popularization of concepts such as community development, squatter settlements, and informal architecture owe much to the aided self-help programs of the early postwar years. Behind such policies was the work of Jacob Leslie Crane, one of Doxiadis' key associates.

2.3 Doxiadis Associates in the Middle East

In the Middle East, "D" stands for Doxiadis and development.[139]

Just a few months after moving back to his home city from Australia, the restless Constantinos Doxiadis set to secure projects for his newborn planning firm, starting from the fast growing market of the post-colonial world. In January 1954, he traveled to India as a representative of the UN Technical Assistance Administration and participated at the United Nations Regional Seminar on Housing and Community Improvement organized in New Delhi. This conference meant to be a turning point in Doxiadis' career: he renewed acquaintances with the American housing expert Jacob Crane and was introduced to UN officials and distinguished planners, among them the British academic Jacqueline Tyrwhitt. As we shall see, both of them were to play a key role in his professional life and in the evolution of ekistics. During the spring of the same year, Doxiadis traveled to Syria for the missions of the International Bank for Reconstruction and Development (IBRD), and some months later, in October 1954, he arrived in Pakistan as part of a Harvard Advisory Group (HAG) assigned by the Pakistani government the drafting of the first Five Year Plan. The HAG group comprised six economists, one engineer, and one expert in pubic administration, while it was directed by the economist and Dean of the Graduate School of Public Administration Edward S. Mason (1899-1992) assisted by the noted economist David E. Bell (1919-2000).[140] What is more, the project was supported by the Ford Foundation, which had already established resident representatives in India, Pakistan, and Beirut getting a foothold in the Near East and Asia regions.[141] Endorsed by

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[139] See, *Middle East Business Digest* (1958) 'How Doxiadis is changing the face of the Middle East', 25 June, pp. 21–23.

[140] Like Rostow, Ed Mason has served the Office of Strategic Services - the predecessor of the CIA - before moving to the State Department and participating in the Harriman committee for the feasibility of the Marshall Plan, whereas he was a longtime consultant to the World Bank. David Bell on the other hand, who had served as special assistant to President Harry Truman, was named by Kennedy Director of the Agency for International Development (USAID), before becoming in 1966 Vice President of the Ford Foundation (FF). Throughout the 1960s, both of them participated several times in Doxiadis' international Delos meetings, and lectured at the programs organized by his educational and research center.

[141] See, Sutton, F. X. (1987) 'The Ford Foundation: The Early Years', *Daedalus*, 116(1), pp. 41–91, p. 67.

his international contacts, Doxiadis met with Alfred C. Wolf, an adviser of the Inter-American Development Bank, for the job interview in Washington. The latter was impressed with the experience of the Greek planner and was captivated by his fervent discourse: "it was clear that all roads led to Doxiadis".[142] This was the beginning of his planning ventures in the developing world and the start of a long-lasting and fascinating association with the Ford Foundation.

Constantinos Doxiadis reputation and firm grew rapidly after joining the Harvard group, although as we shall see, not only because of it. By the end of the 1950s, DA had completed extended projects in Iraq, Pakistan and Syria, had stepped into Lebanon, Jordan, and Sudan, and was starting its ventures in the "advanced" world with notable commissions in the United States (Figure 2.3a,b,c). Numerous projects followed throughout the 1960s, the most important ones undertaken in Iran, Libya, Saudi Arabia, Ghana, Ethiopia, and Nigeria, while at the same period DA was expanding in the Americas and Europe.[143] The culmination of Doxiadis' internationalism came with the River Plate Basin programs that involved five neighboring Latin American countries (Argentina, Bolivia, Brazil, Paraguay and Uruguay), and the survey of the Trans-Asian Highway, a 55.000 km transport corridor connecting Middle East with South-East Asia.[144]

A common view of Doxiadis' extraordinary trajectory and on the origins of his success has been built on the patronage of his projects by prominent U.S. institutes. According to this narrative, Constantinos Doxiadis' affinity with Ford Foundation's officials was the driving reason behind the expansion of DA in the developing world. Against the agitated international politics, the wealthiest U.S. institute waged its own cultural battle to stop the advancement of communism, sponsoring among other proposals, urban development. Modern urbanism was a powerful instrument of "soft-power" aimed to promote universal, i.e., American values and principles.

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[142] "I recall as though it were yesterday my efforts in the spring of 1954 to find a competent and imaginative urban planner who could serve as consultant to the Harvard-Pakistan Planning Board Team. As a result of conversations with a wide variety of eminent people, it was clear that all roads led to Doxiadis. This in turn led to our breakfast meeting at the Hotel Dupont Plaza in Washington, and to our exciting and fruitful discussion. My recollection is that of almost instantaneous accord - and of my introduction to the world and word of 'ekistics'". Alfred C. Wolf was an adviser of the Inter-American Development Bank. See, Tyrwhitt, J. (ed.) (1976) 'C.A. Doxiadis 1913-75: Pursuit of an attainable ideal', *Ekistics*, 41(247), pp. 309–388, pp. 372-373.

[143] For the DA projects in Iran see, Madanipour, A. (2010) 'The limits of scientific planning: Doxiadis and the Tehran Action Plan', *Planning Perspectives*, 25(4), pp. 485–504. On the DA plan in Tema, Ghana, see D'Auria, V. (2010) 'From Tropical Transitions to Ekistic Experimentation: Doxiadis Associates in Tema, Ghana', in Goldhagen, S. W., Mumford, E., and Wagenaar, C. (eds) *Grand plans*. Rotterdam; [Minneapolis]: NAi Publishers ; University of Minnesota Press (Positions, 1), pp. 40–63. Finally, on Doxiadis' project for Riyadh, Saudi Arabia, see Middleton, D. A. (2009) *Growth and Expansion in Post-War Urban Design Strategies: C. A. Doxiadis and the First Strategic Plan for Riyadh Saudi Arabia (1968-1972)*. unpublished dissertation. Georgia Institute of Technology.

[144] For a short account of the Trans-Asian Highway project see, Stylianopoulos, L. (2009) 'The Asian Highway', in *Constantinos Doxiadis and his Work (vol.2)*. Athens: Technical Chamber of Greece, pp. 334–341.

Doxiadis Associates - Geographic Distribution of Activities
Figure 2.3a
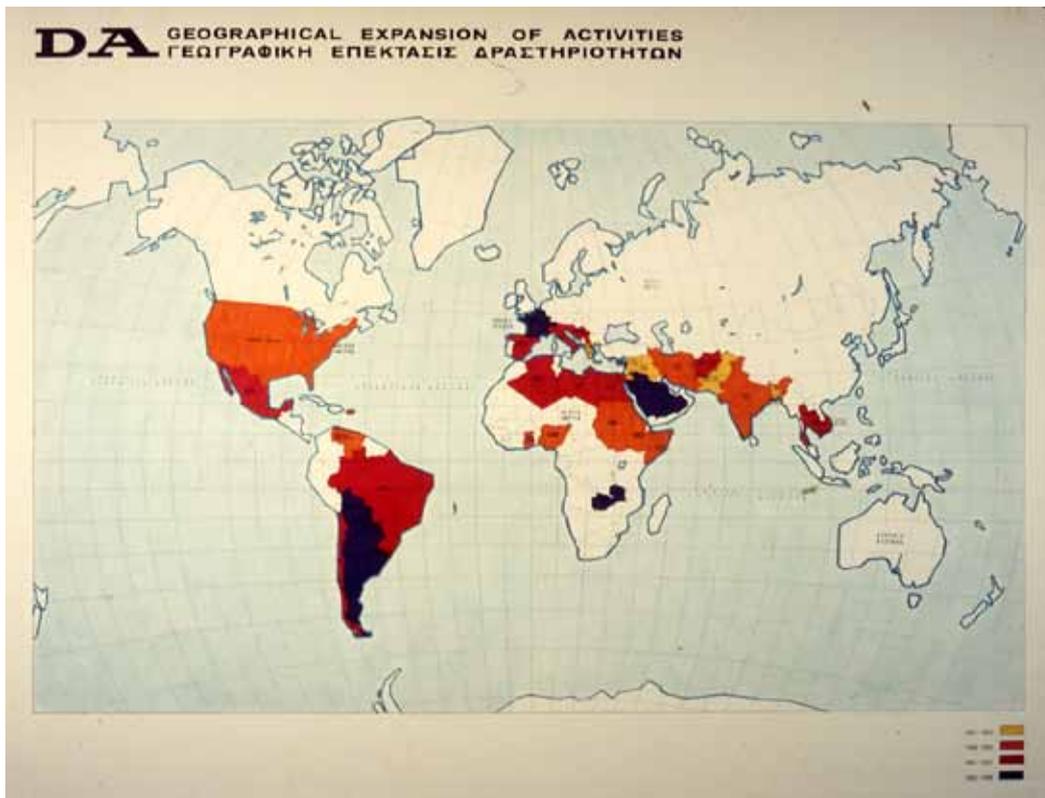
Doxiadis Associates - Geographic Expansion of DA Activities (according to chronology).
Figure 2.3b
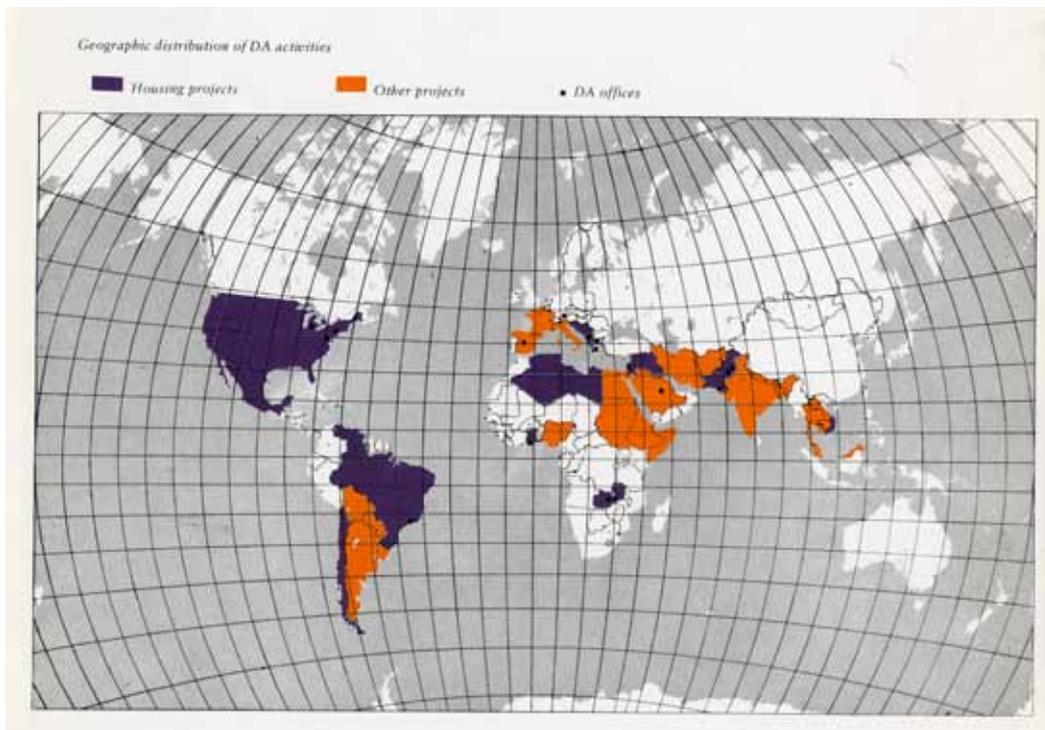
Doxiadis Associates - Geographic Distribution of DA Activities and DA Offices. [*DA Review,* April 1971]
Figure 2.3c

As argued, the systemic methodology of ekistics, the universalism of Ecumenopolis, and Doxiadis' efficient and ever-expanding grids perfectly matched the Ford Foundation's objectives.[145] Accordingly, against the backdrop of the escalating rivalry Doxiadis' nationality was an asset to U.S. foundations and missions since he was "free of the imperialist stigma" and therefore lent an international credibility to the endeavors undertaken in developing countries.[146]

While these hypotheses are neither false nor unsupported, they only tell part of the story. In my understanding, they work better in the big picture, but leave aside important aspects of Doxiadis' work and theory while downplay other virtues or flaws of his personality. Most importantly, if not contextualized they are problematic and even contradictory. For example, the project that practically launched DA in the developing world and after which the Greek planner built his career was the National Housing Program of Iraq. As I shall analyze, the Ford Foundation (FF) was not involved in the Iraqi planning affairs, whereas Doxiadis was contracted along other westerners by the pro-western government of Nuri al-Said. In that case, the Greek passport served Doxiadis only in remaining in charge of the commissioned projects after the 1958 bloodshed coup.[147]

In the case of Pakistan, Doxiadis' lobbying efforts to secure the projects he had originally suggested to the Planning Commission as a HAG expert remained largely neglected, until General Ayub Khan took over power.[148] The new military regime found in Doxiadis the planner to carry out its grandiose development plans, among them the creation of the new capital Islamabad (Figure 2.4). The commission of these projects should be owed to the professionalism and salesmanship of the Greek planner, instead of the FF patronage. Doxiadis seemed to be the right man, in the right place, at the right time.[149]

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[145] See, Provoost, M. (2007) 'New Towns on the Cold War Frontier', *Archplus*, May, pp. 63–67.

[146] See, Daechsel, 'Misplaced Ekistics', *op.cit.*, p.90, and Rand, C. (1963) 'Profiles: the ekistic world', *The New Yorker*, 11 May, pp. 49–87.

[147] In that respect, the original contracting of Doxiadis had nothing to do with his Greek background, as erroneously accounted in Pyla, P. (2008) 'Back to the Future: Doxiadis's Plans for Baghdad', *Journal of Planning History*, 7(1), pp. 3–19, p. 6.

[148] See, Daechsel, 'Misplaced Ekistics' *op.cit.*, pp. 90-91.

[149] As Daechsel accounts, the General Azam Khan and Minister for Refugee Rehabilitation in Khan's regime was captivated by Doxiadis and hired him on the spot after a brief meeting. See, Daechsel, M. (2011) 'Sovereignty, Governmentality and Development in Ayub's Pakistan: the Case of Korangi Township', *Modern Asian Studies*, 45(01), pp. 131–157, p. 150
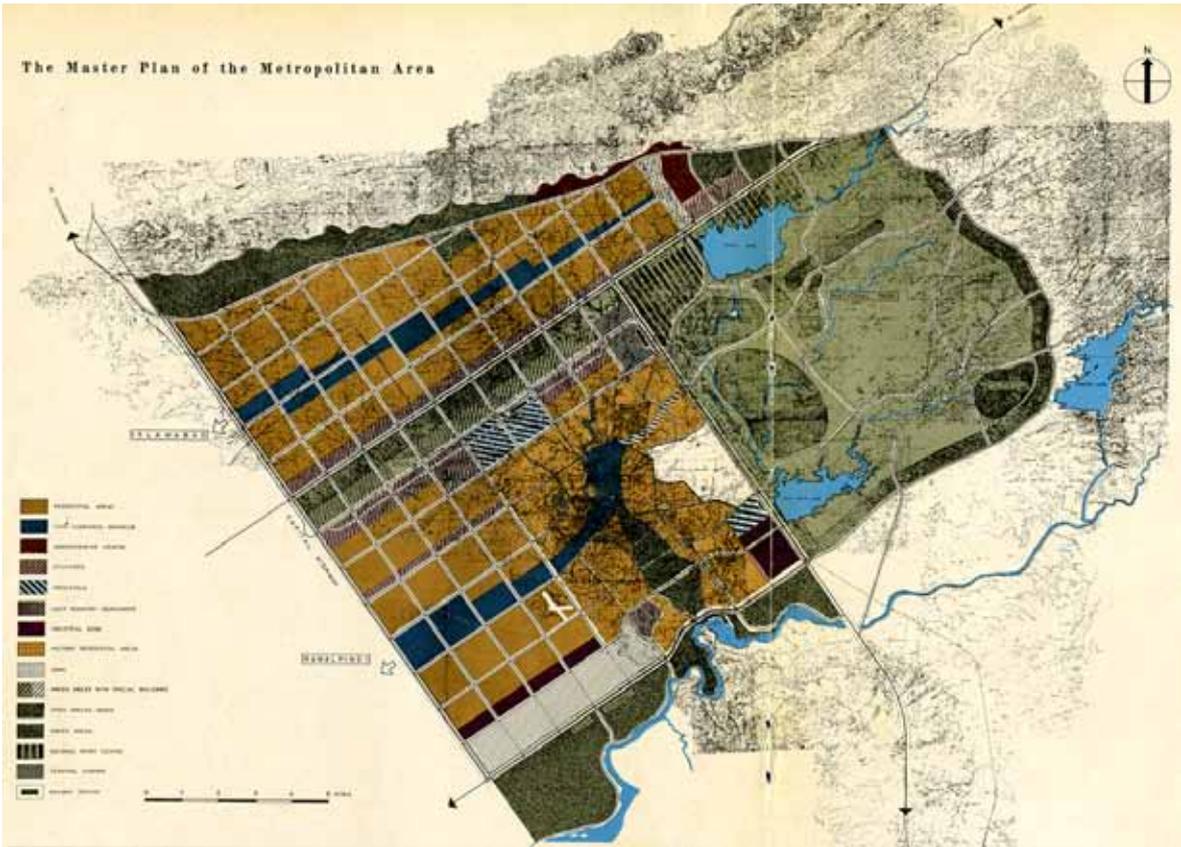
Islamabad Master Plan.
[*DA Monthly Bulletin*, no.64, March 1964]
Figure 2.4

Doxiadis and the Ford Foundation

Doxiadis' relationship with the Ford Foundation started with the HAG contract and continued in the most unexpected and unconventional way. For almost two decades, the Greek planner would push separate and follow-up projects supported financially by the prominent U.S. foundation. The majority of the FF grants however was given to - or alternatively was channeled through - the Athens Technological Organization (ATO) and its nonprofit branch the Athens Center of Ekistics (ACE) for educational and research purposes. That is to say that the FF did not fund the extended DA housing and community development schemes said to be "changing the face of the Middle East", to use the characteristic title of the article quoted in the introduction. Actually, the DA projects designed and constructed with FF dollars were educational buildings in Dacca (East Pakistan - nowadays Bangladesh), in Karachi and Lahore (Pakistan), in Lebanon, and Syria, where DA devised the master plan for the campus of the University of Aleppo and the Meselmiyeh Agricultural Center.[150]

The priorities of the Ford Foundation overseas development programs in fact, were typically agriculture and industry, whereas emphasis was placed on technical education and knowledge transfer. In India and Pakistan for example, early 1950s projects comprised demonstration farms for food production and technical high schools for learning to use machines.[151] International studies and cultural projects followed, with the Congress for Cultural Freedom being one of the largest grantees. And yet, to understand the priority given to each area, "[a]pproximately $10 million were spent between 1950 and 1980, in comparison to the $300 million allocated for international studies or the $200 million for foreign agricultural projects".[152] On the other hand, urban programs had relatively little importance in the Foundation's patronage policies, a fact that more or less mirrors the prevailing discourse of the era on economic and national development, and its application

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[150] See, Pyla (2002) *Ekistics…', op.cit.*, p. 76. Hashim Sarkis refers to the building prototypes designed by DA for the worldwide school construction program of the Ford Foundation, and denotes that in some cases the DA plans were implemented by local architects. Today, "the Marjayoun National College stands as the only physical evidence of the extensive work by Doxiadis Associates on Lebanon," see, Sarkis, H. (2003) *Circa 1958 : Lebanon in the pictures and plans of Constantinos Doxiadis [Le Liban à travers les photos et plans de Constantinos Doxiadis]*. Translated by G. Tuwayni. Beyrouth, Liban: Editions Dar An-Nahar : Fares Foundation, p. 205. The par excellence DA project in this category - without the implication of the FF - is the new campus of the Punjab University at Lahore (1959-1973). DA provided the master plan; designed and supervised the extension of the original University founded in 1882; the construction of the adjacent auditorium, the student dormitories, and the building of the student union. Apart from Bangladesh, Doxiadis Associates carried out School Building Programs in Greece, Saudi Arabia, and Jordan.

[151] India was the first country where FF activities unfolded and to which the greatest fund amount was destined. One of the most striking examples of early FF grants was the funding of the Henry Ford building at the Free University of Berlin (Campus Dahlem). "A little over $1,300.000 went to bolster up the Free University of Berlin-an outpost of democratic learning at the most exposed salient of our cold war frontier". See, Heilbroner, R. L. (1951) 'The Fabulous Ford Foundation', *Harper's Magazine*, December, pp. 25–32, p. 26.

[152] See, McCarthy, 'From Cold War to Cultural Development', *op.cit.*, p. 94.

for the development of Asia, Africa, and Latin America.[153]

As a result, in order to secure the financial support of the FF, Doxiadis had to reframe his proposals as part of training and educational programs. In May 1959, the Pakistan government and DA signed the contract for the design and construction of a new town at the outskirts of Karachi named the Korangi Township. What at the time was "the largest slum clearance and urban rehabilitation measure in Asia" and a satellite town conceived to showcase modernization for the eyes of U.S. officials including President Eisenhower, was co-funded by the FF (and USAID) as an apprentice-training program for Pakistani planners.[154] According to FF officials, the development of the newborn country should be sustained by native professionals and experts instead of perpetuating foreign assistance.[155] The contract of DA therefore, covered the tuition fees of ATO and the stay of the Pakistani trainees in Athens with the condition of their subsequent incorporation in national planning agencies. On the other hand it supported the establishment of a central Housing Agency in Pakistan with the aid of the Greek firm.[156] In other words, the FF grants to the Pakistani government practically covered the DA expenses for the Korangi project, and at the same time supported the start-up of Doxiadis' educational-research center, to be analyzed in the next chapter.

During the 1960s, the Ford Foundation funded similar training initiatives in ATO - one of them tied to the Islamabad project - as well as the international in scope postgraduate program of the Athens Center of Ekistics. Other projects followed, including a study on urban renewal policies commissioned on behalf of the National Association of Housing and Redevelopment Officials (NAHRO), or the "City of the Future" research project (COF) that involved the collection of data on the world's cities and their comparative analysis.[157] While the flaws and gaps of these endeavors will be discussed in the following chapters, it is worth noting that the relationship between the Greek planner and the Ford Foundation was not as easy as those financial ties might suggest. Distinguished officials expressed a

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[153] In examining the FF Urban Programs Overseas, Sutton denotes that "if Ford had started its overseas development programs in Latin America rather than in South and Southeast Asia and the Near East, it might not have displayed this rural 'bias'". See, Sutton, 'The Ford Foundation's Urban Programs Overseas', *op.cit.*

[154] For a historical ethnographic analysis of the Korangi project, see, Daechsel, 'Sovereignty, Governmentality and Development in Ayub's Pakistan', *op.cit.*.

[155] The Partition of the British India left Pakistan with colossal administrative problems and a weak state infrastructure. These programs were supposed to address such problems.

[156] See, Winnick, L. (1989) *Philanthropy's Adaptation to the Urban Crisis 1987-1989*. Unpublished Report 012158 Chapter VII Part 3 'The Athens Center of Ekistics: The Urban World According to Doxiadis'. Ford Foundation Archives.

[157] It should be noted that the COF and other ACE research projects were co-funded by the surplus of Doxiadis Associates.

great deal of skepticism about the legal and financial connections between DA and ATO, the employment of trainees in DA projects other than the accorded ones, the quality of the research studies and postgraduate program, and finally about the very essence of ekistics. Actually, Doxiadis' self-declared science generated great controversy within the FF for its ambitiousness (or pretentiousness) to unify knowledge, as well as for its messianic promises delivered in a discourse full of neologisms. That is to say that neither the Ecumenopolis theory nor ekistics were as comprehensible or appealing as often suggested, whereas contracting DA was not necessarily tantamount to the endorsement of the ekistic methods and planning models.

Highly cited and yet problematic has been as well the idea of Doxiadis' anti-communism.[158] While the Greek planner had a strong pro-American record depicted in numerous publications and conferences, and believed in the dynamics of capitalism, translating these features into an anti-communist action is inaccurate and does not facilitate the understanding of his work and theory. The same case can be made against the rumor spread across the polarized Greek political scene that considered Doxiadis to be a CIA agent due to his connections with distinguished American experts and officials even within the American embassy.[159] Undeniably important and decisive, Doxiadis' striking connections cannot account alone for his manifold career nor for the function of a big enterprise such as DA.

Even if Doxiadis like other (including left-wing) intellectuals of his era was preoccupied with the political affairs of the Soviet Union and opposed its methods as totalitarian, he was naturally interested in Soviet planning and maintained cordial relations with Eastern professionals and academics. This is very far from naming him a Cold War warrior, especially considering the role and actions of prominent U.S.' officials like Walter Rostow, the "chief architect" of the Vietnam War who justified escalation drawing on his economic theory. This is not to imply any kind of comparison between the two personalities, but to put in perspective the beliefs of people who opposed communism on an ideological basis but not in action.

To be sure, Doxiadis was acquainted to Rostow, who participated in the seventh Delos Symposium in 1969.[160] Apparently the two men had met in 1968, when Rostow was

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[158] See, Daechsel, 'Misplaced', *op.cit.*, p. 88. Daechsel cites Bromley's article that originally refers to "[Doxiadis'] disdain for communism [that] identified him clearly as pro-Western and pro-capitalist".

[159] See, Provoost, *op.cit.* Contrary to such narratives are other accounts that describe Doxiadis' actions during the German Occupation and the Civil War, when he fought at the resistance and provided cover even to communist members and friends.

[160] Walter Rostow was accompanied by his wife Elspeth, who was as well a political scientist. He was invited anew to the 1972 *Delos*, nevertheless he did not reply in time and Doxiadis eventually turned his offer down

Special Assistant to the President and received Doxiadis to have a discussion on urban development. Rostow however attended the *Delos* meeting in the capacity of Professor.[161] After some months he wrote a letter to Doxiadis where he expressed his gratitude and explained that he was "spreading" a doctrine in order to plan the urban future.[162] Doxiadis on the other hand, suggested to his collaborators that the ekistic center should not develop further this relationship due to Rostow's fanatical opinions.[163]

Extending this argument to the broader theoretical context, it is worth mentioning that the recent Cold War scholarship has provided more nuanced accounts challenging the monolithic concept of the U.S. establishment as the driving force behind the evolution of social sciences, or in promoting knowledge transfer to the developing world. Problematic for example has been the overall assessment of the CCF whose "anti-totalitarian standpoint has largely been forgotten because of its connection with the CIA", or the criticism of prominent intellectuals who have supported its actions, such as Raymond Aron.[164] Characteristically, scholars that eloquently have debated the emergence of area studies as "a creature of the Cold War" drawing on the extramural funding of American University programs and institutes, in some cases "have discovered (to use the title of one such critical account) 'who paid the piper', but devote little if any space to what the piper actually bought".[165] By the same token, the understanding of Cold War politics in black-and-white terms might have eclipsed the importance of local agendas and interests, or the role played by the very own national governments, which can hardly be considered mere pawns on the chess board of the East and West.[166] Going back to Doxiadis' case, to the

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saying that the ship was already above capacity level "due to unusually high number of acceptances". See, the invitations and Doxiadis' cable to Rostow (4th May 1972) in the folder *Rostow, Walt W.* (no date). Document, Ref. Code 6733. Doxiadis Archives.

[161] From 1950 - 1961 Rostow was Professor of Economic History at Massachusetts Institute of Technology, nevertheless after his tenure at the Presidential Office he wasn't invited back, instead he continued his academic career at the University of Texas where the Vietnam policy was more popular. Rostow had become "the most criticized White House Official of the Johnson administration". See, Reston, J. (1968) 'The Strange Case of Walt Rostow', *Herald Tribune*, 7 December. In May 1966, *Ekistics* reprinted an article that revisited Rostow's theory and discussed its main criticisms. See, Ott, M. (1966) 'Rostow in Retrospect', *Ekistics*, 21(126), pp. 293 – 295.

[162] "I cannot yet claim any dramatic results. But, at least, you can see that your instruction was not wholly in vain". See, letter sent from Rostow to Doxiadis, 6 December 1969, in *Rostow, Walt W., op.cit.*

[163] See, Doxiadis, C. A. (1969) *Rostow W.W.: U.S. Economist, Historian and Educator*. Document, Ref. Code 6733 SD-ACE 897. Doxiadis Archives.

[164] See the Preface in Scott-Smith, G. (2002) *The politics of apolitical culture : the Congress for Cultural Freedom, the CIA and post-war American hegemony*. London; New York: Routledge., p.x

[165] See, Engerman, 'Social Science in the Cold War', *op.cit.*, p. 398.

[166] As Williamson analyzes for example, the Kingdom of Iraq managed to benefit both from the threat of a Soviet expansion and by playing the U.S. off against the British, eventually securing armament grants both

extent that the support of the Ford Foundation has provided the main explanation for the DA success, it might as well have overshadowed the complexities of the local realities and difficulties of planning in developing countries.

From the Baghdad Pact to the Eisenhower Doctrine

In 1955, Britain, Iran and Pakistan joined the military agreement of Turkey and Iraq for cooperation and protection broadly known as the Baghdad Pact. Its aim was to "contain" the Soviet expansion in the Middle East and reinforce "collective security" as stipulated by the North Atlantic Treaty Organization (NATO). Though the U.S. did not officially join the pact, it promoted bilateral agreements with the participating countries thereafter creating regional security groupings under the soft underbelly of the U.S.S.R.[167] Forging alliances in the region was not an easy task considering the Arab-Israeli conflict and the anti-colonial sentiment spearheaded by the Egyptian President Gemal Abdel Nasser. The 1956 Suez crisis was a watershed for the colonial powers, and particularly for Britain that witnessed its prestige trampled by U.S. diplomacy. Britain had lost leadership in the Middle East and one of the outcomes was the debilitation of the Baghdad Pact. When in 1959, Iraq under an Arab nationalist government left the coalition, the latter was renamed to Central Treaty Organization, but practically became an unsuccessful alliance that was eventually dissolved in 1979. In response to the power vacuum left by the humiliating Anglo-French withdraw, the Eisenhower administration set out to counteract Nasserism, which was largely equated to communism.[168] Apart from dispatching economic aid, the Eisenhower Doctrine provided armed forces "to assist any such nation or group of nations requesting assistance against armed aggression from any country controlled by international communism".[169] The clearest application of a U.S. military intervention under the "new" dogma was Lebanon, when in 1958 American troops were sent to support the

from the U.S. and Great Britain. See, Williamson, D. C. (2004) 'Exploiting Opportunities: Iraq Secures Military Aid from the West, 1953-56', *International Journal of Middle East Studies*, 36(1), pp. 89–102.

[167] See, Stromberg, R. N. (2002) 'Collective Security', in DeConde, A., Burns, R. D., and Logevall, F. (eds) *Encyclopedia of American foreign policy*. 2nd ed. New York: Scribner, pp. 273–284. U.S.' policy was the creation of regional security groupings aimed to reinforce the "collective security" stipulated by NATO. The Pact of Mutual Cooperation signed between Turkey and Pakistan in 1954, that is prior to the Baghdad Pact, purposed the connection of NATO's southernmost member (Turkey) with the westernmost member of the Southeast Asia Treaty Organization (SEATO), Pakistan.

[168] Nasser's politics were ambiguous as he called for the Arab world to follow a policy of "positive neutralism" in regard to the Cold War and thus maintain valuable relationships with the West as well as the East. However, it was Nasser's massive armament from the Soviet bloc in 1955 that might have alerted the Eisenhower administration, while changing the status of power in the region, acting as a catalyst to the Suez Canal Crisis.

[169] See, Selverstone, M. J. (2002) 'Doctrines', in DeConde, A., Burns, R. D., and Logevall, F. (eds) *Encyclopedia of American foreign policy*. 2nd ed. New York: Scribner, pp. 521–543, p. 529.

government of Camille Chamoun against an alleged communist invasion, and in fear of a domino effect throughout the region.[170]

These complex and intricate international, regional, and local politics set the background for Doxiadis Associates' projects in the Middle East. An interesting case to refer to then, is the National Housing Program of Lebanon handed to Doxiadis by the United States Operations Mission (USOM), in 1957. USOM was conducting housing and infrastructure projects in Lebanon since 1951 under the development umbrella of the Point Four Program.[171] When the 1956 earthquake exacerbated Lebanon's housing shortage, USOM and the Chief of the Housing Division Frederick W. Lang convinced Camille Chamoun's government to conduct a comprehensive housing program, for the purposes of which Doxiadis Associates was contracted.[172] Apart from treating "the identity of the assistance with discretion", the commission was given to DA most probably due to the fact that the Greek firm was already operating an office in Baghdad and was gaining reputation across the region. Proximity and expertise favored the expansion of the Greek firm in the Arab world.[173] What is more, the presence of Greek entrepreneurs in the Middle East region that dates at least since the days of the Ottoman Empire, and the overall historical and cultural links between Greece and Arab world's countries must have paved the way for Doxiadis Associates.[174] In other words, in the eyes of Arab and Islamic societies, Greeks

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[170] The "domino" metaphor was one of the cornerstones of U.S. Cold War policy. The origins of the discourse supporting the "domino theory" lay at Dean Acheson's 1947 speech in the Congress that argued in favor of taking measures to prevent a Communist victory in Greece. See, Edwin, M. (2002) 'Domino Theory', in DeConde, A., Burns, R. D., and Logevall, F. (eds) *Encyclopedia of American foreign policy*. 2nd ed. New York: Scribner, pp. 551– 559.

[171] The Point Four program anticipated technical assistance for the growth of underdeveloped areas and was eventually destined to Iran, Iraq, Lebanon, Egypt, and Liberia, among other countries.

[172] See, Lang, F. W. (no date) *Housing Activities in Lebanon, 1956-1958: a Summary of Operations*. Available at: pdf.usaid.gov/pdf_docs/pdacx733.pdf.

[173] As Hashim Sarkis accounts, "[o]n several occasions, the Beirut office was involved in coordinating some of the Iraq work particularly when it came to printing the reports, and Doxiadis also benefited from Beirut as a transit stop for his travels back and forth between Athens and Baghdad". *Circa 1958* provides to date the most complete account of the DA endeavors in Lebanon. Unfolded against the background of the Point Four program and the escalating conflicts in the Middle East region, Sarkis argues that "[i]n an agitated political situation such as that of Lebanon in 1957, it may have been more desirable to treat the identity of the assistance with discretion". However, the vivid description of Psomopoulos and Theocharopoulos' travels for the purposes of the survey provide a persuasive account of their warm reception by villagers because of their Greek nationality. See, Sarkis, *Circa 1958*, op.cit.

[174] *Ibid.*, Sarkis for example, refers to the importance and role played by the then Greek Ambassador in Beirut, who was no other than Giorgos Seferis, a prominent poet and the first Greek to receive the Nobel prize in 1963. Seferis was acquainted with Doxiadis since his tenure at the Ministry of Foreign Affairs. Nevertheless, Sarkis accounts erroneously for Doxiadis' engagement by the Lebanese government as an expert in a study of low-cost housing in Beirut, in 1951, and in order to provide the background of the DA contract. Doxiadis at the time was established in Australia, while the report cited by Sarkis was authored by Stephen Ronart, social welfare expert of the United Nations Technical Assistance Administration. See Simeon, A. (1957) *Low Cost Housing in Beirut*. Document, Ref.Code 24871 R-LA 7 Lebanon V.3. Doxiadis Archives. Another flaw in Sarkis' account is "Camille Chamoun's alliance with the Baghdad Pact which put Lebanon as well as Iraq and

were less strange than other westerners.

Nevertheless, this is far from arguing that Doxiadis was contracted because of his Greek nationality, or that he did not see his projects affected by the political turmoil in the Middle East.[175] Doxiadis Associates completed the documentation of Lebanon's housing needs in January 1958, but instead of developing further housing construction proposals, the project was put on hold. The uprisings of May 1958 and the subsequent American troops invasion in July, changed radically the political panorama in Lebanon, along with the new regional status quo wrought by Iraq's 14 of July Revolution. During the first years of his mandate, Fuad Chehab gave priority to the stabilization of the country and to administrative reforms that forged a national government far from foreign interventions. On the other hand, stepping into the 1960s national housing programs lost their importance, while "soft power" changed forms and shifted to other policy areas. Doxiadis Associates seemed to have lost a grasp on development.

Jacob L. Crane and Doxiadis Associates

The growth and expansion of DA from a local Athenian office to an international integrated planning firm took place in the fairly short period of the second half of the 1950s. Constantinos Doxiadis would not have gone that far without the support of his collaborators, some of them more close and influential than others. While the nucleus of the local workforce consisted of ex-Ministry colleagues who faithfully had joined Doxiadis to support the first steps of his private business, the growing international network featured distinguished planners, laureled academics, and senior politicians. Among them, Jacob L. Crane, an American planner with great experience in housing programs and valuable contacts that brought DA in the spotlight of the planning profession.

Born in 1892 in Benzonia, Michigan, Jacob Leslie Crane graduated in civil engineering from the University of Michigan and obtained a planning degree from Harvard before working as a consultant in the "Alphabet Soup" of New Deal agencies, among them the Federal Housing Administration, Tennessee Valley Authority, and United States Housing Authority.[176] The latter was created by the 1937 Housing Act, and was restructured in 1947 as part of the newborn Housing and Home Finance Agency (HHFA). Jacob Crane

Jordan on the United States side of the Cold War". Lebanon never joined the Baghdad Pact.

[175] See, Daechsel, 'Misplaced', *op.cit.,* p. 91. As Markus Daechsel has analyzed in fact, in the case of Pakistan Doxiadis found himself excluded from other U.S. funding programs precisely because of his nationality.

[176] For the emergence of the culture of planning in the New Deal America see, Shanken, A. M. (2009) *194X: architecture, planning, and consumer culture on the American home front*. Minneapolis: University of Minnesota Press (Architecture, landscape, and American culture series).

headed the international office of the HHFA, actually the office which "more than any other, shaped and implemented American housing policy abroad".[177] From this strategic position he would become one of the most influencing U.S. planners, effectively the expert who coined, advocated, and systematized aided self-help as a housing policy.

Constantinos Doxiadis met Jacob Crane in Washington in 1945, most probably during his first trip to the United States for attending the UN conference; however the two men collaborated for the first time for the purposes of the Greek Reconstruction and Recovery.[178] At a time when the young Doxiadis was rallying human and financial resources in order to cover acute housing needs, Crane came up with the solution of aided self-help policies. Crane had already carried out "land-and-utilities" schemes in Puerto Rico, in 1939, while after the establishment of HHFA he used his strategic post and connections with the Department of State to promote kindred policies in other parts of the world.[179] Though Crane did not move to Greece, he lobbied with the help of Doxiadis the placement of George Reed as a housing adviser with the Porter Mission.[180] At the time, George Reed was one of the very few planners who had technical expertise in aided self-help, after his participation in the "Ponce project" as the local representative of the U.S. Public Housing Administration in Puerto Rico. The Doxiadis-Reed-Crane triad devised and carried out successfully the Greek program, which was reckoned as the first time aided self-help was implemented in an emergency situation, in that case in the midst of the Civil War. Crane capitalized on this endeavor for promoting his campaign and office within the U.S. establishment, while Doxiadis became one of the first planners to carry out such policies in Europe.[181]

The two experts maintained correspondence after Doxiadis' removal from the government and renewed acquaintances at the UN seminar in New Delhi, in February 1954. From that point onward their collaboration flourished. In August 1954, Crane was invited by the Governor of the National Mortgage Bank of Greece to study "the financial and technical aspects of the housing problem in Greece" and present proposals for a national housing

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[177] See, Harris, R. (1998) 'The silence of the experts: "Aided self-help housing", 1939–1954', *Habitat International*, 22(2), pp. 165–189, p. 170.

[178] For a brief curriculum of Crane, see *DA Newsletter* (1962) 'Portrait of the Month - Jacob L. Crane', September, p. 33.

[179] See, Harris, 'The silence of the experts', *op.cit.*, The "Ponce" project in Puerto Rico is reckoned as the first official initiative to unfold aided self-help practices. See as well U.S. Department of Housing and Urban Development, *Aided Self-Help in Housing Improvement*, *op.cit.*, pp. 31-32.

[180] From his side, Doxiadis requested the U.S. government to sent an expert on housing policies. See, Harris, *op.cit.*, p. 173.

[181] *Ibid.,*

policy in Greece, a project undoubtedly lobbied by Doxiadis.[182] The next year it was Crane's turn to introduce the Greek planner to the Development Board, an acquaintance that resulted to the contract for the National Housing Program of Iraq. During the same period and having retired from the HHFA, Jacob Crane joined Doxiadis Associates as a Senior Consultant in 1955, thereafter becoming a key figure in formulating DA programs for developing countries and pushing DA campaigns in Latin America and the United States. It goes without saying that the distinguished planner lectured at ekistic seminars, participated at the Delos Symposia, and helped to expand the educational activities of the ekistic center. Considering his contacts within the U.S. establishment and planning circles, Jacob Crane was for Doxiadis "the man behind the scenes".

Doxiadis and Crane not only shared professional goals, but as well theoretical views: the importance of housing for development, the role of the state in promoting housing and community development programs, and the strong belief that home ownership and private entrepreneurship were positive features of urban development, were some of their common points. Both however, considered planning a top-down process managed by experts and encompassing all scales. Their faith in globalism and the belief that the housing crisis was a world-wide problem led the two planners to propose the establishment of a planning organization within the United Nations.

Apparently, Jacob Crane pushed for this idea in one of the first meetings of the Economic Commission for Europe (ECE), in 1946, in the capacity of a UN consultant:[183]

> "In view of the world-wide crisis in shelter, housing, and urban reconstruction, and in view of the many important international aspects of this problem, it is the (unanimous) sense of this meeting that all countries would benefit greatly by the establishment, within the framework of the Economic and Social Council of the United Nations, of an office or unit which might be designated as the Housing and Urban Reconstruction Office of the United Nations. Such an office or unit could work with and through other agencies of the United Nations, could both coordinate and initiate activities in this field, toward world-wide

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[182] See, letter from Crane to Doxiadis, 28 August 1954, and letter from Doxiadis to Crane 9 September 1954, in *Correspondence Between C. A. Doxiadis And J. L. Crane (1954 - 1957)*. Document, Ref. Code 19255. Doxiadis Archives.

[183] Nowadays abbreviated as UNECE, the United Nations Economic Commission for Europe was officially established in 1947 with the prime objective to promote the economic reconstruction of Europe, while the ECE Housing Meeting took place in Brussels, in July 1946.

exchange of knowledge, understanding and experience, the promulgation of standards, the facilitation of exchange of materials, equipment, machinery, credit, and housing experts and work toward the formulation of a world housing program in which each nation could proceed with its own program and all nations could cooperate together in the solution of this critical world problem".[184]

Though Crane's proposal was not advanced as the above memorandum suggested, it should be reckoned as one of the early voices that demanded the attention of the United Nations to physical planning and housing. Another one was Doxiadis', who in the 1945 San Francisco conference pleaded for the "reconstruction of the world" through common policies coordinated by the United Nations.[185] Finally, in 1947, the ECE set up a panel on housing problems that prepared the ground for the creation of the Housing Branch within the UN, a department headed by Ernest Weissmann after 1951.[186] Despite organizing numerous missions to developing countries, it took more than a decade to the UN to upgrade housing within its institutional structure, until the establishment of the Center for Housing, Building and Planning, after the recommendations of the homonymous Committee convened in 1963.[187]

Constantinos Doxiadis criticized the UN, for the acute housing problems remained largely unsolved at their roots, almost two decades after Crane's proposal.[188] The UN committee on Housing, Building, and Planning he claimed, and the rest of UN specialized agencies were far from responding effectively to the crisis, either due to the weakness of this organizational scheme, either because of the scarcity of the allocated funds.[189] Doxiadis

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[184] This excerpt comes from an office memorandum sent by Crane to George Reed, who at the time was a Housing Attaché at the American Embassy in London. Crane, in parallel to his post at the HHFA, was a housing consultant to different UN departments, namely the Department of Social Affairs, the Housing and Planning Section, and the Technical Assistance Administration. See, letter from Jacob Crane to George L. Reed *ECE Meeting on Housing in Brussels* (1946). Document, Ref.Code 23175. Doxiadis Archives. In every respect, Jacob Crane was one of the most influential housing experts of his time, however his work remains broadly uncharted.

[185] See, Doxiadis, C. A. (1945) *To architects and to all who are interested in physical planning for the reconstruction of the world in the United Nations.* Document, Ref.Code 8353. Doxiadis Archives.

[186] See, Harris, R. and Giles, 'A mixed message', *op.cit.*, p. 171.

[187] *Ibid.*, p. 172.

[188] Doxiadis cited Crane's proposal "at the first General Assembly" on housing as an important policy recommendation that unfortunately remained unattained. See, Doxiadis, C. A. (1964) 'A United Nations Organization for Human Settlements', *Ekistics*, 17(101), pp. 219–226, pp. 222, 224.

[189] *Ibid.*,

instead, advocated the establishment of a competent institutional body within the United Nations with transnational jurisdiction dedicated to human habitat. This organization was suggested to coordinate regional and national policies for the planned development of human settlements, to mobilize resources, conduct research and educational activities, provide technical assistance and expertise, etc., that is, to say a holistic framework similar to the one envisioned by ekistics.

Anyhow, Doxiadis' relationship to the United Nations was not an easy one. Though he defended the UN as the *par excellence* international organization to undertake such task, at the same time he must have understood that within an institutional body of such scope and agenda action could not reach the lower and most needed levels. While granting ekistics a full-blown institutional structure might get interpreted as an answer to the UN restrictions and malfunctions, the question of whether Doxiadis understood that his own centralized system and organization could reach as well a similar dead end still remains.[190] By the mid-960s, the UN had become more active in the housing field, nevertheless it would take another decade until Doxiadis' insistence on the paradigm of human settlements was eventually recognized by the 1976 Vancouver Declaration. Even so, this acknowledgment had a smaller influence on the actual UN-Habitat's agenda.[191]

Going back to the duo Crane-Doxiadis, their collaboration was nowhere more intense than in the perplexed context of the Middle East, where international interests meshed with regional claims and local politics embedded in ethnic and religious backgrounds. In March 1957, some three months after the presidential speech that brought "the special message to the Congress on the Situation in the Middle East", Doxiadis sent a letter to Crane titled "Eisenhower Doctrine" where he outlined the prospects of DA under the new conditions.[192] As he reckoned, most of the countries in the region "in spite of some local opposition in Egypt and temporary opposition in Syria" were ready to accept the Eisenhower Doctrine,

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[190] One of Pyla's working hypothesis is that Doxiadis organized and funded his own international forum - that is the Delos Symposia - because he was "[d]isappointed with the UN's 'foot-dragging'", see, Pyla, 'Ekistics', p. 114. Her thesis in fact describes several episodes of Doxiadis' long-lasting and close relationship with UN. Pyla's assessment is that "Doxiadis Associates approximated United Nations policies, but did not fall into their logic". *Ibid.*, p.150. The Greek planner was a UN consultant at several missions, participated in important UN summits, seminars, and conferences, while *Ekistics* reprinted articles and published original reports related to UN programs. Another interesting parallelism comes with Le Corbusier's lobbying and in some cases controversial efforts to link (his) architecture to United Nations and its predecessor League of Nations. The initial appointment of Ernest Weissmann to the UN owes to his efforts. For a short but penetrating analysis see, Deyong, 'Planetary Habitat', *op.cit.*, pp. 115-117.

[191] See, D'Auria, V., Meulder, B. de and Shannon, K. (2010) 'The Nebulous Notion of Human Settlements', in *Human settlements: formulations and (re)calibrations*. Amsterdam: SUN Academia, pp. 8–27, p. 15.

[192] See, letter from Doxiadis to Crane, *Eisenhower Doctrine* (1957). Document, Ref. Code 19248 C-G 124. Doxiadis Archives. Eisenhower's speech to the U.S. Congress was delivered on 5 January1957 under the title "Special Message to the Congress on the Situation in the Middle East".

therefore paving the way for new projects promoted by the American Missions.[193] That was the moment for housing! Doxiadis urged Crane to use his contacts in the American establishment and he would name his own local correspondents in order to "keep in touch with developments in all these countries".[194] The Greek planner proposed to undertake in each country a general housing survey as he had already done in Lebanon, before coming up with "concrete proposals for definite projects". In that way, DA could get a foothold even in places "where there [was] no pressure for immediate aid in housing", and over time come up with specific follow-up projects. The cases of Iraq and Pakistan might have demonstrated that "immediate action" and low-cost fast construction housing schemes were "politically useful", nevertheless created a lot of problems that could be avoided if DA was "given the time for planning first and implementing afterwards".[195]

Finally, Doxiadis proposed to Crane the idea of establishing the "School for Ekistics" with the aim to cover the colossal "scarcity of technical people" in the region and other parts of the world. International political dynamics offered plenty of opportunities not only for planning the developing world but as well for educating planners to serve in the developing world.

Altogether, the correspondence between Crane and Doxiadis during the second half of the 1950s unfolds follow-up discussions on commissioned and potential projects throughout the Middle East: Iraq, Pakistan, Jordan, Syria, Lebanon, Iran, Sudan, and even Nasser's Egypt came under DA's spotlight.[196] The names of Ken Iverson, David Bell, Ernest Weissmann, Jerry Reed, and Edward Mason, private institutes like the Ford Foundation or organizations such as UNRWA (United Nations Relief and Works Agency for Palestine Refugees in the Near East) give an idea about Doxiadis' array of interlocutors.[197] Jacob Crane was essential in hooking up DA with private institutions and national governments.

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[193] *Ibid.,*

[194] *Ibid.,*

[195] *Ibid.,*

[196] Apparently, the Egyptian Government applied to the Greek counterpart asking for suggestions about experts and firms capable of undertaking housing programs. As it turned out, the proposal was linked to a UNESCO project and concerned the replacement of an adviser originally placed by Weissmann for a town planning and shelter improvement project. See, letter from Crane to Doxiadis, 6 August 1955, in *Correspondence Between C. A. Doxiadis And J. L. Crane (1954 - 1957), op.cit.*

[197] Doxiadis even discussed the possibility of undertaking projects in the Middle East region with the Nobel Prize economist Wassily Leontief (1909-1999). Apparently in 1958 Leontief was undertaking field trips in Asia and Middle East countries sponsored by the Ford Foundation in order to provide an analysis and central programming policies for economic development. Doxiadis' proposal was "to create a new form of organization which will be engaged with providing Governments' assistance and advice in the fields of economic and technical planning" in Pakistan, Iran, Afghanistan, Ethiopia, Eritrea, Iraq, Saudi Arabia, Kuwait, Lebanon, Jordan, Egypt, Sudan, Turkey. Eventually the collaboration of the two parts was not fulfilled. See, *Cooperation with W. Leontief: Correspondence* (1958). Document, Ref. Code 19254. Doxiadis Archives.

This was the time for promoting DA in the Middle East. As Crane and Doxiadis used to say, "the time is ripe and the iron is hot".

CHAPTER THREE

Doxiadis Associates Housing Program for a Developing Nation

In August 1955, the Government of Iraq entrusted Doxiadis Associates (DA) the National Housing Program. The Iraqi commission was the first large-scale project of the Greek firm and was followed by the assignment of the Master Plan of Baghdad in 1958. Both projects solidified Doxiadis' reputation as a planning expert and boosted DA from a small group of architects and engineers to an international organization of planning and consultancy. Moreover, these projects provided the organizational model and methodologies after which the majority of the DA projects in the developing world were fashioned.

Doxiadis' planning ventures in Iraq were perplexed and eventually discontinued due to the political turmoil in the Middle East and the radical changes in the Iraqi polity. By all means, the study of the National Housing Program and the Master Plan of Baghdad offers a perspective on the intrinsic relationship of politics and planning, and the clash of Doxiadis' planning philosophy with local realities.

The Modernization of Iraq and the creation of the Development Board

Leading the 1916 Arab Revolt against the Ottoman Empire, the Hashemite dynasty seized power in the Middle East region, and yet had to come to terms with the British rule that effectively controlled former Ottoman provinces. Juggling the demands and aspirations of ethnic and religious groups, and with the support of the United Kingdom, Faisal I (1885-1933) became the first King of Iraq in 1921. His vision for a greater Arab state was rooted historically in the Abbasid Caliphate that descended from the Islamic prophet Muhammad himself, however "championed a national identity as a modern ideal to override ethnic rivalries within the new state's borders".[1] Endorsing Faisal's modernizing vision, the British establishment - effectuated by the Anglo-Iraqi Treaty of 1922 - promoted administrative reforms that sought to organize the country and manage its resources according to Western fashion and interests. Baghdad became the capital of the Mandate Administration and witnessed unprecedented planning interventions. New roads cut through the existing fabric and bridges spanned the Tigris River connecting opposite side districts. Wide, linear, thus functional, these avenues initiated Baghdad's path to

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[1] See, Siry, J. (2005) 'Wright's Baghdad Opera House and Gammage Auditorium: In Search of Regional Modernity', *The Art Bulletin*, 87(2), pp. 265–311. Faisal I tried to foster unity and promote pan-Arabism appointing in his administration offices representatives from different ethnic and religious groups, principally Sunni and Shiite. Nevertheless, the hostility of these groups to colonial rule and their own aspirations to power weakened Faisal's regime.

modernity.[2]

Political tensions however were omnipresent under the colonial rule, even after 1932 when Iraq was granted full national independence and entered the League of Nations. The 1941 Anglo-Iraqi War brought the second Occupation of Iraq by British armed forces, and the establishment of Nuri al-Said (1888-1958) as a Prime Minister of the country, for the third time in office, this time during the Regency of the young Faisal II. The Iraqi liaisons to Britain ended violently on 14th of July 1958, when the military revolution overthrew the pro-western government. Faisal's regicide marked the end of the Hashemite monarchy in Iraq, while Nuri al-Said's macabre fate echoed the verdict that "[i]n the hot and restless Middle East, death alone is the one swift, sure way to bring change".[3]

The Baba Gurgur oil gusher was discovered in 1927 in the northern part of the country near Kirkuk, and though at the time it was considered the largest oilfield worldwide the exploitation of its deposits followed a slow pace during the first years.[4] The Iraq Petroleum Company (IPC) who practically enjoyed the monopoly of oil exploration and production, delayed both in negotiating pipeline rights-of-way and in actual drilling, according to some, complying with global oil demand during the Great Depression.[5] In August 1951 however an agreement was reached to increase oil production from six million tons registered in 1950 to 30 million tons per year by the end of 1955, practically fueling the economic

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[2] In a brief historical account of Baghdad as the capital city of Iraq, Hoshiar describes the construction of the main roads that followed the opening of Al-Rasheed Street in 1908 under the Ottoman administration, and names the housing projects carried out by English architects in Baghdad during the 1930s. See Hoshiar, N. (2004) 'Globalization and the Search for Modern Local Architecture : Learning from Baghdad', in Elsheshtawy, Y. (ed.) *Planning Middle Eastern cities: an urban kaleidoscope in a globalizing world*. London; New York: Routledge, pp. 59–84.

[3] See, Time (1958) 'Middle East: Revolt in Baghdad', *Time Weekly Magazine*, 21 July. When the Royal family was executed, the Prime Minister tried to escape disguised as a woman finally to get betrayed by wearing men's shoes. Even after Nuri al-Said was shot dead, the angry mob dragged his corpse through the streets of Baghdad, hung up, burned and mutilated it. The quoted phrase introduced Time Magazine's article.

[4] The story of the nascent oil industry in relation to ethnic group and identities in Kirkuk is unfolded in Bet-Shlimon, A. (2012) *Kirkuk, 1918-1968: Oil and the Politics of Identity in an Iraqi City*. Ph.D thesis. Harvard University. As Bet-Shlimon accounts, the oil industry that provided the livelihood for a substantial percentage of Kirkuk's population became the main objective of the Communist-led labor organization's action. Consequently, the Iraqi government, the British establishment, and the oil company attempted to counter Communist influence by promoting urban development schemes.

[5] During the Great Depression, the world was flushed with oil and greater output from Iraq would simply have driven the price down to even lower levels. As Qubain recounts, "prior to 1951, the amount of oil revenue was comparatively small, though it averaged about 13 per cent of the total income of the state between 1934 and 1950. From 1951 on, however, it began to increase very rapidly, until by 1955 it accounted for over 30 and perhaps up to 40 per cent of the total national income". See Qubain, F.I., 1958. The Reconstruction of Iraq, 1950-1957, F.A. Praeger, p. 30. Worth mentioning M. Ionides comment that the seminal study of Qubain "occupies a unique place in history as the last full-scale study of Iraq's economic development under the regime of the Hashimites and the guidance of the Development Board, both of which disappeared in the upheaval which followed the revolution". Effectively, "the author's page of acknowledgments was signed on 31 March 1958, ten weeks before the revolution in Iraq of 14 July I958". See Ionides, M.G., 1959. The Reconstruction of Iraq: 1950-1957. by Fahim I. Qubain Review by: M. G. Ionides. International Affairs (Royal Institute of International Affairs 1944-), 35(4), pp. 485–486.

development of the country.[6] Against that background, the Prime Minister of Iraq founded in 1950 the Development Board, a quasi-governmental organization that undertook the implementation of an extensive program of modernization using 70% of the oil profits.[7] Chaired by the Prime Minister himself, the Board included the Minister of Finance (Khalil Kenneh) and Development (Dr. Dhia Jafar), and five distinguished Iraqi members (H. E. Sayid Jalal Baban, H. E. Sayid Abdul Majid Allawi, H. E. Sayid Abdul Jabbar el-Chalabi, H. E. Dr. Abdul Rahman el-Jalili), who were principally educated in the West and maintained good relations with the Hashemite government. Moreover, the Development Board incorporated two foreign consultants, namely the British M. G. Ionides and the American W. Nelson who in 1957 was substituted by the Point Four Program Administrator Clifford Wilson.[8] During the first years the Development Board launched a series of infrastructure projects to address regional problems, such as transportation, irrigation and flood control. On the other hand, it initiated an extended housing program which along public facilities projects aimed to reverse the discontent for the government prevailing in the low and middle classes. The second five-year program (1955-1959) however, comprised grandiose architectural interventions destined to the modernization and embellishment of the capital. Baghdad embraced modernism and flirted with the architectural splendor that sought to put even for a few years this Arabic city on the map next to western capitals.[9]

Baghdad: city of mirage

The introduction and promotion of modern architecture in Iraq came after the efforts of a young generation of western-educated Iraqi architects who rejected the British colonial

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[6] See, International Bank for Reconstruction and Development (1952) *The Economic Development of Iraq*. 11109. The John Hopkins Press, p. 2. Characteristic of this change is the quote introducing Qubain's treatise: "[n]o country of the Middle East had progressed farther along the path of economic progress than had Iraq under the direction of King Faisal and Nuri al-Sa'id". See Robert Strausz-Hupé's foreword note in I. Qubain *op.cit.*,

[7] For an analysis of the Development Board's constitution and role, see Marefat, M. (2007) '1950s Baghdad - Modern and International', *Taarii Newsletter*, (2-2), pp. 1–7.

[8] M.G. Ionides, a junior officer and former assistant engineer in the Irrigation Department Program of Iraq, was appointed director of the Development Department in Transjordan, as well for the purposes of an irrigation scheme. In the 1960s he got associated to Doxiadis, and participated in the Great Lakes Megalopolis project, the study for the Rio de la Plata Basin, and the DA projects in Sudan. In a letter to Crane, and after his acquaintance with Ionides, Doxiadis commented: "it seems of Greek descent some 200 years ago who does not speak any Greek at all". See, letter from Doxiadis to Crane, 23 of May, 1955, in *Correspondence Between C. A. Doxiadis And J. L. Crane (1954 - 1957)*. Document, Ref. Code 19255. Doxiadis Archives.

[9] The modernization of Baghdad was not restricted to architecture and planning but encompassed plastic arts and poetry. Modern thought and customs had a significant impact on the urban Iraqi society. As Siliq accounts "all aspects of Baghdad's life were heading towards modernity", see, Al Siliq, G. (2008) 'Baghdad. Images and Memories', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Papers), pp. 49–72.

architecture in pursuit of a modern vocabulary and new building technology, in some cases interlarded with the local know-how knowledge and traditional elements.[10] On the return from their studies principally pursued in Britain, some of those young disciples joined the efforts for the modernization of the country. Such was the case of the awarded Rifat Chadirji who having entered the technical division of the Development Board in 1952 approached the Minister of Planning with a list of renowned Modern architects.[11] Thereafter, a series of architectural projects came to represent the aspirations of the Iraqi establishment for building a city worthy of the *Arabian Nights*.

Frank Lloyd Wright was assigned the Opera House of Baghdad and Walter Gropius and TAC an extended University Campus, both projects situated on the banks of Tigris River; Gio Ponti - in collaboration with Valtolina-Dell' Orto Studio - designed the Headquarters for the Development Board and the Ministry of Planning, a building apparently inspired by the Pirelli Tower in Milan; Alvar Aalto was invited to design the Mail and Telegraph building, and the Museum of Fine Arts as part of an ambitious urban development scheme called the Civic Center of Baghdad. That scheme was originally designed by the English firm of Minoprio, Spenceley and MacFarlane in an extended area in vicinity to the center. It included public facilities, gardens and mosques, as well as three projects authored by Willem Dudok, namely the General Police Headquarters, the Palace of Justice, and the Property Register and General Settlement Headquarters.[12] The impressive list of modern "star-architects" was complemented by José Luis Sert, who was commissioned the Embassy of the United States (1955-1959), and Le Corbusier who initiated the design of a sport complex in Baghdad. Nevertheless, when the Hashemite government was overthrown and the patronage of the Development Board ended, most of the aforementioned projects were canceled, while the fate of the completed buildings offer sound examples of (and a historical perspective on) the fragility of architecture through time. Unfolding the most illustrative of the above cases is meant to enrich the background for considering Doxiadis' involvement in the planning history of Iraq.

Frank Lloyd Wright was one of the fist international architects to visit Baghdad. Drawn by Orientalism and his fascination for the Mesopotamian ziggurat, Wright responded

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[10] For a descriptive account of the role of local architects and the evolution of modern architecture in Baghdad, see Hoshiar, 'Globalization and the Search for Modern Local Architecture', *op.cit.*, pp. 68-75.

[11] Chadirji's list included Frank Lloyd Wright, Le Corbusier, Gio Ponti, Alvar Aalto, and Oscar Neimeyer. The latter refused the commission declaring that he did not want to collaborate with an oppressive regime. See, Marefat, '1950s Baghdad', *op.cit.*, p. 6. Moreover, according to Marefat, some of those young professionals had even family connections to the Iraqi elite.

[12] See, Azara, P. (2011) 'The Baghdad Civic Center Project (1960–1964)', *Taarii Newsletter*, (6-1), pp. 4–8. After the July 1958 Revolution, Anthony Minoprio who coordinated the Civic Center Project was dismissed and replaced by Jose Luis Sert.

enthusiastically to the invitation of the Development Board, for what he thought it might be a chance to turn into reality his *organic* architecture in harmony with the natural and cultural environment. Initially Wright was granted the design of the Opera House, however in his first trip to Iraq, the architect envisioned the *Greater Plan for Baghdad*, a grandiose and bizarre scheme conceived for an island in the middle of Tigris, which he named "the Isle of Edena".[13] Despite adhering to local cultural patterns as a critique to international architecture, Wright's scheme was dissonant with the western modernity desired and promoted by the Iraqi elite. Be that as it may, the political agitations of 1958 put an end to Frank Lloyd Wright's dreamlike architecture. The celebrated architect died some months later, at the age of 92 and his vision for a *One Thousand and One Nights* Baghdad remained in his fantastical drawings.[14] Dudok and Aalto's neighboring projects in the Civic Center scheme were certainly more realistic and modest considering their architectural forms, and yet had the same fate. What is more, both architects had severe difficulties in collaborating with the Development Board and eventually did not receive the full fees.[15]

The University of Baghdad, assigned to Walter Gropius and The Architects' Collaborative (TAC) on the other hand, turned out to be a successful project that kept the international office busy for several years. Gropius received the commission in 1957, at the age of 74, thanks to his connection with young Iraqi architects who introduced him directly to the Development Board.[16] Though construction was in several cases postponed due to political turmoil, the successive governments resumed the ideas and plans of Gropius, even after he had passed away in 1969. Effectively, the virtues of this architectural scheme and the capacity of the plan to accommodate changes and new requirements surpassed the constraints (even the political ones) raised by international and local factors.[17] The confidence of the Iraqi government was such that TAC was entrusted apart from the Campus master plan and the construction of several university buildings, the

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[13] The Plan for Greater Baghdad (1957-1958) of Frank Lloyd Wright included an opera house, a museum, an art gallery, a casino, commercial facilities, a botanic garden, parks and the University that Walter Gropius eventually constructed. See, Marefat, M. (2008) 'Wright's Baghdad: Ziggurats and green visions', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 145–155.

[14] *Ibid.*, p. 153.

[15] For a description of Dudok's and Aalto's projects based on unpublished archives, see as well Azara, 'The Baghdad Civic Center Project', *op.cit*.

[16] Gropius was introduced to the Iraqi organization by the Jawdats, "the son of the then Prime Minister Ali Jawdat, Nizar Jawdat, and his American wife, Ellen, both of whom had studied under Walter Gropius at Harvard's School of Architecture". See, Marefat, M. (2008) 'The Universal University: How Bauhaus Came to Baghdad', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 157–166.

[17] According to Marefat, "Gropius' plan easily accommodated the symbolic monumentality required by the new government". On the other hand, he, as well, wanted to avoid to much "Americanism" though eventually his plans "celebrated international rather than local style". *Ibid.*, pp.161-162.

university's programmatic principles. One cannot but imagine that the technological aura of Bauhaus and Gropius' *new architecture* appealed to the Development Board.

Equally successful in its realization but less fortunate in time was Sert's American Embassy building. José Luis Sert who became Dean of the Harvard Graduate School of Design in 1953, was invited by the U.S. government to design its embassy in Iraq, as part of the program promoted by the Office of Foreign Building Operations (FBO).[18] Praised by some as one of the most beautiful Modernist buildings, a prominent work in regional architecture, and Sert's best project, the American Embassy was a complex of four buildings - the Embassy, the Ambassador's House, Offices, and the block housing the embassy's staff - situated in a nearly rectangular plot, carefully landscaped by gardens, water channels and ponds.[19] Nevertheless, Sert's complex was used as diplomatic premises only for a few years time. After the international conflicts and the disruption of diplomatic relations the complex was abandoned, while a series of property transactions complicated the status of the empty buildings. Sert's buildings suffered extensive damage during the Second Gulf War and is currently "in limbo" waiting - if ever- to be restored.[20]

Finally, in 1955 Le Corbusier was handed an ambitious, yet vague, program for a sport complex of Olympic dimensions that included a wave swimming pool, a 50,000 seat stadium, open-air exercise grounds, and special facilities for the King. Seizing the opportunity, Le Corbusier conceived an urban space with programmatic activities that extended way beyond sports.[21] When Charles-Édouard Jeanneret died in August 1965, the sport complex still remained a shelved-project. Posthumously, the Iraqi government resumed Le Corbusier's scheme for the Gymnasium of Baghdad that was the most developed design and yet only a small part of his grandiose project.[22] Construction begun

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[18] This Office was a division in the U.S.' State Department. See, Rovira i Gimeno, J. M. (2008) 'U.S. Embassy In Baghdad: Ingredients of a Cold Dish', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 280–290. For an account of the broader embassy program see, Loeffler, J. C. (1998) *The architecture of diplomacy : building America's embassies*. New York: Princeton Architectural Press.

[19] See, Al-Sultany, K. (2008) 'The "American Embassy" building in Baghdad: The architect and architecture', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 103–114. Pedro Azara has characterized the American Embassy as Sert's best project, see Azara, 'The Baghdad Civic Center Project', *op.cit.*, p. 5.

[20] *Ibid.*, p. 8.

[21] See, Baudouï, R. (2008) 'To build a stadium: Le Corbusier 's project for Baghdad, 1955-1973', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 271–280.

[22] Another constructed building from Le Corbusier's scheme is the stadium called Al Sh'ab, built in 1966 by the Portuguese architect Francisco Keil do Amaral (1910-1975). Azara, P. (2008) 'Saddam Hussein Sports Complex (1955-1965, 1979-1983)', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 296–297.

in 1979 and the building was completed in 1983 under the direction of the engineer Georges Marc Présenté. The authorship of the constructed building was only recently attributed to the Modern Master, and yet ironically Le Corbusier's posthumous oeuvre became known as "Saddam Gymnasium" even if it was not commissioned nor inaugurated by Hussein.[23]

For what it's worth, the Gymnasium of Baghdad is the project that links two different periods of architectural development schemes in Baghdad, the first one taking place during King Faisal II, the later unfolding almost three decades later under the mandate of Saddam Hussein. Much alike the postwar years, the 1970s and 1980s witnessed a period of major construction activity in Baghdad as a direct consequence of another economic boom from increasing oil revenues.[24] The international competitions staged for the design and construction of the "State Mosque of Iraq" and the development of a commercial and residential bloc in the center typified as well the attempts of the Iraqi establishment to compete in architectural splendor with the capital cities of the West.[25] It didn't take long however before a series of devastating wars turned the architectural aspirations for a greater Baghdad a chapter of minor importance in the bloodshed reality of Iraq, nowadays a story to reveal after digging in half-destroyed historical archives.

3.1 The National Housing Program of Iraq (NHPI)

The commission

Constantinos Doxiadis was one of the international experts that participated in the modernization of the country under King Faisal II, the last of the Hashemite monarchy in Iraq. The Greek planner in fact, was the exception to the rule among the western planners and consultants contracted out by the Development Board: not only he was assigned

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[23] Caecilia Pieri offers an interesting account on the "denaturations" and surprises of a controversial renovation project initiated in 2004, in Pieri, C. (2012) *The Le Corbusier Gymnasium in Baghdad: discovery of construction archives (1974 -1980), Les Carnets de l'Ifpo.* [Online] Available at: http://ifpo.hypotheses.org/3560 (Accessed: 2 December 2014).

[24] "This policy was called jumping policy (siyasat altafra) and included every sector of society." See Hoshiar, *op.cit.*, p.76. Apart from Le Corbusier and Gropiu's projects, Hoshiar refers to the Central Bank of Iraq, 1985 by Dissing and Weitling; Baghdad Conference Palace, 1982 by Heikki Siren; Haifa Street Public Housing, 1984 designed by ARC Design Consultants Ltd; and the Abu Nawas Development Project, 1981 by Skaarup & Jespersen.

[25] Both competitions witnessed the participation of international architecture firms such as the North American office of Venturi, Rauch and Scott-Brown, and the Catalan office of Ricardo Bofill and his Taller de Arquitectura. See, Azara, P. (2008) 'Project For A Commercial And Residential Block On Khulafa Street (1981-1982)', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 310–311.

extended commissions, but he managed to expand his contract with additional projects; not only he delivered everyone of them, but he was paid all fees and costs as contracted. On the other hand, in contrast to Frank Lloyd Wright's illusory architecture, or Le Corbusier's vast and whimsical schemes, Doxiadis' projects had to respond to the pressing needs of housing.

Doxiadis was introduced to the Development Board by Jacob L. Crane in 1955, at a time when the latter was officially associated to the Greek firm. Crane on the other hand, had already been proposed by Abdul Rahman el-Jalili, a member of the Development Board, for undertaking or consulting the construction of housing schemes in the provinces of Iraq. Apparently el-Jalili pushed for the implementation of a housing program in order to facilitate for administrative reasons the displacement of Iraqi officials to other regions, and emphasized that financing "should not be an obstacle".[26] When the Iraqi establishment turned to the West for expertise in national development and regional planning, Crane lobbied Doxiadis Associates as consultants using as a contact the "American member" of the Board, namely W. Nelson.[27] Less than a month later, the Greek planner received an invitation from the Minister of Development to "proceed to Baghdad for discussions".[28] The first meeting took place in May 1955 and Doxiadis' ideas were reportedly well-received. On the return to Greece, the Greek planner declared himself optimistic for the start of an interesting and long-term collaboration.[29] What is more, Doxiadis had successfully promoted his own terms and conditions such as fixed annual fees for each one of his collaborators. This contract automatically dissociated the net profits of the firm from the total number of personnel, therefore giving Doxiadis a free hand to manage the DA

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[26] See, *Paper prepared by Abdul Rahman Al Galili Member of the D.B.* (1955). Document, Ref. Code 23877 R-QA 10. Doxiadis Archives. The original report was issued on 17 July 1954, meaning that Crane's reputation had reached the Development Board a year before Doxiadis' contracting. As discussed in the previous chapter, Crane was well informed about the fast growing economy of Iraq and the emerging opportunities.

[27] "A letter from Paul Beidle says that another member of the Development Board (the American member) said that the Board would very likely follow my recommendations," letter from Crane to Doxiadis, 25 April 1955, *Correspondence, op.cit*. Paul Henry Beidler (1906-1998) was a housing adviser to the government of Iraq from 1954 to1955. Subsequently, till the early 1970s he held positions in planning and education within the U.S. missions to Cambodia, Vietnam, and Indonesia. A constant traveler and spiritual seeker, Beidler participated in archaeological expeditions in the Middle East, Asia, and Africa, while he became a personal student of Gurdjieff. He studied with Le Corbusier in Paris, worked with Frank Lloyd Wright, and taught at the groundbreaking Black Mountain College. A biographical account of his interesting and not so conventional trajectory can be found at MacFarlane, I. C. (no date) *Paul Beidler - Remarkable Man*, *http://www.endlesssearch.co.uk/*. Available at: http://www.endlesssearch.co.uk/northeon12.htm (Accessed: 24 August 2015).

[28] Crane's report and recommendations had reached the Board. See, letter from Doxiadis to Crane, 23 May 1955, *Correspondence, op.cit*.

[29] *Ibid.*, "The reception of these ideas was as good as that of the principles of cooperation and on the evening of the 21st I left Baghdad and arrived here yesterday with the impression that we are marching towards a long-term contract. I hope that I am not wrong as it looks a very interesting perspective".

workforce according to the needs of the commissions.[30] Doxiadis knew that getting favorable contract terms from the start was essential in organizing his office accordingly and keeping up with strict deadlines:

> The reason that I abstained from your idea to reach only an agreement for the senior people is due to the fact that they are expecting from us **immediate action** in many fields and with the bureaucracy and its delays which I have discovered I would not like to find ourselves in the difficult position of having people to expect from us action whilst we will be struggling for the approval of the contracts of our collaborators. I felt it very necessary to have a certain number of them approved right from the beginning so that we would be able to have the necessary staff and work with them.[31]

In fact, during its stay in Iraq, Doxiadis Associates increased exponentially their employees and came to recount almost a hundred Greek architects and engineers, apart from its Iraqi trained personnel. Along these projects, DA evolved from a small group of architects and engineers to a consulting firm of several departments, including architectural design, regional & urban planning, and infrastructure, such as transportation and hydraulics. All taken in consideration, Doxiadis was one of the few architects that took full advantage of the Development Board's commissions.[32] On the contrary, most of the invited westerners despite their experience had great difficulties in carrying out their visions. As Azara accounts, most of the projects "suffered from the political instability and the lack of knowledge of Iraqi reality on the part of the architects".[33] Disillusionment was furthered by the requested changes, the subsequent increased costs, and the unpaid contracts.

Compared to the star-architects summoned by the Development Board, Doxiadis was an outsider with strong references. In his first travel to Baghdad however, the Greek planner demonstrated proficiency and readiness to undertake complex projects such as the construction of extended housing schemes. Architectural and technical issues left aside,

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[30] *Ibid.*, The starting salary basis averaged $10.000 per year.

[31] *Ibid.,*

[32] Mina Marefat makes a similar point for Walter Gropius and TAC: "In 1957, at the age of 74, Walter Gropius received the lucrative, long-term university commission. It would gradually transform his architectural office, The Architectural Collaborative (TAC), into a large corporate firm that pioneered in setting the parameters of international architectural practice after World War II." See, Marefat, 'The Universal University', *op.cit.*, p. 158.

[33] Azara, 'The Baghdad Civic Center Project', *op.cit.*, p. 5.

the problems of such endeavors were basically administrative. One of the principal issues identified by the IBRD Mission in regard to community planning was the lack of coordination between the public and quasi-public housing schemes conducted by different entities, such as the central and municipal governments, quasi-public transportation companies or even the IPC.[34] As Ionides explained on the other hand, Iraq at the time had good engineers and architects, whereas the technical section of the Development Board was fairly competent. What was needed then were "people with the overall view of the problem who could define policies and inspire the implementation of a major program".[35] As Crane suggested in respect, a general policy framework should precede design and architecture.[36]

Doxiadis was the right man for the job. Back in the days of the Greek Reconstruction he practically organized and administrated the Ministry that undertook a multifarious housing program, while closely collaborating with foreign aid missions. In Iraq the roles were reversed as he was on the side of the foreign experts. In his first meeting with the Minister of Development, Doxiadis was told that his experience in Greece was valuable but the proposed programs had to meet the special conditions and problems of Iraq.[37] Starting from a scratch and delving in uncharted territories were challenges that Doxiadis eagerly embraced. In his opinion, a housing construction program should have a primary role in national planning and unfold in accord to economic development.[38] For in the end, "[t]he administrative problems, the economic problems and the technical problems should only be seen as aspects of the one big problem: that the settlements of such a country should become better in order to create better living conditions out of the steppe" (Figure 3.1).[39]

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[34] See, International Bank for Reconstruction and Development (1952) *The Economic Development of Iraq*. 11109. The John Hopkins Press, p. 451. To this end the IBRD report proposed the establishment of a Housing Authority in the Ministry of Social Affairs.

[35] See, Doxiadis, C. A. (1955) *DA Projects: Iraq V.1 - Diaries DOX.Q (1955)*. Document, Ref. Code 23873. Doxiadis Archives.

[36] See, letter from Crane to Doxiadis, 25 April 1955, *Correspondence, op.cit.* "The thing about this is that all the Iraqis I spoke with feel that they need foreigners on policy and program but that they have plenty of competent architects and engineers for design, once they know what to aim at under the policy and program. So, design might also come into the work which my recommendations contemplate, but I think not at the very first, and preferably at the suggestion of the Iraqis when they find that they need it".

[37] See, Doxiadis, *DA Projects: Iraq V.1 - Diaries, op.cit*.

[38] See, Doxiadis, C. A. (1958) *No more regional planning: a move towards regional development programs*. Document, Ref. Code 2509. Doxiadis Associates. This paper was prepared for the United Nations Seminar on Regional Planning in South East Asia, Tokyo, 1958, and outlined the housing policies put forth in by the Regional Development Program for Greater Mussayib, Iraq.

[39] *Ibid.*,

Doxiadis Associates in the Steppe of Iraq.
Figure 3.1

All together, what differentiated Doxiadis from the rest of the western consultants summoned by the Development Board was his expertise from the Greek Reconstruction and Recovery programs that guaranteed his managerial abilities to face the multifaceted aspects of a national housing program. To put in context therefore the arguments unfolded in the previous chapter, against the clearly pro-western politics of King Faisal II and among the multitude of westerners streaming into Iraq, Doxiadis' nationality was an insignificant factor to his contracting.

On the other hand, though (as correctly denoted in the majority of scholar texts) his approach no matter the scale or the kind of the project originated in the same principles later on formulated within the ekistic theory, ekistics *per se* was not promoted as a planning framework for modernization.[40] When the Iraqi commission was granted, ekistics was still an incubating theory and as derived from Doxiadis' diaries was hardly put on the table for supporting his bid. In my understanding, ekistics was an appealing business card in academic and professional circles, and provided *a posteriori* a theoretical background to Doxiadis' projects. As I shall analyze in the following chapters, the holistic thinking of Doxiadis exemplified by the ambition to establish the science of human settlements had its own contradictions that were most evident when dealing with local contexts and during the process of implementation.

The Program - Need for immediate results

Originally, the Iraqi Government appointed Doxiadis Associates as consultants to the National Housing Program with the aim to formulate and propose the necessary policies in regard to the housing needs of the country. At the time, Iraq faced a critical housing shortage that was further compounded by the lack of public utilities (the most critical one being the sewage system), infrastructure and community facilities. As described in a DA pamphlet,

> "[s]hortage of houses is not the only aspect of Iraq's acute
> housing problem. A considerable portion of existing houses are
> deprived of essential facilities. Only 20% of the houses in Iraq
> have piped water and only 17% have electric light… It has been
> estimated that 50% of the urban and 90% of the rural houses […]
> are in need of amelioration works such as the addition of
> kitchens, showers and toilets, replacement of roofs, addition of

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[40] I refer to the arguments unfolded in Pyla, P. (2008) 'Back to the Future: Doxiadis's Plans for Baghdad', *Journal of Planning History*, 7(1), pp. 3–19, p. 6.

floors, etc".[41]

On the other hand, the program had to take in consideration and respond to a series of problems. Apart from the administrative constraints and the lack of a competent authority discussed above, the insufficiency of inexpensive or good building materials, and the lack of skilled labor and technicians (such as junior engineers, carpenters, masons, plumbers, electricians and even painters) hindered any project related to construction.[42] Inasmuch, the national housing program was intrinsically linked to broader socio-economic policies, like for example the resettlement of rural-to-urban migrants in tandem with slum clearance programs. Most importantly, the above policies unfolded in the peculiar circumstances of a disproportionate economic growth "in sharp contrast to the poverty prevailing in Iraq", which, as we shall see, created an uneasy socio-political framework.[43]

After successive meetings with officials and representatives of the government, Doxiadis crafted the program as a set of interlocking projects and actions whose scope encompassed urban and regional planning, and even included industrial production and professional education programs. During the three years of close collaboration with Nuri al-Said's government and the Development Board, Doxiadis built up an impressive track record of follow-up projects. The NHPI in particular comprised preliminary master plans for the capitals of the 14 *liwas* or provinces; housing projects for urban and rural areas; regional plans for the establishment of new rural settlements; housing projects for new industries; the establishment of vocational schools and the training of Iraqi professionals by DA; the organization of a Public Housing Authority; and the establishment of a research center for building materials and construction methods. In this respect, the NHPI was not only the first large-scale program of DA, but as well the first time Doxiadis had the opportunity to test and develop his ideas and methodologies as a comprehensive program of integrated actions. Most importantly, a great deal of these working concepts was systematized further in ekistics. Practice and theory went hand in hand.

In early 1954, a year before the commission of the NHPI and right after the Delhi conference, Jacob Crane sent to Doxiadis a copy of a report titled "The Economic Development of Iraq".[44] The report had been issued by the Mission of the International Bank for Reconstruction and Development (IBRD) after a three-month survey in early

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[41] See *Iraq Housing Program* (1959). Athens: Doxiadis Associates (5).

[42] See, Doxiadis, *DA Projects: Iraq V.1 - Diaries*, *op.cit.*, and International Bank for Reconstruction and Development (1952), *op.cit.*, p. 453.

[43] See, International Bank for Reconstruction and Development, *op.cit.*, p. 1.

[44] Actually it was Douglas Stone from the HHFA who sent Doxiadis the copy on behalf of Crane. See, letter from Douglas Stone to Doxiadis, 16 February 1954, C. A. Doxiadis' Personal Correspondence 1951 - 1956 (A-Z). Document, Ref.Code 24345. Doxiadis Archives."

1951 with the aim to review the country's economic potentialities and make recommendations for a development program.[45] The outlined recommendations covered different areas such as agriculture, industry, public health, and education, and included proposals on flood control, irrigation and drainage, transport, community planning and housing. When the Greek planner arrived in Iraq therefore, he was well informed and prepared to face the challenge. The NHPI set forth by DA in fact, stemmed from or had several points in common with the IBRD report.[46] Doxiadis' proposals however seemed to respond more effectively to the Development Board's main demands, namely immediate action and publicity.

One of the most essential factors in the NHPI was "time". Despite the fact that Doxiadis was a proponent of long-term programs embedded in macro policy frameworks, in the case of Iraq he understood right from the start that one of the priorities of the Iraqi government was the immediate implementation of housing projects. At his second visit to Baghdad in July 1955, Doxiadis proposed to the Minister of Development a planning strategy based on long-term and short-term programs, the latter comprising projects of high priority, some of which were to be continued as part of the long-term program. The idea was well-received and the Minister himself acknowledged that "only such a double program could save the country".[47] Consequently, Doxiadis notified Crane about the new focus of their endeavor:

> "By reading [this letter] you will understand that a major change has taken place in our discussions with the Iraq Government; it is the introduction of the SPA or the Special Program of Action. The introduction of this element is something which was not necessary as public opinion has been mobilized now in favor of housing and it would be impossible to tell to the public of Iraq that they have hired housing experts who will come back in 12 months time with some big volumes on housing but without having built anything yet".[48]

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[45] The Mission employed UN experts from different agencies and was conducted after an official request from the Government of Iraq in October 1950 under the auspices of the Development Board. See, International Bank for Reconstruction and Development, *op.cit.*

[46] Doxiadis was closely connected with UN agencies and experts, had attended numerous seminars, and participated in the Syria and Jordan Missions in 1954. The similarities between the recommendations of the IBRD Mission and the DA program tell a lot about the origins of Doxiadis' working concepts.

[47] See, Doxiadis *DA Projects: Iraq V.1, op.cit.*,

[48] Letter from Doxiadis to Crane, 30 July 1955, *Correspondence, op.cit.*

Laying the cornerstone of a housing program without further delay was for Doxiadis a matter of professionalism. For the Iraqi government on the other hand, housing construction had a major socio-political significance, especially under the looming threat of a public uprising. During the Regency of Faisal II in fact, strikes and revolts driven by anti-colonial sentiment or mere economic demands posed a continuous and direct threat to the government. The uprising of 1948, popularly known as *al-Wathba* ("the leap") in a first place incited against the Portsmouth Treaty and the British military dominance, soon was transformed to a massive cry for "bread and clothes" and democracy.[49] After three months of turmoil the protests had spread all over the country culminating in "the great march" (*al-Masira*), when thousands of IPC's K3 oil station workers decided to march 250km on Baghdad.[50] Some years later, in 1952, a new wave of strikes joined by student protests burst in the urban riots known as *al-Intifada* ("the tremor"), finally to be halted by the declaration of a martial law.[51] At the same time, the Communist Party's support to the revolts was contested by the government with bloodshed measures.

Against that background, housing was contemplated as a welfare policy meant to rival the communist promises for social justice. The National Housing Program of DA then, not only aimed to showcase progress but as well the social concerns of an otherwise repressive regime. To the extent that social demands conflated with the Nasser's call to Arab nationalism and espoused the abolishment of the established power relations with the West, housing had to represent the local spirit and forge a national identity. As such, the DA program was imbued with anti-communism and nationalist fervor, as principally mirrored in projects developed under the umbrella of research and experimentation.

The Sarifas settlements

After the Second World War, dozens of peasants otherwise called "fellahin", flocked to the cities in search of unskilled labor either in newly established factories either in the numerous construction schemes, above all in Baghdad. While the economic development of Iraq was spearheaded by the oil sector, agriculture and local economies intrinsically connected to everyday life steadily atrophied. On the other hand, reformist policies deprived rural population from their land claims and forced the Bedouins to abandon

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[49] See, Haj, S. (1997) *The Making of Iraq, 1900-1963: Capital, Power, and Ideology*. State University of New York Press, pp. 102-105.

[50] The workers initially went on strike for higher wages, but after two and a half weeks, when the Iraqi government cut them off from food and water supplies they initiated the march. Reportedly, on their way to Baghdad the strikers were fed and sheltered by villagers, but finally they were arrested at Fallujah, some 70 km from Baghdad.

[51] *Ibid.*,

herding and traditional practices. At the core of such issues was the land ownership and tenure system, principally a legacy of the Ottoman Administration that had undergone important legal reforms during the British Mandate. In short, in the Kingdom of Faisal II the different forms and categories of land ownership were the following: land under private ownership (*Mulk*); state land reserved by law for public purposes (*Matruka*); land committed for religious purposes (*Waqf*); and land of mixed ownership destined to productive use (*Miri*).[52] The last category comprised three different types of "tenure" (*Miri Tapu*, *Miri Lazma*, *Miri Sirf*) after which the holder had the right to negotiate the land ownership.[53] Nevertheless, the introduction of the Land Settlement Law and the *Lazma* Law in 1932, after which the homonymous land type was validated, permitted the government to veto such transactions or grant ownership after the authorization of Land Settlement Committees.[54] Practically, the land distribution effectuated by successive regimes and based on the above laws reinforced feudalism and consolidated the power of sheiks allied to politicians.[55]

At the other end of the socio-economic spectrum, peasants and nomads with limited options to labor crowded in squatter settlements both on the outskirts and in open spaces of the old city.[56] The so-called *sarifas*, practically huts made of reed and mud, mushroomed in the early 1950s and in the case of Baghdad came to account for about 45% of the total built stock![57] These improvised settlements barely had sanitation facilities, piped water, or electricity, and were officially considered a threat to the Iraqi society (Figure 3.2).[58]

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[52] See, Sassoon, J. (2012) *Economic Policy in Iraq, 1932-1950*. 2nd edn. Taylor & Francis, pp. 156-157.

[53] Doxiadis annotated in his diary after his first meeting with the Lord Mayor of Baghdad, three categories of land ownership, namely "purely private land", "Lazma land which, according to the last law, belongs 50% to the government and 50% to the cultivator", and "Tapium land, belonging 1/4th to the government and 3/4th to the private people who are cultivating them". See, Doxiadis, *DA Projects, op.cit.*,

[54] Sassoon, *Economic Policy in Iraq, op.cit.*, pp. 161-162.

[55] *Ibid.*, and Doxiadis, *DA Projects, op.cit.* Doxiadis probably referred to the Lazma Law when he wrote , that "it is the recent law which has entitled the government to claim back the above percentages of land not owned but cultivated by the private people".

[56] As Huma Gupta accounts, Kurdish migrants from the north settled in tenement housing in the old city, whereas the majority of rural migrants from the south set up their own *sarifa* communities on the eastern bank of the Tigris. Gupta, H. (2008) 'The Place of Slums in Utopia', unpublished conference paper. *23rd Annual Middle East History and Theory Conference.*

[57] According to Hoshiar, Baghdad had some 44,000 sarifa. See, Hoshiar, *op.cit.*, p. 65.

[58] Gupta, 'The Place of Slums in Utopia', *op.cit.*,

Sarifas Settlements.
Figure 3.2

After visiting the *sarifas* Doxiadis characteristically wrote:

> Outside of the Band wall conditions are much worse. Not only
> there is no ownership of the land, but no plan, no order, no water,
> no roads, no facilities at all; this reminds of a big camp with tends
> which have been pitched overnight without any order. This
> reminds of an army without leaders, of a society without classes,
> without order, without pattern.[59]

Doxiadis was contracted to put order in slum settlements, therefore the proposed actions
had invariably a significant political weight. The first SPA programs were conceived to
meet the housing needs of the *sarifa* dwellers.[60] In tandem with slum clearance projects,
the resettlement of rural migrants in communities built from scratch was a first-rate
measure that sought to appease the growing discontent of the impoverished masses.

What is more, a considerable part of the middle class was being threatened with evictions,
due to the opening of new roads, particularly in Baghdad. The majority of these people
were on the threshold of becoming homeless and the only option left was to join the
squatter settlements. Rahman el-Jalili from the Development Board urged Doxiadis to
"start working immediately for the middle class",[61] and the Lord Mayor of Baghdad asked
him to devise a program for the slums that mushroomed at the periphery of the city.[62]
Considering the emergency of the situation, Doxiadis proposed among other policies an
aided self-help program, which however was not met with enthusiasm by the Development
Board.[63]

Eventually, the question of whether the DA projects were unfolded to cover the acute
problems of the *sarifas* and their impoverished tenants - or the extent to which the
proposed actions were implemented – remains unanswered. Officially, the SPA projects
that were carried out addressed social groups with "a considerable role in the
development of the country", such as civil servants (12,000 houses), industrial workers

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[59] Doxiadis, *DA Projects*, *op.cit.*, p. 22.

[60] See, Doxiadis, C. A. (1955) *SPA*. Document, Ref. Code 23877 R-QA 1. Doxiadis Archives.

[61] Doxiadis, *DA Projects*, *op.cit.*,

[62] See, Crane, J. (1955) *Opinion of Mr. Jacob L. Crane on our Iraqi Projects (written in Baghdad on 10 December, 1955)*. Document, Ref. Code 23877 Q.A.42. Doxiadis Archives.

[63] Doxiadis discussed this possibility with el-Jalili, see, Doxiadis, *DA Projects, op.cit.*

(6,000 houses), and handicraft workers (1,000 houses with attached workshops).[64] And yet, in no case these groups were the most affected ones, as originally the concept of Special Programs claimed to address.

Against the growing discontent, the Iraqi government unfolded an extended campaign to advertise its accomplishments and forthcoming plans. From 1956 to 1958, the Development Board organized an event dubbed the Development Week, that is, a week-long "celebration of progress" showcasing governmental achievements in galas and exhibitions, publications and public speeches. Similarly, the 1957 Baghdad Housing Exhibition staged the domesticated modernity in prototypes, models, and photographs, while officials paid in situ visits to construction sites and first stone ceremonies.[65] Whereas Doxiadis' projects were on display, the buildings designated to renowned architects were conspicuous by their absence. The Development Board's pamphlets in fact, illustrated the modernization of the country with infrastructure works such as damns and bridges, and public buildings such as hospitals and schools, the only exception being the symbolically important Parliament building.[66] For in the end, the main objective was to legitimate in the social imaginary the development programs, thus legitimate the establishment itself. Giving visibility to housing and public benefit projects was fundamental in order to overcome the "crisis of legitimacy" of the ruling class before the impoverished people. Against the growing influence of Nasser's revolutionary discourse, the Development Board and Nuri al-Said himself propagated construction programs as a national endeavor originating in and destined to the Iraqi people.[67] Nevertheless, the disparities between the official discourse, the actual socio-political objectives of the Iraqi government, and the results accomplished, though hard to assess are impossible to refute.

Comprehensive Action

Despite the perplexed background and difficulties, the NHPI was implemented to a great extent as an integrated program of different scales (local, urban, regional, national) and

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[64] See, the pamphlet Doxiadis Associates (1957) *Experimental Housing Projects*. Baghdad: Development Board - Ministry of Development of the Government of Iraq.

[65] Gupta describes the Baghdad Housing Exhibition as a major gala attended by high-class people: "Although this was a public exhibition and advertised in the newspapers, the only nongovernmental local attendees seemed to be chicly dressed women in high heels and western suits, who were smoking cigarettes and eager-eyed and uniformed Iraqi schoolgirls. There were also a group of slick men, wearing western suits, who seemed to be conversing over a cardboard cut-out display of traditionally dressed men shown migrating to the city in a two-dimensional caravan. See, Gupta, *op.cit.*

[66] On the Development Week and a critique of the respective official Board's publications see, Marefat, M. (2007) '1950s Baghdad - Modern and International', *Taarii Newsletter*, (2-2), pp. 1–7.

[67] *Ibid.*, p. 3.

short-term / long-term actions. Most significantly, it was based on Doxiadis' early ideas on housing and development, some of them thereafter to be systematized in ekistics. Doxiadis' rationale was summarized in a report issued by Doxiadis after his visit to Baghdad, where he attended numerous meetings with high-ranking government officials and the sub-committee of the Development Board. The report emphasized that the housing crisis was world-wide; housing construction was a productive sector intrinsically linked to industrial production and regional-urban planning; a successful housing program should be comprehensive and integrated in an overall development program; such program should "tend to become national"; its solutions derived from local conditions and not from universal standards; and finally, time should be considered the fourth dimension of the program.[68]

On the other hand, the NHPI was developed after the programmatic requirements of the Iraqi government aiming to respond to local needs (and above all) in a tight timeline. That is to say that despite his hermetic planning philosophy, Doxiadis did not develop the Iraqi program in vacuum. In fact, a DA office was established in Baghdad in September 1955 with a workforce of four architects-engineers, reaching up to ninety employees at the apex of the program.[69] Initially, the Greek planner and his collaborators had to work with different departments and even continue some of the initiated planning efforts. The first task of DA for example, was to assist the Development Board and other agencies to implement some of their projects already in progress, like for example the construction of 1.000 houses promoted by the Ministry of Social Affairs.[70] Doxiadis progressively gained the respect and confidence of the Iraqi officials. As Crane informed him, "everybody here is convinced that you know everything. […] They are so prone to take your advice out-of-hand that they are likely to feel that you are in fact directing the construction phase and [that you are] responsible for it".[71] When Doxiadis eventually started to unfold his own proposals the only problem seemed to be time.

Altogether, the NHPI derived from Doxiadis' systemic thinking, was adapted to the local conditions, and was molded after the government's exigencies. It would be apposite then, to study the NHPI both as a model for organizing a territory practically from scratch and as

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[68] See, Doxiadis, C. A. (1955) *Aide-Memoire*. Document, Ref. Code 23876 Q.B.2. Doxiadis Archives. As analyzed in the previous chapter, some of those concepts formed the backbone of Doxiadis' modernizing discourse.

[69] See, Siouti, V. and Koronaios, P. (2003) 'The Greek... expedition to Iraq [Η Ελληνική... Εκστρατεία στο Ιράκ]', *Epsilon*, 4 May, pp. 76–82, p. 80.

[70] Doxiadis, *Aide-Memoire, op.cit.*, p. 4.

[71] See, Crane, J. (1955) *Opinion of Mr. Jacob L. Crane on our Iraqi Projects (written in Baghdad on 10 December, 1955)*. Document, Ref. Code 23877 Q.A.42. Doxiadis Archives. The only complaint was that Doxiadis did not pass sufficient time in Iraq.

an example of Doxiadis' methodology for managing a vast and manifold. In that sense, the NHPI typified his attempt to develop a planning approach from theory and for practice, that is, stemming from the global and responding to the local.

The NHPI was structured in three categories, namely the Basic Foundation Program (BFP), the General Housing Projects (GHP), and the Technical Assistance Projects (TAP). To the above was added the Special Program of Action (SPA) within which consequently opened another category of projects, namely the Experimental Housing Projects (EHP). Methodologically, the most important categories were the BFP and SPA. The former was the backbone of the NHPI and an umbrella for numerous follow-up projects that according to Doxiadis could even provide the basis for a comprehensive 20-year program. Under the SPA category on the other hand, unfolded priority projects, partial interventions, and even consultancy services to other organizations.

In a first place, the SPA comprised actions that sought to fill the time gap till the implementation of the BFP. As such, a special team of DA experts undertook the development of four low-cost housing projects in Baghdad, Basra, Mosul, and Kirkuk due to be completed by the Development Board's technical section in no more than five months time![72] The same team, always under the guidance of the celebrated planner, had to develop aided self-help projects for the *sarifa* dwellers of the four major Iraqi cities. The concept of the SPA seemed opportune and Doxiadis sounded optimistic, albeit preoccupied about the potential risks:

> I must say that I am quite happy with the confidence shown to us
> by the Iraqis but at the same time I must confess that I am for the
> first time a bit worried because expectations are very big.
> Everybody wants something done and if we do not succeed in
> moving quickly with the SPA then the whole basic foundation
> program for a long-term period may have no meaning at all.[73]

Crane on the other hand pushed for the rapid construction of the SPA even if this meant making mistakes, for those projects would later on "be considered a test of DA's ability to produce a really practical program, [n]ot only in Iraq but elsewhere, particularly in the several other interested countries in this region".[74] The risk of implementing in such a

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[72] Doxiadis, *Aide-Memoire, op.cit.*, p.3.

[73] Letter from Doxiadis to Crane, 30 July 1955, *Correspondence, op.cit.*

[74] See, Crane, *Opinion, op.cit.*, pp. 1-2.

short notice extended housing projects was high but so were the benefits. The fast track projects spearheaded Doxiadis in an uncharted territory, while the experience gained from their implementation was used to ground the BFP on a solid base. From that point onward, Doxiadis orchestrated the two programs as two communicating vessels, withdrawing from the one and pouring to the other personnel and resources in order to keep pace with the exigencies of the government. The short-term / long-term approach represented by the SPA and BFP was thereafter applied in several DA programs in different latitudes.

As said, the Basic Foundation Program (BFP) was the backbone of the DA planning campaign. It was conceived and developed as a 5-year program that sought to "satisfy the most urgent needs", "to organize the public services concerned with housing and settlements", and "to create a suitable framework for the further development of all the complex activities constituting the national housing effort".[75] According to the original plan, the program was due to begin in September 1956. All together, the BFP included urban, rural and special projects that ranged from the construction of new housing units and community facilities in existing cities, to the building of new villages for industrial workers. The urban projects for example, aimed to the "construction of 20,000 new houses, the development of 20,000 housing plots, the resettlement of 40,000 *sarifa*-dwelling families in new healthy quarters specially built for low-income communities, and […] the execution of the necessary works, either in the form of community facilities or of repairing and making additions to existing houses".[76] In that respect, DA prepared preliminary master plans for the capitals of the 14 provinces (*Liwas*) of Iraq, housing schemes, and transportation and infrastructure studies for Baghdad, Basra, Kirkuk and Mosul. Inasmuch, the BFP responded to specific requests of the Iraqi government, such as the provision of community buildings both in urban and rural areas, or the construction of housing schemes for new industrial plants.[77] In the case of Surchinar for example, in the northern part of the country on the borders with Iran, DA provided the plans for the construction of a settlement to house the employees of a major cement plant.[78]

The rural program on the other hand, aimed to the improvement of "the housing conditions

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[75] See the pamphlet *Iraq Housing Program, op.cit.*

[76] *Ibid.*,

[77] The establishment of social centers and social units (nurseries and workshops) in fact, had been initiated by joint ventures between the government and local authorities, in some cases presumably under the auspices of the Point Four program and with the assistance of experts of UN and American Missions. Reportedly, two social centers had already been built in Baghdad and two social units in rural areas. See, Doxiadis, *DA Projects: Iraq V.1 - Diaries*, *op.cit.*,

[78] See, 'The National Housing Program of Iraq', *op.cit.*, p. 54.

of 80,000 rural families", fairly a priority within the NHPI since the two thirds of Iraq's population lived in villages, while a small proportion was nomads. Two strategies were unfolded in respect, the first one concerning water supply and the construction of a sewerage system to existing villages, the second one the foundation of new rural settlements in tandem with the development of agricultural policies, flood control, irrigation, and drainage measures. The second category in particular, specified the resettlement of "30,000 families of the swampy southern areas in houses with firm foundations, thus freeing them from the dangers of flood and malaria".[79] The regional plan for the Greater Musayyib (or Mussayib), an area of 75.000 hectares South of Baghdad prepared for the permanent settlement of rural families was such a case (Figure 3.3).

In 1945, the Iraqi government initiated a pilot project for the construction of a new rural settlement in the region between the *Liwas* of Kut and Amarra, South of Baghdad. The Dujaila pilot project was "the first locally developed attempt to solve the pressing land tenure problems of the arid Middle East", and became a benchmark project thereafter.[80] The project was developed after the completion of the Kut barrage that raised water level in the Tigris for the irrigation of the surrounding area, and provided farm plots to the fellahin chosen to cultivate the land. Dujaila was a pioneering project whose main flaws were the inadequacy of social and health services.[81] In this respect, the IRBD Mission commented briefly on the concept and presented a new layout for the integration of community facilities in groups of farm plots designated as rural units.[82]

Doxiadis on the other hand, proposed a seemingly more urbanized layout of row houses aligned to vegetable gardens and irrigation ditches. The rectilinear pattern included pedestrian roads to access the housing rows, roads connecting with the cattle fields, and a broader canal system (Figure 3.4a,b). Altogether, the rural settlements formed villages, which were consequently clustered in four groups, each one featuring a head village of its own, whereas the whole area was administrated by an "urban center" of 15.000 people.[83]

Accordingly, for the distribution of the settlements built from a scratch literally in a desert landscape, Doxiadis resorted to one of his earliest influences in regional planning, namely Walter Christaller's Central Place Theory. Much alike in the Greek Reconstruction program, the Greater Musayyib plan was drew using hexagonal patterns, which, according

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[79] *Iraq Housing Program*, *op.cit.*

[80] See, Fisk, B. (1952) 'Dujaila: Iraq's Pilot Project for Land Settlement', *Economic Geography*, 28(4), pp. 343–354. Dujaila was hailed as "the first project of its kind in the Arab Middle East and the forerunner of a large scale social experiment".

[81] *Ibid.*, p. 354.

[82] See, International Bank for Reconstruction and Development, *op.cit.*, pp. 436-440.

[83] See, 'The National Housing Program of Iraq', *op.cit.*, p. 47.
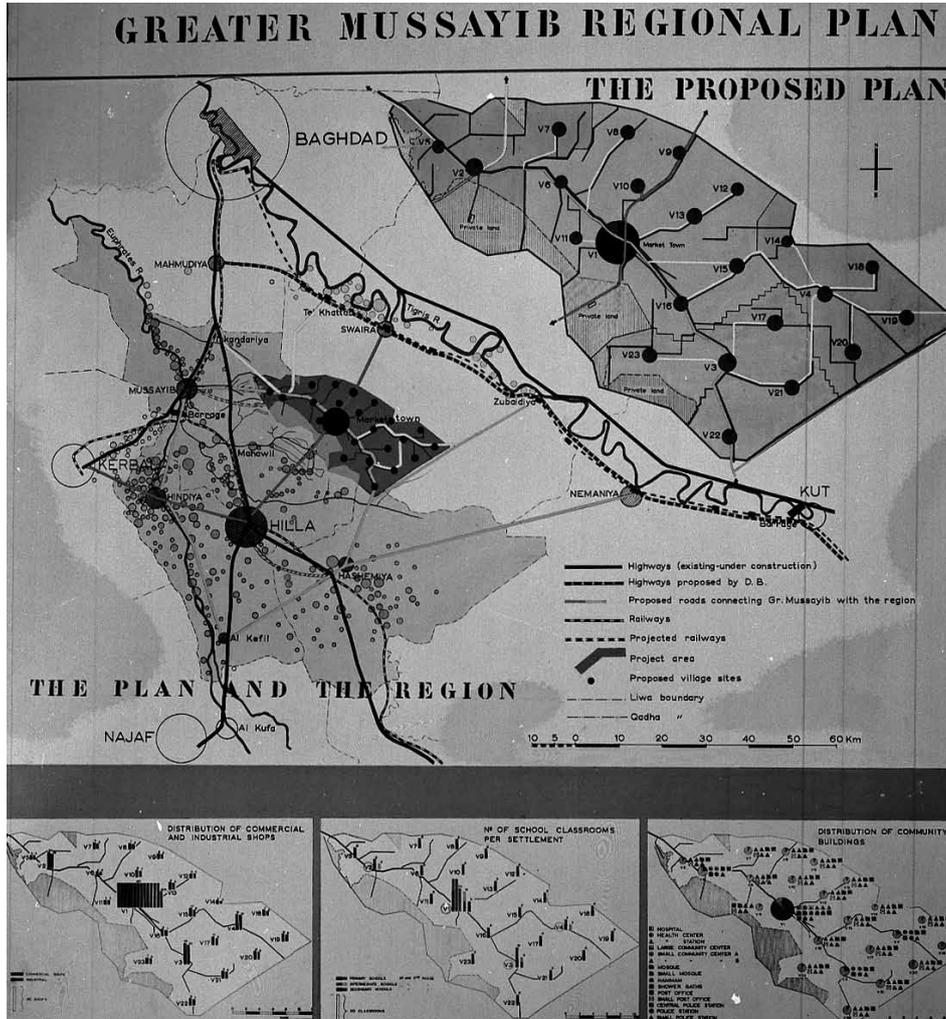
The Greater Mussayib Regional Plan
(Tables From the Baghdad Exhibition, Iraq).
Figure 3.3

ONE   ACCESS   PLOTS

TWO - ACCESS   PLOTS

Same access for people and animals.

Back-lanes for animals

Water point **W** serves houses along streets **AB** and **CD**.

Water point **W'** serves houses along srreets **A'B'** and **C'D'**.

Greater Mussayib - Village Layout Principles.
[Doxiadis, C. A. (1958) *No more regional planning: a move towards regional development programs*.
Document, Ref. Code 2509. Doxiadis Associates.]
Figure 3.4a

GREATER MUSSAYIB - VILLAGE V 15, LAY-OUT
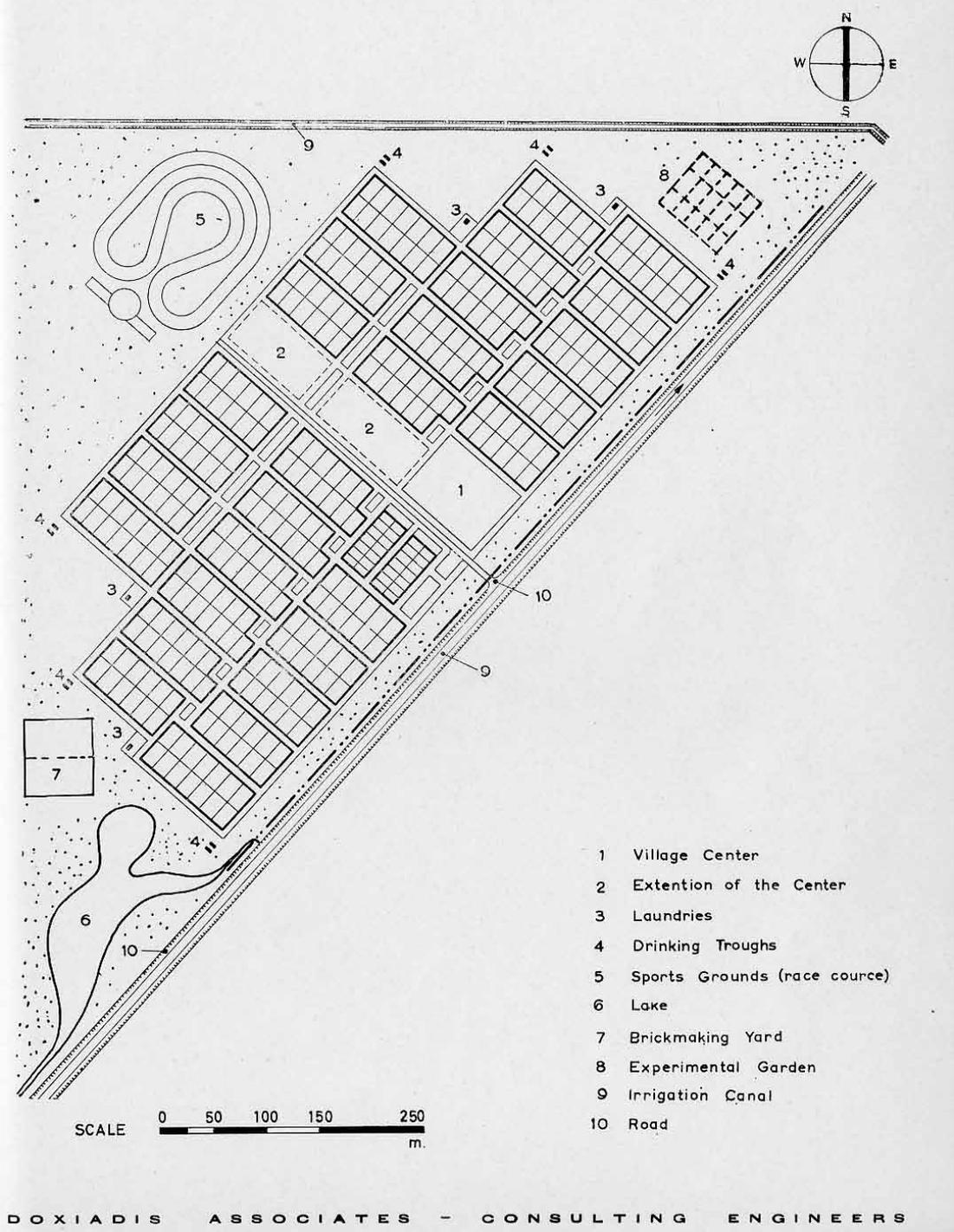
1	Village Center
2	Extention of the Center
3	Laundries
4	Drinking Troughs
5	Sports Grounds (race cource)
6	Lake
7	Brickmaking Yard
8	Experimental Garden
9	Irrigation Canal
10	Road

SCALE 0 50 100 150 250
m.

D O X I A D I S   A S S O C I A T E S   —   C O N S U L T I N G   E N G I N E E R S

Greater Mussayib - Village V-15 Layout.
[Doxiadis, C. A. (1958) *No more regional planning: a move towards regional development programs.*
Document, Ref. Code 2509. Doxiadis Associates.]
Figure 3.4b

to Christaller's theory, defined uniform areas "suitable to local geographical conditions" (Figure 3.5a,b).[84] Notwithstanding, the distribution of the new villages within every area followed the infrastructure lines, such as the irrigation canals and local roads. In other words, Doxiadis' use of the Central Place Theory was more effective in granting his plans a theoretical background and a scientific aura than in devising the actual layout (Figure 3.6).

On the other hand, and beyond the theoretical approach of the Greek planner to the organization of the territory, these operations even if advertised as development campaigns, had dubious effects on the rural population itself. While DA projects and similar policies were officially promoted as means to fight scourges such as floods or malaria, raise the living standard in the countryside, and constitute a policy against rural depopulation, in practice they entailed significant population movements, sometimes concerning specific ethnicities. For example, as Bet-Shlimon describes, the Iraqi irrigation and cultivation projects in the Hawija area advanced the Arabization of Kirkuk. Though "it is difficult to confirm or refute the idea that the Iraqi government undertook the Hawija project to change Kirkuk's demographics […] the notion that the Iraqi central government intentionally placed carefully chosen Arabs in the Kirkuk province for strategic reasons is plausible".[85]

Skilled labor, construction materials, and standardization
The most practical constraints to the implementation not only of the DA schemes but for the advancement of the overall building boom in Iraq were the shortage of construction materials and the deficit in skilled workers. Doxiadis discussed his policy proposals in a full-board meeting presided by the Prime Minister, and the Ministers of Development and Finance, where in respect to the former problem, he proposed the production of building materials from local raw materials and the importation of prefabricated and standardized components.[86]

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[84] *Ibid*., The Greater Musayyib area was part of one of the theoretical hexagons centered around the town of Hilla.

[85] Arbella Bet-Shlimon based her argument on contemporary accounts principally written by Kurdish nationalist scholars. Moreover, she referred to the case of an Euphrates-based irrigation scheme in the southern half of the country, where "the British embassy in Baghdad went so far as to briefly consider settling Palestinian refugees […] in the aftermath of the 1948 Arab-Israeli War in order to make up for a 'lack of population' in the region." See, Bet-Shlimon, A. (2012) *Kirkuk, 1918-1968, op.cit.,* pp. 168-170. Social engineering and an interesting example of compulsory villagization (in Tanzania) is analyzed in Scott, J. C. (1998) *Seeing like a state: how certain schemes to improve the human condition have failed*. New Haven: Yale University Press, pp. 223-261.

[86] See, Doxiadis, C. A. (1955) *Approval of our recommendations on the SPA and the BFP*. Document, Ref. Code 23877 Q.A.22. Doxiadis Archives.
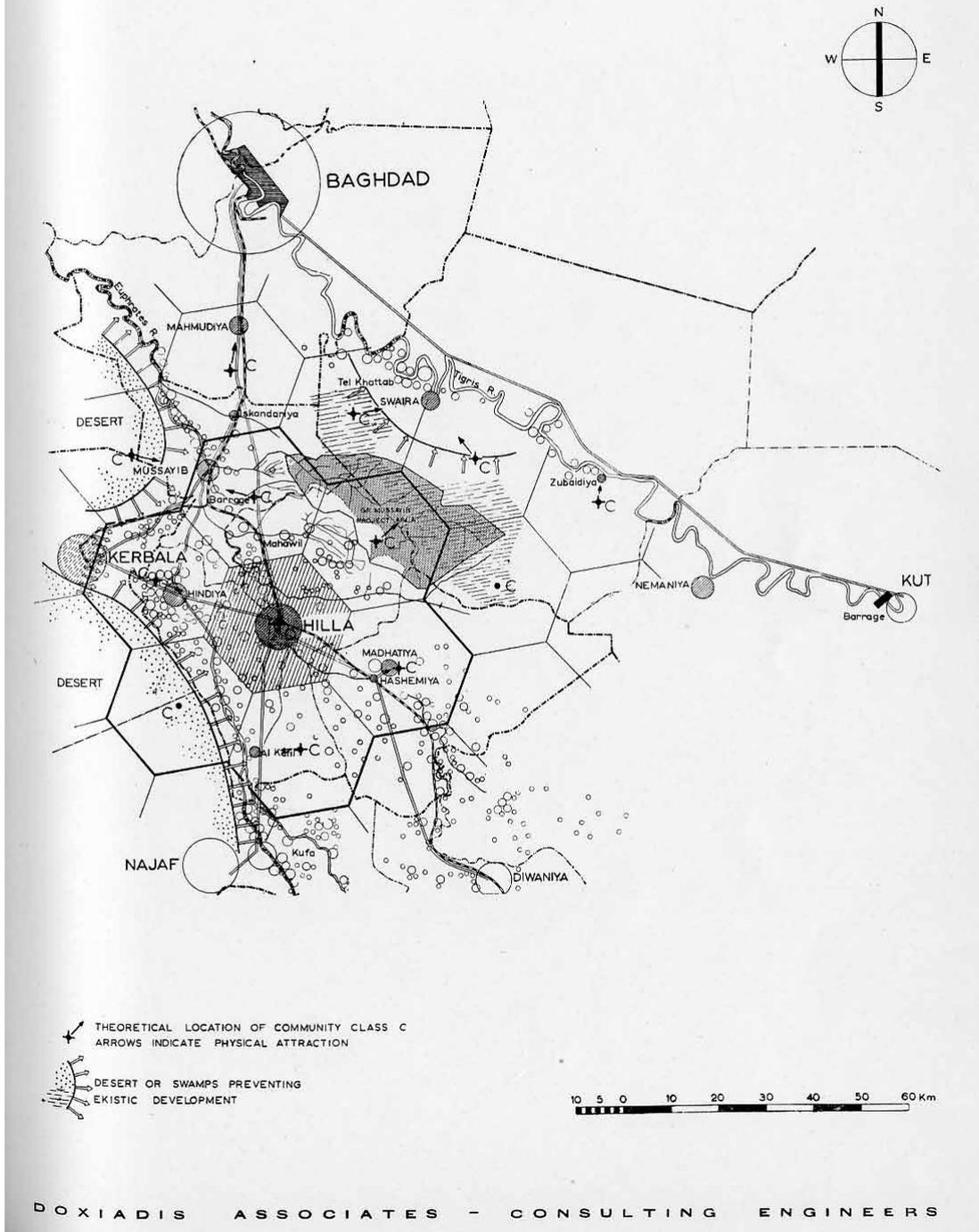
Greater Mussayib - The Theoretical Hexagonal Pattern.
[Doxiadis, C. A. (1958) *No more regional planning: a move towards regional development programs*.
Document, Ref. Code 2509. Doxiadis Associates.]
Figure 3.5a
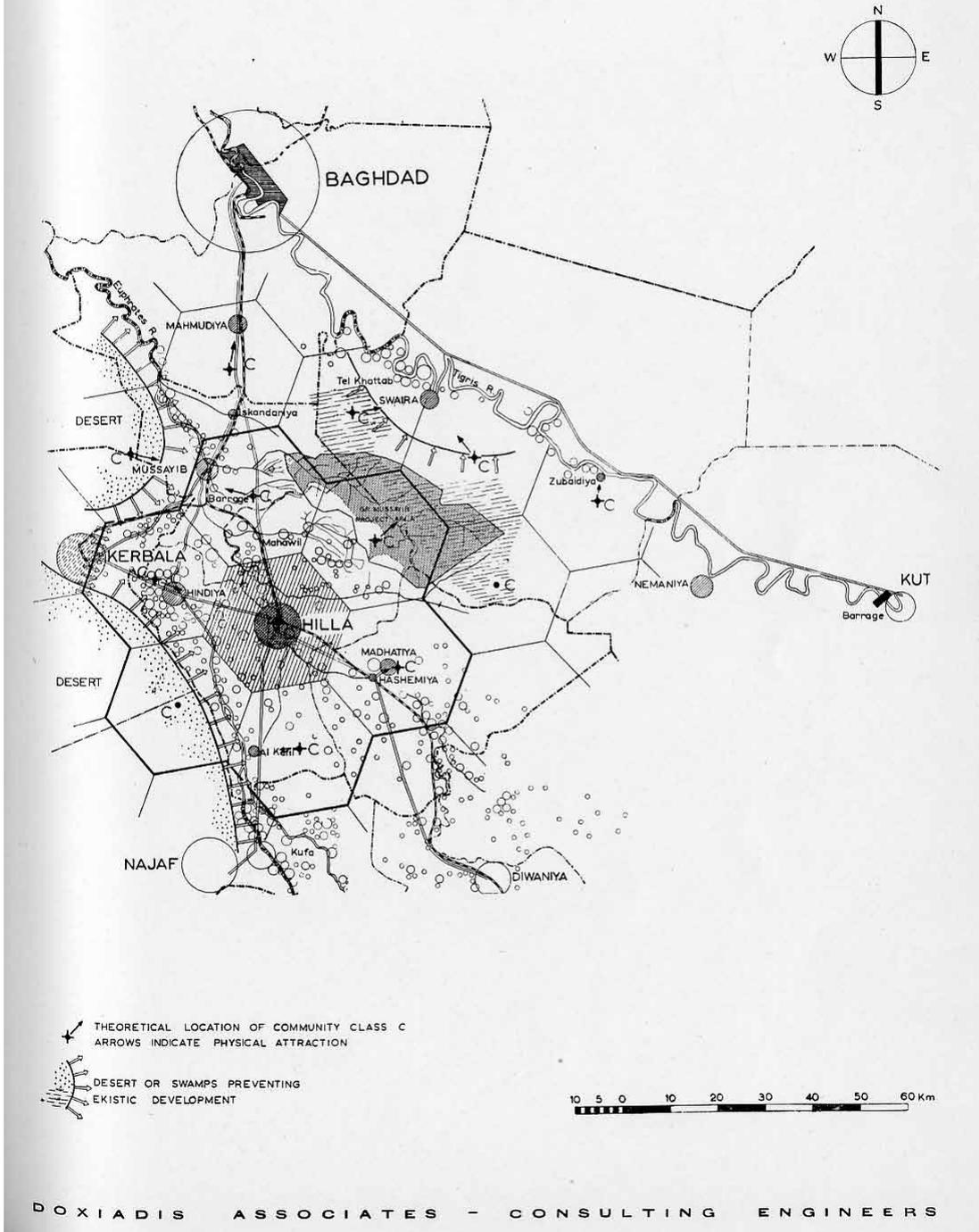
Greater Mussayib - Application of the Theoretical Hexagonal Pattern of Communities.
[Doxiadis, C. A. (1958) *No more regional planning: a move towards regional development programs*.
Document, Ref. Code 2509. Doxiadis Associates.]
Figure 3.5b

AVERAGE NUMBER CF DAYS PER MONTH WITH WINDS BLOWING FROM SPECIFIED DIRECTIONS AT 0500, 1100 AND 1600 GMT.

N

SCALE: I DAY = 0.5 cm.
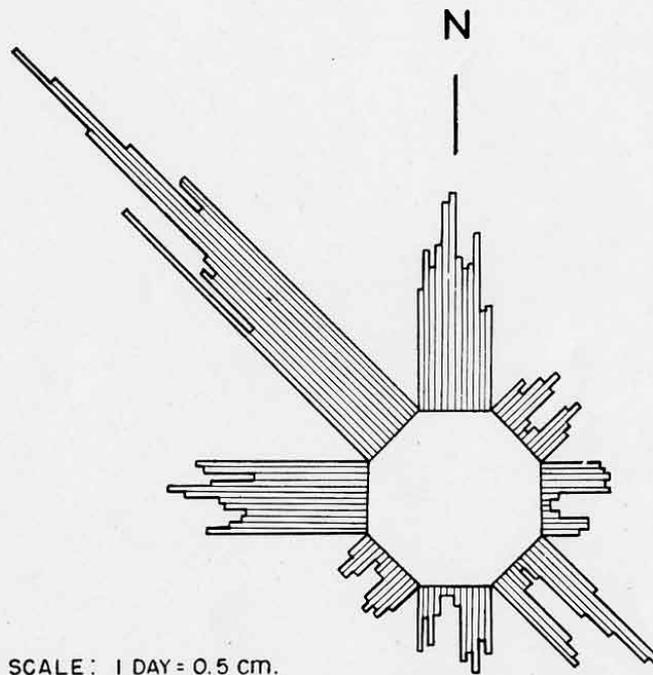
NOTES:
1. Data of the years 1908 - 1913 from Babylon meteorological Station.
2. Projecting from each side of the octagon are twelve columns representing the twelve months of the year working round clockwise from January to December.

DOXIADIS   ASSOCIATES   —   CONSULTING   ENGINEERS

Prevailing Winds in Greater Mussayib Region.
[Doxiadis, C. A. (1958) *No more regional planning: a move towards regional development programs*.
Document, Ref. Code 2509. Doxiadis Associates.]
Figure 3.6

Importing finished products had a higher cost, nevertheless as Doxiadis explained it reduced considerably the need for skilled workers that still was the main preoccupation of the Iraqi officers. To meet the needs of skilled labor, Doxiadis advanced the establishment of vocational schools for masons, plumbers, and electricians among other construction trades, in Mosul, Baghdad, and Basrah (Figure 3.7). Characteristically, in the case of Mosul where stone was in abundance, artisans from the northern areas of Greece were brought to teach stone craft.[87]

At the same time, young Iraqi professionals were trained at the DA offices in Baghdad and Athens so as to staff the Organization of Public Housing Authorities and continue the initiated programs, once DA and foreign missions had left the country. The necessity of such institution had been as well indicated by the IBRD Mission, which in its report called for the creation of a Housing Authority within the Ministry of Social Affairs, in tandem with the foundation of an Applied Building Research Station.[88] Doxiadis brought forward both ideas giving them a touch of his ekistic spirit. Technicians and professionals were introduced at the ekistic principles and the methodologies used by DA, whereas the newborn Housing and Settlement Research Center aimed to develop different aspects of the construction process, such as the application of new methods of construction, the introduction of new materials, and the improvement of traditional building systems.[89]

Crane on the other hand, considered both vocational training and a labor importation program proposed by Iraqi officials too slow and long term to benefit the SPA projects. To reduce the need for skilled labor the American expert proposed "on-the-job training" and the use of mechanized methods and construction systems for the standardization of the building process.[90] In particular, he discussed with Doxiadis the use of a Swedish system for making panels of lime, sand and aluminum powder called Ytong (a method which at the time was employed by an Israeli factory), the production of bituminized earth blocks with a compressing machine, or even the use of manual compression machines for producing earth-blocks and cement-sand bricks (Figure 3.8).[91]

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[87] See, Xatzopoulos, A. (2009) 'The National Housing Program of Iraq', in *Constantinos Doxiadis and his Work (vol.2)*. Athens: Technical Chamber of Greece, pp. 5–15.

[88] International Bank for Reconstruction and Development, *op.cit.*, pp. 57-58.

[89] See the booklet Doxiadis Associates (1957) *Experimental Housing Projects*. Baghdad: Development Board - Ministry of Development of the Government of Iraq. Originally, the Center was equipped with a library, a small architectural museum, and an information point, that is, a small complex destined to keep the public informed about the progress in construction schemes and register-exhibit the radical changes in the urban fabric of the Iraqi cities, especially of Baghdad's where old buildings were daily demolished.

[90] See, Crane, *Opinion*, *op.cit.*,p. 2.

[91] See, *Extract from Mr. Jacob L. Crane's Letter* (1956). Document, Ref. Code 23877 Q.A.50. Doxiadis Archives. For the roof construction Crane suggested the use of aluminum or fiber-cement sheets, and looking into an Italian prefabricated system for warped concrete roofs.

Booklet on the Vocational Schools for Building Trades in Baghdad, Mosul and Basrah, Iraq.
[Doxiadis Associates (1957) *Vocational Schools for Building Trades*. Development Board - Ministry of Development of the Government of Iraq.]
Figure 3.7

Building Materials for New Dwellings in Iraq (Special Program of Action 2, Iraq).
Figure 3.8

Housing Construction in Iraq (Basic Foundation Program, Iraq).
Figure 3.9

In any case and under the existing conditions in Iraq, a mass housing program could not depend on skilled carpenters and experienced concrete workers. The only way to deliver this perplexed and vast program was **standardization** (Figure 3.9). "In order to create tens of thousands of houses located in hundreds of communities or to construct a considerable number of community facilities and buildings scattered all over the country" within a tight time schedule, the program was partitioned and standardized.[92] As Doxiadis contended, standardization in a first place consisted in finding the proper module that would permit the simplification and economization of the overall housing program, from the division of land and the drawing of the community plan, to the design and construction of different housing types. The modular grid of the building plots, thus the ratio of width to depth of the different housing types, was alleged to be the outcome of a land development cost analysis, whereas another study accordingly defined the overall cost of housing types corresponding to different incomes.[93] Architectural design on the other hand, included standardized components and prefabricated building elements such as door and window frames, staircases, parapets, and pergolas, in order to simplify the construction process by assembling parts in situ. Countless reports issued by DA collaborators on the properties of raw materials and the derived construction elements such as bricks and blocks, on the industrial production of different building components, on the modular coordination in building, and even on furnishings, manifest the control Doxiadis sought to have over the design and implementation of the housing program. And yet, Doxiadis' commitment to mass production and standardized architecture often resulted at odds with the design and planning principles ekistics presumed to represent.

Establishing the guidelines of the Program

Doxiadis' first impression from Baghdad was the monotony of the surrounding landscape, and was accompanied by a commentary annotated as the first "special rule" for the Iraqi program: plans should be "richer in synthesis than in other cases".[94] In a first place, Doxiadis' approach to a "richer synthesis" involved the diversification of the housing types based on combinations of standard elements. In every case, and unlike colonial architecture, Doxiadis sought to root his housing schemes in traditional building practices,

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[92] See, *Iraq Housing Program, op.cit.*

[93] See, Doxiadis, C. A. (1957) *A method for the design of low-income housing [Μια Μέθοδος για την Αρχιτεκτονική της Λαϊκής Κατοικίας].* Document, Ref. Code 8032 R-QA 445. Doxiadis Archives.

[94] See, Doxiadis, *DA Projects, op.cit.* "On the contrary, if the monotony of the landscape is going to be repeated by a monotonous architecture and a monotonous planning, then we may do harm to the people who live in this area, who may easily turn mechanical and lose every interest in their habitat and for life around them. I think that we should make a rule out of it. It is perhaps the first special rule that I feel necessary about Iraq…"

albeit recasting them in order to fit with mass production. As he claimed, the evolution of architecture and ekistics itself were to breed at the crossroads of tradition and scientific planning.[95] As we shall see, the paradoxical relationship of tradition and modernity permeated every scale and aspect of the NHPI.

During the initial phase of the housing program, and while in discussions with the Development Board, Doxiadis presented in a short report the basic guidelines for the development of urban communities in Baghdad and other Iraqi cities. In a first place, these communities had a rectangular plan, a population of 5,000 people, and were framed by main streets leaving the interior area for pedestrian and in some cases for bicycle movement.[96] Every community contained the necessary amenities, that is, shops, an elementary school, and a hall combined with a social and health center. To harmonize this model with its social milieu, the Greek planner included in the scheme cultural amenities and religious services akin to the local ones, such coffee and tea houses in the vicinity of the community hall, mosques, and Turkish baths "with facilities for the whole community…".[97] Since the very beginning then, Doxiadis' sought to introduce into the planned communities elements and facilities that complied with the living patterns of the ethnically heterogeneous and largely Muslim population of Iraq. Similarly, his planning philosophy claimed to safeguard the human scale and the traditional characteristics of the developing societies.

Even if at a first glance Doxiadis' "sensitivity" to the local seemed at odds with the broader modernizing discourse, the proposed guidelines are better understood as a carefully crafted deviation from modern urban planning, and in particular as an alternative to the high-modernist schemes of Le Corbusier.[98] According to this discourse, cities and societies were amalgams of local and global elements and therefore architecture and planning should express both, instead of reproducing only western standards.[99] Ekistics

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[95] "The more we try to clarify our ideas and reach the most basic and essential forms, the more we find ourselves reaching back toward tradition…", see Doxiadis, C. A. (1960) 'Architecture in Evolution', *The Journal of the Royal Institute of British Architects*, 67(11-12).

[96] The width and characteristics of the bicycle lanes in tandem with the broader circulation of cars and pedestrians was discussed in a meeting between Doxiadis and el-Jalili from the Development Board. See, Doxiadis, *DA Projects, op.cit.*

[97] See, Doxiadis, *SPA, op.cit.*

[98] In Ahmed Mahsud's writings on the other hand, Doxiadis' theory is presented as an amendment of modern urbanism. See for example, Mahsud, 'Rethinking Doxiadis' Ekistical Urbanism', *op.cit.*,

[99] This was the main hypothesis in Doxiadis' paper "The Arab Metropolis" that outlined the theoretical (and generic) guidelines of ekistics for planning and development in the Middle East. The conference was delivered in December 1960 in an international seminar in Cairo, under the title "The New Metropolis in the Arab World". The seminar was organized by the Egyptian Society of Engineers and sponsored by the CCF, and took place in Cairo during Nasser's mandate. Apart from Doxiadis and his then associate Hassan Fathy, the seminar

therefore, promised to link the rapid economic development of the country with the housing needs of its society, or in other words to marry modernity and tradition. In effect, this proposal appealed both to national governments and their western counterparts. Doxiadis resolved this paradoxical relationship emphasizing the understanding and correct use of different scales in his comprehensive planning system. In that respect, as planning interventions unfolded from the bigger to the smaller scale, more importance was given to elements that supposedly represented local identities and needs. Whereas national development interlocked with global phenomena such as industrialization, demographic explosion, or rural-to-urban migration, community planning and architecture mainly related to the human scale and everyday practices. Nevertheless, and despite the fact that the existing city was comprehended as a hybrid of the local and the global, the DA communities were designed as islands separated from the detrimental effects of modernity and specifically from the automobile.[100]

In a similar vein, the general guidelines for housing construction sought to root the DA projects in local practices, or better said in Doxiadis' own interpretations of the "local". As his report specified, the Iraqi houses should comprise three kind of spaces, namely an enclosed space, a semi-enclosed space (a covered veranda), and "an open courtyard with a compound wall raised to protect the women of the household from being seen from outside".[101] The courtyard in fact, was an important feature in Islamic architecture (*sahn*), and formed part both of traditional mosques and residences. Every housing variation then, should have a living room also used for receiving visitors, one room for the men and another for the women of the household, a kitchen, a storehouse, a lavatory and a latrine, the necessary verandas and courtyard; all the above estimated between 80 and 100 square meters total floor space area (Figure 3.10).[102]

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featured the participation of eminent architects such as Michel Ecochard, Cornelis Van Eesteren, Maxwell Fry, and Ernesto Rogers. See, Doxiadis, C. A. (1960) *The Arab Metropolis*. Document, Ref. Code 2556 Doxiadis Archives R-GA 212. Athens: Doxiadis Associates. For an interesting juxtaposition of Hassan Fathy's and Doxiadis' conferences as representative of their respective planning philosophies, see, Pyla, P. I. (2007) 'Hassan Fathy Revisited', *Journal of Architectural Education*, 60(3), pp. 28–39.

[100] In the case of the "Arab Metropolis", Doxiadis considered that modern networks and machines "infiltrated" the international to the local, starting from the airport, the harbor, or the railway station and passing to the city scale with the use of the car. On the other hand, Doxiadis describes in his diary an episode that manifests his interest on the transformation of local cultures and societies. In August 1955, and when flying from Karachi to Baghdad, he stopped at the airport of Dhahran of Saudi Arabia: "[w]e enter into an air-conditioned room and then to an air-conditioned bar and soda-fountain which is run by Americans selling American products, breakfast ice-cream and so on. Everything is clean as in the U.S.A. [...] It is characteristic that the poor fellah of the arabic desert who has been struggling a few years ago for survival is now able to eat, and pay for it with his own profits, at an American restaurant. [...] I wonder where do these Arabs belong? What is their world?" See, Doxiadis, *DA Projects, op.cit*.

[101] Doxiadis, *SPA*, op.cit., pp. 7-8.

[102] *Ibid.*

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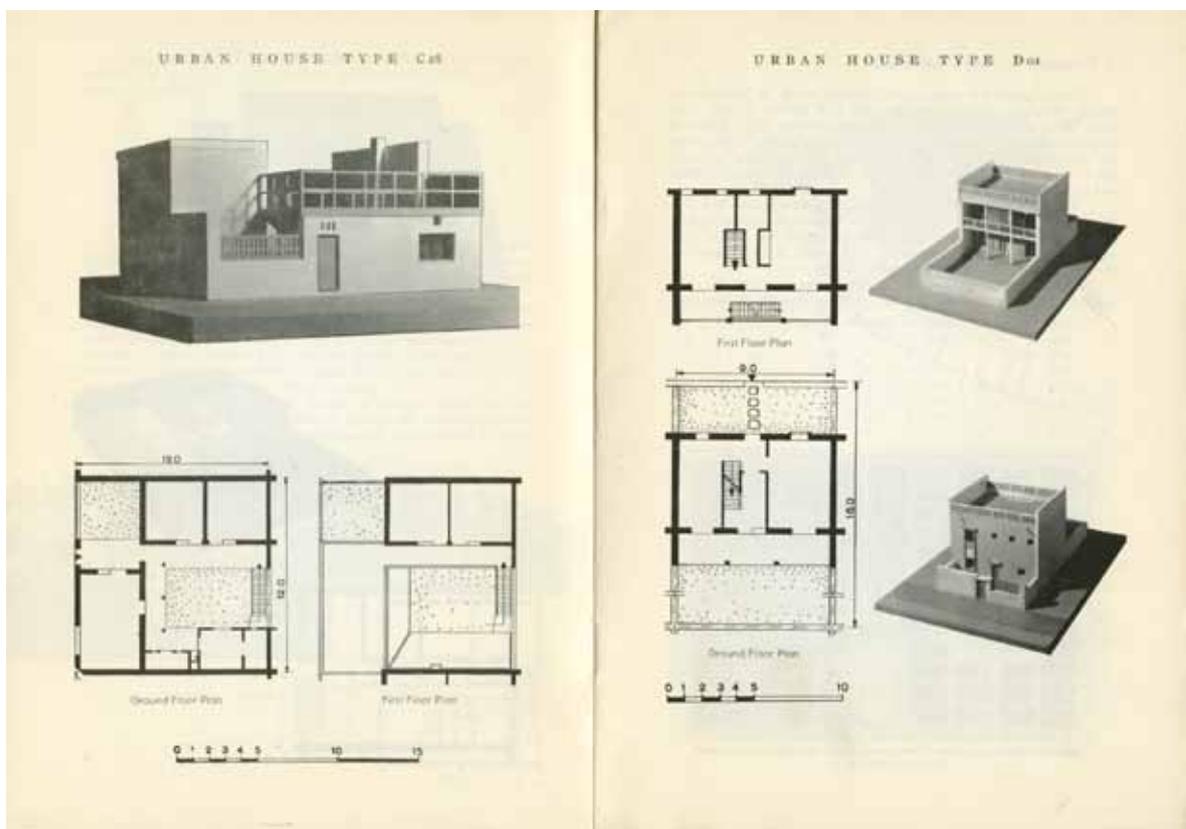
Urban Housing Types - C28 with an interior patio / D01with a backyard
Figure 3.10

The extreme climatic conditions as well imposed restrictions in building materials or required specific architectural solutions. One of the first observations for example, was the necessity of cross ventilation, a feature that had to be studied carefully in tandem with the interior distribution in order to avoid incompatibilities with local habits, such as having openings that permitted visual contact with the interior courtyard.[103] Moreover, the anecdotal observation that people liked to sleep on the roof of their houses during the hottest periods of the year, had to be taken in consideration for the roof construction system, therefore excluding the use of lightweight materials alone.[104]

Altogether, Doxiadis' approach especially to the smaller scales of the program was aligned to the broader current of vernacular architecture that began to gain support as a response to climatic conditions and as a corrective concept to international architecture. Understanding the "local" and finding the corresponding solutions became the subject of a series of DA reports and the goal of experimentation programs. The most significant contribution to this end however, came from Hassan Fathy, the Egyptian architect who, having fled from Nasser's Egypt, joined Doxiadis Associates from 1957 to 1961.[105] At the time, Fathy had carried out his pioneering project for New Gourma, nevertheless his housing prototypes gained international attention and acclaim only after the publication of *Architecture for the Poor*, in 1973. The first task entrusted to Fathy was the design of rural housing types for the Greater Musayyib project. Much alike in New Gourma, his design proposals manifested the quest for a vernacular architecture that sought to adapt traditional construction elements such as the "badgir" or wind-catcher, to the needs of mass housing.[106] Fathy was instrumental in mining traditional building practices and in developing what Doxiadis called "traditional empirical solutions". Nevertheless, and despite the confluence of their theoretical inquietudes, their design approaches to the housing problem differed significantly, as best exemplified by the use of the interior courtyard. While both men praised this architectural element for its benefits in hot climates and its significance for social relations and private life in traditional societies, Hassan Fathy's housing types were modified radically in order to comply with rapid and mass construction, especially for the low-cost housing communities developed by DA in Baghdad and consequently in Islamabad.[107] As such, interior courtyards were changed to

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[103] *Ibid.*, Doxiadis recurred to a solution implemented by Ecochard in Morocco that consisted in modifying the section and lifting one part of the house in order to have cross ventilation.

[104] *Ibid.*, p. 8.

[105] For an account of Fathy's collaboration with DA, see Pyla, 'Hassan Fathy Revisited', *op.cit.*,

[106] *Ibid.*, p. 31.

[107] *Ibid.*, p. 36. In accord to DA's nomenclature Fathy's farmers' housing type was codified as "House Type QR9".

backyards in order to fit the long and narrow plots that according to DA studies economized space.[108] The inconsistencies between Doxiadis' theoretical discourse and the built results were nowhere more evident than in the aesthetics of the housing communities. Doxiadis might have succeeded in organizing the territory from a scratch, nevertheless his housing schemes were overwhelmed by the repetition of standardized buildings, and therefore were at odds with the first "special rule" for a richer synthesis. Naiveté aside, the prevailing impression of order and monotony was further enhanced by the designated street naming and property numbering. As denoted in an anonymous critique published after Doxiadis' lecture in RIBA,

> "Has he [Doxiadis] ever really put himself in the position of the man living in the n'th house of the m'th row of his West Baghdad? We must design areas for people, in their variety and nonconformity and need for identification with a recognizable place. Dr. Doxiadis has his view of the Parthenon from his office. It is his moral duty to provide the equivalent for Ali in house n, row m. Otherwise he is one more false prophet like the rest of them. Is it too much to ask from a profession, which thinks too much and lives too little?"[109]

Housing experimentations in Western Baghdad

The first DA projects in Baghdad were located in the western part of the city, overlapping with the areas that today extend between the neighborhoods of al-Washash and al-Mansour. The "Western Baghdad Development Scheme" (WBD) sought to provide housing for no less than a 100,000 people, while construction began in early 1957 (Figure 3.11a,b). The WBD plan divided the study area in communities of 7,000-10,000 people, and every community, otherwise called sector, was considered a small town with "its own administrative, educational, social, health and other community buildings, proper shopping centers and complete community facilities, that is, roads, water supply, sewers and electricity".[110] According to the classification system of ekistics, each one of these residential sectors corresponded to a Community Class IV, whereas the whole WBD area

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[108] Moreover as Pyla describes "Doxiadis Associates' attempts to reinterpret wooden window screens with reinforced concrete produced larger patterns of openings that were not nearly as effective in increasing wind pressure, in softening sunlight, or in providing a sense of privacy", see, Pyla, *op.cit.*, p. 15.

[109] *The Architects' Journal* (1960) 'Life with Doxiadis', 7 April.

[110] See, *Iraq Housing Program*, *op.cit*. For example, Sector 10 comprised 1.150 plots in tandem with the respective facilities and public buildings.

comprised several sectors and constituted a Community Class V, otherwise a polis (Figure 3.12). The nesting logic of scales and units where every community consisted of a number of lower order communities and the facilities corresponding to its size and population was one of Doxiadis' methodological tools for understanding and organizing space, no matter the scale or place.[111] On the other hand, the WBD scheme is a good example of the practical application of this comprehensive system represented graphically in the ekistic grid: when one year later DA was commissioned the Master Plan of Baghdad, the already built or under construction communities were easily incorporated in the overall plan, as well structured according to the same guidelines. All taken in account, the Greek planner used the ekistic classification system to organize a vast and unfamiliar territory in a rationale way easily comprehended, and therefore espoused, by the Iraqi officials. The methodology of nesting communities coupled with a touch of local color was a proposal not easy to turn down.

Some of the projects included in the WBD scheme were baptized "experimental" due to the application of innovative construction methods, practices, and management. Consistent with the analytic nomenclature of the program, those projects were grouped under a new rubric named the Experimental Housing Program (EHP). As explained in a pamphlet published in March 1957 by the technical section 5 of the Development Board and the Ministry of Development, the EHP comprised three avenues of experimentation: the first one focused on the very construction of housing projects, the second one comprised research projects on building materials and systems, while the third concerned collaborations with different contractors and firms for the implementation of Special Experimental Housing Projects.[112] Unfolding these endeavors in parallel with the general housing projects, Doxiadis sought to extract useful results for ameliorating the overall construction process, reducing costs and time expenditures. As explained for example in the aforementioned bulletin, the program considered several possibilities for assigning the building contracts to different agents, such as to property developers, small-scale contractors, or large-scale construction firms so as "to determine the relation of price fluctuations and market sensitivity to contract size".[113] The combinations varied in accord to the size and type of the commission. A single contractor for example, could undertake a project ranging "from a few dozen houses to hundreds of buildings", or several contractors could be employed separately in housing or other public works, such as road construction.

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[111] Doxiadis' classification system has been analyzed in several scholar accounts, see for example, Pyla, 'Back to the Future', *op.cit.*, and Sarkis, H. (2003) *Circa 1958, op.cit.*, p. 197.

[112] See, Doxiadis Associates (1957) *Experimental Housing Projects*. Baghdad: Development Board - Ministry of Development of the Government of Iraq.

[113] *Ibid.*, p. 3.
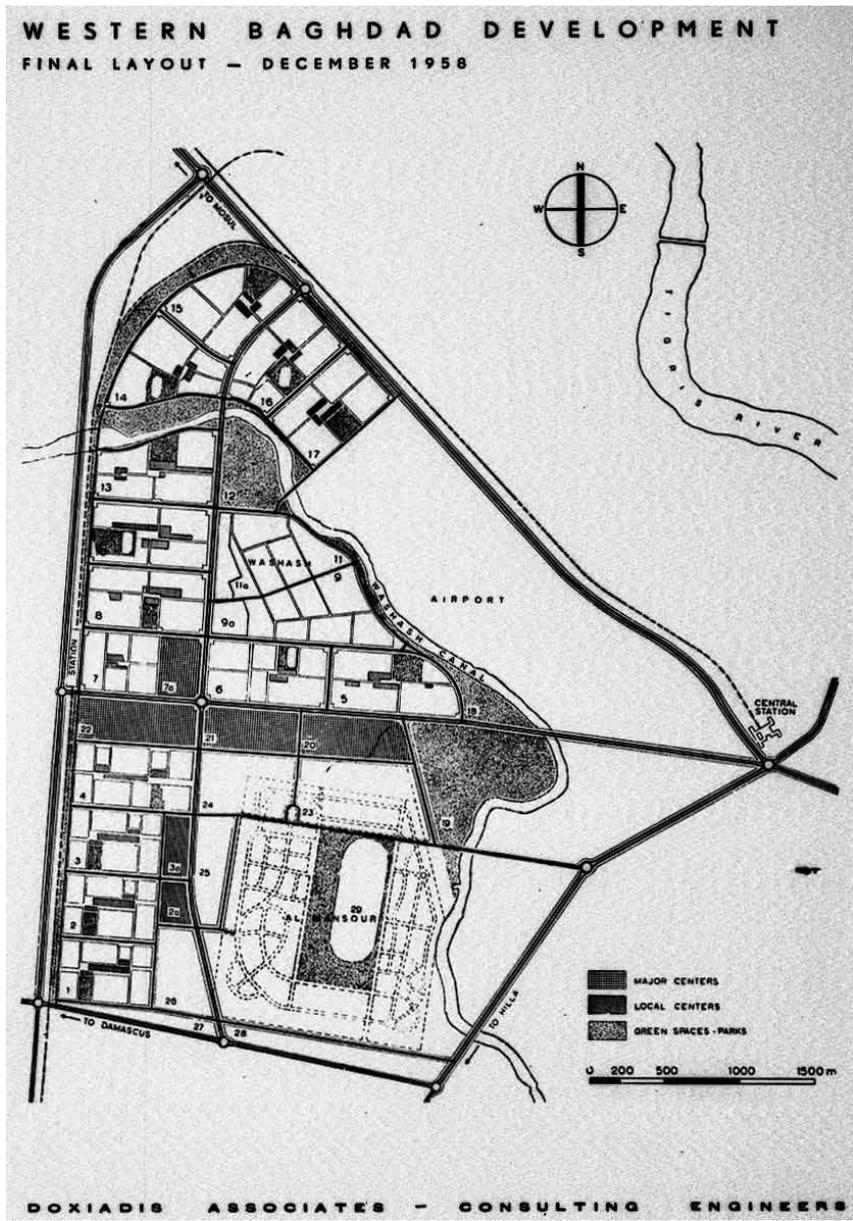
Final Layout of the Western Baghdad Development Plan.
Figure 3.11a

Photograph of a perspective drawing showing a view of a market-place in West-
ern Baghdad, Iraq, designed by DA.
Figure 3.11b
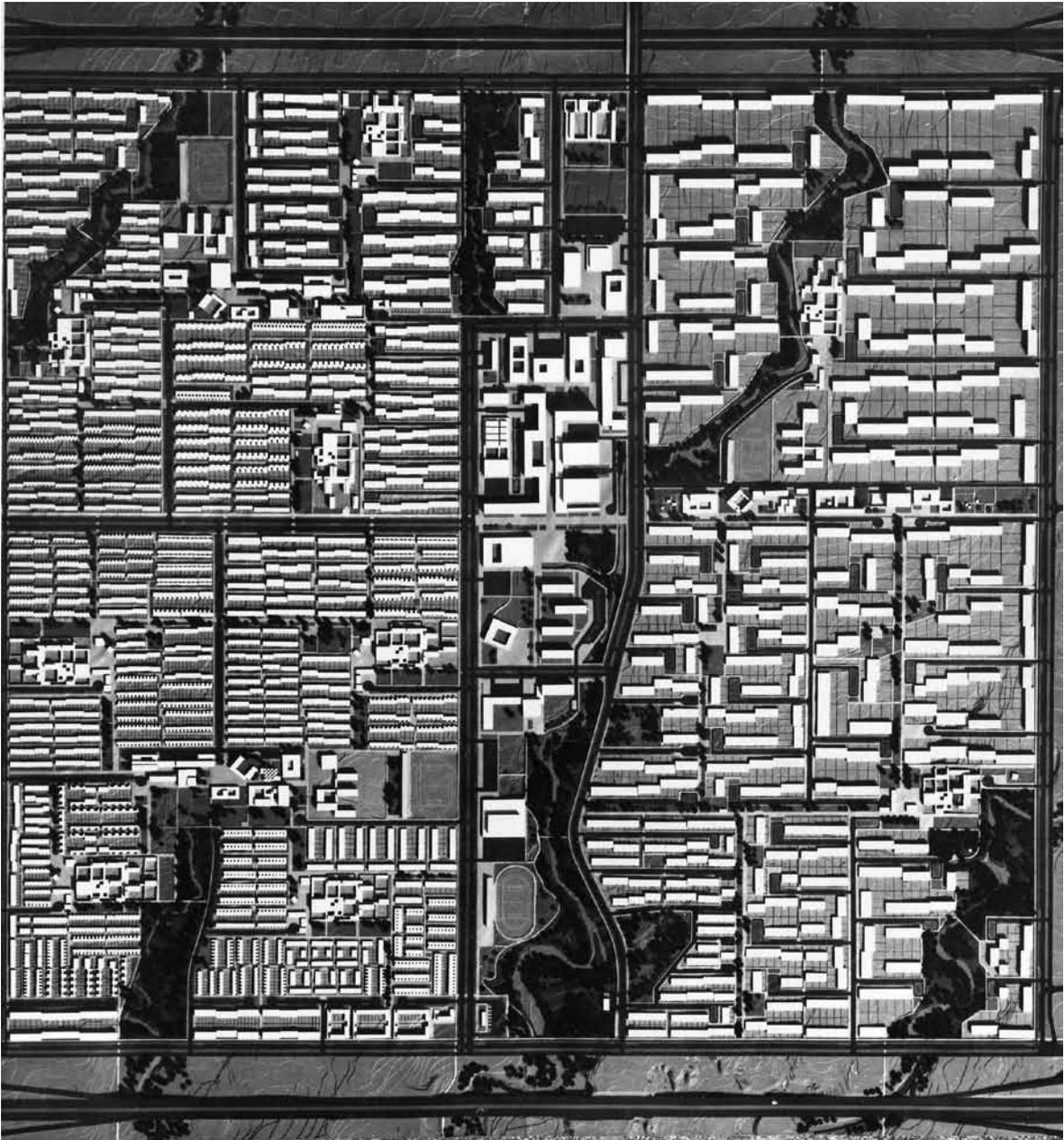
Model of a Community Class Sector G6 (Islamabad).
Figure 3.12

The first projects of the kind were built in Western Baghdad and were given the codes 13 and 5 after their respective community sectors. Both projects comprised groups of 15 to 20 houses, while each one of these groups consisted of "various types of houses suitable for a wide range of incomes".[114] In Project 13 for example, the houses ranged from the type A1 that was "suitable for persons with a monthly income of 10 dinars", and progressed to A2, B, and C types which corresponded "to 20, 30, and 50 dinar monthly incomes respectively".[115] In other words, the experimental unit of Project 13 was a low class neighborhood of 15 houses, with a pedestrian road and a square. On the other hand, Project 5 comprised housing of higher standards that corresponded to monthly incomes of 78 to 100 dinars.

While the Experimental Projects 13 and 5 comprised different home-ownership standards, therefore providing feedback from various perspectives, the two communities did not merge and were not even placed in vicinity. Though Doxiadis' classification system was apparently a method for organizing space according to different scales and facilities, its hierarchical logic as well entailed a system of social ordering that stipulated the gradual shift from low income sectors to high income sectors. Apparently, preserving the integrity of different income communities was one of the Iraqi government's demands, and yet Doxiadis' experimental endeavors did nothing to overcome segregation. In the end, architectural elements and infrastructure works such as the opening of the Army Canal were used as social barriers in accord to the regime's decisions.[116]

On the other hand, the EHP examined different agreements for the purchase of property in the prospective residential communities based on combinations of down-payment, outright payment, and installments. At the same time, aided self-help solutions were contemplated for people with limited financial resources, including the provision of a single room (nuclei housing) or the participation of the owner to the completion of the building once a contractor had constructed the walls and the roof.[117] While a careful analysis of such issues has to take in account the logistics of the program and so far unknown figures such as the final cost of the produced housing units, worth mentioning that Doxiadis was involved in decision-making in regard to the economic aspects of the housing program and the issue of home ownership since the very beginning of the discussions with Iraqi officers. Even if the Greek firm was originally contracted for devising housing schemes

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[114] *Ibid.*, p. 6.

[115] *Ibid.*, p. 7.

[116] See, as well, Pyla, pp. 12-13.

[117] See, Doxiadis Associates, *op.cit.*, pp. 2, 4.

destined to low-income groups, Doxiadis was soon consulted on more perplexed issues, such as the percentage of the expenditures on public works (for example, pavement construction) externalized to housing, or on the loans of the Iraqi government to industrialists in order to cover the 60% of housing schemes for their workers.[118]

The Iraqi Minister of Development agreed with the Greek planner in favor of home ownership instead of renting, and asked for more advices on how to capitalize and amortize the construction of the housing units. Doxiadis explained that the best policy especially for mass housing destined to the working class was a phased construction approach according to the nuclei system. To overcome objections to aided self-help policies like the ones for example expressed by the Development Board, Doxiadis named the concept "the growing house".[119]

Summarizing on the other hand the "principles of finance for Iraq settlements improvement program", Crane - a devoted New Dealer - postulated that it was "the purpose of the Crown to stimulate and assist in the improvement of all the human settlements in Iraq, - from Baghdad to the smallest village".[120] According to Crane, the central and municipal governments had to undertake a series of welfare state policies such as: assemble the necessary land in public ownership; carry out infrastructure works (roads, water, sewerage, electricity); provide technical services to aided self-help; lease lots; build houses for civil servants and industrial workers; provide recoverable investments, non-recoverable subsidies, and mortgage loans destined to different categories of beneficiaries.[121] All together, Crane's proposals aimed to the improvement of 500,000 households destined to 3 million people within the time horizon of 20 years. This was a macro-planning framework that as we shall see was barely sustainable within the socio-political turmoil in Iraq.

Finally, one of the most interesting and practical aspects of the EHP program had to do with the organization of the building process and in particular with the competitions of constructors. The Special Experimental Housing Projects were brought to implementation after an open call for construction bids, where contractors offered prices for building housing types approved by the Development Board, however proposing modifications

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[118] Doxiadis discussed such issues with the Minister of Development on 28 and 30th of August 1955. See, Doxiadis, *DA Projects*, *op.cit*.

[119] *Ibid.*,

[120] See, Crane, J. (1956) *Iraq - Financing*. Document, Ref. Code 23877 Q.A.53. Doxiadis Archives.

[121] *Ibid.*,

according to the construction method and materials.[122] The first competition was announced in March 1956 and concerned the construction of a low-income neighborhood of fifteen houses, while a second competition was announced after three months and concerned the construction of twenty two-storey houses for higher incomes arranged in rows (plus a paved street and sidewalks). Finally, the third competition was announced in early 1957, and considered the building of several housing types (from the cheapest type, AO4, to type D) on plots that ranged from 72 to 162 square meters. All in all, eighteen (18) firms submitted bids in the aforementioned competitions: seven (7) of them were from Iraq, three (3) from Lebanon, one (1) from Syria, six (6) from Europe - among them a German, a Norwegian, and an Italian firm - and one (1) from the U.S. In most cases foreign firms had to partner with local contractors in order to ensure results during the construction and follow-up period. As such, the EHP program entailed a significant knowledge transfer process to Iraqi enterprises, or as the DA bulletin proudly announced the program had "a favorable effect on the entire Iraqi labor force".[123]

In respect to the technical aspects of the program, the experimentation focused on providing solutions for specific problems, such as finding a stabilizing compound to be used in the bituminous and concrete mixes for the construction of roads and pedestrian paths, or ascertaining soil properties in the construction areas before the laying of foundations.[124] As accounted, in the wall and roof construction local contractors used to a greater extent brick products (kilned clay bricks; sand-lime bricks; stabilized earth bricks), whereas foreign firms made use of prefab elements, as in the case of the Norwegian firm that put up walls of reinforced concrete precast elements produced with the "Christensen System".[125] All aspects taken in account, the EHP was an interesting model proposed and promoted by Doxiadis in order to facilitate and ameliorate housing development in Iraq. Unfortunately (as far as the author is concerned) there are no data that demonstrate whether this model yielded affordable and qualitative housing, or the extent to which the results were used to upgrade the rest of the housing initiatives.

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[122] *Ibid.*, p. 7.

[123] *Ibid.*, p. 12.

[124] *Ibid.*, p.14.

[125] *Ibid.*,

The "national" character of the housing program

Against the socio-political turmoil Doxiadis' program was used as a propaganda tool meant to give credibility to the regime in the eyes of the public. This was nowhere more evident than in the official publications that overstated the national and social importance of housing construction. As alleged, research aimed to study the Iraqi society so as to plan not only the buildings of Baghdad's future neighborhoods but as well the communal life within them.[126] For example, the experimental projects were launched to complement the projects in progress by taking a step further in order to "give a purely national character to the overall housing activity".[127] Iraq thereafter, should "be able to advance on its own utilizing the skill and talent of the people" and forging a national identity through urban planning and housing policies.

Paradoxically, the strongest national sentiment of the Iraqi people at the time, or in other words the most popular nationalist discourse, was anti-colonialism, represented throughout the Middle East by Nasser's movement. Distances between social strata and ethnicities on the other hand, were immense. While the Iraqi elites flaunted a lifestyle adhered to western standards, the fellahin crowded in squatter settlements where hygiene was a luxury. In that respect, the housing program of DA had to deal with perplexed social correlations, as it addressed the *emancipation* of the rural class and its integration in the urban society, undoubtedly a difficult task considering the heterogeneous blend of ethnic groups with different customs and practices. In the end, this transition was not as natural as conveyed in the official reports and publications. As DA collaborators described, when the *sarifa* dwellers moved for the first time in public housing projects the government had to put soldiers to guard them, for they would escape to spend the night in their mud houses.[128]

What the Iraqi policies needed then was a national identity that the middle class and the impoverished masses could embrace. Doxiadis' housing program had to provide this kind of *narrative* at least in its official propaganda. As such, the experimental program not only appealed to a national identity but was as well accompanied by a call to public participation, first in the decision making process and consequently in the management and maintenance of public space. As proposed for example, "the cleaning of squares and roads, the establishing and maintenance of a small school, the tending of gardens, the maintenance of small buildings, etc., [might] be undertaken jointly by a number of

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[126] See, Doxiadis, *SPA*, *op.cit.*, pp. 1-2.

[127] *Ibid*, p. 1.

[128] See, Siouti and Koronaios, *op.cit.*, p. 80.

families".[129] The description of the experimental programs continued stipulating that the "participation of the people" was necessary in order to "give a local color to each settlement," and "avoid uniformity and monotony". As such, each owner was given the "freedom […] to decide on the color and decoration of his house or on any addition to the building".[130] In tandem, aided self-help methods were supposed to provide every Iraqi family with "a 'firm foundation to build their house on".[131]

Public participation and private initiatives were consonant with the anti-communist narrative of the Iraqi regime, nonetheless the question remains whether those policies were ever put into practice.[132] Instead of the humanistic and regional character that Doxiadis praised in his trial and error projects, the DA communities became broadly known for the standardized row houses and uniformity (Figure 3.13). As Pyla concludes, "despite all the research and analysis of the locale, what prevailed most was an aesthetic imperative of standardization, which left little opportunity to contemplate a more cultured conception of the human subject or to conceive of urban development itself as a cultural process tied to the locale".[133]

All in all, the EHP was an interesting chapter in the overall housing program that however is not easy to assess using only the official bulletins. Though providing detailed descriptions of the technical aspects of housing construction, their propagandistic role leaves doubts about the extent to which those proposals were eventually developed. In fact, an accurate estimation of the total amount of houses constructed by DA in Iraq is yet to be done. By the end of 1958, that is, only three years after Constantinos Doxiadis had signed a contract with the Iraqi government, three villages had been established from a scratch, 2790 housing units had been built, and 3.007 more houses were under

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[129] As described in the DA pamphlet, "the participation of the citizens in the laying out of squares and gardens, the decoration of cities and erection of monuments" should be carefully considered, whereas research experiments should "extend into the social sector in order to determine whether and to what extent the individual members of a community can and will co-operate". See, Doxiadis Associates, *Experimental Housing Projects*, *op.cit.*, pp. 2-3.

[130] *Ibid.*,

[131] *Ibid.*, p. 14.

[132] Analyzing the case of Korangi Markus Daechsel denoted that , "[a]t least in theory, it should be possible for the residents of these units to easily modify and upgrade these designs as their financial situation improved; in practice, however, DA experts in the field tended to vehemently object to such modifications when they threatened to limit the regularity and showpiece character of Korangi". See, Daechsel, M. (2011) 'Seeing like an expert, failing like a state? Interpreting the fate of a satellite town in early post-colonial Pakistan', in Maussen, M., Bader, V.-M., and Moors, A. (eds) *Colonial and post-colonial governance of Islam: continuities and ruptures*. Amsterdam: Amsterdam University Press (IMISCOE research), pp. 155–174, p. 158.

[133] See, Pyla, 'Back to the Future', *op.cit.*, p. 16.

construction.[134] Reportedly, the residential communities were successfully equipped with the necessary facilities and infrastructures and most of their public buildings were completed (Figure 3.14a,b). Moreover, DA had finished the construction of streets, water supply networks, sewerage and electricity facilities for 1215 plots of land, destined to serve self-aided housing schemes, whereas 2419 plots of land were in the process of urbanization.[135] On the other hand, an assessment of Doxiadis' contribution to the regional and urban development of Iraq should take in account the manifold aspects of the NHPI, and in particular consider his efforts beyond the absolute numbers and under the light of knowledge transfer. Be that as it may, the commission of the Master Plan of Baghdad offers another interesting and complementary perspective on Doxiadis' working concepts and theoretical ideas.

3.2 The Master Plan of Baghdad

On 14 July 1958, the Nasser-inspired Free Officers movement headed by General Abd al-Karim Qasim overthrew the Hashemite monarchy, in a violent coup that brought the Pan-Arab revolutionist aura intra Iraq under the flag of a newborn Republic. At the *revolution's* aftermath, great part of the Development Board's programs were put on hold or canceled, while most of the foreign companies and consultants were forced to abandon the country. Doxiadis Associates was one of the few firms that was permitted to stay after the coup d' état in order to conclude its projects in progress.[136] Just a few weeks before the coup, the Iraqi Government entrusted Doxiadis Associates the preparation of regulatory programs and master plans for the cities where the Greek firm had initiated or completed housing projects. Among those was the Master Plan of Baghdad, most probably commissioned while Nuri al-Said was still in office.[137] Nevertheless, after the change of regime Doxiadis

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[134] For example, Pedro Azara reports that "Doxiadis […] up until 1960, was able to construct 20,000 houses (for three classes) and twenty-six villages, and restore 30,000 buildings in five years (at a cost of 1 million dollars), and get paid for every job". Nevertheless, those numbers come from the pamphlet *Iraq Housing Program* and therefore refer to the target of the program and not the actual outcome.

[135] The total cost of the completed projects amounted approximately to $17millions. See 'The National Housing Program of Iraq', *op.cit.*, p. 46.

[136] Xatzopoulos, A. (2009) 'The National Housing Program of Iraq', *op.cit.* In an interview with the author, Xatzopoulos has confirmed that the DA collaborators as himself were not threatened nor hurt by the revolting mob because they were Greeks. On the contrary, several foreign nationals (including Jordanian and American citizens) were killed. When one of the Greek engineers was threatened to get thrown to the river he got released after shouting "Greek". See, Siouti and Koronaios, *op.cit.*, p. 82.

[137] So far, and despite the fact that Doxiadis was a meticulous professional and his archives are detailed, the exact date of the contract signing is unknown. Apparently the Master Plan of Baghdad was considered a continuation of the numerous DA projects in the capital. Be that as it may, the author in consultation with the archivist Giota Pavlidou has concluded that originally the commission was granted before the July coup.

Standardization in Housing Construction.
Figure 3.13

DA Housing in Iraq - SPA.
Figure 3.14a
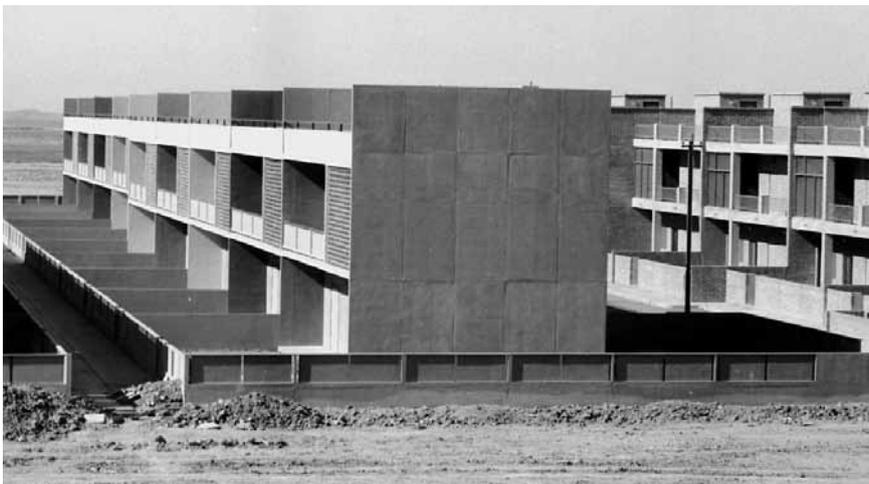
DA Housing in Iraq - SPA.
Figure 3.14b

was very careful in denoting that the master plan was prepared for the "thriving Republic of Iraq", instead for the Iraqi Kingdom.[138] The DA commission came to replace the master plan of Minoprio, Spencely, and Macfarlane, a British firm of architects and town planning consultants contracted out in 1954. Their plan devised in 1956, proposed the creation of a belt around the older parts of the city and the respective radial transportation system. Furthermore, the plan specified land uses and demarcated the areas designated for the public buildings commissioned to renowned architects.[139] The change of regime was decisive for the British architects. Not only the Master Plan of Baghdad ended up in Doxiadis' hands, but two months after the coup the contract for the Civic Center scheme was as well abrogated.[140] The winds of political change swept away the ties with Iraq's colonial past and cleared the way for Doxiadis. When DA succeeded the British firm various of its projects were already underway. The new master plan therefore was developed to include the Western Baghdad Development scheme, and the rest of housing, slum-clearance, and infrastructure projects drafted by DA. Most importantly, the Greek firm was ready to complement its program with further actions set to resolve the most practical needs of the capital, such as the sewerage, water and electricity supply system. More than ever before, the scarcity of housing and the proliferation of illegal settlements called for a comprehensive approach to the problems of the lower classes and contrary to the grandiose architectural projects commissioned by the Development Board.

From a circular city to the Dynapolis

Baghdad was founded on 32 July 762 by Al-Mansur, architect and second caliph of the Abbasid Empire, according to a circular plan, "common in the celestial cities but also in the nomadic settlements in the desert".[141] The fortified round city was originally baptized "The City of Peace" (Madinat Al Salam), however, as if its inhabitants got a glimpse of the city's

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[138] See, *Iraq Housing Program, op.cit.*

[139] In fact, this was the colored scheme that Frank Lloyd Wright used as a base map for promoting the opera house project. The Minoprio, Spencely, and Macfarlane plan is published in Marefat's "1950s Baghdad" with Wright's markings on it. See as well, Marefat, M. (1999) 'Wright's Baghdad', in Alofsin, A. (ed.) *Frank Lloyd Wright: Europe and beyond*. Berkeley: University of California Press, pp. 184–213.

[140] "On October 3, 1958, Anthony Minoprio sent a letter to Aalto in which he notified him that the contract with his studio as 'co-ordinating consultants' had been canceled", with the excuse that funds were not available anymore for the public buildings of this scheme. The coordination of the scheme was entrusted to Jose-Luis Sert in September 1960. See, Azara, 'The Baghdad Civic Center Project', *op.cit.*, p. 5.

[141] See, Azara, P. (2008) 'City of Mirages: Baghdad from Wright to Venturi', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 253–256.

devastating wartime future, its name changed to the more popular Baghdad.[142] With the passing of time, the Round City gradually lost its original shape giving way to an irregular form that expanded to both sides of the Tigris.[143] Apparently, the Minoprio - Spencely - Macfarlane master plan sought to preserve the "organic" forms of the existing city, nevertheless "advocated the total demolition of Baghdad's historic areas" in order to prepare comprehensive layouts for their future development.[144] Far more exuberant in its aesthetics and formalism, while at the same time manifesting a concern about the impact of international architecture on the urban fabric of Baghdad, was Frank Lloyd Wright's "Plan for Greater Baghdad".[145]

Doxiadis was not comfortable with circular ground plans, be that an urban plan or the design of a house.[146] In several cases throughout his career, he criticized the expansion of contemporary cities based on ring roads, and even condemned the opening of diagonals as ineffective against the problems wrought by urban growth.[147] As he contended, the only design able to give the city a rational structure and accommodate the automobile was the gridiron plan originally devised by the Greek urban planner Hippodamus.[148] In the case of Baghdad, Doxiadis was critical of the Minoprio master plan since the very beginning. In August 1955, the Greek planner traveled to London to meet with the British architects in order to get more information about their work and take it into consideration for the DA projects. The meeting did not yield specific results and Macfarlane apparently had not any reports, aerial photographs, or maps to contribute to Doxiadis' preliminary work.

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[142] See, Martin Muñoz, G. (2008) 'Baghdad, a Tragic Story', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 260–265.

[143] Hoshiar explains the transformation of Baghdad as "the result of several forces such as the population growth, decline of the central power of the Abbasids, and periodic demolition and reconstruction". See, Hoshiar, *op.cit.*, p. 61.

[144] See, Al-Akkam, A. J. M. (2013) 'Urban Heritage in Baghdad: Toward a Comprehensive Sustainable Framework', *Journal of Sustainable Development*, 6(2), p. 43.

[145] Another worth reading account on Wright's projects is Al-Sultany, K. (2008) 'A Half Century no F.Ll.Wright's Projects for Baghdad: Designs of Imagined Architecture', in Azara, P. (ed.) *City of Mirages: Baghdad, from Wright to Venturi*. Barcelona: Departament de Composició Arquitectònica. ETSAB-UPC (DC Revista de crítica arquitectónica), pp. 131–144.

[146] During the Delos meetings in fact, Doxiadis and Buckminster Fuller had endless debates on the economy of the built forms and their use in urban planning and architectural design. Doxiadis unfolded his arguments against spherical or shell-like houses in the 1960 annual discourse at RIBA. See, Doxiadis, C. A. (1960) 'Architecture in Evolution', *The Journal of the Royal Institute of British Architects*, 67(11-12).

[147] See, Tyrwhitt, J. (ed.) (1976) 'C.A. Doxiadis 1913-75: Pursuit of an attainable ideal', *Ekistics*, 41(247), p. 329

[148] For a reassessment of the Hippodamus' concept, see, Grammenos, F., Craig, B., Pollard, D. and Guerrera, C. (2008) 'Hippodamus Rides to Radburn: A New Model for the 21st Century', *Journal of Urban Design*, 13(2), pp. 163–176.

Furthermore, Doxiadis considered that the plan of the British firm was of low quality and that could hardly influence his own ideas.[149]

The DA master plan instead, was a rectangular grid pattern that encompassed the city of Baghdad delimiting the areas of the prospective residential sectors. The elongated scheme unfolded along a central axis, parallel to the Tigris river and integrated the existing streets and neighborhoods by modifying accordingly the shape of the planned sectors in vicinity. In reference to the classification system of ekistics, the new residential sectors were Communities Class V, which as in the case of the WBD scheme were subdivided in Communities Class IV, that all together constituted the future city of Baghdad, a Community Class VI planned to accommodate a population of 3 million people in the next twenty years (Figure 3.15).[150]

The Master Plan of Baghdad was based on the planning model of Dynapolis, a spatial paradigm that according to Doxiadis aimed to resolve the problems of the contemporary city wrought by unchecked growth. To do so, the dynamic "polis" or Dynapolis proposed the development of the new urban sectors along a predetermined axis that linked the existing center to the outskirts (Figure 3.16). The center in fact, was expected to grow as well and along the same direction, therefore creating new focus areas for metropolitan services and facilities that effectively got the transportation pressures off the historic center. To balance further the development dynamics between the older parts of the city and the new districts, the ideal case scenario called *Dynametropolis*, proposed growth along the other three directions of the rectangular pattern, albeit at a slower pace.[151] All together, this pattern made possible "the natural growth of the city without allowing the new additions to break up the already existing pattern".[152] In other words, Dynapolis was Doxiadis' proposal for preserving the historic city in harmony with the (inevitable) expansion of the urban tissue.

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[149] Doxiadis described the meeting with Macfarlane in his diary, nevertheless his most critical comments were included in a briefing he wrote while being in Amsterdam, and on the way to Baghdad: "I had a long meeting with Mcfarlane. The rest [of the collaborators] were at the countryside (such men exist as well!). I saw their project. Low quality. We cannot expect new ideas of this team. Most probably they will take [ideas] from us." This note was accompanied by the comment "confidential." See, Doxiadis, C. A. (1955) *London Arrangements [Συνεννοήσεις Λονδίνου]*. Document, Ref. Code 23877 Q.A.6. Doxiadis Archives. Afterwards, Doxiadis met with Jane Dreu and Maxwell Fry and discussed their housing projects in Iran and Chandigarh. On the same journey, Doxiadis reached an agreement with Jacqueline Tyrwhitt to work with DA as consultant. Her initial tasks were to provide general bibliographic references and material on planning, and conduct a two to four months research on housing in Baghdad.

[150] Doxiadis' population projections proved to be reasonable or even moderate, as in 1980 Baghdad had an estimated population of 3,354,000 people. Paradoxically, and despite the impact of the successive wars, Baghdad was one of the few projects that Doxiadis' projections were not overestimated. The issue of demographic projections and their significance in DA planning will be discussed further in the case of Detroit.

[151] Tyrwhitt, *op.cit.*, p. 330.

[152] *Ibid*.

DA Master plan of the city of Baghdad 1959.
Figure 3.15
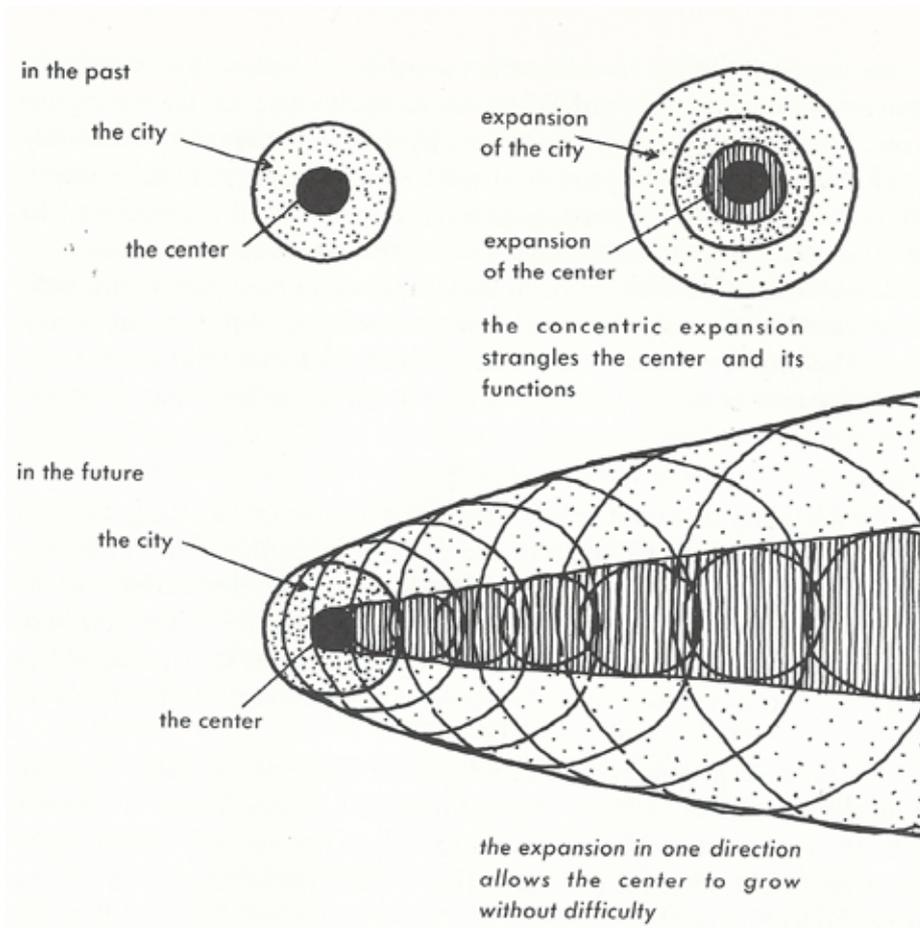
The Dynapolis Planning Model.
[Doxiadis, C. A. (1966) *Urban renewal and the future of the American city.* Chicago:
Public Administration Service, p.56]
Figure 3.16

170

The Dynapolis model was formulated at a time when planners and architects discussed the increasing problems of urban centers in tandem with the unchecked sprawl of the urban periphery and the ongoing demographic growth. For example, the third postwar CIAM conference took place in 1951, in Hoddesdon, today a London commuter belt town, and focused on the significance and use of public space, and in particular on the revitalization of the city's center.[153] The choice of the theme however evinced the concern of the architectural community for the detrimental effects of suburbanization and decentralization, for as Sert put it, "urbanism [had] really become suburbanism".[154] Of equal importance for the contextualization of Doxiadis' theory and models were the contributions of different groups, such as Candilis and Wood's GAMMA group from Morocco. Their grid depicted the plan for satellite town outside Rabat, and was broadly influenced by Ecochard's analysis and work on the *bidonvilles* or squatter settlements that featured one-storey courtyard houses in a 8x8m infrastructure-street grid.[155] Effectively, the GAMMA group presentation in CIAM 9, Aix-en-Provence, 1953, shared this analytical base and called for the first time attention to rapid urbanization and demographic explosion in the developing world, under the rubric "housing for the greater number".[156] What is more, the CIAM 8 classificatory grids incorporated different "scale levels" for the definition of the community, as typified by the study of the MARS group with a major contribution of its assistant director Jacqueline Tyrwhitt. As such, beyond the four CIAM functions, MARS identified "the village or primary housing group"; the neighborhood; the town or city sector; the city itself; and finally "the metropolis or multiple city".[157]

Though Doxiadis' theory shared a lot with other contemporary efforts the Dynapolis model was principally discussed in relation to linear cities or corridor development, comparisons that according to the Greek architect were confusing. When Lord Richard Llewelyn-Davies cited in his article Arturo Soria y Mata and Doxiadis as "the first attempts to add facility for growth to the traditional concepts of town design [that] led to the proposals for linear towns", the Greek planner answered with a brief article titled "On Linear Cities" refuting the parallelisms with the model of Dynapolis.[158] In the first place, he claimed that despite the

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[153] See, Tyrwhitt, J., Sert, J. L. and Rogers, E. N. (eds) (1952) *CIAM 8. The Heart of the City: towards the humanisation of urban life*. London: Lund Humphries.

[154] See, Mumford, E. P. (2002) *The CIAM Discourse on Urbanism, 1928-1960*. Cambridge, Mass.; London: MIT Press, pp. 202-203.

[155] *Ibid.*, p. 209, 211.

[156] See, Avermaete, *Another Modern, op.cit.*

[157] Mumford, *The CIAM Discourse, op.cit.*, p. 203.

[158] See, Doxiadis, C. A. (1967) 'On Linear Cities', *The Town Planning Review*, 38(1). Llewelyn-Davies was Professor of Architecture and of Urban Planning, and he was broadly known for his participation in the design

project's title, Soria proposed a "corridor-like expansion of cities" that concerned only "part of cities" with "no central functions".[159] Dynapolis instead, had "no limits" and studied the city as a whole. Whereas the Linear City proposed a longitudinal growth by adding modules to the end of each band without growing any wider, the Dynapolis pattern grew as a parabola with an elongated axis. As Doxiadis concluded, there could not be linear cities but only linear solutions for specific areas.[160]

On the other hand, Victor Gruen, the Austrian-born architect who pioneered shopping mall design in the States, was more straight-forward in condemning Dynapolis as "Miracle Miles" that resulted to further sprawl instead of opposing decentralization.[161] Ironically, Gruen and Doxiadis crossed their swords anew in the planning field in Tehran, the capital of Iran. The former, in partnership with Abdulaziz Farmanfarmaian drew in 1966 after the petition of the Iranian government a comprehensive master plan, while the latter in 1972 issued the Tehran Action Plan as a corrective to urban sprawl. Political turnover(s) and ongoing development overruled both.[162]

Doxiadis used the Dynapolis model in most of his new town and urban projects, i.e., in the master plan of the capital of Sudan, Khartoum, in development proposals for Washington D.C., Caracas, and Athens, to name a few. Certainly, the most ambitious and complete realization of the model to date is Islamabad. Even if these projects prove that Dynapolis was not a futuristic pipe dream, it is not easy to assert Doxiadis' claims about the efficiency of the model. Guiding urban development, especially during an extended period of time, requires a strong hold on public and private stakeholders, central planning mechanisms, urban legislation measures, and the willingness and means to overcome local opposition.[163] The only thing that Doxiadis could do in respect was to urge

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of the new town Milton Keynes, once dubbed "the little Los Angeles in Buckinghamshire". Llewelyn-Davies' article was originally published in the *Town Planning Review* in October 1966.

[159] "Soria was not thinking of cities but of parts of cities only, as well as of very long connections between distant cities. These parts of cities have no central functions and therefore do not form cities". *Ibid.*, p. 35.

[160] *Ibid.*, p. 39. The debate between the two architects ended with another article of Lord Richard Llewelyn-Davies where he "apologized" to Doxiadis corroborating his arguments with paradigms of linear proposals albeit based on transportation lines. He ended his article by advocating poly-nuclear patterns for the growth and management of the metropolis. See, *The Town Planning Review*, v.38, no.3, October 1967, p. 202-203. In any case, Lord Richard Llewelyn-Davies was acquainted with Doxiadis and participated in several Delos Symposia. Corridor development and transportation lines in Doxiadis' theory and work will be analyzed further in relation to the Ecumenopolis and the Urban Detroit Area project.

[161] See, Ehrenkrantz, E. and Tanner, O. (1961) 'The remarkable Dr. Doxiadis', *Architectural Forum*, 114(5), pp. 112–116, p. 154.

[162] See, Madanipour, A. (2010) 'The limits of scientific planning: Doxiadis and the Tehran Action Plan', *Planning Perspectives*, 25(4), pp. 485–504. For an interesting reading of Tehran's urbanism and Gruen's plan see, Vanstiphout, W. (2006) *The Saddest City in the World: Tehran and the legacy of an American dream of modern town planning*, *The New Town*. [Online] Available at: http://www.thenewtown.nl/article.php?id_article=71 (Accessed: 4 March 2015).

[163] As Bromley concludes, "[s]uch conditions did not exist in any of the cities where Doxiadis worked and it is

governments and municipalities to secure the necessary land, before private-driven speculation.

Embedding the local: the Army Canal and the Gossip Square

One of the greatest paradoxes in Doxiadis' work and theory was precisely the relationship between theory and practice. While the father of ekistics dedicated his career and life to develop a scientific approach to global urbanization both as a theory and a methodology for planning, the most common critiques point to the disparity between the two areas. The Dynapolis paradigm for example, was often questioned due to its rigidness as a scheme and the authoritative aspect of the endlessly repeated communities. Despite Doxiadis' allegations for preserving the human scale and local cultural traits within his communities, the uniformity of the "human sectors" left little space to such interpretations. Despite his attempt to harmonize the master plan with the landscape and the existing city, the visual impact and vast scale of his grid made the plan alien to the surrounding landscape. What is more, the strong identity of Dynapolis has often kept scholars away from delving into other aspects of Doxiadis' proposals, and in some cases has resulted in misleading readings of his theory. Characteristically, the Master Plan of Baghdad has been blamed for the destruction of the old quarters, whereas on the contrary, Doxiadis' guidelines paid great attention to the historic center, an asset that was hardly visible in terms of design.[164] To shed more light on these issues it is worth analyzing two features of the Baghdad master plan, namely the opening of the Army Canal and the introduction of the Gossip Square in the DA communities.

The Army Canal, today running parallel to Omar Bin Al Khatab Street, was opened to connect the upper and lower part of Tigris River, on its eastern side. Though the exact year of its construction is unknown, this straight "infrastructure" line was originally proposed by the DA master plan and was most probably constructed while the Greek firm was still operating in Baghdad.[165] The Army Canal in fact was one of the first axes to organize the territory east of the existing city according to the rectilinear pattern of the master plan (Figure 3.17).

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questionable whether they will ever exist. Futurology and preaching do not create self-fulfilling prophecies". See, Bromley, *op.cit.*, p. 336.

[164] See, Al-Akkam, *op.cit.*, in comparison to Pyla, *op.cit.*, p.10.

[165] The canal system was one of the master plan's guidelines. See, *The Master Plan of Baghdad* (1960). Athens: Doxiadis Associates (Monthly Bulletin, 9).

THE RIVER
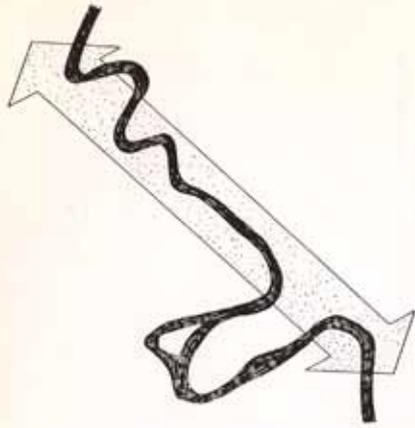
The Tigris River, the only outstanding natural element in the surrounding desert, imposes an axis along which the city of Baghdad should develop. Microclimatic effects, the pleasant view, vegetation and facilities for transport, justify the growth of the city along the river.

POSSIBILITY FOR EXPANSION
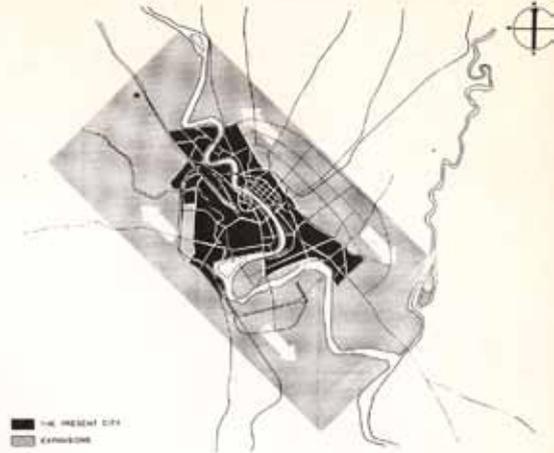
Existing conditions, and the limitations which the present road pattern imposes, must not adversely influence the natural development of Greater Baghdad or the wider Baghdad area. The general plan must follow the axis which runs parallel to the main direction of the river.

THE ROAD SYSTEM
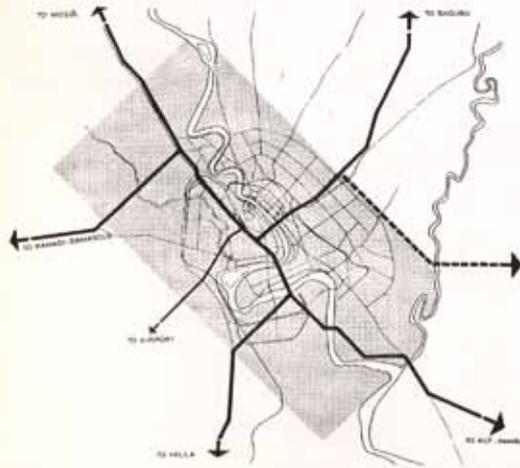
The plan must also provide for the easy connection of the city with the country through a system of roads adapted to the rectangular road pattern.

THE CANAL SYSTEM
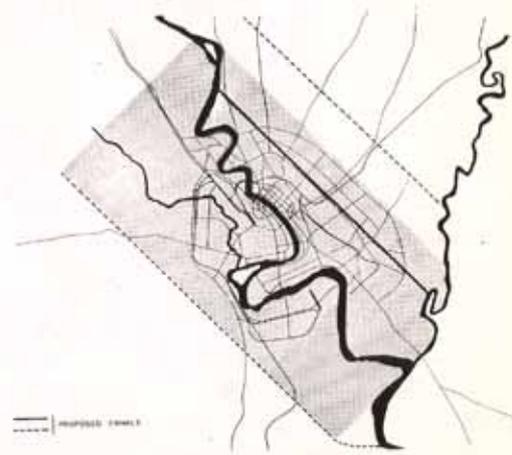
As only a part of the city will be in direct proximity to the river, canals have to be provided for the present and future development in order to create better climatic conditions for the more remote parts. That is why a complete net of canals was proposed, one of which is now under construction.

The Guidelines of the Master Plan of Baghdad.
[*DA Monthly Bulletin* (1960), January.]
Figure 3.17

174

Moreover, Doxiadis' original proposal considered the construction of a system of canals and parks in order to create a micro-climate in the communities that were to get constructed far from the river.[166] This imaginative proposal sought to *ground* the master plan on its natural surroundings using an infrastructure work as a landscape architectural element.[167] The concept was inspired by the flood control and irrigation system, a practice so old in the Mesopotamia region as its proper cities. Drawing on the idea, Doxiadis gave a theoretical spin to his master plan arguing that Baghdad's future should come out of the past and in harmony with the natural landscape. The master plan therefore, should unfold in relation to Tigris, undeniably the most prominent natural element across the land, and a factor of great historical importance for the evolution of the city. Eventually, the only canal opened according to the DA master plan was the Army Canal.

While the opening of the Army Canal was a planning gesture conceived to integrate the master plan in the landscape, the introduction of the "gossip square" in the planning vocabulary of the plan was the means to accommodate local culture and habits in the module of "human sectors". As its name implied, the "gossip square" was a community space that complemented every group of ten to fifteen houses, located at the end of the respective housing row and alley (Figure 3.18a,b). Each one of these small public spaces was connected to a system of pedestrian walkways leading to the community center of higher order facilities, such as a secondary school, shops, tea houses, and a mosque.[168] Apparently, the title "gossip square" was inspired by the spots usually found in traditional neighborhoods where casual meetings or informal gatherings were taking place, mostly between women. Though reflecting gender and cultural stereotypes, the name was successful in depicting the scale, informality, and use of a public space much different from the western piazzas, to use a term that as well has conveyed stereotypical views.

In the first place, the concept of having miniature public squares in every housing module was not proposed because of its cultural significance, instead emerged from the necessity of having water facilities shared by a number of families. During the preliminary discussions on the national housing program, Doxiadis proposed to install "one tab of water for every group of families" in the corner of every housing row instead of "connecting

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[166] *Iraq Housing Program*, *op.cit.* See as well, Doxiadis, *The Arab Metropolis*, *op.cit,* p. 4.

[167] Though the DA signature was consultancy services and engineering, the firm employed experienced architects and some of the recently graduated and talented students of the Polytechnic University of Athens, recruited by Doxiadis himself. Apropos the Iraqi commissions, Doxiadis consulted with Tyrwhitt and Crane the hiring of a proper landscape architect, therefore contracting a senor architect named Rudolph R. Platzek. See, letter sent from Doxiadis to Crane, 21 November, 1957, *Correspondence, op.cit.*

[168] See, Ehrenkrantz, E. and Tanner, O., *op.cit.*, p. 116.

The Gossip Square with the Communal Water Fountain.
Figure 3.18a

The Gossip Square (Mosul).
Figure 3.18b

every household".[169] The latter had elevated costs not only as an infrastructure system but, as Doxiadis argued, due to the "big waste in water as people [were] not used to close the tabs"![170] On the other hand, having points of community water supply would permit "the women folk to meet and gossip and be seen by the prospective husbands".[171] The idea of the small squares was received well by the Minister of Development, who conversely expressed his preference for installing a tab in every household and a meter for every group of houses.[172] In that sense, the "gossip square" originated in the practical need to have collective neighborhood facilities but was branded as a public space of local color rooted in tradition.[173]

Indeed, the "gossip square" received a great deal of press attention ranging from acclaims for its vernacular character to criticisms as a stereotype of oriental culture. Doxiadis himself condemned the overuse of the term and the misleading interpretations deriving from it, and finally issued a memo to repeal the use of the term thereafter changed to "community squares of first degree".[174] The case of the "gossip square" perfectly - and ironically due to its name - exemplifies not only the use of stereotypes for promoting urban plans, but as well the anxiety of architects and planners in their mission to improve housing conditions across the decolonizing world.

Another element developed to ease the transition from the regional and urban scale to the community scale was the hierarchically configured and dimensioned road network employed by Doxiadis in his plans for new towns.[175] Communities Class V for example

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[169] See, Doxiadis, C. A. (1955) *SPA*, *op.cit.*, p. 9.

[170] *Ibid.*,

[171] *Ibid.*,

[172] The meeting with the Minister of Development took place on the 30th of August, 1955. Doxiadis complied with his request, answering that in that case he would have to consider installing meters for controlling the waste of water. The Minister responded positively and suggested to install meters for every group of households, for water waste would be lesser if such expenditure was a collective issue. See, Doxiadis, *DA Projects: Iraq V.1 - Diaries DOX.Q (1955), op.cit.*

[173] Pyla for example attributes the idea of this feature to Hassan Fathy, Pyla, *op.cit.*, p. 13 Nevertheless, Fathy joined Doxiadis Associates in 1957, whereas Doxiadis discussed the idea of "a small square" with the Minster of Development in August 1955, during his third trip to Baghdad. What is more, the idea of providing tap water at community water points was broadly used in the Greek settlements raised to accommodate the 1922 massive influx of migrants. Doxiadis was acquainted with those immigrant neighborhoods, since his father supervised the programs of resettlement in the capacity of the Minister. The water network, including the Marathons Dam (the principal water supplier to Athens), was constructed by the American Ulen & Company and had a significant role in the modernization of Greece. Thereafter, the word "Ulen" held a special place in the popular imagination and vernacular of that generation. While this analysis does not clarify completely the origin of the "gossip square", this hypothesis suits better the managerial and practical spirit of the Greek planner. Most importantly, it tells a lot about the stereotypes that we as scholars use occasionally in our assessment.

[174] See, Doxiadis, C. A. (1957) *Memo.* Document, Ref. Code 8032 R-GA 12. Doxiadis Archives.

[175] The case that best exemplifies Doxiadis' transportation model is Islamabad. See, Frantzeskakis, J. (2009) 'The Influence of D.A. Doxiadis Principles on Urban Transportation & Traffic', in *Constantinos Doxiadis and his*

were framed by principal roads coupled with service roads, whereas Communities Class IV were framed by secondary roads and shut off from through traffic. Much alike most of the paradigms related to the neighborhood unit theory, these communities should be easily crossed by foot.[176] In the case of the Iraqi communities, the above road system and in particular the local roads were further adjusted to the extreme climatic conditions and the need for economizing space. As Doxiadis claimed, one of the biggest problems in community planning was the percentage area given to public space. New town schemes especially in developing countries were erroneously planned with big roads, therefore requiring "higher cost of land, higher cost of development, [and] higher cost of maintenance", which in the long run resulted to incomplete, dirty, and insecure public spaces.[177] On the contrary, Doxiadis observed, the cities of the East featured an intermediate space between the private and public sphere, that is, the narrow roads that served only a limited number of houses. The Greek architect proposed to use this element for organizing blocks of different size, and added that "only narrow streets can have some shadow which will allow the people to circulate in them with certain comfort".[178]

Doxiadis' proposal was nothing out of the ordinary, however implied the intention to craft his community schemes reproducing regional characteristics instead of western standards. Likewise, he claimed to develop Baghdad both as a continuation of the traditional city and as a modern metropolis, effectively an Arab metropolis. This approach was resumed in what Doxiadis used to call "global in conception and yet local in expression", and was often illustrated by the comparison of DA communities built in different parts of the world.[179]

Nevertheless, Doxiadis' approach had its flaws and in some cases the final results were problematic both aesthetically and functionally speaking. The main roads framing the residential sector module (2km x 2km) in Islamabad for example, including the service

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Work (vol.2). Athens: Technical Chamber of Greece, pp. 164–182. Moreover, from 1964 to 1977, DA developed its own mathematical models applied to transportation models of existing cities, the most significant ones being Athens, Detroit, Rio de Janeiro, and Catalonia. See, Frantzeskakis, J. and Voskoglou, N. (2009) 'Urban Transportation Models. Implementation in Athens, Detroit, Lusaka, Riyadh, Rio de Janeiro, Catalonia', in *Constantinos Doxiadis and his Work (vol.2)*. *Constantinos A. Doxiadis and his Work*, Athens: Technical Chamber of Greece, pp. 285–316.

[176] The theoretical connections between Doxiadis' "human sector" and the neighborhood unit theory are discussed in chapter five.

[177] See, Doxiadis, C. A. (1955) *SPA, op.cit.*, p. 8.

[178] *Ibid.*, p. 9.

[179] In the "Arab Metropolis" conference for example, and in order to exemplify how the ekistic solutions adapted to local contexts, Doxiadis went on comparing the plans for Baghdad and Eastwick, Philadelphia. As he contended, the two communities were "similar in conception but different in their expression". See, Doxiadis, *The Arab Metropolis*, *op.cit.*, p. 26. See as well, Mahsud, *op.cit.*, p. 29.

roads, bike lanes, sidewalks, and intermediate green areas, had a width of 180m (!), a dimension that could be barely justified by demographics or the provision for light rail transit systems.[180] On the other hand, when Doxiadis decided to use narrow roads for separating housing rows in certain Baghdad's communities, the size and density of the residential blocks augmented considerably. A characteristic case to refer to would be Sadr City, the notorious housing district and one of the most controversial aspects of the Master Plan of Baghdad.

Sadr City

Madinat al-Thawra or "Revolution City" was originally planned as a neighborhood for migrants and urban poor. Construction began in 1959, during the Abdul Karim Qassim governance, while soon after its completion it became one of Baghdad's denser districts. When the Ramadan Revolution took place in February 1963, and General Qasim was overthrown by his own Colonel Abdul Salam Arif, Madinat al-Thawra was considered a bastion of the Iraqi Communist Party and a stronghold of resistance against the Ba'ath government. Following Hussein's 1982 coup it was renamed to Saddam City, nevertheless the government did nothing to ameliorate its housing and social problems. The district deteriorated, it was further segregated, and finally ghettoized. Eventually, in April 2003 and after the fall of Saddam Hussein, the neighborhood was unofficially renamed to Sadr City, a popular homage to Shia leader Mohammad Mohammad Sadeq al-Sadr. During the U.S.-led invasion of Iraq, Sadr City stood out as a hotbed of resistance and was broadly televised offering the most characteristic background of the Iraqi war footage: repetitive row houses, labyrinthine narrow alleys, and unexpected cul-de-sacs, composite the image of a bloodshed reality.[181] Since then, the discussion on the urbanism of Baghdad and the existence of strong ethnic enclaves and homes of different militias has intensified. From then on, Constantinos Doxiadis is often reckoned as the planner of low-rise high-density urban blocks turned to nightmarish ghettos, all together typified by Sadr City.[182] This uneasy relationship between the planner and the outcome of his work

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[180] See, Frantzeskakis, 'The Influence of D.A. Doxiadis Principles on Urban Transportation & Traffic', *op.cit.*, pp. 169-170.

[181] This labyrinth-area "even has the dubious honor of being featured in a multi-player computer war-game on the Internet, called Kuma War: Mission 16, Battle in Sadr City". See, Provoost, 'New Towns on the Cold War Frontier', *op.cit.*, p. 10.

[182] According to Al Siliq, not only Sadr City but as well other suburbs of Baghdad were built after Doxiadis' plans. Those communities lacked the necessary civil services and became crowded during the 1980s and 1990s. See, Al Siliq, G. (2008) 'Baghdad. Images and Memories', op.cit., p. 67. Provoost's description of Doxiadis' communities as an "endless repetition of square neighborhood units […] easily recognizable on any satellite image" has been even more sharp, nevertheless as I shall analyze, misleading in its details. See, Provoost, *op.cit*. Finally McFarlane has recently summarized the different views, including the author's as

could yield further questions: should Doxiadis get blamed for the fate of Baghdad's housing communities? Is his design responsible for generating segregated slums? While such analysis would take this thesis too far, the following paragraphs will examine the extent to which Doxiadis has actually implemented his plans in Baghdad, therefore challenging the idea of the absolute control he sought to exert over his master plans.

Madinat al-Thawra was part of the DA Master Plan and was delimited as a prospective community sector, whose boundaries broadly overlapped with Sadr City's, nevertheless covering a smaller area. A 1959 DA bulletin depicting the "portions of the Master Plan […] already under implementation", included a plan with "areas marked in red" indicating "where such development takes place, or will take place next".[183] The above plan illustrated the Western Baghdad Development scheme, a small area south of it, and three adjacent red areas in Eastern Baghdad. On the other hand, the few references to the eastern parts of the city found in the archives cite a slum clearance program and the construction of a residential community destined to Iraqi military officers at the southwestern part of the canal, that is, on the opposite side from the Sadr City.

In October 1971, G. Papageorgiou, one of Doxiadis' closest collaborators, revisited Baghdad in order to report on the implemented DA projects.[184] More specifically, Papageorgiou described the most important changes or omissions from the original plans, the state of the constructed buildings and facilities, and the living conditions in those neighborhoods. His report started with the analysis of the Western Baghdad Development scheme that was the main area of DA operations. The WBD, he described, had been built entirely except sector 8 and constituted a Community Class V with an overall population of 60.000-70.000 people, including the areas of al-Washash and al-Mansour. While sectors 10 and 13 were planned much alike al-Washash as low-income neighborhoods, the rest of the WBD scheme comprised middle- and high-income housing, the latter located in Al-Mansour.[185] Reportedly, the residential sectors on the north side of the Washash Canal - a landmark most probably covered today - had been constructed by other organizations and regardless of the master plan, while half of the Sector 13 (originally reserved for "Special Experimental Housing Projects") in vicinity with the railway line had become a logistic area of pharmaceutical storage. On the other hand, the road network had been

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presented in the article "Containing Baghdad" in McFarlane, C. (2011) *Learning the City: Knowledge and Translocal Assemblage*. Wiley.

[183] See, *Iraq Housing Program*, *op.cit.*

[184] The report is a draft document with a lot of handwritten annotations. See, Papageorgiou, G. (1971) *Baghdad - October 1971*. Document, Ref. Code 28978 R-IRQ-A 1. Doxiadis Archives.

[185] *Ibid.*, p. 1

laid down according to the original plans and was reported fully functional. As such, Papageorgiou resumed, even if the WBD scheme has not been constructed in its totality, its basic planning principles have been implemented correctly.

The report continued with the analysis of Sector 10, a low-income neighborhood of approximately 320.000 sq m that comprised 1.150 plots, a local center with shops, and a school. The shopping center was not constructed according to DA blueprints, the covered market was in a bad state, whereas two mosques instead of one had been raised, one for Shias and the other one for Sunnis. Apparently, the original plans were not successful in understanding the needs of different religious premises according to the denominations of Islam.[186] Inasmuch, the report emphasized the preservation of private properties (with a couple of exceptions where housing had been turned to retail) and the good state of urban equipment and public space. The "corners of the blocks" - the "gossip squares" - were planted and well preserved by the adjacent neighbor, the pedestrian ways along the facades were clean, and some of the interior courtyards had blossomed.[187] On the contrary, the pedestrian ways on the sides of the housing rows were abandoned as well as the sidewalks of the main streets.

Altogether, the inhabitants preserved and beautified the small scale public areas that were useful and close to them, as for example the pedestrian ways where they had even placed iron posts in order to prohibit car circulation. In Papageorgiou's words, "people not only respected but protected pedestrian areas".[188] On the other hand, the most negative aspects of the neighborhoods resulted from omissions, such as non-paved roads or unfinished pathways, spots that had not been planted, or a small stadium whose plot was partly occupied by shanty-shops. Put bluntly, Papageorgiou considered that the main problems of the constructed communities derived from the maintenance and management of public areas, and as such suggested that communities should be planned according to the economy and integrity of space before anything else.

The report went on describing the planning interventions of Doxiadis Associates in Eastern Baghdad, starting with the construction of the Army Canal. Papageorgiou affirmed that the project had been completed successfully, planted on both banks, and framed by motor ways. The canal separated residential sectors of different classes, namely an

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[186] Analyzing the Korangi plan, Daechsel offers an interesting perspective on the sectarian nature of local politics and the disputes between different ethnic players that eventually compelled Doxiadis to augment four times the provision of mosques in his plans. See, Daechsel, *op.cit.*, pp. 164-165.

[187] Papageorgiou's reference to a planted interior courtyard does not specify if he refers to a patio or a backyard. This would be an interesting observation in order to clarify further the position of the yard in the implemented housing types.

[188] See, Papageorgiou, *Baghdad - October 1971, op.cit.*

upper-income neighborhood located at the southwest of the canal, and a low-income community situated at the northeast.[189] The former was a residential scheme for Iraqi officers and was probably one of the last projects developed entirely by DA in Iraq. Papageorgiou described the good conditions of this Community Class IV and considered its implementation exemplary: all public buildings were operative, the central market was busy and all shops have been rented out; the central square was very pleasant and pathways were framed by green areas and cypresses (!). Moreover, the housing types varied significantly, as the design was the owner's choice (only 10-15 smaller houses had been constructed according to the same plan). On the other hand, the presence of military officers was giving the impression of safety, whereas public space maintenance was carried out by soldiers. Beyond any doubt, this was a high standard community. Characteristically, Papageorgiou reported that though the cul-de-sac system was implemented as in the original plans, the cars turned with difficulty as in the area predominated automobiles *made in U.S.A[190]*.

On the other side of the canal, conditions differed significantly. To begin with, the Eastern Baghdad community schemes were developed to rehouse the population evicted by slum clearance programs that effectively had cleared away the *sarifas* from Baghdad.[191] The plan approved by the Iraqi government in October 1958 in fact, carried the title "slum clearance sector", whereas the area of the illustrated projects indeed overlapped with Sadr City (Figure 3.19).[192] Nonetheless, as Papageorgiou described, apart from the general planning guidelines, these neighborhoods differed significantly from the schemes developed by DA in Western Baghdad. The module of the "eastern" communities was in principle the typical DA unit, nevertheless bigger than the ones constructed in Western Baghdad (52 HA instead of 32 HA). Moreover, the plots were two times the number of the plots included in Sector 10 (a low-income community as well) increasing significantly the density of the sector, while the housing typology was NOT designed by Doxiadis Associates.[193] In fact, according to Papageorgiou, the community lacked the housing variety of other sectors, while the repetition of the same building type and material, that is the brick, was giving a monotonous impression further enhanced by the absence of green areas.[194] Much alike in the "western" DA neighborhoods, the report emphasized the

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[189] *Ibid.*, p. 7.

[190] *Ibid.,* p. 10.

[191] *Ibid.,* p. 7.

[192] *Ibid.,* see the plans that accompanied the report.

[193] *Ibid.,* p. 8.

[194] *Ibid.,* p. 9

willingness of the residents to preserve their properties and adjacent public spaces, especially the pathways along the facades of the households, while once more the empty plots created a desert-like uneasiness. In spite of these problems, Papageorgiou evaluated the community positively. Considering that the area was inhabited by *sarifa* dwellers and low-income families with no urban experience at all, the experiment was successful.[195]

In November 1963 another coup d'etat against the first Ba'ath government brought in power the Arab nationalists and established the pro-Nasserist government of Abdul Salam Arif. Political unrest brought substantial changes in local administration and to the housing programs in progress. Rifat Chadirji, one of the most influential Iraqi architects to date, was appointed chief architect. In this capacity, he undertook the design of numerous projects in Baghdad and coordinated the plans carried out by international consultants and offices. As such, Chadirji collaborated with Doxiadis Associates "in order to develop their plans and design principles based on a better understanding of the local Iraqi needs, nevertheless "[s]hortly after that, the government decided to stop working with Doxiadis and abandon his planning proposals".[196] In 1965, the Polservice Polish firm was commissioned a new master plan as an alternative to Doxiadis' projects that were considered "by the local authorities of Baghdad to be incomplete and unrealistic".[197] The Polservice master plan proposed the establishment of three zones, demarcating the center, a metropolitan area, and an outer regional zone, that practically adhered to the principles of a concentric plan.[198]

Altogether, Doxiadis' master plan was essentially a comprehensive framework that envisioned Baghdad's development in successive stages and throughout several decades. Though in the eyes of the Greek planner the Dynapolis model was a practical way to guide growth and preserve local life and tradition in the neighborhood scale, its application postulated central planning and governance mechanisms in different scales and levels. On the other hand, while the National Housing Program of Iraq outlined

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[195] *Ibid.,* p. 8.

[196] See, Hoshiar, 'Globalization', *op.cit.*, p. 67. Rifat Chadirji participated in 1969 as an observer at the Delos Symposion and the Athens Ekistic Month, while in 1966 an exhibition on his work was held in the lecture and exhibition hall of the Athens Center of Ekistics. Doxiadis was as well acquainted with another Iraqi architect, namely Mohammed Makiya.

[197] *Ibid.* The implementation of the new plan was initiated after 1967 and published in 1973 as "Comprehensive Development Plan for Baghdad 2000".

[198] See, Al-Akkam, A. J. M. (2012) 'Towards Environmentally Sustainable Urban Regeneration: A Framework for Baghdad City Centre', *Journal of Sustainable Development*, 5(9), p. 61.

manifold ways to deal with the acute housing needs in tandem with the structural changes of the Iraqi society, its policies were most likely to get implemented as a program by a welfare state, and not just by the spending money of the Development Board. At any rate, Iraq's socio-political milieu coupled with regional politics set up a far more perplexed and agitated background that invalidated Doxiadis' comprehensive and rigid macro-planning vision.

Against the background of the bloodshed history of Baghdad, the parallelism between the "self-contained urbanism" of the DA residential sectors and the characterization of Sadr City as "a state within a state" undoubtedly challenge Doxiadis' urban model, without however legitimizing its "demonization". While his plans and ideas may as well have provided autistic guidelines for community development, the segregation of Sadr City and its transformation to an enclave of Shiite militia exceeds architecture and design. On the other hand, the Greek planner's "promises" for "a happy and harmonious" urban environment did fail, in the same way that the modernization theory failed to understand the transformation processes of the developing nations and propose a model different than the western one. In the dawn of the 1960s, Doxiadis as well changed his professional status and course, focusing on the educational and research activities of ekistics, what he liked to think of as the science of human settlements.

Eastern Baghdad, Slum Clearance, Sector 7.
Figure 3.19

CHAPTER FOUR

Ekistics between East and West

The emergence of Doxiadis Associates in the world of planning started with the National Housing Program of Iraq and was consolidated with the creation of Pakistan's capital city, Islamabad. Throughout the 1960s, DA continued to grow undertaking extended commissions not only in the developing world but as well in Europe and the U.S., where the firm established branch offices. At the same time, Constantinos Doxiadis conceived a holistic framework for the analysis and planning of global urbanization that he baptized ekistics, the science of human settlements. Ekistics represents Doxiadis' commitment not only to the planning profession, but also to theory, education, and research as necessary conditions for planning the city of the future.

The institutionalization of ekistics begun with the creation of the Athens Technological Organization (ATO), which was consequently divided in several departments set to carry out multifarious activities and projects. Apart from the research and educational programs, the ATO included the journal *Ekistics* and the organization of a series of conferences named the Delos Symposia, which witnessed the participation of distinguished personalities of the postwar era. As such, the ATO emerged as a beacon of education and research in Greece, and progressively became a point of reference for an international community of experts and academics.

Doxiadis' strenuous efforts brought the ATO side by side with significant institutions such as the International Union of Architects (UIA), and eventually gained the recognition of the United Nations itself. Above all, the establishment of the ATO is the strongest evidence of Doxiadis' commitment to education and research. His approach to the problems of the contemporary city was fundamentally interdisciplinary and rooted in the growing importance of social sciences. To all intents and purpose, Doxiadis promoted his institution as a planning hub operating "between the East and the West", and the Delos Symposia as an independent forum isolated from the anxieties of the Cold War.

4.1 The Athens Technological Organization (ATO)

The ATO was founded in 1958 with the aim to organize and develop systematically some of the activities that were already underway in Doxiadis' office. These included elementary research studies, the collection and documentation of raw information, the organization of professional seminars for the DA personnel, and the publication of a professional bulletin. As we shall see, each one of them was progressively institutionalized in distinguished departments under the auspices of the ATO.

The first institutional branch to open was the Athens Technological Institute (ATI) and undertook the organization of post-graduate and technical education programs initially destined to draftsmen and foremen. Soon however, due to the augmenting demand, the ATI extended its curriculum to other technical professions such as craftsmen, topographers, accountants, secretaries and even decorative arts. Its managing director was E. Papanoutsos (1900-1982), a prominent Greek educator, philosopher and essayist, whereas its prestigious faculty was comprised of renowned architects, engineers, and artists of the era.[1] Spanning almost two decades of life, the ATI graduated more than 20.000 people and became broadly known as "Doxiadis' schools".[2]

Moreover, the ATI had an extensive cultural agenda that included the organization of symposiums, public debates, and lecture series. Events such as the *Economic Development of the Country* (1959), the *Demotic Greek* (1964), the *Educational Reform* (1965), or the *Greek Television* (1966), discussed the dynamics and problems of the modern Greek society with the participation of distinguished personalities. Other events tackled issues of international or special interest, such as the symposium on the *Atomic Energy* (1965) - moderated by Walker L. Cisler and attended by several atomic scientists - or the "Reciprocal influence of urban and architectural forms and structures on the orient and the occident" organized by the International Union of Architects (UIA) and UNESCO, in 1963, to be analyzed below. Finally, the ATI was a platform for international cultural exchange, supporting both the dissemination of Greek culture abroad and the introduction of international artistic currents. Such were the cases of the "Modern American Drawings"

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[1] Papanoutsos was as well the Vice President of the Athens Technological Institute, and in 1963 he was elected Secretary to the Ministry of Education. In fact, most of Doxiadis' collaborators were noted professionals that had joined his private organization after their common service in the Ministry of Reconstruction. At any rate, Doxiadis had the reputation of employing highly competent personnel, while his office was staffed with talented graduates from the National Technical University of Athens' Architecture school. Some of them, continued their career in Doxiadis Organization, as for instance Panayis Psomopoulos, who started as a student and ended being one of the milestones of the Athens Center of Ekistics.

[2] The schools closed in 1976, still they remain part of the collective memory of Athens due to the great number of graduates (over 20.000 graduates) and to the well-known modern building that hosted the faculty and Doxiadis Associates. See, Psomopoulos, P. (2009) 'Athens Technological Organization: programs for Greece and the world', in *Constantinos Doxiadis and his Work (vol.1)*. Athens: Technical Chamber of Greece, pp. 95–138, p. 100

exhibition (1962) that figured the work of Jackson Polloc, Morris Graves, and Philip Gustonor, or the concert of Otto Luening (1963), one of the pioneers of tape music and electronic music. In effect, numerous painters, composers, and directors presented their work within Doxiadis' Institute premises, among them G. Moralis, M. Hadjidakis, D. Pikionis, or I. Xenakis - the by then ex-collaborator of Le Corbusier - to name just a few. Considering the above, the cultural agenda of the ATI represented the *esprit nouveau* of the 1960s and manifested the strong interest of Doxiadis for promoting modernity not only in architecture but as well in other aspects of the arts and public life.[3] All in all, the ATI was one of the first private and prestigious educational and cultural centers, whose influence in the development of research and education in Greece is undeniably significant but yet to be assessed.[4]

Education in ekistics

The Graduate School of Ekistics, abbreviated GSE, was the first sub-division of ATO to develop an international curriculum. Doxiadis entrusted the direction of the educational department to Demetrius Iatridis, a younger former fellow who at the time was pursuing a social sciences career in the United States. As Iatridis recalls, Doxiadis was enthusiastic for setting up an educational center: he felt "a deep responsibility to himself and the planning profession to invest personal energy, time, and material resources" in order prepare "capable and competent planners" not only for Greece but for the whole world.[5] The emerging educational center in fact, sought to transcend "traditional narrow educational planning orientations" by training planners for "international practice" rather than for specific countries, for Doxiadis strongly believed that there was a shortage of planners ready to confront the global housing crisis.

Assisted by Papanoutsos, Doxiadis set to organize the GSE in early 1958, when he initiated a series of contacts in order to get a feedback on the original idea and the

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[3] In fact, one of Doxiadis' closest collaborators and a lifetime friend namely John G. Papaioannou, was a music theorist. Papaioannou co-authored the compendium of Doxiadis' theoretical inquiries on global urbanization "Ecumenopolis: the inevitable city of the future" (1975).

[4] A striking example is the resemblance of the constitutional scheme of the National Hellenic Research Foundation (NHRF) with Doxiadis' institute. The National Hellenic Research Foundation (NHRF) was established as well in 1958 as a multidisciplinary center aiming to the support of humanities and the natural sciences. The chief executive officer (CEO) of the NHRF was K. Dimaras, an ex-collaborator of Doxiadis in the Ministry of Reconstruction and a childhood friend. This comparison was first made by Eleni Kalafati in an interview with the author on 19 December 2008. Significantly, the building that hosts the NHRF is the fruit of Constantinos Doxiadis' collaboration with the notable architect and his master Pikionis.

[5] See, Iatridis, D. (2009) 'Ekistics education and training: vision or tool?', in *Constantinos Doxiadis and his Work (vol.1)*. Athens: Technical Chamber of Greece, pp. 139–143. Dr. Iatridis directed the GSE during the period 1959-1966, and became the vice president of the ACE and DA. According to Psomopoulos, Iatridis was a relative of Doxiadis. In 1966, Iatridis returned to the States to become the director of the Institute for Human Sciences of Boston College.

formation of the curriculum. At the same time he inquired about funding possibilities and sought to acquire teaching material related to community development programs, including documentary films of the kind. Letters were sent to Jacob Crane and Jacqueline Tyrwhitt who were already associated to DA; Ernest Weissmann from the UN Bureau of Social Affairs Housing Building and Planning (at the time Assistant Director); Martin Meyerson and Kevin Lynch from the Center of Urban and Regional Studies in Harvard University; and David E. Bell, a prominent economist and an acquaintance from the Harvard Advisory Group to Pakistan, who was as well proposed to instruct a working group of ATO on a long-term economic development program for Greece. The new center advocated the combination of theory, practice, and research, and proposed a multidisciplinary perspective to spatial analysis, planning, and design, with a strong adherence to the emerging social sciences. As such, the GSE developed a three-cycle curriculum that included theoretical courses, the methodology and working methods of ekistics, and finally an applied-training period during which students participated in DA projects or conducted field work related to research projects of the ACE.[6] The theoretical cycle comprised seminars on Architecture, History of Civilization, Urban Engineering, and Urban Geography, juxtaposed to courses on Economics, Research and Statistics, even Computer Programming. On the other hand, seminars such as Ekistics, Social Ekistics, or History of Human Settlements, were clearly inscribed in Doxiadis' planning theory.

The GSE inaugurated its two-year course in October 1959 with the enrollment of twenty Pakistani experts and civil servants, after the agreement of DA with the Government of Pakistan for the training of its personnel in an intensive course of ekistics. A similar initiative had unfolded for the purposes of the National Housing Program of Iraq, however in this case it was further institutionalized initially within the newborn GSE, and consequently with the establishment of the Pakistan Institute of Ekistics, an associated center that most probably operated till 1963. The connection was so strong that during the nearly 15 years of GSE's operation (after 1963 integrated in the Athens Center of Ekistics), Pakistani students constituted the second most numerous nationality of the school, after the Greek students. In fact, during the period 1958-1971, out of a total of 263 students, 52% came from Europe with the majority originating in Greece (117 in a total of 137 students), 5% came from Africa, 29% came from Asia (49 Pakistani students in a total of 75), 12% originated in the Americas (27 students came from the U.S.A in a total of 32), and finally nearly 2% came from Oceania.[7]

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[6] See, Iatridis, D. (1976) 'Education for Planners on Human Settlements: a retrospective view of the Graduate School of Ekistics', *Ekistics*, (246), pp. 281–283.

[7] See the graph in Psomopoulos, 'Athens Technological Organization', *op.cit.*, p. 107 The same graph depicts the multi-disciplinary precedence of the GSE's alumni: 170 students that had previously pursued studies in

Both Doxiadis' vision for establishing ekistics as a science and the recognition of the ekistic curriculum from the academia presupposed, among other conditions, the introduction of its methodologies and theoretical principles in the curriculum of the existing academic structure. The educational scope of ekistics therefore, was not confined in the graduate program of ATO but was brought among a community of planners and scholars for debate and dissemination in their respective countries and institutes. The culmination of these efforts was the International Conference "Education in Ekistics", held in Athens in July 1971, under the auspices of the World Society for Ekistics (WSE), an international organization founded in 1965. The conference was chaired by the cultural anthropologist Margaret Mead, the then president of WSE, and the outcome report was submitted to the United Nations Conference on the Environment that took place at Stockholm in 1972.[8] The participants discussed the approaches-strategies that should be followed towards the broader consideration of ekistics. The first step was to create "a climate of opinion" by introducing the "ekistic thinking into every level of education, into the mass media, and into continuing education and the reeducation of adults".[9] This ambitious proposal targeted "all sectors of the population" and every educational grade - even kindergarten years and the elementary school! - and aimed to raise and foster awareness on general issues such as the interrelation of man and environment, the use of natural resources, etc.[10] On the top of that, the conclusive report affirmed the need to combine theoretical and applied knowledge, and discussed the inclusion of ekistics in the academia either as an independent complementary undergraduate program, either as part of the existing curricula.[11] Several courses that blended theory and practice were offered as examples, among them the graduate program of the ACE, which collaborated with Doxiadis Associates. Effectively, training and placement were considered essential educational

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"Technology" (architects, planners, civil engineers, industrial designers, etc.) represented the 65%, 65 students were coming from social sciences and "related" fields (business administrators, economists, political scientists, even lawyers…) and constituted the 25%, while the rest of the students was divided between a 6% of geographers and agriculturalists (17 students), and 4% of students from cultural studies (11 students from the arts, literature and historians…).

[8] The report, selected articles, and extracts from the discussions of the conference were published in a special issue of *Ekistics.* This was the second issue of the journal dedicated to "education", the other one been published in December 1968. As reported, the conference was attended by 31 invited participants and an audience of 178 people. See, Tyrwhitt, J. (ed.) (1971) 'Education in Ekistics', *Ekistics*, 32(193).

[9] See, World Society for Ekistics (1971) 'Report from the International Conference on Education in Ekistics', *Ekistics*, 32(193), pp. 397–405, p. 398

[10] Surprisingly, at the time, two North American States had introduced ekistics in educational curricula. Those were the cases of the Education Department of Illinois that had sponsored a teacher's manual titled "An Introduction to Urban Studies: Ekistics as a Tool," authored by Joel R. Surgal (1971), and of the respective Californian department which had prepared a document titled "Ekistics: Curriculum Development in Conservation and Environment". Apparently, there was another case in a Canadian High School, where Edward Leman - an architect-planner and member of WSE - was "teaching" ekistics. Tyrwhitt, 'Education in Ekistics', *op.cit.*, p. 394

[11] See, World Society for Ekistics, 'Report', *op.cit.*, p. 398.

parts, whereas the completion of a course and the grant of a professional degree should entail practice in offices, research programs, or even city halls.[12] Since the courses and training often related to developing countries, the discussion moved to knowledge-transfer issues and the role of international agencies in establishing schools *overseas*.[13]

Another aspect of the debate evolved around the necessity of developing multi-disciplinary studies instead of single-track professions. Ekistics was aligned to the current of thought that promoted holistic thinking against reductionism, however, as the report stated, not in antagonistic terms: "[g]eneralization and general administrative leadership should proceed from not be regarded as a substitute for, competence in a special field".[14] The emerging scientific branch not only advocated interdisciplinarity but sought to provide the theoretical and methodological base for integrating established knowledge areas under its auspices. While the "process of training in ekistics" included different cycles of specialization based on existing curricula such as architecture, anthropology, social sciences, etc., ekistics *per se* was considered the ultimate step to their integration.[15] As such, its ultimate objective was the formation of specialists able to synthesize existing scientific knowledge, that is, the experts with the "special capacity to integrate and relate different disciplines, different scales, different political groups", and therefore lead future planning endeavors.[16]

All in all, the conference "Education in Ekistics" examined some of the contemporary debates on didactics from the perspective of an aspiring discipline. The outcome report forwarded to the UN the viewpoints of distinguished scholars, albeit gathered under Doxiadis' intellectual and theoretical concept. Nevertheless, some voices questioned whether ekistics should be formalized as a study "by implanting it within the academic establishment", whereas there was no consensus about the constitution of a specific curriculum.[17] In fact, the conference's debates showed that there was no consensus on what ekistics actually *was*. The introductory part of the report provided a definition that

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[12] See, Doxiadis, C. A. (1971) 'Education in Ekistics', *Ekistics*, 32(193), pp. 406–410, p. 409.

[13] At the time there were more than a hundred programs of city and regional planning destined to such "environments", see, Rizvi, A. A. B. (1971) 'City and Regional Planning Education: response of selected North American institutions to the needs of underdeveloped countries', *Ekistics*, 32(193), pp. 445–452. Moreover, Dr. Rizvi, an alumni of GSE who had studied in Karachi and the British Columbia University, proposed the establishment of two international centers - one in Puerto Rico and another one in Athens - for re-orienting foreign-trained planners on their return to their countries. That proposal manifested the influence of John Turner and Doxiadis as successful planners in the developing world.

[14] See, World Society for Ekistics, 'Report', *op.cit.*, p. 400.

[15] See, Doxiadis, 'Education in Ekistics', *op.cit.*, p. 407.

[16] See, World Society for Ekistics, 'Report', *op.cit.*,

[17] The former point was advanced by Dr. Posvar, Chancellor of the University of Pittsburgh who had an extended and distinguished experience in administration, see, Tyrwhitt, *op.cit.*, p. 395.

ratified Doxiadis' principal statement, albeit elaborated his ideas according to the pluralism of the WSE: "Ekistics is the science of human settlement. Ekistics is the *developing science* [emphasis added] of human settlements conditioned by man and influenced by economics, social, political, administrative and technical sciences and the disciplines related to culture and art".[18] As such, the report reiterated the ekistic principles (the 5 elements, the taxonomy of scales, the contribution of several disciplines, and the transition from the analysis to synthesis), nevertheless affirmed that ekistics as "a set of theories […] operational methods and […] a body of competent people" was still under development and that it would take time for its integration in tertiary education.[19]

Horizontal and vertical connections within Doxiadis Organization (DO)

In 1963, Constantinos Doxiadis founded the non-profit Athens Center of Ekistics (ACE) in order to promote "the systematic application of scientific concepts to the comprehensive development of human settlements all over the world". The new branch of the ATO not only advanced the previously described educational mission but also undertook a set of actions that had at the core the problems of global urbanization. For more than a decade, the ACE became the institutional vehicle of ekistics and the channel of dissemination and debate of Doxiadis' ideas at the international plane.

Apart from its Administrative Division, the ACE comprised four departments, namely the Research Division (RD) directed by John Papaioannou, the Graduate School of Ekistics (GSE) directed by D. Iatridis, the International Programs Division (IPD) that handled public relations under the guidance of P. Psomopoulos, and the Documentation division managed by J. Tyrwhitt. Most of the activities initiated at the ATI (e.g. the graduate program, the library, or the early research programs) were brought under the auspices of the ACE, after the institutional transformation of the former due to legal constraints.[20] As such, the Documentation Division assumed the library of the ATO and the publishing of the *Ekistics* journal that was in print since 1955. The Research Division was responsible for several short or long-term investigation projects, the most important being the "City of the Future" (COF), initiated in 1960 and funded by the Ford Foundation and DA; the

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[18] *Ibid.*, p. 397.

[19] *Ibid.*, p. 398.

[20] Supposedly in the Greek legislation the term "institute" was apt only for higher education organizations, thus its official title changed to "center". See, Psomopoulos, 'Athens Technological Organization', *op.cit.*, p. 105. The transition from the ATI to the ACE was made progressively. Depending on the date, some documents may refer to the former or the latter constitution. For the purposes of this study, and principally concerning the international affairs and aspects of the Athens Technological Organization, hereafter I will refer to it as the ACE.

"Human Community" (HUCO), started in 1961 with a grant of Rockefeller Foundation; the Capital of Greece (COG), which began in 1964 with DA funds; and last but not least, the Ancient Greek Cities (AGC) that started in 1968 with the financial support of the Ford Foundation. Finally, the Division 3 organized the programs that brought together distinguished personalities, scholars, and professionals of the era, in international forums such as the Athens Ekistic Month and the celebrated Delos Symposia. After 1965, a new branch was developed in this department in order to include the activities of the newborn World Society of Ekistics.

The ACE and its divisions were only a part of Doxiadis Organization that comprised sectors such as planning and consultancy (DA), construction and engineering, international and interior development, commerce and consumer goods. Though an analysis of Doxiadis' business activities would take this thesis too far, worth mentioning that under the aforementioned sectors fell private enterprises of imports (Intrade Ltd.), commerce (Triaina Ltd.), fishing (Zephyros S.A.), publishing, and tourist development (Figure 4.1). Much alike Doxiadis' professional temperament, DO was a mixture of business, education and research, often dubbed by ex-collaborators willing to express their gratitude for this comprehensive learning experience as "Doxiadis' University".[21] At the antipodes of such characterization was "Doxiadis' Ministry" or "private state" used by his adversaries to denote his omnipresence in cultural and business activities alike.

The business administration of this private entrepreneurial empire was complex and entailed a tight organization with a tree-like structure. At the top of the pyramid was Constantinos Doxiadis who supervised all activities, albeit some only in part. The organizational scheme ramified in personal assistants named BD (standing for "By-Doxiadis"), directors, project managers, employees, etc., whereas every department was to a certain extent independent and had a proper board of directors and internal administration.[22] On the other hand, the aforementioned sectors and their sub-divisions were "horizontally connected" effectively constituting a network of activities within DO. For example, the Documentation Division handled the storage of all data (charts, slides, maps, etc.,) produced by the Research Division or DA, and published the outcome of the research projects in pamphlets or preliminary reports available to the associated staff. Most significantly, both the Research Division and the graduate program shared projects,

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[21] See, Antonopoulou-Bogdanou, M. and Perpinias, G. (2009) 'The Doxiadis Organization', in *Constantinos Doxiadis and his Work (vol.1)*. Athens: Technical Chamber of Greece, pp. 37–49. Antonopoulou-Bogdanou and Perpinias were longtime DA collaborators. Their article though referring to DO it describes only the activities related to planning.

[22] See the graph in *DO: Regulations Of Internal Organization, Operation, Coordination Of Activities And Collaborations (1965)* (1965). Document, Ref. Code 28996. Doxiadis Archives.
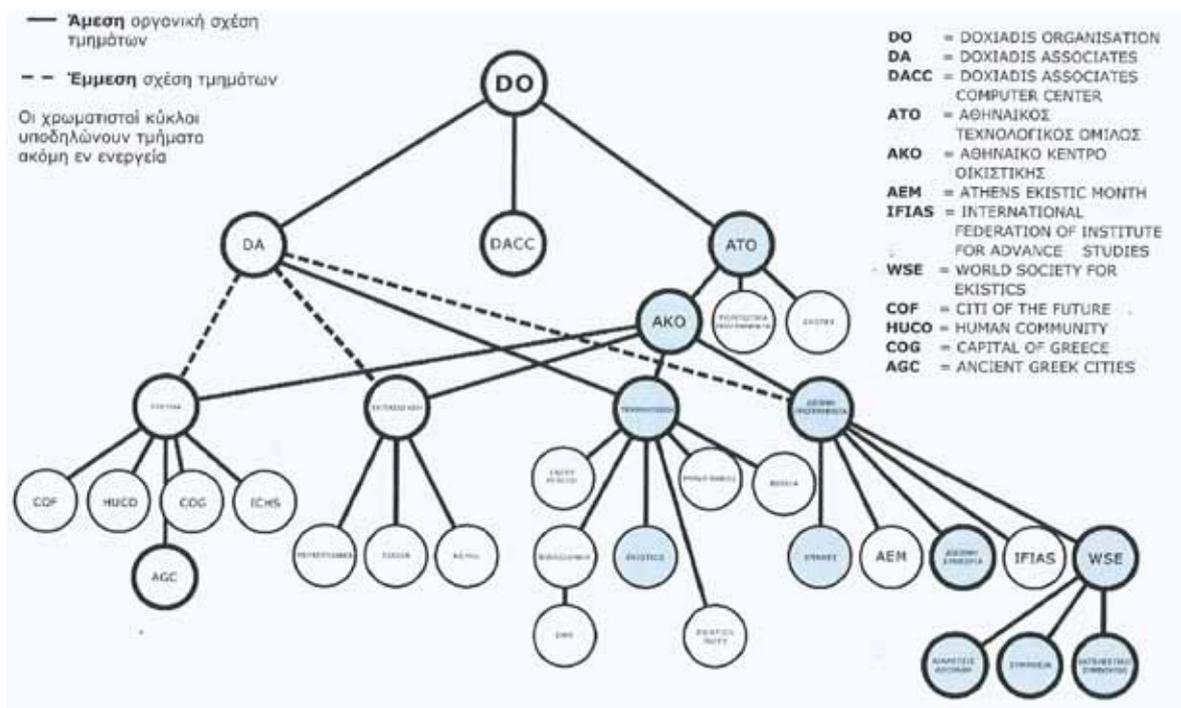
DO Scheme Organization
[Antonopoulou-Bogdanou, M. and Perpinias, G. (2009) 'The Doxiadis Organization', in *Constantinos Doxiadis and his Work (vol.1). Constantinos A. Doxiadis and his Work*, Athens: Technical Chamber of Greece, pp. 37–49, p.46]
Figure 4.1

activities, and personnel with DA. As such, distinguished associates of Doxiadis' bureau participated in the research projects of the ACE or, for example, lectured at the graduate program, while in some cases graduate students carried out field studies for the purposes of DA projects. In the words of Panayis Psomopoulos, "it was in the nature of ACE's manifestly 'join efforts' that each senior collaborator be involved in one way or another in almost everything that was happening".[23]

In 1961, Doxiadis clustered the scattered departments of his organization in a new building complex situated on the slope of Mount Lycabettus, a pine-tree hill in the center of Athens (Figure 4.2a,b). Despite its massive volume (15.000 cubic meters) the complex was architecturally adjusted to the surrounding landscape distributing the extended programmatic needs of DO in volumes of different heights. An eight-storey rear wing housed the DA headquarters, while in the front wing were accommodated the vocational schools of the ATI. The building complex had a central atrium - an architectural element reminiscent of the Athenian building typology - where students and personnel used to take a break from their daily routine. Additional facilities, such as an amphitheater, a library, a meeting hall and underground parking structure, attested to the prestige and innovative character of DO. The building was designed by DA architects T. Kouravelos and A. Scheepers after Doxiadis' instructions, and is considered one of the earliest and most authentic expressions of Le Corbusier's brutalist code in Greece. During the first years and before the 1980s intense urbanization, its emblematic modernist structure predominated in the Athenian landscape due to its volume and elevated location.[24] Much alike the contrived platform that the Greek planner used to supervise the room-size models of his projects, the roof terrace of his building became the pedestal from which Doxiadis observed the sprawling city of Athens (Figure 4.3).[25]

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[23] See, Psomopoulos, P. (1985) 'Jaqueline Tyrwhitt and the Athens Center of Ekistics', *Ekistics*, 52(314/315), p. 442.

[24] The architecture of the building featured innovative functional and structural elements. For a description of the building, its interiors, and activities, see Kyrtsis, A.-A. (ed.) (2006) *Constantinos A. Doxiadis: texts, design drawings, settlements*. Athens, Greece: Ikaros, pp. 425-426. The late 2009 refurbishment and conversion of the DA headquarters to the high standard residential complex "One Athens" arose a fervent debate among the Greek architectural community.

[25] I refer to a much published image portraying Doxiadis discussing the scale model of Islamabad. "With this machine we can see our city from every possible angle, not as a drawing or picture but as a complex system in four dimensions. When I plan a city I look on it as a growing organism not to be straight-jacketed". See, *Life (American Edition)* (1966) 'City Planner Constantinos Doxiadis: busy remodeler of the world', 7 October, pp. 55–60.
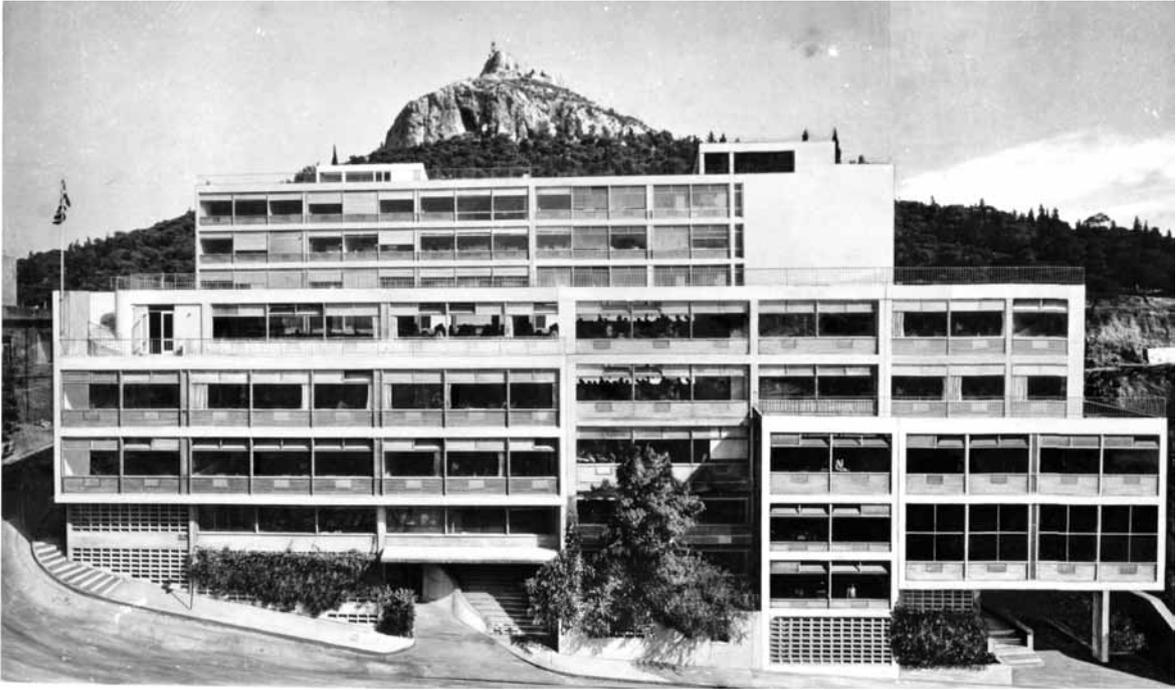
DA Headquarters, Athens, Greece. View from Stratiotikou Syndesmou street.
Figure 4.2a

DA Headquarters, Athens, Greece.
The building comprises volumes of different heights.
Figure 4.2b

Standing on specially contrived platform, Doxiadis discusses with associates scale model of
Pakistan's new capital, Islamabad.
[*Life (American Edition)* (1966) 'City Planner Constantinos Doxiadis: busy remodeler of the
world', 7 October, pp. 55–60.]
Figure 4.3

In effect, a series of photographs taken periodically from the same roof terrace in the mid-1960s were used to register and report the increasing air pollution in the capital, thereafter opening a public debate. To the press however, these panoramic views were another gossip comment on Doxiadis' persona. The American magazine *Life* introduced its article alluding to his privileged status: "[h]aving the Acropolis as a permanent backdrop should be inspirational for any man. It is particularly so for Constantinos Doxiadis, one of the world's busiest and most controversial urban planners" (Figure 4.4).[26]

On the other hand, the building represented Doxiadis' working philosophy: projects "moved" from the upper floors of the managing directors downward to the design and technical departments, and occasionally "crossed" the building to the classrooms and auditorium for analysis and discussion.[27] Debate and cross-fertilization of ideas were part of the work carried out at the distinguished departments of the organization, a concept facilitated by the spacious working areas (free of interior walls and supporting columns) that adapted to different programmatic requirements using mobile partitions.[28] From the conception and programmatic requirements, to construction and architectural details, Doxiadis Office Building typified the holistic spirit of ekistics and the innovative thinking of its "creator". The *par excellence* symbolic element however was the central atrium, said to be at the source of Eridanos, the small stream that flowed from the foothills of Lycabettus through the Agora of ancient Athens. Standing besides the small fountain, and looking through the glazed facade of the Computer Center, one could see the impressive UNIVAC system and "get a glimpse into the future" itself (Figure 4.5).[29] Modernity and tradition stood under the same roof.

Leaving aside the business oriented sectors of DO and focusing on the relationship of DA and ACE, one should consider their synergy. Blending research, civil engineering, and architecture served well public relations, especially when it came to the promotion of consulting services to national governments. In most cases, the ACE conducted surveys and preliminary studies that provided the DA programs and projects with the necessary statistics, plans, photographs, and maps. In that way, the integrated services of Doxiadis' firm and Center offered an appealing and cost-effective option.

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[26] *Ibid.*, Characteristic as well is the title of a New York Times article, namely Reif, R. (1961) 'The Acropolis is Backdrop for Modern Setting in Architect's Home', *New York Times*, 13 December. On the other hand, the Architectural Forum offered a commentary drawing on the Greek mythology: "Ekistics, like Doxiadis himself, is regarded on Lycabettus Hill with something approaching the awe of Zeus". See, Ehrenkrantz, E. and Tanner, O. (1961) 'The remarkable Dr. Doxiadis', *Architectural Forum*, 114(5), pp. 112–116, 154.

[27] *Ibid.*,

[28] See, Kyrtsis, *Constantinos A. Doxiadis, op.cit.*, p. 425.

[29] *Ibid.*, p. 426.

Doxiadis receives in his office General Azam Khan from Pakistan, 5 June 1959.
Figure 4.4

Doxiadis Associates Computer Center (DACC).
Figure 4.5

Nevertheless, things were different considering this synergy from the standpoint of the ACE. The mixture of non-profit and professional activities often aroused a critique regarding the objectiveness of the research and the quality of the post-graduate programs. According to some voices, the GSE's projects or the case studies of the ACE's programs were chosen according to DA's contract agenda, therefore conditioning the curriculum and research of the Center.

For example, when a number of trainees were appointed to the ACE under a Ford Foundation grant for a "two-year program of training and research in urban planning with special reference to the building of a new capital in Pakistan", Doxiadis deviated from the grant terms redirecting them according to the needs of his institution and in particular for the purposes of the "City of the Future" project.[30] What is more, some of the selected trainees were associated in one way or another to DA's international contract agenda, as was the selection of the case studies of the research programs.[31] While it is hard to assess the extent to which sharing projects came at the expense of research and education, it certainly conditioned the functioning of the ACE as an independent center.[32]

Similarly, the curriculum of the GSE came under fierce attack by a group of Pakistani students who "reacted very negatively to the concept of ekistics as a discipline", in fact considering it a fraud![33] As reported by Mr. Qureshi, one of the trainees of the program promoted by the Pakistani government, the students were divided into pro-ekistics band and the "dissatisfied students" who would like to see the program discontinued and "return to their previous positions to build a career in their own discipline". What is more, the latter, "organized propaganda against Ekistics and the program of the School and missed no opportunity of any visitor passing by without making systematic efforts to complain and create a bad impression about the School".[34]

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[30] See, Winnick, L. (1989) *Philanthropy's Adaptation to the Urban Crisis 1987-1989*. Unpublished Report 012158 Chapter VII Part 3 'The Athens Center of Ekistics: The Urban World According to Doxiadis'. Ford Foundation Archives.

[31] *Ibid.*, According to Winnick, "the crisscross of Ford's grant and DA's consulting work" was one of the thorns in the collaboration of Doxiadis with the Ford Foundation.

[32] Iatridis' comment is characteristic of the challenges that Doxiadis' endeavors were faced with, especially in respect to funding: "[s]ome, mainly competitors to Ekistics growth in general, questioned the collaboration and the mix of profit-making DA and non-profit Athens Technological Institute. They speculated that it created a tool benefiting DA's aspirations in the context of public relations, attraction of new contracts, and funding. Actually, the opposite is probably the reality". See, Iatridis, 'Ekistics education and training', *op.cit.*, pp. 142-143.

[33] See, Iatridis, D. (1961) *Meeting with Mr. Qureshi*. Document, Ref. Code 15121 CC-EGSE 16. Doxiadis Archives.

[34] *Ibid.*,

Other voices suggested the incompatibility of research and education, especially during the early years of the Athenian institute. For example, L. J. Lehrman, a visiting professor from the University of Pittsburgh, claimed that the ACE was not mature enough to deliver education and conduct research programs. As he explained to Doxiadis in a private conversation, at the time within the U.S. academia existed three different currents of thought in respect, namely conducting research within the faculty, in an institute related to the University but independent from the faculty itself, and in a completely autonomous foundation. Though Lehrman advocated the first model, he emphasized that the ACE was far to young ("a baby faculty") to handle both, and suggested that it should spend at least 4-5 years developing its curriculum before starting out research projects.[35]

Lehrman's comments however soon turned to a criticism against "the men of action willing to construct", and who insist on delivering projects instead of delving deeper into knowledge.[36] As one might guess, this criticism photographed Doxiadis and attacked his dual role of planner and educator. While some praised Doxiadis as a Renaissance man as well committed to action, others claimed that Doxiadis was nothing more than a good salesman.

The following anecdote involving the criticism of a GSE student is illustrative: "Mr. F" (as the student was referred to as) claimed that there was nothing special in the educational program of the GSE, and described Doxiadis as a "public relations man rather than scientist". The student made these comments to his dentist, who unfortunately (for him) was a friend of Iatridis, the director of the educational center.[37]

Documentation - Organization

If there was a thing that characterized each one of Doxiadis' steps that would most probably be organization. His managerial capacity and vigor for documentation and planning were present in every project, endeavor, and idea, even during his workaday life, as demonstrated by the index cards he used to carry in his pocket, to write down thoughts,

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[35] Lehrman was from the Graduate School of Social Work, University of Pittsburgh and had most probably joined the GSE as a Fulbright scholar. After his short stay in Athens he made an extensive report criticizing the theory of Ecumenopolis and the COF research project. In 1961 the post-graduate program had barely completed its second academic year. Doxiadis described his discussions with Lehrman in two documents, namely *Our Research is of Poor Quality [Η Έρευνά μας Είναι Χαμηλής Ποιότητας]* and *Continuation of the Discussion with Mr. Lehrman [Συνέχεια Συζητήσεως με κ. Lehrman]* (1962). Document, Ref. Code 17923 S-D 4520. Doxiadis Archives.

[36] *Ibid.*,

[37] See, Iatridis, D. (1960) *F's Criticism of the School*. Document, Ref. Code 15121 CC-EGSE 6. Doxiadis Archives.

feedback, and keep in pace with the projects underway.[38] Effectively, Doxiadis was very methodical and well informed on the issues he was interested in, while in most biographical accounts he is described as a man with "an innate ability to inspire and manage people and ideas".[39]

Doxiadis took interest in the organization of space and sought to apply scientific rules for its analysis and planning since the early years of his career. His dissertation analyzed the architectural space in ancient Greece and aimed to *unveil* the geometric principles and mathematical correlations used in the layout of public spaces and buildings.[40] His thesis was submitted to the Berlin Charlottenburg Technische Hochschule in 1936 under the title *Die Raumordnung im griechischen Städtebau*, and was translated and edited by Tyrwhitt for the MIT edition, published in 1972 as *Architectural Space in Ancient Greece*.[41] The original title however, used the word *Raumordnung*, meaning "Regional Planning" in German. At that time the term had no official translation in Greek and Doxiadis sought to establish an equivalent one that extended the concept of *poleodomia* (city planning) spatially and semantically. To do so, he coined the word *chorotaxsia*, whose components literally signify "to bring **order** (*taxis*) to space (*choros*)".[42] Doxiadis sought to publicize the term among his peers, naming after it the weekly bulletin of the "Circle of Technicians". The term *chorotaxsia* was officially adopted in 1943, when the "Office for Urban Planning Studies", which he had created in 1939 with the help of A. Dimitrakopoulos of the Ministry of Public Works, was renamed to "Office for Regional and Urban Planning Studies and Research".[43]

Doxiadis' keen interest in the documentation and organization of space is also registered in some of his early publications in the aforementioned bulletin. Disparate articles, such as housing in Russia and Austria, the economic aspect of settlements, or even the production

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[38] See, Madanipour, A. (2010) 'The limits of scientific planning: Doxiadis and the Tehran Action Plan', *Planning Perspectives*, 25(4), pp. 485–504, p. 499.

[39] The phrase is quoted from an e-mail response of Gerald Gutenschwager, a geographer who participated at the "City of the Future" research program and author of *Planning and Social Science; a Humanistic Approach* (University Press of America, 2004). See, Theodosis, L. (2012) 'E-mail to Gerard Gutenschwager', 19 July.
[40] See, Tsiambaos, K. (2009) 'The Creative Gaze: Doxiadis' discovery', *The Journal of Architecture*, 14(2), pp. 255–275.

[41] Doxiadis defended his dissertation in July 1936, which was originally published in 1937 by the Kurt Vowinckel Publishing House, in Heidelberg.

[42] As Papaioannou denotes, Doxiadis coined the word "with the willfully ambivalent meaning 'bringing order (taxis) to space (choros),' implying space at any scale, and also 'bringing order to the country (chora)', that is national planning". See, Tyrwhitt, J. (ed.) (1976) 'C.A. Doxiadis 1913-75: Pursuit of an attainable ideal', *Ekistics*, 41(247), pp. 309–388, p. 314.

[43] In Greek, the office was called "Grafion Chorotaxikon kai Poleodomikon Meleton", nevertheless in some cases it was denominated as Town and Country Planning Department, always under the Ministry of Public Works. Today, *chorotaxsia* is an official term.

and distribution of bread, evinced his concern for the organization of space no matter the scale, phenomena, or processes entailed. Most significantly, an article titled "The Statistics of Housing, Building, and Urban Plots" explored the importance of statistics for city planning in Greece and abroad, and concluded to specific proposals for the documentation of the existing housing conditions as prerequisite to any kind of intervention.[44] Characteristically, the article started by citing Le Corbusier's renowned phrase, "[s]tatistics are the Pegasus of the town planner". When Doxiadis established his private office and research institute, statistics became the base of DA design strategies and a cornerstone of the ekistic theory.[45]

At any rate, Doxiadis' concern was not just theoretical. As analyzed in the first chapter, the systematic registration of wartime destructions and the documentation of the collected material for the purposes of the exhibition *Such Was the War in Greece*, provided a powerful display of the devastated Greece and a comprehensive presentation to advance the Reconstruction's needs. Since then, Doxiadis and his associates performed manifold surveys collecting information in developing countries and uncharted territories, where detailed plans and reliable demographic data were scarce. Doxiadis in fact, recorded every single step of his endeavors, starting with the impressions of his trips kept in detailed diaries.[46] Descriptions were plain and simple, sometimes expressing an austere professional opinion but rarely elaborating further personal sentiments. By the same token, the photographic records that accompanied the documentation of the *unknown* were raw images to get analyzed and archived instead of artistic representations. For the purposes of the Lebanon commission for example, DA conducted an extended photographic survey between 1957 and 1958 meant to analyze the situation in the country and provide a base for developing further the guidelines of the national housing program.[47] Ironically, in some cases these photos recorded the last view of places and

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[44] Doxiadis, C. A. (1942) 'The Statistics of Housing, Building, and Urban Plots [Η στατιστική της κατοικίας, των οικοδομών και των οικοπέδων των πόλεων]', *Chorotaxsia*, (29), pp. 161–180.

[45] See as well, Tsiambaos, K. (2009) 'From Information to Action', in *Constantinos Doxiadis and his Work (vol.1)*. Athens: Technical Chamber of Greece, pp. 516–536.

[46] When Doxiadis was diagnosed with the Lou Gehrig disease, he started to keep detailed notes of his illness, a kind of a medical record meant to contribute to future research. Even when he lost his voice, Doxiadis used a small portable wrist typewriter (a Canon communicator) to continue with this task and broader work.

[47] As Sarkis denotes, "[t]he photographs themselves were not the final product but the means to a comprehensive housing program for all of Lebanon […]. They do have value as images but when they were collected they were meant to serve as data, as objective depictions of an unpleasant reality, not as coffee table material". See, Sarkis, H. (2003) *Circa 1958 : Lebanon in the pictures and plans of Constantinos Doxiadis [Le Liban à travers les photos et plans de Constantinos Doxiadis]*. Translated by G. Tuwayni. Beyrouth, Liban: Editions Dar An-Nahar : Fares Foundation, p. 15.

customs about to change or even disappear forever.[48]

All in all, registering and documenting information were important steps prior to DA projects and ekistic programs, as for example was the "City of the Future" (COF) research study that scrutinized different parts of the world, effectively compiling a worthy archive with analytical information on world-wide urbanization. After the establishment of the ACE, the classification of raw data was assumed by the "Documentation Center for Ekistics", the same division that undertook a set of publications related to ekistics. Last but not least, this department was responsible for the library of the ATO, one of the most extensive and diverse collections at the time that, due to the multidisciplinary nature of ekistics, spanned from architecture and urbanism, to social sciences, mathematics and economics. More than a remote study room, the library was an active entity that alimented both the educational activities and the research projects of the ACE. The first years of its life, the library was entirely financed by Constantinos Doxiadis, while after 1965 it was expanded on a Ford Foundation grant. It was furthermore modernized after the establishment of the Computer Center and the introduction of innovative means to control and disseminate information.[49]

4.2 *EKISTICS* - The Journal

As said, the Documentation Division IV of the ACE was entrusted to Jacqueline Tyrwhitt (1905-1983), a South African-born but British-raised and educated town planner who joined Doxiadis in the mid-1950s to become one of his closest collaborators in developing and disseminating ekistics.[50] Tyrwhitt was for several years the principal editor of the journal *Ekistics*, a regular member of the Delos Symposia planning committee, supported

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[48] Apart from the case of Lebanon as denoted in Sarkis' *Circa 1958*, the same thing applies in the case of Iraq, where DA countless photographies depicted the constructions and lifestyle of nomadic tribes settled in floating reed homes called 'mudhif'. These were traditionally built without nails, wood or glass in less than three days, and rested on compacted mud and rushes islands. This civilization almost disappeared after the draining of the Mesopotamian marshes that took place originally after an irrigation project that disrupted the flow of water, and in the early 1990s when Saddam Hussein's regime resumed the same project. Recently the non-governmental organization *Nature Iraq*, accredited to the United Nations Environment Programme (UNEP), has started out programs for the protection and preservation of the Iraqi marshlands. Another case that reiterates the historic value of Doxiadis Archives is the photographic survey of DA in Erbil currently analyzed for the purposes of the restoration of the ancient Erbil citadel under the auspices of UNESCO World Heritage Center.

[49] Eleni Kalafati provides an excellent account of the library's activities in analyzing the extent and importance of Doxiadis' documentation activities. See, Kalafati, E. (2009) 'The Significance of Documentation in the Professional and Research Activities of C. A. Doxiadis', in *Constantinos Doxiadis and his Work (vol.1). Constantinos A. Doxiadis and his Work*, Athens: Technical Chamber of Greece, pp. 69–81.

[50] The most complete accounts on Tyrwhitt to date are Psomopoulos, P. (ed.) (1985) 'Mary Jacqueline Tyrwhitt. In Memoriam', *Ekistics*, 52(314/315), p. 442, and Shoshkes, E. (2013) *Jaqueline Tyrwhitt: a transnational life in urban planning and design*. (Design and the built environment).

wholeheartedly Doxiadis' theory and planning models, and even edited or published his writings and books. She joined the ekistic movement when she was the CIAM secretary (1951-1959) and maintained a tight circuit of communication between Giedion, Le Corbusier, José Luis Sert, Walter Gropius, thereafter called the "committee of five".[51] Being the assistant director of Maxwell Fry at the MARS group, the British wing of CIAM, Tyrwhitt prepared the debate and planned the agenda for CIAM 8, and co-edited with José Luis Sert and Ernesto Rogers the respective publication "CIAM: The Heart of the City". In 1969, and after Sert's retirement, Tyrwhitt left Harvard and the faculty of Graduate School of Design, to get permanently installed in Greece and dedicate herself to ekistics.[52] As such, Tyrwhitt became a key figure in disseminating the ekistic lore and expanding the ekistic network, and had a major effect on Doxiadis himself.

Doxiadis and Tyrwhitt got acquainted for the first time at the UN Regional Seminar on Housing and Community Improvement organized in New Delhi, in 1954.[53] Tyrwhitt, in the capacity of a UN consultant, directed the seminar and organized an international exhibition on low cost housing that among other things featured a prototype village built using aided self-help methods. Even though this was only an exhibition space, Tyrwhitt's project was significant in bridging three planning approaches. First of all, the prototype hamlet included a set of community buildings (a school unit; a small health clinic; a crafts center focused on housing; a seed store and a vegetable garden destined to food production) developed around an open space, much alike the concept of the core explored in the CIAM 8 congress.[54] Apart from the spatial configuration of the village then, Tyrwhitt's experimental unit placed emphasis on local tradition and productive social practices, therefore echoing Patrick Geddes' planning philosophy and work in India.[55] Last

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[51] Tyrwhitt in fact, was Giedion's assistant in preparing *Mechanization Takes Command*. See, Mumford, *The CIAM Discourse on Urbanism*, *op.cit.*, p. 202.

[52] Jacqueline Tyrwhitt purchased a property at a hillside in Attica, the broader region of Athens, where she made a garden cultivating local and foreign plants, while registering the whole process in a book about wildlife gardening in the Mediterranean climate. Tyrwhitt in fact, had studied at Worley Place under the famous gardener Ellen Willmott, and had already practiced as a landscape architect. Her house was built by J. Papaioannou and A. Scheepers, both of them associated to Doxiadis (Scheepers was as well married to his sister), at Sparoza, Liopessi area in Paiania. Today, the home and garden of Jacky Tyrwhitt host the headquarters of the Mediterranean Garden Society, founded in 1995. Her experiences written in a form of a diary were published posthumously in Tyrwhitt, J. (1998) *Making a garden on a Greek hillside*. Limni, Greece: Denise Harvey.

[53] Doxiadis and Tyrwhitt's paths had already overlapped in 1937, when Tyrwhitt spent nine months studying at the Technische Hochschule in Berlin, that is, the same period Doxiadis was completing his dissertation. Apparently they never met. See, Nagshima, C. (1985) 'M.J. Tyrwhitt: Annotated Curriculum Vitae', *Ekistics*, 52(314/315), pp. 403–407.

[54] See, Tyrwhitt, J. (1985) 'The Village Centre at the Exhibition on Low Cost Housing, Delhi, 1954', *Ekistics*, 52(314/315), pp. 430–432, 489.

[55] See, Shoshkes, E. and Adler, S. (2009) 'Planning for healthy people/healthy places: lessons from mid-twentieth century global discourse', *Planning Perspectives*, 24(2), pp. 197–217, p.200. Tyrwhitt in fact, had

but not least, the use of aided self-help practices related to the programs advanced by Jacob Crane, who as well participated in the Delhi seminar.[56]

On the other hand, the Greek planner delivered the opening address of the section II on "Methods of Preparing Housing and Community Improvement Programmes" and chaired the afternoon session. His paper stressed the importance of housing production for the developing countries advocating the need to unfold solutions adapted to the local context and necessities rather than reproducing universal standards.[57] Among the discussed policies were aided self-help construction methods exemplified by the "growing" or "extendable" house of the Greek Reconstruction program. Nonetheless, as Doxiadis contended, in order for the humanity to win the (losing) battle of a growing population against housing construction a new science should be established; he called it ekistics.[58]

During the side event discussions of the seminar, Doxiadis and Tyrwhitt coincided that there was a need for publishing a professional bulletin that would keep architects and planners working in developing countries updated. The journal *Ekistics* was born one year later, when Doxiadis had already opened an office in Iraq and was looking forward to strengthen his expanding network in the Middle East. He therefore proposed to Tyrwhitt to edit a monthly bulletin on planning issues, and she agreed provided it would outreach not only the DA personnel but as well UN experts stationed abroad.[59] Tyrwhitt at that time, was not only serving CIAM as an Acting Secretary but since the fall of 1955 occupied the position of Assistant Professor of City Planning in Harvard, organizing with Sert and Giedion the celebrated GSD Urban Design Conferences.[60] Occupying a key position in the global network of the planning profession and academia, Tyrwhitt was the perfect match

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compiled the second edition of Geddes' *Cities in Evolution* (1949) and had edited the collection of essays *Patrick Geddes in India* (1947).

[56] Both Crane and Tyrwhitt were Geddes' disciples. In 1945, the former made some arrangements for Tyrwhitt's lecture tour in North America, which as well coincided with the UN San Francisco conference, attained by Doxiadis. See, Shoshkes, E. (2009) 'Jaqueline Tyrwhitt and transnational discourse on modern urban planning and design, 1941–1951', *Urban History*, 36(02), pp. 262 –283, p. 268.

[57] See Doxiadis, C. A. (1954) *Types and Densities of Housing Accommodation*. Document, Ref. Code 24965. Doxiadis Archives. Doxiadis most probably had the chance to visit Tyrwhitt's exhibition during his trip to India.
[58] *Ibid.*, Doxiadis' address at the UN seminar was probably the first time he presented the idea of ekistics in an international fellow forum. At that time ekistics was in its infancy and was discussed as a policy, whereas it was spelled "oecistic".

[59] The second meeting of Doxiadis with Tyrwhitt took place in London, in 1955, among other meetings arranged for the purposes of the Iraqi commission. See, Doxiadis, C. A. (1955) *London Arrangements [Συνεννοήσεις Λονδίνου]*. Document, Ref. Code 23877 Q.A.6. Doxiadis Archives.

[60] Tyrwhitt got involved in Harvard University after Sert's invitation to give a conference at the GSD in January 1955 on her experience as a director of the UN seminar in New Delhi. Mumford explains the development of the "urban design" concept at Harvard, as Sert, Giedion, and Tyrwhitt's response to the challenges of Team 10 within CIAM. See, Mumford, E. P. (2009) *Defining Urban Design: CIAM architects and the formation of a discipline, 1937-69*. New Haven: Yale University Press, pp. 113-115.

for disseminating ekistics.[61]

The bulletin was initially published in 1955 as *Tropical Housing and Planning Monthly Bulletin*, was renamed to *Ekistics: Housing & Planning Abstracts* in October 1957, and after some changes, in January 1975, it was given the title still holding to date, *Ekistics: The Problems and Science of Human Settlements*.[62] During the first years, *Ekistics* reprinted articles from journals specialized in thematic areas such as social sciences, geography, urban economics, ecology, or architecture, selected and abstracted by Tyrwhitt from diverse sources not easily accessed by planners. To a certain extent then, *Ekistics* was developed as a scanning device and a networking instrument that played an important role in popularizing urban and regional planning in relation to developing countries.[63] The journal however, soon built up a proper identity using distinctive ekistic features. Every issue for example, had at the inside cover page the definition of the science of human settlements, the back cover illustrated the five ekistic principles, while every article was codified in the Ekistic Grid, that is, a generic chart next to the title denoting the scale of the settlement and the ekistic elements the article related to. As the bulletin began to gain popularity it evolved from a mimeographed leaflet, to a monthly periodical sold on subscription to Universities, private foundations, and planning organizations. Through the years, *Ekistics* included original articles mixed with the abstracted ones under specific subjects, always seen through its particular theoretical lenses.[64] The topics that most interested the readers - 29% of which were planners and "ekisticians", 27% architects and engineers, 20% administrators (including librarians), and the rest divided in professions such as social scientists, economists, geographers, etc., - were urbanization, community development, and ekistics, whereas less attractive seemed

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[61] See, Shoshkes, E. (2006) 'Jaqueline Tyrwhitt: a founding mother of modern urban design', *Planning Perspectives*, 21(2), pp. 179–197.

[62] Moreover, in 1956 the periodical changed to *Tropical Housing & Planning Monthly Information Bulletin*; in May 1959, it came out as *Ekistics: Abstracts of the Problems and Science of Human Settlements*; while in January 1961, its subtitle changed to *Reviews on the Problems and Science of Human Settlements*. For simplification purposes it is denoted *Ekistics*.

[63] A taxonomic analysis of the content of the journal during its first decade of life can be found in Tyrwhitt, J. (1965) 'The Journal of Ekistics 1955-1965: analysis of its contents', *Ekistics*, 19(110), pp. 39–45. Tyrwhitt's analysis drew on a questionnaire distributed to all readers and used several graphs but principally the Ekistic Grid to represent the content according to categories such as academic fields, Ekistic units, or "subjects interesting to readers of ekistics". As explained, over two thirds of the printed articles focused on problems related to developing countries. For the role of Ekistics in relation to the broader debate on the education of planners see, Friedmann, J. (1969) 'Intention and Reality: The American –Trained Planner Overseas', *Ekistics*, 28(169), pp. 411–415. Finally, for an interpretation of every aspect of ekistics - including the journal - in relation to networks see, Wigley, M. (2001) 'Network Fever', *Grey Room*, 4, pp. 82–122, p. 92.

[64] During the first nine years, *Ekistics* divided the table of contents in three thematic areas, adding rubrics such as books reviews or letters to the editor. Since February 1964 however, almost every issue was published with a specific title broadly corresponding to a unique theme.

to be building construction and public administration.[65] As expected, Doxiadis and ekistics had the lion's share. Conference papers, articles, and even draft chapters from Doxiadis' books were constantly published in the journal along editorials on the Delos Symposia, reviews and updates on the ACE research programs or monographic issues on events such as the Athens Ekistic Month.[66] On the other hand, critiques on Doxiadis' planning theory were scarce, or to put it another way, *Ekistics* did not use to host "external voices".[67]

In July 1960, when *Ekistics* had become a monthly journal, Doxiadis launched another pamphlet destined to his full-blown consulting firm, by then including offices in the Middle East, US, Europe and Asia. Initially published as DA Newsletter (1960-1964), the bulletin was renamed to DA Review in January 1965, adding pages, illustrations, and sections.[68] Unlike the theoretical scope of *Ekistics*, the new English written journal was "a means of communication among the members of the fast-growing Doxiadis Associates family" reporting on its projects and overall activities. The DA Review was "designed to communicate official and general information as well as to include all facets of DA personnel activities such as travels, speeches, public appearances, publicity and guests".[69] Eventually, the DA Review reported the social life of Doxiadis Organization's members, covering from Christmas celebration parties to the marriages of DA/DO collaborators. If *Ekistics* was "a scanning device constantly monitoring information flow in other magazines",[70] DA Review was the monitoring device of the DA society. Another pamphlet published over the period 1965-1971 was the "ATI-ACE Newsletter" that communicated the educational and research activities of the Athenian Center, while for a year's time, from 1966 to 1967, this newsletter was supplemented by the annals of ATI. Doxiadis' persistence in documenting the flow of information in order to keep updated his collaborators was systematized further with the publication of the Ekistic Index, that is, a cumulative index published from 1968 to date, classifying more than half a century of

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[65] See, Tyrwhitt, 'The Journal of Ekistics 1955-1965, *op.cit.*

[66] A bibliography of Doxiadis' articles in Ekistics can be found in Tyrwhitt, J. (ed.) (1976) 'C.A. Doxiadis 1913-75: Pursuit of an attainable ideal', *Ekistics*, 41(247), pp. 385-388.

[67] One of the few exceptions was an article published in the November 1967 issue that compiled the commentaries of graduating students of City Planning at Columbia University on Doxiadis' address on receiving the Aspen Award. This task however had been assigned by Charles Abrams, an "ekistician" himself. See, City Planning Students at Columbia University (1967) 'Doxiadis' Anthropocosmos: a critique', *Ekistics*, 24(144), pp. 421-424.

[68] The DA Review was published monthly from January 1965 to April 1971, thereafter reducing printing to three issues per year till 1982.

[69] See, 'From the Newsletter to the Review' (1965) *DA Review*, (1), pp. 2–3.

[70] See, Wigley, 'Network fever', *op.cit.*, p. 92.

articles related to ekistics.[71] Eventually in 1971, Doxiadis established the editorial Lycabettus Press Ltd., which undertook the publishing of *Ekistics*, DA Review, and a stream of reports and pamphlets for the purposes of DA projects.

Doxiadis' role in the journal

Jacqueline Tyrwhitt was the first editor of *Ekistics*, however she was not the only one. In July 1969 Gwen Bell joined as an assistant editor and from December 1972 to 1977 she undertook the journal, with Tyrwhitt as a consultant editor.[72] When Doxiadis passed away and after the resignation of Bell in 1977, Tyrwhitt assumed anew an active role and along Panayis Psomopoulos (the current editor), she undertook the editorship of *Ekistics*. She was associated with the journal until her death in 1983.

Editing *Ekistics* was not an easy task considering Doxiadis' role in the journal. Being the mastermind of almost every endeavor related to ekistics and co-authoring most of the journal's editorials, the Greek planner felt he had a deep responsibility for the published content, and yet he was not the editor. An illustrative example of the internal problems affecting the journal unfolded after the publication of the February 1974 issue, and in particular in relation to a piece on Singapore shopping centers authored by Willie Lim. Doxiadis expressed his discontent about the publication of the article that described in a positive way a complex of apartment buildings with the lower floors used for shopping facilities:

> "I must confess that I was shocked when I saw the February 1974 issue of EKISTICS because while our position is so clear throughout our common effort to fight criminals, we present two criminal efforts […] without calling them so [...] Do we intend to turn EKISTICS into an architectural magazine presenting what is supposed to be fashionable by forgetting the human values?[73]"

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[71] Among the first subscribers to the Monthly Periodical Index of *Ekistics* were the Universities of Harvard and Toronto and the British library. See, Kalafati, 'The Significance of Documentation in the Professional and Research Activities of C. A. Doxiadis', *op.cit.*, p. 80.

[72] Gwen Bell was an Assistant Professor of Urban Affairs at Pittsburgh's Graduate School of Public and International Affairs and a visiting professor at the Harvard Graduate School of Design. She was also a consultant to the United Nations programs for Indonesia, The Philippines and Brazil (1970–1977). After the death of Doxiadis, Bell resigned from *Ekistics* and became a social science journal editor for Pergamon Press, an Oxford-based publishing house.

[73] See, Doxiadis, C. A. (1974) *February EKISTICS*. Document, Ref. Code 22359 SD-ACE 1646. Doxiadis Archives. As Doxiadis complained to Bell, he received a couple of calls "from people laughing at [him]", and he had to explain that the aforementioned article was published "due to a mistake because of the distance between the editor and the printing facilities".

To anyone acquainted with Doxiadis' beliefs about architecture and design, the above statement comes as no surprise. The father of ekistics was critical of the megalomania of the architects, who tried "in a completely unjustified and facile way, to create their own 'styles,' as if one man or group of men could overnight replace the action of a whole society over a long period of years".[74] Doxiadis' critique of what today is called "signature architecture" was typified by his aversion to skyscrapers and his preference for low-rise construction and pedestrian oriented neighborhood design.[75] With the passing of time the father of ekistics intensified his discourse accusing modern architecture for producing despotic high-rise buildings, partly as a reaction to the construction of the Athens Towers, completed in 1971.[76] The same year Doxiadis invited to the Delos symposium Vincent Scully, an influential architectural historian who in July 1963 published in Architectural Forum a caustic article titled "The Athens Hilton: A Study in Vandalism".[77]

Though Scully eventually did not attend the Symposium, Doxiadis made clear his intention to target high-rise buildings in the introductory speech titled "Confessions of a Criminal"! According to the Greek planner five architectural mistakes - otherwise denominated crimes - were to impact cities for the generations to come: the construction of high-rise buildings, the dispersed buildings, the unconnected buildings, the monumental buildings, and the loss of human scale.[78] In regard to the ekistic elements, skyscrapers (Shells) were considered harmful to the landscape's scale (Nature), had alienating effects on the lives of their inhabitants and especially on children (Man-Society), and overloaded the

[74] See, Doxiadis, C. A. (1968) 'Architecture', *International Encyclopedia of the Social Sciences*, pp. 392–397. Surprisingly, this is one of the few articles that Doxiadis offers an extensive list of bibliographic references.

[75] Doxiadis made one of the first public condemnations of skyscrapers in his address at the 2nd annual conference of the San Francisco Planning and Urban Renewal Association, San Francisco, California, United States, January 1962. See, Canter, D. (1962) 'Planner warns S.F. on its future skyscrapers', *San Francisco News-Call Bulletin*, 18 January.

[76] Athens Towers is a building complex designed by architect Ioannis Vikelas and constructed between 1968 - 1971. The Tower 1 is the tallest building in Greece with a height of 103 meters. Its construction became a subject of controversy not only for its unprecedented scale but as well for its symbolism. Athens Towers was built during the period of the military Junta taking full advantage of the abolition of the existing building regulations that set the maximum height to 35 meters tall.

[77] Characteristically, Scully's article was illustrated with a picture of the Hilton hotel taken from the Parthenon in order to show how the voluminous building obstructed the harmony and visual connection of Acropolis with its natural surroundings. Doxiadis was one of the architects that objected the construction both of the Hilton building and the Athens Towers. For an interesting analysis of the Athens Hilton hotel and the broader international construction program see, Wharton, A. J. (2001) *Building the Cold War : Hilton International hotels and modern architecture*. Chicago: University of Chicago.

[78] See, Doxiadis, C. A. (1971) 'Confessions of a Criminal', *Ekistics*, 32(191), pp. 249–254. The article was reprinted and translated in several languages (Portuguese, Spanish, French, Norwegian). The 1971 Athens Ekistics Month took place from 5th to 29th of July. For selected conference papers, discussions, and excerpts from the Declaration of Delos Nine see, Tyrwhitt, J. (ed.) (1971) 'Our Buildings (Shells) and Human Settlements', *Ekistics*, 32(191).

infrastructure networks (Figure 4.6).[79] The "Confessions of a Criminal" concealed the apologetic discourse of an architect in a period when modern architecture was *incriminated* for the creation of dormant suburbs. At the same time, it added to the ekistic discourse a fundamental parameter of urban planning, namely legislation.

Doxiadis' "crusade for justice" continued with another publication titled "The Great Urban Crimes that We Permit by Law".[80] In that case, the Greek planner attacked land marketing and property development agencies, and denounced the inflated land values that produced the frenzy horizontal and vertical exploitation of space. Though land ownership has always been synonymous to power, the Greek planner contended that "with the onset of the 20th Century, humanity has entered a new feudal era in terms of urban land development" due to rapid growth and technological innovations that permitted "any type of construction".[81] The landowners were conducting a new type of colonization, making profit from high-rise constructions, "against the interests of the many", and at the expense of the city. In an egalitarian society, Doxiadis claimed, landownership should be detached from space ownership, and vertical expansion should be subject to another kind of legislation and taxation.[82]

On the other hand, Doxiadis blamed Le Corbusier and Frank Lloyd Wright for promoting "the high-rise as a solution to urban problem without taking a stand on the social and legal aspects of their proposals".[83] The condemnation of high-rise buildings was a clear deviation from the international style and ekistics was advanced as the amendment to modern urbanism. In that respect, Doxiadis urged the editors of the journal "to respect *Ekistics* as a scientific magazine which does not praise anything unless the success for Anthropos can be proved (*sic*)", and proposed to establish objective criteria concerning

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[79] See, Doxiadis, C. A. (1972) 'Inhuman High-Rise Apartments', *Ekistics*, 33(197), pp. 296–297. To illustrate the first argument Doxiadis used a section of a valley, which ideally featured an acropolis on the top - in harmony with the city beneath - while two skyscrapers represented the spoiling of the landscape. The sketch is reminiscent of Alison and Peter Smithson's sketch of "scales of association" that was drawn after Geddes' Valley Section, and depicted the gradual augmenting of degrees of complexity, from detached buildings on higher slopes to the formation of cities situated in the valley, including high-rise buildings. Doxiadis' sketch might as well get interpreted as a critique of Smithsons' views.

[80] See, Doxiadis, C. A. (1973) 'The Great Urban Crimes that We Permit by Law', in. *World Conference on World Peace Through Law*, Washington, D.C.: World Peace Through Law Center. This paper was consequently published in *Ekistics* February 1974. One year later, in February 1975, the issue of *Ekistics* was titled "Combating Urban Crimes" and included Doxiadis' last ever-written article titled "Human Settlements and Crimes".

[81] *Ibid.*,

[82] Doxiadis named the city of justice and equality *Isopolis*. In his eyes, this was one of the goals to be achieved in planning urban systems and eventually the Ecumenopolis.

[83] *Ibid.*, Doxiadis referred to Le Corbusier's "The City of Tomorrow and its Planning" [(tr. By Etchelli) at 192;] and to Frank Lloyd Wright's "many occasions".
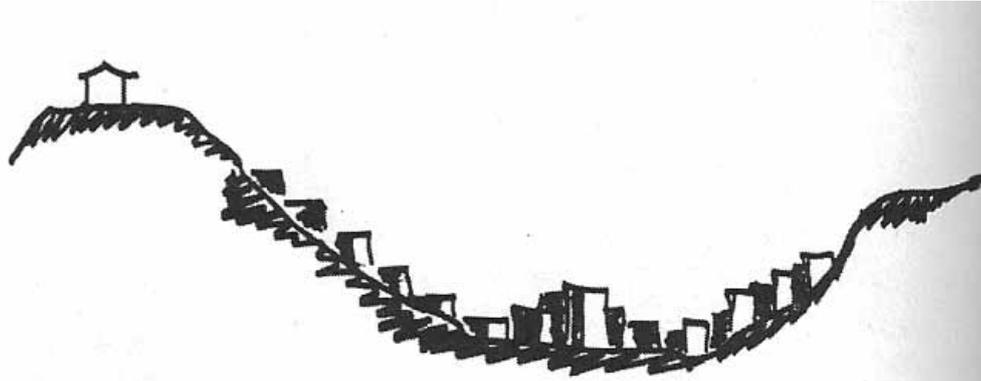
The balance among Man, Shells, and Nature...
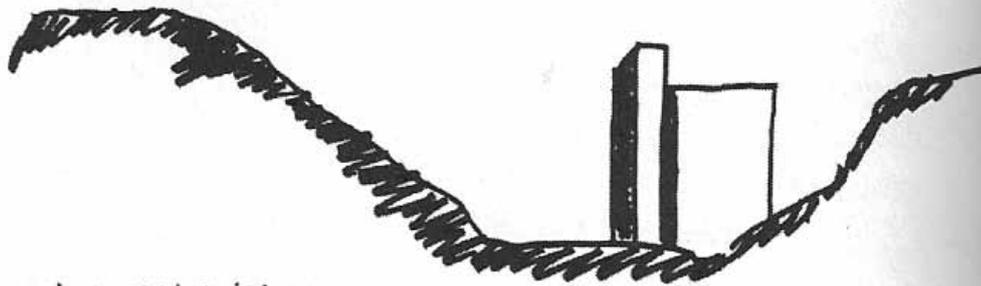
...does not exist any more.

First crime - First Aspect: The high-rise buildings are spoiling the landscape.
[Doxiadis, C. A. (2005) 'Confessions of a Criminal', *Ekistics*, 72(430-435), pp. 102–107.]
Figure 4.6

future publications.[84]

Doxiadis complaint letter was sent to Bell, to receive Tyrwhitt's straightforward and explanatory response. In her opinion, the controversial building complex was not just a profit-making, high-rise commercial facility, but had several merits that justified its publication in accordance with the ekistic philosophy: it featured "several open plaza-like spaces for casual gatherings, and a number of (free) rooms for social uses from clinics to children's play".[85] Moreover, she countered Doxiadis' argument on "the big volume of their lower floors deprived of light and air" stating that "in the hot humid tropics it is often impossible for people to gather together in any comfort in the open air".[86] Ending the discussion, Tyrwhitt justified the inclusion of the disputed article and toned down the whole issue, assuming that the "initial editorial comment should have been stronger in drawing attention only to the lower floors".[87]

Needless to say, the dispute between Tyrwhitt and Doxiadis exceeded the controversial article and had to do with the very editing principles, not to mention their own respective roles within the editorial committee. Indeed, Doxiadis identified himself with the journal and therefore would take the blame or assume the moral responsibility for its content. Tyrwhitt instead understood much differently his obligations:

> "I am sure you will agree that your statement that 'when the magazine says it, we are all responsible' cannot be taken at its face value. As with all journals, the day-to-day responsibility of the contents and the views expressed in EKISTICS rest with its Editor".[88]

Reiterating Gwen Bell's and her own dedication to Ekistics, and manifesting her professionalism, Tyrwhitt proposed to Doxiadis either a disclaimer for the journal's

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[84] See, Doxiadis, C. A. (1974) *Reply to your memo 19.2.74 RE 'February EKISTICS'.* Document, Ref. Code 22359 SD-ACE 1648. Doxiadis Archives. The proposed criteria sought to draw a clear distinction between built and unrealized projects, and include if possible the author's or a public opinion on related issues.

[85] The discussion between Doxiadis and Tyrwhitt unfolded in several letters with carbon copies to Bell. In her first reply Tyrwhitt argued that the building "paid special attention to the social uses of these centers by the local people" nevertheless, Doxiadis insisted on speculating about the built result. Ironically, Tyrwhitt had visited the buildings in question. See, Tyrwhitt, J. (1974) *Reply to SD-ACE 1646 RE 'February EKISTICS'.* Document, Ref. Code 22359. Doxiadis Archives.

[86] See, Tyrwhitt, J. (1974) *Reply to SD-ACE 1648 RE 'February EKISTICS'.* Document, Ref. Code 22359. Doxiadis Archives.

[87] *Ibid.,*

[88] *Ibid.,*

content, either to dismiss the editor, either to "ask the editors to see that it does not happen again", as was eventually the case.[89] At the same time Tyrwhitt drew the line to Doxiadis' involvement in the journal saying that "the Executive Committee […] can only be asked to set a general policy. It cannot possibly be used to approve or disapprove the inclusion of specific material in EKISTICS".[90] To a certain extent, Tyrwhitt's pragmatism seemed necessary for counteracting Doxiadis' spirit of control.

Similar disputes arouse out of the editing of Doxiadis' articles. In December 1973, the Greek planner had the circulation of the monthly issue stopped and asked to be reprinted, for he considered Gwen Bells' editing a *censorship*.[91] While Bell apologized, Tyrwhitt built bridges between editor and author arguing that "her intention was only to make [the] meaning sound more colloquially American".[92] Though she was the consultant editor, Tyrwhitt knew that Doxiadis counted on her for critical issues, even if this meant that she had to usurp Gwen's role as an editor.[93] After all, she was entrusted the editing of Doxiadis' articles and speeches, a task that became even more demanding at the final stages of his illness. On the whole, the collaboration of Tyrwhitt was of a paramount significance for Doxiadis' intellectual work. Even if she was "the woman behind the man", Jacqueline Tyrwhitt was a key figure in ekistics.

4.3 The Athens Center of Ekistics: a hub in the periphery

1963 was a turning point both in Doxiadis' career and for the development of ekistics. The contribution of the Greek planner was recognized with the Sir Patrick Abercombie Prize of UIA and the Cali de Oro (Mexican Gold Medal) Award of the Society of Mexican Architects, while his institute organized the first of a series of summer meetings baptized Delos Symposia and an international conference jointly with the International Union of Architects (UIA). In 1963 in fact, Doxiadis established the Athens Center of Ekistics (ACE)

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[89] *Ibid.*,

[90] *Ibid.*,

[91] See Doxiadis' handwritten note in Tyrwhitt, J. (1973) *December Ekistics*. Document, Ref. Code 22359 Memo. Doxiadis Archives, and Doxiadis' cable to Bell, C-ACE 19297, 10 December 1973, found in *General Scientific Matters: Correspondence Between The Editors Of 'Ekistics' And C. A. Doxiadis (1966 - 1975)* (no date). Document, Ref. Code 22359. Doxiadis Archives. Most probably the dispute was about the article titled "How to build proper human settlements".

[92] *Ibid.*, In my view, Tyrwhitt used the trust she was enjoying by both parts for their reconciliation: "I do not know if you had time to go through the whole article. It seemed to me that, after that first paragraph, her editing was almost exactly what I would have done myself;"

[93] While Tyrwhitt was one of Doxiadis' most trusted and respected colleagues, according to Papaionnou, Gwen Bell wanted to make *Ekistics* "autonomous" and sell it to a North American editorial company. See, Papaioannou, J. G. (1988) *Interview with John Papaioannou*. Unpublished Interview. Doxiadis Archives.

aiming to disseminate the science of human settlements and rally the international community of scholars and professionals around a world-saving agenda. In Doxiadis' eyes the newborn center was to become "a true melting pot of East and West", an international planning hub located in the periphery of Europe at the threshold of the two fronts. Most importantly, the ACE was developed with the hope of uniting "fruitfully" the East and West.[94]

Throughout the 1960s, the ACE organized several events that sought to generate an intellectual debate on the problems of worldwide urbanization and promote ekistics as an approach to developing solutions. Still, the first international meeting that took place at the ATI premises was organized by the International Union of Architects (UIA) and UNESCO, in 5-6 March, 1963. Its title was "Reciprocal influence of urban and architectural forms and structures on the orient and the occident", and though hardly related to the ekistic theory, it was the starting point for forging institutional bonds between UIA and the ekistic center. The connection between the ACE and UIA most probably owes to Konstantinos Kitsikis (1893-1969), a founding member of the International Union of Architects and the President of the Greek branch.[95] At the time, UIA was a relatively small organization supported by a secretariat of 2-3 persons, and yet had an international scope. Much alike other postwar institutional efforts inspired in the internationalism of the newborn United Nations, UIA was conceived by Pierre Vago - a French architect born in Budapest who became internationally known as the publisher of the journal *L'Architecture d'Aujourd'hui* - as an institutional means to overcome ideological barriers and unite architectural associations throughout the world.[96] Undoubtedly, it was in the interest of the ACE to forge institutional

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[94] See, Ehrenkrantz, E. and Tanner, O. (1961) 'The remarkable Dr. Doxiadis', *op.cit.*

[95] Kitsikis was a prominent architect and author of important interwar and postwar buildings that pioneered modern architecture and beton armé construction in Greece. He participated along Thomas Mawson and Ernest Hebrard in the committee for the reconstruction of Thessaloniki after the Great Fire of 1917. He received his diploma from the Charlottenburg University of Berlin in 1913, he was elected professor at the National Technical University of Athens, and was an honorary member of international associations, such as the Institute of American Architects, and the Architectural Academy of France. His brother, Nikos Kitsikis, was President of the Technical Chamber of Greece when CIAM arrived in Athens to hold its 4th Congress. This was not the first "visit" of UIA in Greece. In May 1954, UIA held in Athens the first congress of Eastern Mediterranean countries titled "The problems of modern urbanism and architecture in the east Mediterranean countries of high cultural and artistic tradition". The congress comprised a series of conferences and was accompanied by an extended architectural exhibition divided in three main sections, namely the international, the Mediterranean and the Hellenic section, while an ad-hoc section payed tribute to the French architect Henri Prost. The congress was celebrated as an international event, was attended by the Prime Minister, the King and Queen of Greece, and received extensive media coverage. Kitsikis delivered the opening address in Zappeion. Moreover, in June 1962, fourteen members of UIA payed a visit to DA headquarters, most probably for the preparations of the meeting.

[96] The UIA was founded in 1948 and till 1963 had celebrated six international congresses, that is, in Lausanne (1948), Rabat (1951), Lisbon (1953), The Hague (1955), Moscow (1958), and London (1961). The first session was titled "Architecture Faced with its New Tasks" and was preceded by Sir Patrick Abercrombie, the first UIA president.

coalitions, especially with an organization that aspired to represent international architecture after the dissolution of CIAM. The arrival of a small team of experts headed by Vago was announced by Doxiadis to his collaborators as an issue of extreme importance for ekistics that needed to "be handled correctly".[97] Apparently the interest was mutual, since Pierre Vago had accepted to move the conferences originally planned to be held in Paris, when Doxiadis notified that in such case he could not attend the meeting.[98] Eventually, the conference witnessed the participation of a small, yet international team of distinguished architects, namely the master of modern Japanese architecture Kunio Maekawa (1905-1986);[99] Edouard Albert, a French architect and Professor at l' Ecole des Beaux Arts of Paris; Minette de Silva (1918-1988), an architect from Sri Lanka;[100] and Pierre Vago (1910 - 2002), the founder and General Secretary of the UIA himself (Figure 4.7).[101] As the title suggested, its theme explored the points of convergence of the oriental and occidental architecture without however offering further specifications. As such, Maekawa searched for "effective methods for the study of the problems of human settlement in the East and West and of their mutual influences", Albert talked about the "[i]nfluence on human settlement of systems of thought in the East and West", De Sylva explored India as "a crossroad of reciprocal influences from East and West", and Vago analyzed the "[m]utual influence of the East and West on some particular elements of human settlements". Though the delivered papers in a first place did not consider ideological issues, the symposium - otherwise called the "Orient - Occident" conference of experts - grew against the climate of polarization that formed the background for Vago's internationalism.

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[97] See, Doxiadis, C. A. (1963) *Congress U.I.A. [Συνεδρία UIA]*. Document, Ref. Code 29003 S-D 5594. Doxiadis Archives.

[98] *Ibid.* In 1964, Pierre Vago visited anew the ACE to deliver a lecture. As Doxiadis commented in an internal report, the French architect was invited in the first place because it was his intention to see the Athenian Center and if possible develop a collaboration. Doxiadis described Vago as the heir of "the biggest architectural office in France" that, nevertheless, got diminished after he started publishing *L'Architecture d'Aujourd'hui* and undertook the UIA. See, Doxiadis, C. A. (1964) *Invitation to Vago [Πρόσκληση Vago]*. Document, Ref. Code 29003 S-D 7493. Doxiadis Archives. In any case, Doxiadis referred to Vago's visit as a mutual opportunity for collaborating at an international level.

[99] Maekawa apprenticed in France with Le Corbusier before setting up his own office in Japan. Moreover, the awarded Kenzo Tange served an apprenticeship with Maekawa after graduating from the university of Tokyo.

[100] Minette de Silva pioneered modern architecture in Sri Lanka and was the first South Asian woman to be elected a member of the Royal Institute of British Architects (RIBA). The academic period 1962-63, De Silva elaborated a study entitled "A Comparative History of Indian and South-East Asian Architecture" that was sponsored and supervised by DA and GSE.

[101] An internal communication letter of DA predating the meeting, informed on the participation of the Iranian Mohsen Foroughi (1907-1983) and Alexandre Persitz (1910-1975), a French architect born in Moscow and chief editor of "L' Architecture d' Aujourd' hui" (1949-65). According to the official brochure of the conference held at the ACE, none of them participated. See, *U.I.A. Meeting in Athens* (1963). Document, Ref. Code 29003 S-GA001 79. Doxiadis Archives, and the brochure in the same archive folder.

"Reciprocal influence of urban and architectural forms and structures on the orient and the occident" meeting, organized by the Athens Technological Institute, International Union of Architects (UIA), and UNESCO, 5-6 March, 1963. From left to right: Constantinos Doxiadis, Pierre Vago, Minette de Silva, Edouard Albert, and Kunio Maekawa.
Figure 4.7

Doxiadis on the other hand, sought to establish objective - but actually abstract and arbitrary - criteria for housing transcending the established ideological lines. His address was titled "Forces of differentiation and unification acting on human settlement in the East and West" and broadly reproduced some of the modernization theory's truisms blended with his own beliefs about development. For example Doxiadis' paper was characterized by the logic of the universal stages of development that both occidental and oriental civilizations would sooner or later go through due to the "forces" of science and industrialization.[102] These forces in fact, created "universal expressions" that menaced to overwhelm local types of construction, especially in bigger scales.

Taking a step further, the Greek planner stated that even if housing in *developed* countries was technologically advanced, it was not necessarily "leading to a better life than […] the humble and ancient dwelling common to both West and East".[103] Housing in advanced countries was "no better than that of less developed countries," while the urban ills manifested in metropolitan centers and towns challenged the idea that "the West is more developed and the East is backward".[104] Typically, Doxiadis concluded his address with a call to action for the betterment of housing and for the sake of mankind.

Less than a month after the first ACE meeting, in April 1963, the UIA communicated to Doxiadis that his multifaceted organization has been awarded the Sir Patrick Abercrombie Prize for town planning and territorial development. As stated in the report of the UIA committee, the prize was granted after considering 23 candidatures to "this group of architects, town planners, economists, sociologists and general planners" for its "effective contribution to the solution of urgent problems which arise notably in countries which are in the process of development".[105] With these words, the UIA rewarded both Doxiadis Associates for its projects in the developing world and praised the Athens Technological Institute for its contribution to the training of future senior technical stuff "fully qualified to resolve the problems which arise in various parts of the world".[106] In this respect, the Abercrombie prize consolidated not only the professional practice of the Greek planner but

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[102] See, Doxiadis, C. A. (1963) 'Forces of differentiation and unification acting on human settlement in the East and West', in. *Reciprocal influence of urban and architectural forms and structures on the orient and the occident*, UIA (Revue de l'Union Internationale des Architectes).

[103] *Ibid.*,

[104] *Ibid.*,

[105] The committee consisted of Sir Robert Matthew, the president of the Union of Hungarian Architects Mate Major, the Editor-in-Chief of the *Architectural Review* James Richards, professor Alfred Roth, and Pierre Vago. The committee met in Luxembourg, in 1st and 2nd of April 1963. Two of its members, namely Guilio Carlos Argan (1909-1992), an Italian art historian and politician, and the renowned Swedish architect Sven Markelius (1889-1972) were consulted by telephone and fully supported the resolution. The other UIA distinction, namely the Auguste Perret prize for technology applied to architecture, was shared by the Japanese architect Kunio Maekawa and the designer and self-taught architect Jean Prouvé.

[106] *Ibid.*,

as well his vision for a holistic approach to urban practice, theory, research, and education. Despite located at the European periphery, the Athens Center of Ekistics was beginning to make up its niche in the post-CIAM era. And yet, this period was marked by the anxiety of the escalating confrontation. The Sir Patrick Abercrombie Prize was meant to be formally presented at the 7th Congress of UIA in Havana, in the aftermath of the most critical Cold War episode.

The UIA Congress in Havana

The 7th UIA Congress was set against the agitated events that followed the 1959 Cuban Revolution and the ascendance of Fidel Castro: the April 1961 Bay of Pigs invasion and the October 1962 Cuban missile crisis, the thirteen-day confrontation that brought the two superpowers close to the *Mutually Assured Destruction* scenario. The escalating crisis overshadowed the UIA plans, however did not change the decision taken originally by the 1959 Lisbon Executive Committee for a twin-site arrangement that stipulated "to hold the congress in Havana, and the Assembly and meetings of working commissions in Mexico City, with Executive Committee meetings in both countries".[107] In fact, neither the efforts of the U.S. government for canceling and consequently the boycotting the congress through the powerful American Institute of Architects (AIA), nor the targeting of the UIA's president Robert Matthew by "Americans and Miami based anti-communist emigre groups", made Vago and Matthew to redraw UIA's assemblies.[108] Eventually, the Havana Congress took place in a relatively cordial ambient and witnessed the participation of Fidel Castro himself side by side with Sir Robert Matthew and Osmani Cienfuegos, the Minister of Construction originally educated as an architect.[109] It counted nearly 1,200 delegates from sixty-nine countries, principally South American but only a few westerners, in the majority French. On the other hand, the US delegation had a strong presence at the Mexico Assembly counting more than a hundred members. Undeniably, the Cold War rivalry imbued international cooperation and cultural exchange.

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[107] See, Glendinning, M. (2009) 'Cold-War Conciliation: international architectural congresses in the late 1950s and early 1960s', *The Journal of Architecture*, 14(2), pp. 197–217.

[108] As Glendinning accounts "the State Department argued forcefully that the Congress should be moved to Mexico, and began to pressure potential US delegates and organizations: overseas architects were threatened with a refusal of future US visas". *Ibid.*, p. 208. Moreover, an American teacher sent a letter to Robert Matthew calling him an '*hijo de puta*' [son of a whore] for participating in a "farce" congress.

[109] *Ibid.*, Ernesto (Che) Guevara gave the closing speech of the international competition for a "Monument to the Victory of Playa Girón in the Bahia de Cochinos" organized as well under the UIA auspices. The architectural competition was one of the acts that had endangered the whole Congress, as did the participation of Valentina Vladimirovna Tereshkova, a Soviet cosmonaut and the first woman to have flown in space.

Constantinos Doxiadis attended both assemblies; he received the UIA Abercrombie prize in Havana, and addressed the International Symposium on Architecture at Mexico. His address under the heading "A new role for the architect" reiterated the need to extend the architect's competences from a designer of buildings to a master builder.[110] As such, the architect should "connect architecture with industry" (the architect-producer) and "architecture with ekistics" (the architect-community builder) in order to create "the human community, and to define its economics, its social and political objectives, its functions and its aesthetics".[111] Accordingly, ekistics was the framework for the training and education of the *archi-tecton*, the Greek word for architect whose etymology implied a holistic approach to the design, construction and usage of the built space. Doxiadis finally proposed the patronage of such endeavors by the International Union of Architects, whose prestige would even facilitate their dissemination to national unions, professional organizations, schools of architecture, research institutes, etc. His proposal was outlined as a ten year program eloquently titled "The Architect's Missions".[112]

Two things can be said about Doxiadis' speech in Mexico. In the first place, unlike his address at the "East-West" Athens meeting, the "new role for the architect" barely made references to political ideologies. Doxiadis in fact, advocated an apolitical stance that downplayed aesthetics and politics in pursuit of practical solutions to the spatial aspects of "greater numbers and dimensions":

> "In this way, [the architect] is going to abandon vague notions about aesthetics and politics (of which there is always an abundance) and become more specific in all his endeavors. He will understand that aesthetics or politics or any other misinterpreted notions are part of his duty also, but as parts of his specific endeavor to create a better human settlement for more people and not as uncoordinated vague notions confusing and not solving the issues".[113]

Secondly, Doxiadis' discourse converged with the UIA's "strenuous efforts to the

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[110] See, Doxiadis, C. A. (1964) 'A New Role for the Architect', *Ekistics*, 17(100), pp. 143–149. A couple of months later, in December 1963, Doxiadis gave the same lecture at the 3rd Conference of the Greek Union of Architects at Nauplion. The article was published as well in French, Spanish, and Portuguese.

[111] *Ibid.*, p. 148.

[112] *Ibid.*,

[113] *Ibid.*, p.147.

protection of the ideal of apolitical professional solidarity".[114] Since its foundation, the UIA had pursued the consensual profile of an international organization that promoted architecture beyond Cold War polarizations. By organizing congresses in hotbeds of international politics, the UIA sought to establish a forum of equal representation for both sides, and counteract "any cold-war divisions within architecture, such as those that had poisoned relationships within CIAM".[115] The agitated international affairs often imposed restrictions to architects willing to participate in congresses at "the other side" of the Curtain. As Glendinning accounts for example, Buckminster Fuller did not attend the Havana Congress not wanting to "jeopardize [his] passport or antagonize the US government", after receiving a rather threatening letter from George Bundy, at the time assistant for national security to President Kennedy.[116] The bitterness of these incidents was moderated by the diplomacy of the UIA committee, and principally by General Secretary Pierre Vago and President Robert Matthew, who since his days in the London County Council (1945-1953) had demonstrated a strong commitment to architecture as a public service, whereas after the organization of the 1958 Moscow Congress he maintained connections to prominent Soviet architects. Actually, it was Matthew's political attitude that outlined and safeguarded an apolitical milieu for UIA.

Robert Matthew progressively espoused Doxiadis' ideas and contributed significantly to the development of the ACE on similar grounds. On the other hand, Vago' interest in ekistics did not advance much further and Doxiadis' proposal to include ekistics in UIA's programmatic actions remained uncontested.[117] Nevertheless, and while the UIA continued to explore diverse architectural facets in ever growing congresses, the ACE organized its own international events to bring under its auspices experts from the East and from the West. The most significant one was a series of meetings that took place on board a ship. The celebrated Delos Symposia aspired to provide a common ground for a theoretical debate on global urbanization, and set up a forum where the Soviet-bloc and

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[114] See, Glendinning, M. (2007) 'The Architect as Cold-War Mediator: the 1963 UIA congress in Havana', *Docomomo*, (37), pp. 30–35.

[115] See, Glendinning, 'Cold-War Conciliation', *op.cit.*, p. 199. As Mumford denotes for example, CIAM 7 organized in Bergamo in 1949, was originally proposed for Prague but due to Cold War tensions the organization had to change the location. See, Mumford, E. (2009) 'CIAM and the Communist Bloc, 1928–59', *The Journal of Architecture*, 14(2), pp. 237–254.

[116] See, Glendinning, 'Cold-War Conciliation', *op.cit.*, p. 208. Ironically, the two men coincided at the 1968 Delos Symposion in Greece, when Bundy was the president of the Ford Foundation!

[117] Nevertheless, the Athens Technological Institute and the UIA organized jointly an architectural competition for students called the "Athens Prize". The first award was celebrated at the 1965 UIA Congress in Paris, whereas the second session coincided with the 1967 Prague Congress. The jury was comprised of distinguished architects both from the East and West, such as Igor Rogine (U.S.S.R.), Antonin Cenry (Czechoslovakia), Jean Dubuisson (France), Karl Schwanzer (Austria), Heikki Siren (Finland), Jose Luis Sert (U.S.A.), Kunio Mayekawa (Japan), and Mohamed A. Makiya (Iran). The "Athens Prize" was most probably sponsored by Doxiadis Associates.

the developing countries of Africa and Middle East were represented along the Western world. As alleged, *Delos* offered its distinguished participants an intellectual forum isolated from the Cold War anxieties.

4.4 The Delos Symposia

In 1963, from 6 to 13th of July, Constantinos Doxiadis and some 34 distinguished personalities sailed the Aegean Sea aboard the "New Hellas" initiating a series of interdisciplinary meetings broadly known as the Delos Symposia. They were named after the final destination of this *intellectual* journey, specifically a small island of the Cyclades called Delos, well-known for its archaeological sites and distinguished for its historical and mythological significance. On the other hand, the Greek word "symposion" (*pl*. symposia), preferred to the Latin word "symposium" broadly used for official events, denoted the intentionally informal character of those meetings that paradoxically witnessed the participation of prominent personalities of the era. Year after year the Delos Symposia evolved into a prestigious think tank and the ACE emerged as a planning hub in the European periphery. Constantinos Doxiadis was not alone in the ekistic mission to plan the urban future.

The meeting of Delos was an eight-day journey meticulously organized by the Greek planner for his distinguished colleagues. Having made the acquaintances at the cosmopolitan Doxiadis' "open house", the group of some 35 selected intellectuals would go aboard a cruise ship to sail the Aegean Sea and debate the future of human settlements.[118] Constant stopovers included dramatic plays in the ancient amphitheater of Epidavros, visits to picturesque villages, and tours of historic monuments and archaeological sites guided by prominent archaeologists. As such, the Delos Symposia were set in the Greek landscape and wrapped up in the archaic origins of western civilization, skillfully handled by Doxiadis as a cornerstone of the ekistic theory. In order to plan the city of the future, the delegates had to "travel back in time" and experience the *polis* and the *agora*. The implied withdraw was not just figurative, but as well factual.[119] Once aboard the ship and sailing in the Aegean archipelagos, no telephone, newspaper, or mail, were available to the delegates who were cut off from mundane distractions. The end of their journey was celebrated during a torchlight ceremony at the ancient

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[118] Doxiadis was an exemplary host and an excellent showmanship performing against the idyllic Mediterranean background. This was nowhere more evident than in the Delos Symposia. For the first *Delos* in fact, "Doxiadis had arranged that the cruise start by full moon. A partial eclipse was to occur that first night, contrived by the host", see Deane, *op.cit.*, p. 114.

[119] See, Wigley, M. (2001) 'Network Fever', *Grey Room*, 4, pp. 82–122, p.89.

amphitheater of Delos with the signing of a declaration that affirmed the commitment of the participants to the ekistic mission and the betterment of human settlements.

The choice of Delos, the mythological birthplace of Apollo and Artemis, as the final destination of this traveling forum rested both on the historical significance of the island and on its geographical and social seclusion. In the antiquity, Delos was the seat of the Delian League, an association of Greek city-states, founded in 478 BC under the leadership of Athens, effectively bounding Greece's mainland cities to the Hellenic settlements of the East and the Western Mediterranean colonies in Sicily, Marseilles, and Spain. On the other hand, contemporary Delos had almost no inhabitants: standing "aloof and lonely [in] its wonderfully preserved ruins", Delos was "a perfect retreat where these new trends could be conceived and formulated".[120] While the solitude of the Greek island conveyed a retreat from Cold War anxieties, the symbolism of the ancient federal center might as well get interpreted as a call to forge the bonds of an ecumenical movement in pursuit of a better urban future. As such, the invitation sent to the participants described Delos as a place "between East and West and North and South […] an island which does not create any commitment, cultural, political or of any other kind, because of its surroundings".[121]

Regardless of the detailed organization, the Symposion had no scheduled conferences, nor guidelines to follow. What was offered to the participants instead was the opportunity to unfold their creative thinking and engage in improvised discussions that augmented in intensity as days passed. Morning conversations started at the bar of the boat and continued at round table sessions. Fervent debates would give way to intimate conversations along sunbathing and swimming, during pleasant afternoon strolls in the maze of white houses, and even after dinner and during evening spontaneous parties that challenged the dance abilities of the "glamour-intellectuals".[122] On board tension brought by the confronting perspectives and approaches, by the end of the day was giving way to dialectic cooperation (Figure 4.8).

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[120] See, Doxiadis, C. A. (no date) *A Proposal For A Conference Of Planners On The Island Of Delos For The Formulation And Declaration Of The Charter Of Delos*. Document, Ref. Code 2761. Doxiadis Archives. This document was a tentative proposal for discussion drafted most probably around 1960.

[121] See, the invitation letters sent for the first Delos Symposion in Doxiadis, C. A. (1963) *ATI Correspondence (1963)*. Document, Ref. Code 17623. Doxiadis Archives.

[122] Mark Wigley includes in his account anecdotes of the animated meetings that showcased among other things the eccentricity of its distinguished participants. Whereas Buckminster Fuller due to his bad hearing, gave lengthy speeches, Marshall McLuhan tried to get attention monopolizing the dance floor of the boat. "High-level theoretical discourse was well lubricated with retsina and ouzo," Wigley, *op.cit.*, p. 85 Apparently, Doxiadis himself was a great dancer and most probably to the eyes of his colleagues embodied Greek tradition and celebrations. A few accounts draw on his capacity for entertaining his guests such as Sarkis, H. (2005) 'Dances with Margaret Mead: Planning Beirut since 1958', in Sarkis, H. and Rowe, P. G. (eds) *Projecting Beirut: Episodes in the construction and reconstruction of a modern city*. New York: Prestel, pp. 187–202. On the other hand, many of the articles published at Doxiadis' time excessively focused on his lifestyle therefore resulting rather pandering.

Constantinos Doxiadis at the Delos Symposion 1964.
Figure 4.8

"The magic of Greece had begun to work for Doxiadis".[123] The deliberately loose format of the meeting turned "world planners into delighted tourists" who day after day, enchanted by the Greek landscape, they immersed themselves in its myths along marathon intellection. Effectively, the format of free discussion stimulated creative thinking and as Doxiadis claimed, it offered "the participants an opportunity of approaching closer to the truth".[124] Be that as it may, the Delos meetings were not just conferences but altogether an experience that forged a spirit of solidarity among the participants, thereafter identified as *Delians*.[125] Doxiadis had successfully gathered an intellectual society to support ekistics.

The proposal for organizing a conference of planners was initially discussed by Doxiadis, Tyrwhitt and Piperoglou in mid-1958, however due to financial reasons it was impossible to hold the meeting till 1963.[126] In the meantime, Doxiadis tried to secure funds from the Rockefeller and Ford Foundation, nevertheless unsuccessfully. In the first case, he requested financial support for the meeting in 1961, emphasizing in his proposal the international character and experience of the ATI "especially in Europe, U.S.A., Africa and the Middle East".[127] Moreover, he explained that such a meeting should take place in Greece due to "its long tradition in dealing with problems of human settlements since ancient times", and its geographical position "at the crossroads of civilizations, cultures and political and economic systems".[128] Though Doxiadis had introduced the issue to Chadbourne Gilpatric (the associate director of the Humanities Division) in a private discussion in New York, and had favorable remarks made on his behalf by Professor Llewelyn-Davies, his proposal was turned down since the Rockefeller foundation did not finance international meetings.[129]

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[123] See, Deane, *Constantinos Doxiadis*, *op.cit.*, p. 117.

[124] See, Doxiadis, C. A. (1972) 'The Delos Symposia and the Athens Ekistics Months', *Ekistics*, 33(197), pp. 236–237.

[125] In Panayis Psomopoulos' words, "the Symposion was conceived as a "happening" and was implemented as such". See, Psomopoulos, P. (1985) 'Jacky and the Delos Symposia', *Ekistics*, 52(314/315), pp. 493–494. Deane on the other hand, denotes that "[t]hose who recognize the master showman in Doxiadis have little doubt that he consciously used the common experience of Greek beauty to create a sense of unity among his fellow passengers". See, Deane, *Constantinos Doxiadis, op.cit.*, p. 120.

[126] See, BD (1958) *Discussion Between D, J. Tyrwhitt and Piperoglou on the Subject of the Conference in Delos*. Document, Ref. Code 2761 S-BD 181. Doxiadis Archives. BD stands for "By-D", meaning therefore one of the personal assistants of Doxiadis who in this case acted as the rapporteur of the meeting.

[127] See, letter from Doxiadis to Mr. Charles B. Fahs (Director for the Humanities of the Rockefeller Foundation), date 14-4-1961 (C-EATO 49), in *AEM Organization 1958-1968, op.cit.* Doxiadis estimated the cost of the conference at $30,000.

[128] *Ibid.*,

[129] *Ibid.*, letter from Gilpatric to Doxiadis, dated 24 April 1961. And yet, the same year, Doxiadis managed to secure a fund from the Rockefeller Foundation for the purposes of the "Human Community" (HUCO) research program, to be analyzed in the next chapter.

In the case of the Ford Foundation the situation was more perplexed. As already said, the funding of Doxiadis' endeavors was a subject of controversy among the foundation's officials, who were divided into ekistic supporters and critics.[130] The ekistic admirers were convinced of the Greek planner's efficiency after the coordination of the Marshall Plan, and believed in the ekistic cause for the betterment of human settlements. Among them was Shepard Stone, then Director of the International Affairs Program whose support was instrumental in advancing the ATI petitions.[131]

In January 1963, Doxiadis replied to Stone's cablegram expressing his gratitude for the approval of a $10,000 grant to "settle the accounts of ATI" and reassured him that the issue was to be kept confidential.[132] Nevertheless, when a couple of months later the ACE issued a new request of the order of $10.000 aimed to cover the expenses of some long distance flights from Latin America or India, the request was rejected and Doxiadis was advised "not to jumble matters".[133]

Eventually, much alike other activities of the ACE, the Delos Symposia were financed principally by DA revenues.[134] The funneling of financial resources to education and research supports the thesis that Doxiadis not only considered planning in a holistic way but as well pursued it as such.

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[130] See, Winnick, *Philanthropy's Adaptation to the Urban Crisis, op.cit.*,

[131] In his letter for Doxiadis' 60th birthday, Shepard Stone expressed his appreciation saying that "[…] many of us in Europe, Asia and America, are somewhat less barbarian in our tastes and actions than we would have been if you had not taken us in hand". See, Tyrwhitt, 'C.A. Doxiadis 1913-75: Pursuit of an attainable ideal', *op.cit.*, p. 373. Moreover, he described an anecdote when Henry Heald, then President of the Ford Foundation and reportedly a restrained man, exclaimed after one of Doxiadis' presentations, "he is the greatest teacher I have ever seen". Ironically, according to Winnick, Heald was not comfortable with Doxiadis' funding!

[132] "I have just received your cable about the approval of the $10,000 grant and I want to thank you very much. This settles the accounts of A.T.I. I will certainly keep it confidential, as you wish". See, letter sent from Doxiadis to Stone, dated 4-01-1963, in *ATI Correspondence (1963)* (1963). Document, Ref. Code 17623. Doxiadis Archives. Though the aforementioned document did not explicitly refer to the organization of the Delos Meeting, it is compiled with other documents related to Delos Symposia. Surprisingly this grant is not accounted in Luis Winnick's report.

[133] See, letter sent from Doxiadis to Stone, dated 29-03-1963, in *ATI Correspondence (1963), op.cit.*, and Winnick, *op.cit.* In his request letter, Doxiadis brought the example of Dr. Carlos Chagas, an eminent Brazilian scientist and leader in the field of neuroscience, and who had *just* acted as Secretary General of the UN Conference on the Application of Science and Technology in Geneva. As Doxiadis suggested, Chagas as other high-profile scientist would not attend the meeting if their airfare tickets were not sponsored.

[134] In her letter to Doxiadis on his 60th birthday, Jaqueline Tyrwhitt mentioned that the ekistic father himself was the "anonymous donor" of the Symposia, cited in Pyla, *Ekistics, architecture and environmental politics, 1945-1976, op.cit.*, p. 114. On the other hand, Shoshkes and Adler erroneously adhere to the widespread idea that the Ford Foundation funded Doxiadis' projects. See, Shoshkes and Adler, 'Planning for healthy people/healthy places', *op.cit.*, p. 205.

The redefinition of the Athens Chart

As anyone with a rudimentary knowledge of the historiography of architecture would have guessed, the Delos Symposia were modeled after the legendary CIAM 4 Congress of 1933 that took place aboard the Mediterranean cruise ship *Patris II*, sailing from Marseilles to Athens, where proceedings continued along the "Functional City" exhibition.[135] Doxiadis, then still a student at the Polytechnic University, was impressed by the presentation of 33 cities drawn to the same scale, classified in different types ("Metropolises"; "Cities of Administration"; "Ports"; "Industrial Cities"; "Villes de plaisance"; "Cities of diverse functions"), and marked with Neurath's ISOTYPE symbols.[136] He probably even had the chance to attend Le Corbusier's "Air-Sound-Light" lecture and listen to the master's invocations to the "strong, strict, precise, intense, and sensual" Greek spirit exemplified by Acropolis.[137] In organizing his own symposia, Doxiadis deliberately referred to the same Greek spirit and presented *Delos* as a continuation of CIAM.[138] Actually, when he invited Le Corbusier to the first Symposion, he urged him to see it as an extension of the principles laid by the Charter of Athens, however unsuccessfully.[139] Finally, the connection between the CIAM generation and the newborn *Delians* was ensured by the participation of Sigfried Giedion. The former secretary general of CIAM delivered the closing speech at the first Symposion, and enthusiastically affirmed that "Greece has done it again" (Figure 4.9).[140]

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[135] For a detailed account of the CIAM congress aboard *Patris II*, see Mumford, *The CIAM Discourse on Urbanism*, *op.cit.*, pp. 77-85.

[136] See, Tyrwhitt, J. (1978) 'Background to C.A. Doxiadis' "Ecology and Ekistics"', *Ekistics*, 45(266), pp. 12–19, p. 14.

[137] Mumford, *The CIAM Discourse, op.cit.*, p. 83. Reportedly, Le Corbusier made those commentaries inspired by the colorful fishing boats mooring at the port of Piraeus.

[138] Doxiadis however never joined the CIAM. His name featured in a list attached to an invitation sent by Bakema for a meeting that took place in September 1957, in La Sarraz. Doxiadis, Vassiliadis and Xenakis, were (to be) proposed to participate as individual CIAM members in the assembly that decided the dissolution of the old CIAM, thereafter subtitled "Research Group for Social and Visual Relationships". See, Mumford, E. P. (2002) *The CIAM Discourse on Urbanism, 1928-1960*. Cambridge, Mass.; London: MIT Press, p. 259. In 1957, Ioannis Despotopoulos (1903-1992), a Greek architect and CIAM member who moved to Sweden from 1947 to 1961, wrote a lengthy letter to Doxiadis discussing proposals for the revival of the Greek delegation and his personal interest in the Middle East. Doxiadis replied that unfortunately he had too much work to consider any issues related to CIAM. See the letter sent from Despotopoulos to Doxiadis dated 10 March 1957, as well as Doxiadis' reply letter sent on 19 March 1957, in *General Correspondence 1956 - 1957* (no date). Document, Ref. Code 19248. Doxiadis Archives.

[139] See, the letter sent to Le Corbusier, dated 12 March 1963, in Doxiadis, *ATI Correspondence (1963), op.cit.* This was the second letter sent to the French Master who did not accept the invitation, even if Doxiadis offered to cover all expenses, including the airfares.

[140] See, 'Ninth Meeting - July 12, 1963. The Declaration of Delos: Statements and Comments' (1963) *Ekistics*, 16(95), p. 254. Paradoxically, Jacqueline Tyrwhitt whose organizational genius and connections made her the sine-qua-non of the Symposia proposed to invite to the first *Delos* "next generation" architects from the emerging Team X, such as Jerzy Soltan, Jaap Bakema, and Kenzo Tange (who did not join the Team X group but was an influential figure from the Metabolism movement), instead of Le Corbusier and Gropius who considered them "out of place" and barely "ekistic minded". See, the letters sent from Tyrwhitt to Doxiadis,

Doxiadis introduced the concept of the Delos Symposia placing emphasis on bridging the generation gap of architects, however "through a new scientific approach".[141] After the dissolution of CIAM, architecture and urbanism set to explore at a faster pace paths that ran parallel to emerging epistemological approaches originating in social sciences or, to go even further, cybernetics. Rapid population growth, decolonization in the developing world, and rural-to-urban migration were only some of the emerging challenges for the culture and profession of architecture that had to provide new paradigms in response.

The ekistic approach then was not only about architecture but had to take in account all aspects and consider every problem related to human settlements. Compared to other institutional problem-solving efforts, the ekistic forum singled out for its interdisciplinary character owed to the diversity of its participants. As Doxiadis argued,

> "Many meetings are taking place around the world discussing the
> subject. The great weakness of these meetings is that they are
> mainly gatherings of people of the same profession, the same
> class, the same group, and very often, also the same nation.
> Thus, they all begin with the great disadvantage of being based
> on people of very similar background".[142]

Past mid-1960s, Sibyl Moholy Nagy (1903-1971), wife of the Hungarian Bauhaus artist László Moholy-Nagy (1895-1946) who filmed the proceedings of CIAM 4, published an article where she endorsed Doxiadis approach as one of the continuations of CIAM. According to Sibyl Moholy Nagy the father of ekistics "transferred the sacred flame of the CIAM Charter from Athens to the Holy Isle of Delos".[143] Most importantly, she placed emphasis on the interdisciplinary character of ekistics by citing (what she considered) "the

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dated 22 February 1962 and 13 March 1963, in *AEM Organization 1958-1968* (no date). Document, Ref. Code 2761. Tyrwhitt's role in the organization of the symposia is described in Psomopoulos, 'Jacky and the Delos Symposia', *op.cit.*,

[141] Doxiadis, C. A. (no date) *A Proposal For A Conference Of Planners On The Island Of Delos For The Formulation And Declaration Of The Charter Of Delos*. Document, Ref. Code 2761. Doxiadis Archives.

[142] See, Doxiadis, *ATI Correspondence (1963), op.cit.*

[143] See, Moholy-Nagy, S. (1967) 'Architectural History and the Student Architect: A Symposium', *Journal of the Society of Architectural Historians*, 26(3), pp. 178–199. Worth mentioning that Sibyl Moholy Nagy considered favorably not only the work done within the ACE but the DA projects in Islamabad and Tema, as well as the Dynapolis concept. Her overall impression from her visit at the DA headquarters and the ACE was positive, something that Papaioannou considered a public relations' triumph, since Moholy-Nagy criticized everybody (from Le Corbusier and Gropius to Mies and Neutra) and was at loggerheads with everyone, including Tyrwhitt. See, Papaioannou, J. G. (1962) *Contact with Professor S. Moholy-Nagy and Mr., Mrs. J.M. Fraser [Επαφή με Καθηγήτρια S. Moholy-Nagy και Κον & Κα J.M. Fraser]*. Document, Ref. Code 18755 T-ERES 58. Doxiadis Archives.

key sentence of the Charter of Athens from 1933: the course to be taken by all town-planning projects will be influenced by political social and economic factors and not by the spirit of modem architecture".[144]

In a similar spirit, Giedion welcomed Doxiadis' approach commenting on the new fellowship:

> "What great changes have occurred within a generation. I now see around me high officials and presidents grappling with the same problems that bothered us trying to break through the mist of future developments and foresee its aims and trends. This represents a fundamental change in the attitude of responsible decision makers which is of utmost importance for the development of our period".[145]

Indeed, Doxiadis successfully brought under *Delos*' roof scholars, experts, and decision makers, pushing forward the *Transition of Architecture* right on the ekistic path. Year after year, the signing of the Declaration of Delos solidified Doxiadis' intellectual triumph who envisioned the Declaration of Delos as the upgrade of the Charter of Athens, and ekistics as an amendment of modern urbanism.[146] Ekistics aspired to be the new paradigm and *Delos* was its *agora*.[147]

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[144] Moholy-Nagy, 'Architectural History and the Student Architect: A Symposium', *op.cit.,*

[145] See, Psomopoulos, P. (2005) 'Milos R. Perovic, ekistics and *Ekistics*', *Ekistics*, 72(430 to 435), pp. 6–9.

[146] Worths mentioning that Doxiadis tried to get the support of Lewis Mumford for the founding session of the Delos Symposia by proposing him to "join in the formulation and signature of such a declaration, even from a distance?" some months before the trip had taken place, and after the renowned historian had turned down the invitation. See, letter from Doxiadis to Mumford, dated 23-04-1963, in *ATI Correspondence (1963)*. Document, Ref. Code 17623. Doxiadis Archives.

[147] "In Doxiadis' mind the ekistic movement and the Delos Symposia were two closely associated but distinct developments. Delos was an agora to mobilize and diffuse ideas. Ekistics was to be a permanent, evolving and spreading scientific approach to the study of and action for human settlements". See, Gottmann, J. (1976) 'The ekistic philosophy of C.A. Doxiadis: a personal appreciation', *Ekistics*, 41(247), pp. 383–385.

Sigfried Giedion at the Delos Symposion 1963.
Figure 4.9

The Delians

All together, twelve sessions were celebrated till 1975, the first ten aboard and the last two in Athens and at the Apollonion, a private community planned by Doxiadis some 30km from the capital.[148] The long list of the participants included renowned architects, prominent artists and visionaries, sitting side by side with distinguished scientists and soft power representatives from public organizations and private institutions that supported or collaborated with Doxiadis' organization. The participants were invited to all costs during their stay in Greece, once they had assumed the cost of their flight to Athens.[149] On the other hand, due to the limited capacity of the vessel and its peculiar format, the Delos Symposia were "by invitation-only", a fact that augmented further its media impact and raised expectations among the aspiring participants. The selection was made based on personal recommendations principally made by the most trustworthy delegates, while after every Symposion the planning committee issued a qualitative evaluation of every participant based on his/her contribution to the discussions.[150] Though the original intention was to have the broader possible regional representation and "different levels of experience", some of the participants were invited anew in order to ensure the continuity of the discussed concepts.

As such, a core-group was formed that included Jacqueline Tyrwhitt and R. Buckminster Fuller, the only persons that apart from Constantinos and his wife Emma attended all ten conferences taking place aboard;[151] Conrad H. Waddington (1905-1975), the developmental biologist who laid the foundations for systems biology; the American cultural anthropologist Margaret Mead (1901-78); Barbara Ward (1914-1981), a British economist and an early advocate of environmentalism broadly known as Lady Jackson; Charles Abrams (1902-1970), a Lithuanian-born lawyer and housing expert who had created the New York Housing Authority in 1934; Arnold J. Toynbee (1889- 1975), a British historian who had worked for the Foreign Office as an analyst of international affairs; Eiichi Isomura, Professor of Urban Sociology in Tokyo Metropolitan University who compiled and translated a collection of Doxiadis' articles for a Japanese edition in 1965; Richard Llewelyn-Davies (1912-1981), a British architect and Professor of Architecture at

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[148] Delos Twelve in fact, was held in July 1975, that is, only two weeks after Doxiadis had passed away.

[149] The ACE offered to finance the international flight of a visitor only in exceptional cases, such as the ones of Carlos Chargas, Lewis Mumford, and Talcott Parsons, the American sociologist and Professor at Harvard University, however unsuccessfully. Eventually Chagas participated at the Sixth Delos Symposion, in 1968.

[150] See for example the evaluation after the first Symposion, Tyrwhitt, J. and Stangos, A. (1963) *Sociometric Data on Delos Symposion*. Document, Ref. Code 2761. Doxiadis Archives.

[151] Paradoxically, Tyrwhitt "only became a Delian with the right to full participation in the discussions at Delos Ten in 1972, together with John Papaioannou, Demetrius Iatridis and [himself]", see Psomopoulos, 'Jacky and the Delos Symposia', *op.cit.*,

Bartlett, University College London, entitled Baron and broadly known as the designer of the new town Milton Keynes; Sir Robert Matthew (1906-1975), the Scottish architect and Professor of Architecture in the Edinburgh University, the geographer Jean Gottmann (1915-1994), and the city planner and academic leader Martin Meyerson (1922-2007).

Other *Delians* that participated occasionally or just once at Doxiadis' Symposia included the American medical researcher and virologist Jonas Salk, the philosopher of communication theory Marshall McLuhan, the German geographer and father of Central Place Theory Walter Christaller, the environmentalist Rene Dubos, and the regional planner Richard Meier, to name just a few.[152]

Finally, the Delos Symposia counted with the presence of soft power representatives from the world of politics, economics, or business, such as the American civil rights leader Whitney Moore Young Jr.; the economist, political theorist, and Special Assistant for National Security Affairs to U.S. President Lyndon B. Johnson, Walter Rostow; U.S. Secretary of the Interior Stewart Udall; Congressman James Scheuer; Senator Claiborne Pell; industrialist Jerome Monod; and Ford Foundation's trustees such as Mc George Bundy, Luis Winnick, David E. Bell, and Julius Adams Stratton.

The Delos Symposia witnessed the participation of experts coming not only from different disciplines, but from different cultural and political backgrounds as well. Though the majority of *Delians* were eventually westerners, Doxiadis sought to ensure the assistance of professionals originating in Eastern bloc countries, and yet in most cases unsuccessfully. The first Delos Symposion for example, counted with the presence of the Polish Waclaw Ostrowski (1907-1990), professor of Town Planning in the Technical University of Warsaw, joined by his daughter, Miss Anna Ostrowski. When Ostrowski answered the invitation favorably, Doxiadis asked him to suggest other candidate participants from the Soviet Union, in order to have a "wide geographic distribution".[153] Consequently, an invitation was sent to W. Baranov, member of the Academy of Building and Architecture of Moscow, and Deputy Chairman of the State Committee on Building, but apparently it was never answered.[154] A year later, and after the invitation for the Delos Two had the same luck, Doxiadis turned to the Russian Embassy in Athens asking to

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[152] Among the invited personalities to Delos Symposia that did not attend any meeting one can discern Fernard Braudel, R. B. Bakema, Roberto Burle Marx, Vincent Scully, Walter P. Reuther, David and John Rockefeller, Lewis Mumford, Robert Mc Namara, Claude Levi-Strauss, Raymond Aron, Paul Hoffman, Walter Gropius, John Kenneth Galbraith, even Federico Fellini, Marta Grahan, and even Sir Lawrence Olivier.

[153] See, letter sent from Doxiadis to Ostrowski, 21-01-1963 (C-EATI 1028), in *ATI Correspondence (1963), op.cit.*

[154] *Ibid.*, letter sent from Doxiadis to Baranov, dated 15-03-1963. Doxiadis attached to Baranov's invitation a Russian translation of his paper "Ekistics as a Tool for the Solution of Problems in Human Settlements".

mediate and use its services in order to contact Baranov.[155] The Greek planner in fact, met with the Russian Ambassador in Athens, where after explaining the idea behind the Delos Symposia, he asked from the Russian Embassy to indicate the professionals or academics who would probably be interested in attending his international meeting, in order to sent to them private invitations.[156] In another instance, Doxiadis proposed to the U.S.S.R. Embassy to organize one week of lectures on Soviet Planning with the prospect of developing the event to an annual program.[157] Nevertheless, the proposal that was supposedly conceived in the broader context of cultural exchanges between the two states remained on paper.

Developing cultural programs in the Cold War years was certainly conditioned by the polarizing climate. The ACE was no exception and despite being in the European periphery or promoting a curriculum with apparently no political implications, in several cases the communication with Soviet representatives had to go through the official bureaucratic channels.[158] A striking case of these bureaucratic procedures topped with a political flavor, occurred when a young architect from Georgia named Vladimir Tsintsadze won the 1968-69 Athens Prize, that is, a prize awarded to students of architecture schools by the International Union of Architects (UIA), DA and the Athens Technological Institute (ATI). The prize, which included an annual scholarship at the ACE, a monthly stipend for accommodation and living expenses, and the airfare ticket, was initially postponed by the candidate for a year due to family affairs, however, and despite the airfare arrangements made by the ACE, Tsintsadze eventually did not travel to Athens at all, neither responded to letters or cables. Doxiadis once again turned to the Embassy of U.S.S.R. in order to locate the student, however unsuccessfully.[159] Some months later, a report from an ACE Iraki student named S. El Jader who had just traveled to Moscow, mentioned that "he [had] found out by chance that Mr. Tsintsadze […] [was] working at the office of the Architect in Chief of the City of Kiklovodsk," and that most probably "the young man could

[155] *Ibid.*, see the letter sent from Doxiadis to His Excellency, The Ambassador of the U.S.S.R. Mr. Nikolai I. Korioukine, dated 26-3-1964. The invitation letter referred to Baranov as an excellent choice for the international meeting.

[156] See, Doxiadis, C. A. (1963) *Meeting with the Russian Ambassador [Συνάντηση με Ρώσσο Πρεσβευτή].* Document, Ref. Code 6821, S-D 7037. Doxiadis Archives, and the letter sent to the Russian Embassy on 21-12-1963 (C-IPD 69) explaining (in French) the concept and aim of Delos Symposia.

[157] See, *U.S.S.R.* Document, Ref. Code 6821. Doxiadis Archives. The working document of the proposal has no date, but most probably dates from 1966.

[158] This approach in fact, was suggested by Sir Robert Matthew when Psomopoulos, the Director of the International Programs, wrote to him about the difficulties of contacting experts beyond the Iron Curtain. See, letter sent from Psomopoulos to Matthew, dated 4 October 1965 (C-ACE 3421), in *Matthew, Sir Robert* (no date). Document, Ref. Code 6509. Doxiadis Archives.

[159] See, the letter sent from Doxiadis to Mr. Kliment Levitchkine, the Ambassador of the U.S.S.R. in Athens, dated 21 March 1970 (C-ACE 12132), in *U.S.S.R., op.cit.,*

not come and make use of his scholarship, because of political reasons".[160] The last attempt of the ACE to communicate with the student was made by contacting the Secretary General of the U.S.S.R. Union of Architects, Vladimir N.Belaussof, to whom it was explained the case denoting that the selection for the scholarship did not consider racial, religious or political criteria.[161] Though this anecdote by no means constitutes the rule, it conveys some of the difficulties in advancing international collaborative endeavors aspiring to bring together pieces of a *fragmented* world. Doxiadis' efforts to extend the ACE's scope and collaborative approach beyond the Iron Curtain were often hindered by international political disputes and caught in the red tape of communication between East and West.[162]

The World Society for Ekistics and Robert Matthew

The first Delos Symposion proved to be a success and the number of people that showed interest in participating thereafter grew exponentially. The informality of the event and the warm hospitality offered by the ACE combined with the global-awareness agenda and the invited "glamour-intellectuals" created a unique event of great expectations. The most important ekistic forum however was destined only to small discussion groups, whereas practical issues such as the board's capacity and financial constraints impeded to increase the number of participants. Doxiadis in fact, had originally conceived *Delos* as an one-time event, nevertheless he was urged by his colleagues to celebrate the forum annually.[163] The ACE planning committee therefore, decided to extend the meeting, initially adding a week seminar after the Symposion, and from 1966 to 1975 holding all celebrations as an international seminar dubbed the Athens Ekistic Month (AEM). Apart from the original Symposion then, the AEM featured seminars with distinguished experts,

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[160] See, *Mr. Saad el-Jader* (1970). Document, Ref. Code 6821 S-ACE 201:1050. Doxiadis Archives.

[161] See, the letter sent from Psomopoulos to Mr. Vladimir Nikolayevitsch Belaussof, dated 13 August 1970, in *U.S.S.R., op.cit.,*

[162] And yet, to a certain extent the ekistic center managed to operate between the two fronts. A long list of visitors published every month in the DA Review registers its international character. Among them, one can find Soviet architects, professors of History or History of Arts, the Director of the Polytechnic Museum of Moscow, scientists, or even officials who held scheduled visits as part of broader ceremonial acts. For example, in December 1964, nine members of the Soviet Parliamentary delegation that was on a week's visit to Greece were received at the DA office and the ACE premises, while in October 1966 the ACE hosted the Yugoslav Prime Minister Petar Stambolic. See, 'DA Hosts to Visiting Soviet Parliamentary Delegation' (1965) *DA Review*, 1(1), and 'Yugoslav Prime Minister on DA Visit' (1966) *DA Review*, 2(23) respectively. At the same time, the ACE library was continuously enriched with books and documents on Planning and Architecture, sent either from Soviet institutes or purchased by DA collaborators or ACE students while visiting Eastern bloc countries. This was for example the case of Iraki student named S. El Jader, who ended his report sent to ACE after his visit to Moscow affirming that Botasarov and Belaussof were very interested in ekistics. See, *Mr. Saad el-Jader* (1970), *op.cit.*

[163] See, Psomopoulos, 'Jacky and the Delos Symposia', *op.cit.*

a workshop called "Greek Settlements through the Ages" whose participants toured ancient and byzantine sites guided by Papaioannou, and meetings related to the research and educational programs of the ACE.[164] Practically, the AEM offered the possibility to junior professionals and students who were intrigued by the newborn *science* to attend the events as observers, broadened the circle of experts that introduced *ekistics* in their planning vocabulary, and facilitated the participation of the relatives that accompanied the distinguished *Delians* in their summer plans.[165]

Last but not least, the AEM included the annual assembly of the World Society for Ekistics (WSE), an international organization that came directly out of the Delos Symposia.[166] The idea for establishing a channel for the dissemination of ekistics parallel to the existing ones was initially proposed by Martin Meyerson at Delos Two, in July 1964, and not by Doxiadis as it is often believed.[167] His proposal for promoting action concerning human settlements reinforced not only the ekistic message, but as well the role of ACE as a "missionary center" coordinating action from Greece, "a small developing country, located between east and west but fully accepted in the European community of nations".[168] Even more clear was the message of the agenda set out by a steering committee in London, in February 1965: the WSE aimed "to promote the development of knowledge concerning human settlements […]; encourage the development and expansion of education in Ekistics; educate public opinion concerning Ekistics […]; recognize the benefits and the necessity of an interdisciplinary approach to the needs of human settlements, and to promote and emphasize such an approach".[169] Most importantly, Doxiadis counted with the support of an international institution that was fairly independent. Ekistics was making

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[164] See, Psomopoulos, 'Athens Technological Organization: programs for Greece and the world', *op.cit.*, pp. 118-119.

[165] See, Doxiadis, 'The Delos Symposia and the Athens Ekistics Months', *op.cit.,*

[166] WSE was established in February 1965 and recognized as a Non-Governmental Organization from the Economic and Social Council (ECOSOC), that is, "United Nations' central platform for reflection, debate, and innovative thinking on sustainable development", in 1970. For a detailed account of WSE, his past and current members, see, Psomopoulos, 'Athens Technological Organization', *op.cit.*, pp. 121-129.

[167] See, Meyerson, M. (1964) 'A World Association of Ekisticians', *Ekistics*, 18(107), p. 231.

[168] *Ibid.*, Meyerson in fact, suggested that the success of such endeavor depended on the good secretarial services provided by ATI. Meyerson in fact, was one of the first persons that Doxiadis consulted before establishing the post-graduated program and vocational schools, while he had already worked with Tyrwhitt at the Harvard GSD programs. On the relationship of Meyerson and Tyrwhitt, and their contribution to the Delos Symposia and WSE, see Shoshkes, E. (2010) 'Martin Meyerson and Jaqueline Tyrwhitt and the Global Exchange of Planning Ideas', *Journal of Planning History*, 9(2), pp. 75 –94.

[169] See, Psomopoulos, 'Jacky and the World Society for Ekistics', *op.cit.* The original steering committee comprised selected *Delians* such as A.B.K. Brohi (a politician and lawyer from Pakistan), C.A. Doxiadis, R. Buckminster Fuller, J. Gottmann, J.R. Lasuen (Professor of Economics in the University of Barcelona and Deputy Director General of the Ministry of Housing of Spain), Sir Robert Matthew, Lord Llewelyn Davis, W. Nielsen, and P. Psomopoulos.

its own international path.

Among the committee's members and President of the WSE from 1974 to 1975 was Robert Matthew, who had served as President both of the UIA (1961-1965) and of the Royal Institute of British Architects (1962-1964). As already commented, Matthew was a proponent and leading architect in Britain's welfare-state programs, while his good relations with Soviet architects had granted him the reputation of an "honest broker between east and west".[170] From his institutional positions Matthew worked hard to advance architectural forums that operated beyond the existing political controversies, as was the case of the 1963 Havana Congress. When the British planner espoused the ekistic bona fide objectives, Doxiadis' efforts for establishing a neutral planning hub found an essential ally.

Matthew in fact, holds a special place among the ekistic company, for he was one of the few who apart from the intellectual links shared urban building projects with Doxiadis. In Islamabad in particular, Robert Matthew Johnson-Marshall & Partners (RMJM), formed in 1956, designed the Administrative Sector Plan, the National Library, the National Museum, and the Armed Forces Museum, effectively undertaking some of the first large-scale projects of the firm outside the United Kingdom.[171]

On the other hand, he espoused Doxiadis' planning philosophy and was one of the most active *Delians* in disseminating ekistics. Right after Delos One, Matthew gave an interview for the *Architect's Journal* where he emphasized the importance of Doxiadis' initiative for mankind and the need to spread the ekistic message further.[172] Year by year, Matthew - whose direct involvement in RMJM decreased as he committed himself to "architectural diplomacy" presiding the UIA, RIBA, and WSE - assumed more responsibilities in support of the ekistic endeavors.[173] For the purposes of Delos Two, Doxiadis proposed to Matthew to introduce jointly with Richard Davies the theme of the Symposion focusing on the training and education of architects, whereas in the wake of the summer meeting and during a UIA assembly reporting on institutional relations with the UN, Matthew referred to the signed Declaration.[174] Finally, in March 1975, Matthew started a draft of a "Charter for

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[170] See, Glendinning, 'Cold-War Conciliation', *op.cit.*, p. 199.

[171] In 2010, Doxiadis Associates and RMJM undertook jointly the master planning project for the creation of a new city situated 35 km from Karachi, named DHA and dubbed the first planned sustainable and green city of Pakistan expected to be completed by 2030. The chief planner of this ambitious project is Professor Spiro Pollalis from the GSD Harvard University.

[172] See, 'Meeting in Delos: an interview with Sir Robert Matthew' (1963) *The Architects' Journal*, p. 362.

[173] The disparate threads of Matthew's life and work are synthesized in Glendinning, M. (2008) *Modern Architect: the life and times of Robert Matthew*. London: RIBA Pub.

[174] See, letter from Doxiadis to Matthew, dated 17-12-1963, and letter from Matthew to Doxiadis dated 25-11-

Housing" destined to be presented at the Habitat I, in Vancouver.[175] To all intents and purposes, Matthew was aligned with Doxiadis' long-standing request to develop a scientific approach for the study of human settlements and confront the problems on a global scale therefore through the UN. Nevertheless, Robert Matthew did not attend the first United Nations Conference on Human Settlements. He passed away in June 1975, one week before Constantinos Doxiadis.[176]

The Declarations of Delos and the Habitat for human settlements

Constantinos Doxiadis organized the Delos Symposia aiming to generate a dialogue among his peers on the problems of human settlements and advance the establishment of a new discipline towards planning solutions. Since ekistics advocated a holistic approach the participants were fairly specialists in different knowledge fields and discussions addressed a wide range of subjects, from the education and training of planners to economic development and the use of natural resources. At the end of the intellectual journey the disparate and occasionally contrasting contributions were used to compose the Declaration of Delos and therefore publicize a common perspective bearing the ekistic signature. The synthesis of the final document was undertaken by Barbara Ward and Margaret Mead in close collaboration with Jacqueline Tyrwhitt who was responsible for keeping records of the discussions during the whole trip.

In broader terms, the first Symposion confirmed the global demographic growth and the fast and unchecked urbanization as the driving forces behind the "deepest and widest revolution ever to overtake mankind" that effectively meant the crisis of human settlements.[177] The Second Declaration then, called national governments and international economic institutions to support policies related to urbanization, especially in the developing world where exploding cities produced "the worst and most hopeless concentrations of human poverty".[178] The 1965 Symposion focused on the problems of living in high densities, albeit discussions sought to clarify the concept of density beyond

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1964, in *Matthew, Sir Robert* (no date). Document, Ref. Code 6509. Doxiadis Archives. Moreover, Matthew was one of the core-group participants that maintained the continuity of the Symposia and one of the members to suggest new participants and observers.

[175] See Matthew, R. (1975) *Notes for Discussion on a Possible Charter for Housing*. Document, Ref. Code 6509. Doxiadis Archives.

[176] Despite the convergence of views, close collaboration, and even parallel trajectories, the relationship of Matthew and Doxiadis has barely got any attention from the historiography of planning and architecture.

[177] See, Tyrwhitt, J. (ed.) (1972) 'Discussions on Ekistics: Nature, Man, Shells, Society, Networks. Summary of the Athens Ekistics Months 1963-1971', *Ekistics*, 33(197), p. 235.

[178] *Ibid.*, p. 303.

its use as a quantitative data by discussing it in relation to other qualitative factors such as "intensity", or by contextualizing it in the economic prosperity of a nation.[179] From 1966 to 1971, and with the exception of Delos Five (1967) which was titled "Strategy for the Development of Human Settlements", each Symposion corresponded thematically to an ekistic element, that is, Nature (1966), Man (1968), Society (1969), Networks (1970), and Our Buildings (Shells).

Nevertheless, the designated thematic areas were rather the formatted output instead of the framework of the discussions, or in other words they re-framed the contributions of the distinguished participants according to the ekistic guidelines. For example, Kenzo Tange's speech at the "Nature and human settlements" in 1966 called the attention to the information revolution claiming that "[i]n large contemporary urban complexes, the communication networks twist and intertwine into a complex which must be something like the nervous system of the brain".[180] His analysis concluded considering the role of the new technologies and indirect communication versus face-to-face contact, actually one of the recurrent topics during the *Delian* intellection. At the dawn of the information era, the immateriality of the emerging information networks, that "invisible extension of the physical", progressively gained importance in the discourses of the "glamour intellectuals" and compelled Doxiadis to add new theoretical layers to his sprawling Ecumenopolis.[181] Conversations however varied considerably and according to the background of the speaker: the city was examined as a form of social organization after Conrad Waddington's animal behavior models, spatial perception was analyzed according to Edward Hall's "receptor systems", and Fuller started from the differentiation between brain and mind ending with a call to reconsider education for the sake of the spaceship Earth.[182] The discussions on human settlements in fact, included everything under the sun and

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[179] *Ibid.*, pp. 266-269. According to Richards, by proposing to consider density in a broader sense the *Delians* were "taking a swipe at Jane Jacobs". See, Richards, S. (2012) 'Halfway between the Electron and the Universe: Doxiadis and the Delos Symposia', in Adler, G., Brittain-Catlin, T., and Fontana-Giusti, G. (eds) *Scale : imagination, perception and practice in architecture*. Abingdon, Oxon; New York: Routledge (Critiques: Critical Studies in Architectural Humanities), pp. 170–181, p. 178.

[180] See, Tyrwhitt, 'Discussions on Ekistics, *op.cit.*, p. 340.

[181] In his analysis of the Delos Symposia, Wigley describes how Marshall McLuhan and Bucky Fuller monopolized the interest of their interlocutors with communication technologies and biological metaphors that merged electronics with urban systems, overshadowing the need to discuss the fixed trace of Ecumenopolis. Characteristically, McLuhan referred to Delos participants as "earnest men, rather all 19th-century types, still preoccupied with bricks and mortar", see Wigley, op.cit., p. 113.

[182] Even before the Apollo 8 broadcasted the Earthrise on December 1968, the term "spaceship Earth" was used to convey the global view of our ecosystem and call attention to the use of its limited resources. *Delians* picked up the new term fast. Barbara Ward for example, published *Spaceship Earth* in 1966, and Fuller popularized further the term in his *Operating Manual for Spaceship Earth* (1968). The awakening of the "planetary awareness" is best exemplified by the participation of the astrophysicist Fritz Zwicky in Delos 4 1966 and in the 1970 AEM.

sometimes downgraded to a theoretical jargon open to interpretation.[183] The philosopher Doxiadis however, was there to "connect the dots" and ingeniously reframe discussions under the light of the ekistic theory.[184] Needless to say that Doxiadis was not the only one to "distill" the aboard intellection for his own benefit. Barbara Ward and Rene Dubos' *Only One Earth* written for the 1972 UN Stockholm conference on the Human Environment and often cited as a textbook of sustainable development, was heavily influenced by the dialogs unfolded in the ekistic floating forum.[185] From another perspective then, the Delos Symposia were an essential influence and provided a valuable input for the development of "numerous modern concepts used widely in planning, architecture and environmental sciences".[186] Its most direct connection with other institutional planning efforts, and beyond the academic or professional trajectories of its members, is the organization of the first United Nations Conference on Human Settlements, in Vancouver, in 1976. Effectively, the Vancouver Declaration acknowledged the magnitude and consequences of inequitable economic growth, world population growth and uncontrolled urbanization, while considered that in meeting those challenges "human settlements must be seen as an instrument and object of development", and strongly emphasized that "the use and tenure of land should be subject to public control".[187] After a decade of generating an intensive debate, the ekistic interdisciplinary forum drafted the Declaration of Delos Eleven (1974) under the title "A Charter for Human Settlements" to set the tone of the Vancouver UN meeting. Humanitarian objectives such as "The Right to Shelter", "The Right to Equality", and "The Right to Dignity" were followed by the plea for the establishment of a United Nations agency with a major program for human settlements.

The Habitat I in fact was the first and foremost opportunity for the WSE to carry the ekistic message to a broader international forum. The ekistic movement had a presence

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[183] Mark Wigley for example, reads the Delos Symposia as a "Network Fever" both in actual terms between the participants and in theoretical terms. Richards' article on the other hand, provides other references arguing that in a certain extent "Wigley is not writing architectural history, but [appropriates] Doxiadis into the manifesto of his school" at the University of Columbia, see Richards, *op.cit.*, p. 174. Shoshkes and Adler draw on the *Delos* discussions supporting a discourse of "reintegration of urban planning and public health", whereas Pyla uncovers their profound impact on the emergence of the environmental consciousness in the 1960s.

[184] See, Psomopoulos, 'Athens Technological Organization', *op.cit.*, p. 118.

[185] In many ways, *Only One Earth* "represents the culmination of the nearly decade long international and interdisciplinary dialogue that took place during the Delos Symposia and was disseminated through *Ekistics*", see, Shoshkes and Adler, 'Planning for healthy people/healthy places', *op.cit.*, p. 212.

[186] See, Keles, R. (2009) 'The Relevance of the Delos Declaration for the Problems of Urbanization and Environment Facing the World Today', in *Constantinos Doxiadis and his Work (vol.1)*. Athens: Technical Chamber of Greece, pp. 154–169. Keles traces parallels between the discussions and Declarations of the Delos Symposia and the contemporary efforts towards sustainable development and Spatial, Urban and Regional Planning.

[187] See, UN-Habitat (1976) *The Vancouver Declaration on Human Settlements: From the report of Habitat – United Nations Conference on Human Settlements, Vancouver, Canada, 31 May to 11 June 1976*.

spearheaded by distinguished colleagues of Doxiadis, such as Barbara Ward, Margaret Mead, and Jaqueline Tyrwhitt, who had a decisive participation in the Non-Governmental Organizations' (NGO) Forum, and Buckminster Fuller, who in the capacity of the President of the WSE presented Doxiadis' four red books especially written for the Conference, namely *Ecumenopolis: the Inevitable City of the Future*, *Anthropopolis: City for Human Development*, *Building Entopia* and *Action for Human Settlements* (Figure 4.10).[188] In that respect, Doxiadis' lifelong commitment and persistence were instrumental in shaping a climate of opinion that eventually in 1978 led to the establishment of the United Nations Center for Human Settlements (UNCHS), and related initiatives such as the peer-reviewed journal *Habitat*.[189]

Nevertheless, even if Doxiadis gained recognition as the father of "human settlements" the approach of the United Nations left a lot to be desired, especially for those who believed in the idea of a global policy framework and the power of an international agency to carry out well-designed regional and local actions. Echoing Doxiadis' grievances for the UN foot-dragging, in 1978 Margaret Mead published an article lamenting the bureaucratic delays and failures to enlist a sufficiently committed and knowledgeable staff", or "the purely politically motivated location" of the new UN Center.[190] Political interests, limited financial aid and restricted funds, or just the incapacity to respond to global challenges still haunt UN summits.

Altogether, the ekistic vision for the betterment of human settlements was rooted in the optimism of another era, but as well was nourished by the informal, intellectual, and more human character of initiatives such as the Delos Symposia (Figure 4.11). From the mid-1990s onward and after a long period of lethargy the WSE revived its activities, participated in Habitat II (Istanbul), at the preparatory meeting for Habitat III (Nairobi), and organized a series of meetings revisiting the pertinence of the once called science of human settlements. Today, the organization remains the main carrier of the ekistic legacy along the ongoing editorial work of Psomopoulos for the Ekistics journal.

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[188] An excerpt of Fuller's speech is presented in Psomopoulos, 'Athens Technological Organization: programs for Greece and the world', *op.cit.*, p. 137.

[189] See, D'Auria, V., Meulder, B. de and Shannon, K. (2010) 'The Nebulous Notion of Human Settlements', in *Human settlements: formulations and (re)calibrations*. Amsterdam: SUN Academia, pp. 8–27. As the authors argue, "[a]s an integrating notion emerged from within Doxiadis' entourage, 'Human Settlements' was finally reflected in the UN's institutional history. In practice, however, the Greek architect's design-based approach for guiding rapid urban growth was less accountable for the development agenda in the UNCHS' foundation".

[190] See, Mead, M. (1978) 'Habitat: Building a Global Constituency', *Habitat International*, 3(3/4), pp. 283–286.

$5.95

Anthropopolis
City for Human Development

by C. A. DOXIADIS
and a symposion with:
**RENE DUBOS
ERIK H. ERIKSON
DENNIS GABOR
REGINALD S. LOURIE
MARGARET MEAD
C. H. WADDINGTON
THOMAS A. DOXIADIS
SPYROS A. DOXIADIS**
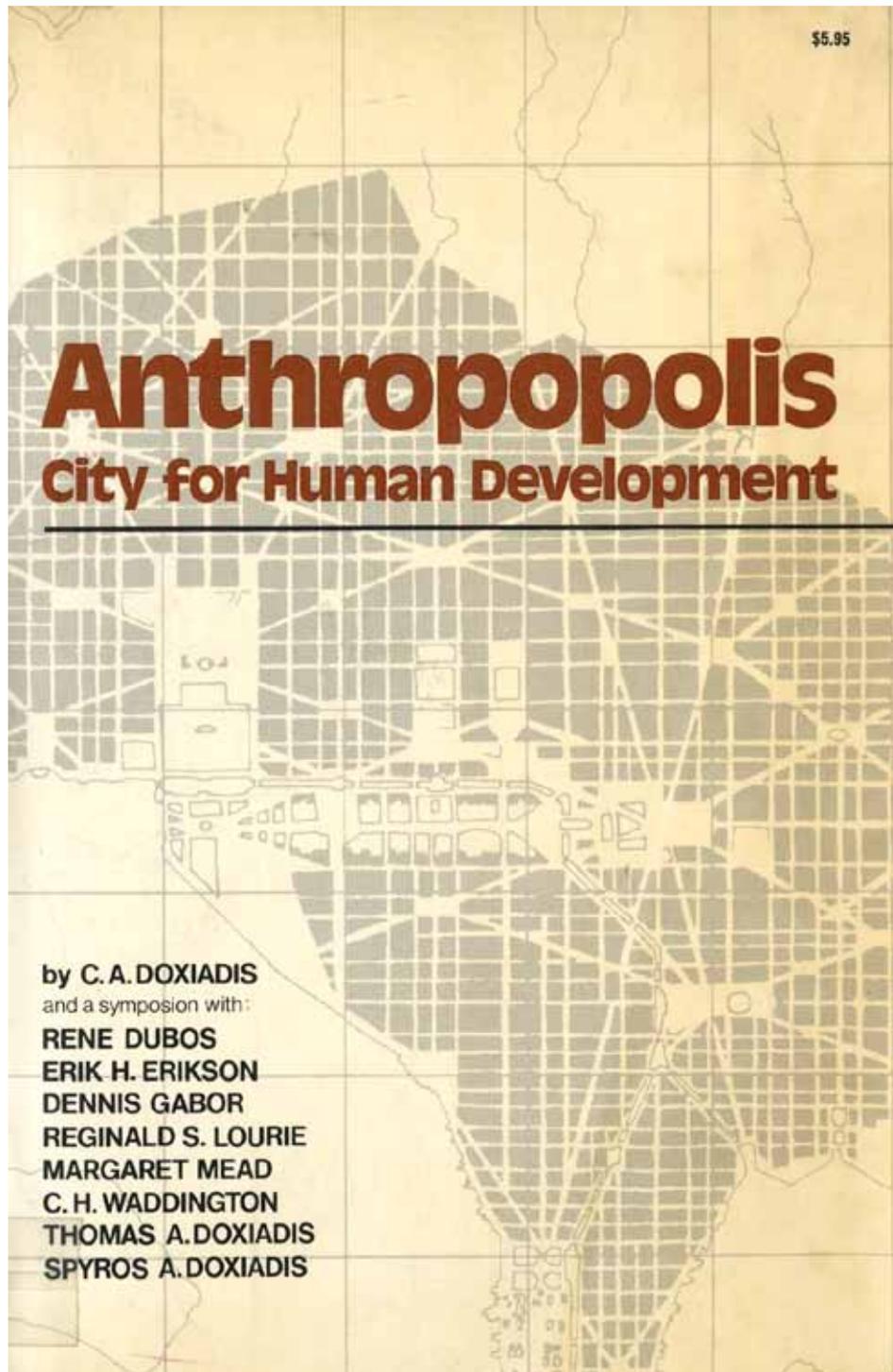
Cover of *Anthropopolis.*
[Doxiadis, C. A. (1975) *Anthropopolis: city for human development.* New York: Norton.]
Figure 4.10
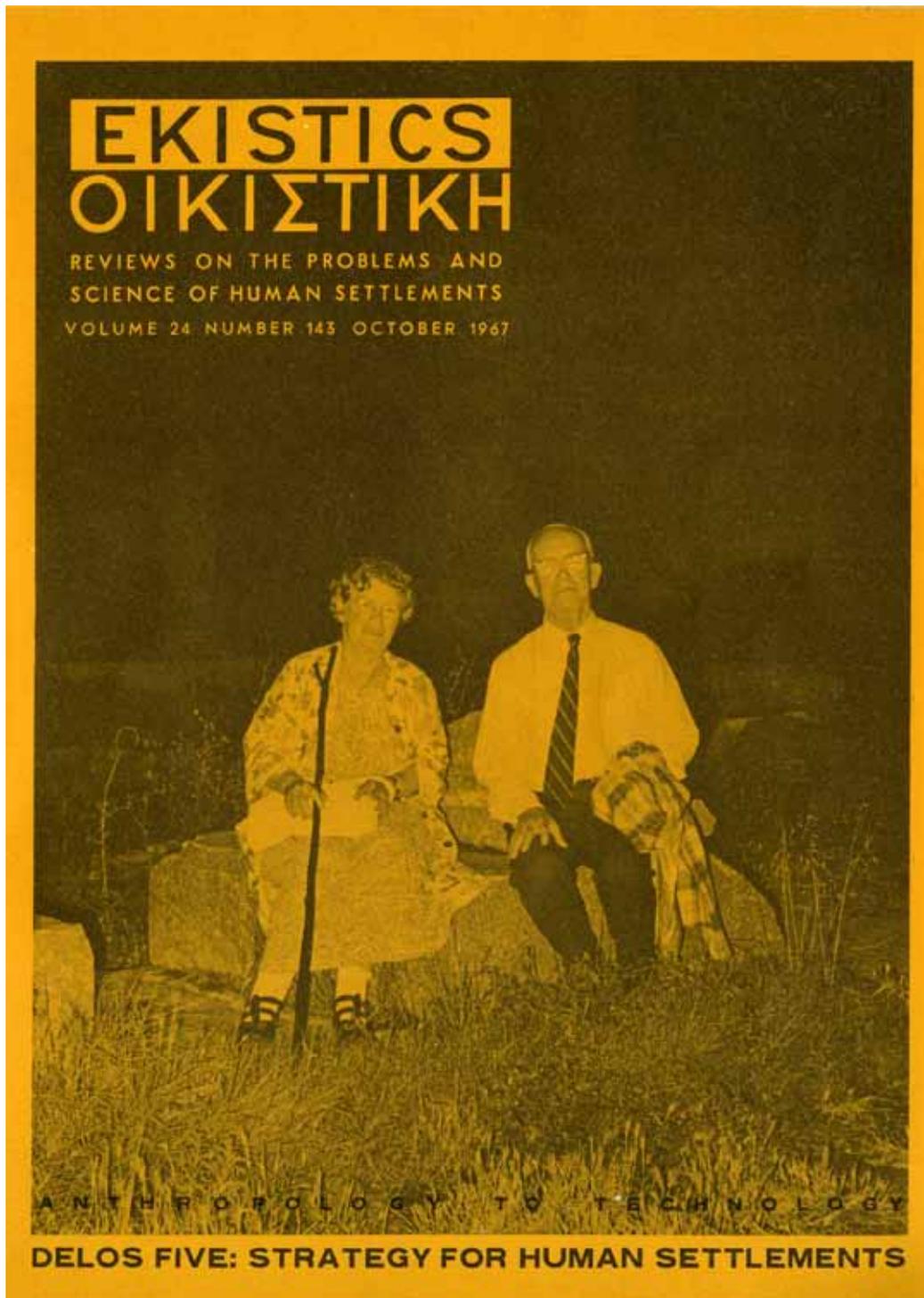
Cover of *Ekistics* showing Margaret Mead and Buckminster Fuller at Delos Five.
['Delos Five: Strategy for Human Settlements' (1967) *Ekistics*, 24(143).]
Figure 4.11

CHAPTER FIVE

A Science to Plan the City (and Save the World…)

From the city-machine to the city-organism

From 1946 to 1953, a group of prominent intellectuals held a series of meetings under the heading "Cybernetics: Circular Casual, and Feedback Mechanisms in Biological and Social Systems".[1] Sponsored by the Josiah Macy Jr. Foundation, these meetings became broadly known as the Macy conferences and are often cited as the founding event of cybernetics.[2] Ten sessions were celebrated altogether, and witnessed the participation of leading scientists such as Gregory Bateson (anthropologist, social scientist, linguist, and anthropologist); Heinz von Foerster (biophysicist, physical scientist, and philosopher); Lawrence K. Frank (social scientist and the vice president of the Macy Foundation); Warren McCulloch (psychiatrist, neurophysiologist, and chairman of the meetings); Margaret Mead (cultural anthropologist); John von Neumann (mathematician); and Norbert Wiener (mathematician and founder of cybernetics) to name just a few from the "Macy" core group.[3] The Macy meetings staged intense debates and sought to formulate a "meta-theory which could be applied within both the natural sciences and the social sciences".[4] Drawing on scientific fields that spanned from biology, neurology, sociology, linguistics, and mathematics to psychoanalysis, ecology, politics, and economy, the participants developed and debated pioneering ideas such as the cellular automata, feedback mechanisms, or the analog-digital binary. Most importantly, the Macy conferences called to cross-disciplinary awareness and emphasized the "development of effective communication across the scientific disciplines" as the most urgent need of the era.

Over the same period, the Austrian theoretical biologist Ludwig von Bertalanffy (1901-

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[1] The 1946 inaugural conference was titled "Feedback Mechanisms and Circular Causal Systems in Biological and Social Systems", while the term *Cybernetics* was introduced at the 7th conference in 1950. The transactions of the conferences were published by the Josiah Macy Jr. Foundation and edited by Heinz von Foerster, Margaret Mead, and Hans Lukas Teuber.

[2] Claus Pias named the Macy conferences "the most important event in the history of science after WW II", see Pias, C. (ed.) (2003) *Cybernetics - Kybernetik: the Macy-Conferences 1946-1953.* Zürich [u.a.]: Diaphanes.

[3] Distinguished personalities were invited to the meetings, like for instance the sociologist Talcott Parsons. Besides the collection edited by Claus Pias, a thorough description of the Macy conferences is published at the website of the American Society for Cybernetics. http://www.asc-cybernetics.org/foundations/history/MacySummary.htm

[4] See, Barbrook, R. (2007) *Imaginary futures : from thinking machines to the global village*. London: Pluto, p. 44.

1972) developed the general systems theory, a "transdisciplinary" theoretical framework that emphasized a holistic approach applicable to an array of knowledge areas, including humanities.[5] Premised on the maxim "the whole is greater than the sum of its parts", Bertalanffy defied the mechanistic view that explained "wholes" (including living organisms) as connected parts and conceived a theory that considered the organization of living organisms and broader "living systems". In doing so, he explored systems as open-dynamic entities and used the concept of "feedback", apparently without knowing that Norbert Weiner had already introduced the idea of such process in his theory of cybernetics.

It did not take long before systems theory permeated urbanism. Following several tentative steps taken during the first half of the 1960s, the establishment of the new paradigm in planning circles was validated by Brian McLoughlin's *Urban and Regional Planning: A Systems Approach*, published in 1969.[6] The book was introduced as an alternative to traditional physical planning and design approaches and soon became a beacon for overcoming the doubts raised about "the effectiveness of the means for planning" and "the ends which institutionalized planning [was] supposed to serve".[7] McLoughlin's approach rested on the development of mathematic methodologies and computational models, while explicitly suggested the application of cybernetics for guiding urban and regional growth. As such, the city was conceived as a system, a concept clearly portrayed at the book's cover in a diagram of dots and triangles interconnected by lines of varying thickness. The publication was a success and since the very beginning was hailed both as a "standard text book" and a benchmark for strategic planning.[8] For more than a decade, McLoughlin's book remained one of the most influential readings in urban and regional planning worldwide, while the suggested concepts and methodologies had a direct impact on professionalism.

McLoughlin's treatise practically outlined some of the theoretical and professional directions explored since the eve of the 1960s by planners involved in public policy

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[5] Bertalanffy's compendium *General System theory: Foundations, Development, Applications* was eventually published in 1968, nevertheless his influential ideas had already been laid down in a series of articles in 1945, 1950, and 1951, whereas the fundamental principles of systems theory can be found as well in his Theory of Biology (1928). See, Seising, R. (2010) 'Cybernetics, system(s) theory, information theory and Fuzzy Sets and Systems in the 1950s and 1960s', *Information Sciences*, 180(23), pp. 4459–4476.

[6] The circumstances under which systems theory was introduced in British planning circles are explored in McLoughlin, J. B. (1985) *The Systems Approach to Planning: a Critique*. Working Paper. University of Hong Kong - Centre of Urban Studies and Urban Planning.

[7] See, McLoughlin, J. B. (1969) *Urban and Regional Planning: a systems approach*. London: Faber and Faber, p. 15.

[8] *Ibid.* In the words of Professor Peter Hall: "this is a strikingly original work on the new concept of Urban and Regional Planning which must become the basis of Strategic Planning during the 1970s. It should rapidly become a standard text book in progressive Schools of Planning everywhere".

programs and architects on pursuit of the post-CIAM paradigm. Characteristically, the beginning of the end of the city-machine paradigm promoted during decades by CIAM architects and typified in Le Corbusier's oeuvre was denoted by the emergence of the younger generation of Team 10 architects who among other things proclaimed that the city is more than "the sum of its parts".[9] The new scientific paradigm to follow was prescribed in a systemic framework, and the city was examined "*as if* it [was] a living organism", a concept most clearly portrayed in Archigram's futuristic projects, Cedric Price's responsive environments, Yona Friedman's Megastructures and the Metabolism movement in Japan.[10] The common background of these approaches was cybernetics and the concept that the city as every other system or organism could be analyzed and eventually controlled by feedback mechanisms.[11]

In 1963 Constantinos Doxiadis published *Architecture in Transition*, where he described the most critical challenges for architecture and urbanism, and the need for a new paradigm (Figure 5.1).[12] Against the changing modern life the architect was compelled to answer the challenges of population explosion, uneven economic development, increased mobility and uncontrolled urban growth. And yet, as Doxiadis argued, the relevance of architecture was rapidly diminishing considering the impressive rates of industrial production and the promotion of low-cost housing both by institutions and private promoters, including informal urban practices.[13]

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[9] See Deyong, S. (2002) 'Memories of the Urban Future: the Rise and Fall of the Megastructure', in *The Changing of the Avant-Garde*. New York: Museum of Modern Art, pp. 23–35, p. 26. On the paradigm of the city-machine see Tzonis, A. (2001) *Le Corbusier: the poetics of machine and metaphor*. New York, NY: Universe.

[10] On the emergence of the Megastructure movement, its relation to the agenda of the younger generation of CIAM architects and the use of biological metaphors in its discourse, see Deyong, 'Memories of the Urban Future', *op.cit.*

[11] Beyond the generational and conceptual gap, it is worth noting that the city-machine and the city-organism concepts shared the faith in the emancipating forces of science and technological progress. As such, one could argue that systemic planning and architectural visions of cybernetic control were the culmination of the modernist rationale. In the words of Nigel Taylor "both the systems and the rational process views of planning were part of the heady 'modernist' optimism of the 1960s. Indeed, the systems and rational process views of planning can be regarded as marking the high tide of modernist thought - the crest of that wave of optimism about the use of science and reason for human progress which had formed the European Enlightenment of the 18th century". See, Taylor, N. (1998) *Urban planning theory since 1945*. London ; Thousand Oaks, Calif: SAGE Publications, p. 74.

[12] *Architecture in Transition* was one of Doxiadis' most popular writings. It was published in France (1967), Germany (1965), Japan (1967), Spain (1964), Portugal and Brazil (1965), China (1974) and South Korea (1981).

[13] Doxiadis' argument was illustrated by a cone that represented the total building production whereas only its top corresponded to the architectural works. A few pages later, another curved graph depicted the number of professionals involved in the production of space, a number that increased proportionally as the scheme grew from a building to a community. See, Doxiadis, C. A. (1963) *Architecture in Transition*. New York: Oxford University Press, pp. 70, 94.
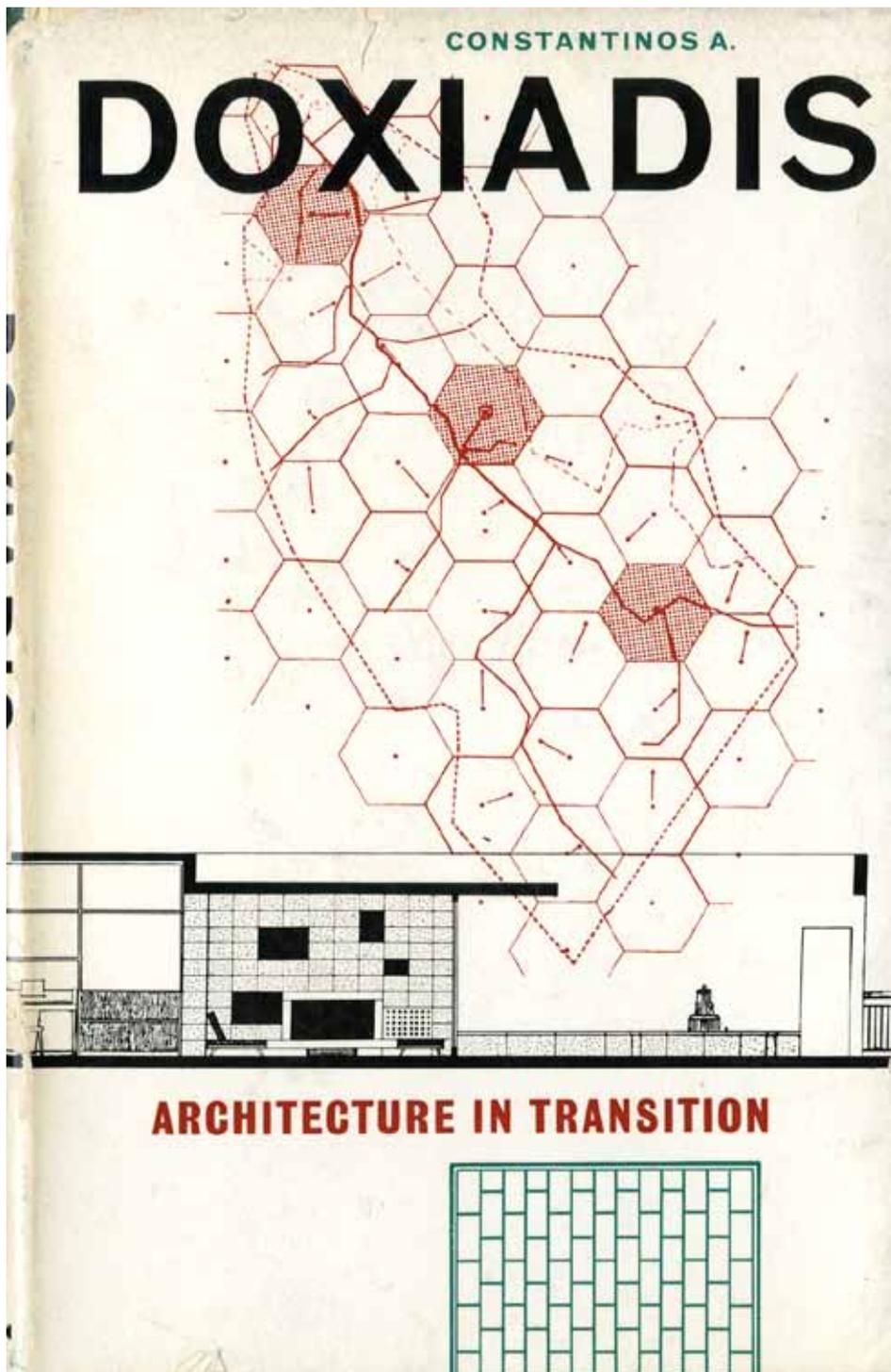
Cover of *Architecture in Transition*
[Doxiadis, C. A. (1963) *Architecture in Transition*. New York: Oxford University Press.]
Figure 5.1

In response, the Greek planner advanced the redefinition of the architect's role as a "coordinator of all forces leading to the creation of the building", what he called a master builder.[14] In order to bridge the gap between theory and practice, and combine physical design with the emerging social and economic exigencies, the architect had to expand his scope to the circles of production (industry), decision-making (government), and scientific knowledge (education and research). In effect, the master builder had to be a scientist, a technician and an artist.[15]

McLoughlin as well introduced his book by identifying the transitory phase of town and country planning however revealing the other side of the coin, namely the blurring of boundaries between disciplines.[16] As the professional and scientific approaches to the problems of the contemporary city multiplied, so did the communication problem between the professionals and academics of the respective disciplines and knowledge areas. The need to recast a framework for the study and planning of cities and regions - both in theoretical and institutional terms - became imperative. McLoughlin's answer eloquently read systems and premised cybernetics as the key to synthesis. Doxiadis called it ekistics.

5.1 Ekistics: a System of Systems

According to its definition, ekistics (Modern Greek: ΟΙΚΙΣΤΙΚΗ) is derived from the ancient Greek adjective *οικιστικός* meaning "concerning the foundation of a house, a habitation, a city or colony; contributing to the settling". The etymological root is the verb *οικίζω*, that is, to settle, and it is ultimately derived from the word *οίκος*, meaning "home" or "habitat". From the same root derive words such as ecology and economy, something that Doxiadis was eager to emphasize, pointing to the inextricable linkages between the three knowledge areas.[17] As such, the development of the global habitat was connected conceptually to the increasing environmental concerns of a fast-shrinking world and the forging of a world market economy. To paraphrase Pyla, "if ecology (the knowledge of the home) and economics (the management of the home) had to re-conceptualize their tasks

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[14] *Ibid.*, p. 95.

[15] *Ibid.*, p. 96.

[16] As McLoughlin argued, "the boundaries between 'disciplines' become ever more blurred as studies starting from varied origins impinge upon urban and regional life, mingle, coalesce and reform". See, McLoughlin, *Urban and Regional Planning, op.cit.,* p. 16.

[17] The definition of "ekistics" was printed on the cover of the journal *Ekistics*, sometimes in its abbreviated form. As Agrafiotis analyzes from the viewpoint of the philosophy of science, "[e]ven the use of "k" instead of "c" (as in the case of Economy) in order to keep the sound of "oikos"/"ecosekis" was thoroughly thought out". See, Agrafiotis, D. (2010) *Misrecognition: 4 essays on C.A.Doxiadis*. Athens (/synapses), p. 65.

to manage the global household", this could and should be done through ekistics.[18] In Doxiadis' vision then, environmentalism went hand in hand with development.

Ekistics in fact, drew inspiration from contemporary theoretical currents that explored environmentalism, the world market, and the emerging communication technologies which progressively led to the interconnected system of networks known as the World Wide Web (Figure 5.2). Doxiadis' aspiration was to establish "the science of programming and planning, the science of determining the way to utilize the earth to peoples' advantage".[19] The Greek planner had long ago espoused the clear-cut aesthetics of graphs and the numerical language of statistics, nevertheless when ekistics engaged with worldwide urbanization and his firm was contracted out at four continents, managing vast amounts of information became indispensable. In analyzing spatial and social phenomena in material and invisible networks, ekistics embraced the concept and methodologies of cybernetics, albeit keeping distances from the architectural aesthetics that eventually came to express this new movement.

Above all, these theoretical links were manifested in the use of biological metaphors alluding to the organic nature of cities. Constantinos Doxiadis of course was just one of the postwar architects who incorporated in their texts and discourses biological analogies and compared cities to evolving organisms.[20] Transportation networks were compared to the nerve system and portrayed as electrical circuits, all of them essentially considered streams of information. Doxiadis in particular, illustrated the chaos of networks that threatened to dissolve the urban structure with photographs from a spider's web after the arachnid had drunk sugar water containing dextro-amphetamine.[21] In a similar vein, in the Typical Urban Renewal Area study (abbreviated TURA) Doxiadis used electromagnetic models that according to the intensity of the electromagnetic field and using iron filings "simulated" different densities and formations in urban areas (Figure 5.3).[22]

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[18] See, Pyla, P. (2002) *Ekistics, architecture and environmental politics, 1945-1976 : a prehistory of sustainable development*. Unpublished dissertation. Massachusetts Institute of Technology. Dept. of Architecture, p. 144. As Pyla denotes, "[e]kistics' centrality to environmental debates was rooted in its etymology. QED!"

[19] See, Doxiadis, C. A. (1946) *Ekistics analysis, ekistic studies [Οικιστική ανάλυση. Οικιστικές μελέτες]*. Athens: Undersecretary's Office for Reconstruction (Publication Series 1), pp.276-277, cited in Kakridis, A. (2013) 'Rebuilding The Future: C. A. Doxiadis And The Greek Reconstruction Effort (1945-1950)', *The Historical Review / La Revue Historique*, X, pp. 135–160, p. 139.

[20] Analyzing the Delos Symposia and the influence of the generated debate on the evolution of ekistics, Wigley argues that "the biological argument rose very slowly in Doxiadis's writing […] The Delos discussions clearly had an effect". See, Wigley, M. (2001) 'Network Fever', *Grey Room*, 4, pp. 82–122, p. 101.

[21] See, Doxiadis, C. A. (1972) 'The Two-Headed Eagle: from the past to the future of human settlements', *Ekistics*, 33(198), pp. 406–420.

[22] For the TURA study see, Doxiadis, C. A. (1966) *Urban renewal and the future of the American city*. Chicago: Public Administration Service. For the figures of the electromagnetic models, see, pp. 48, 49.

The city of the future will form a world-wide network consisting of centres of several orders interconnected by settled parts of various importance.
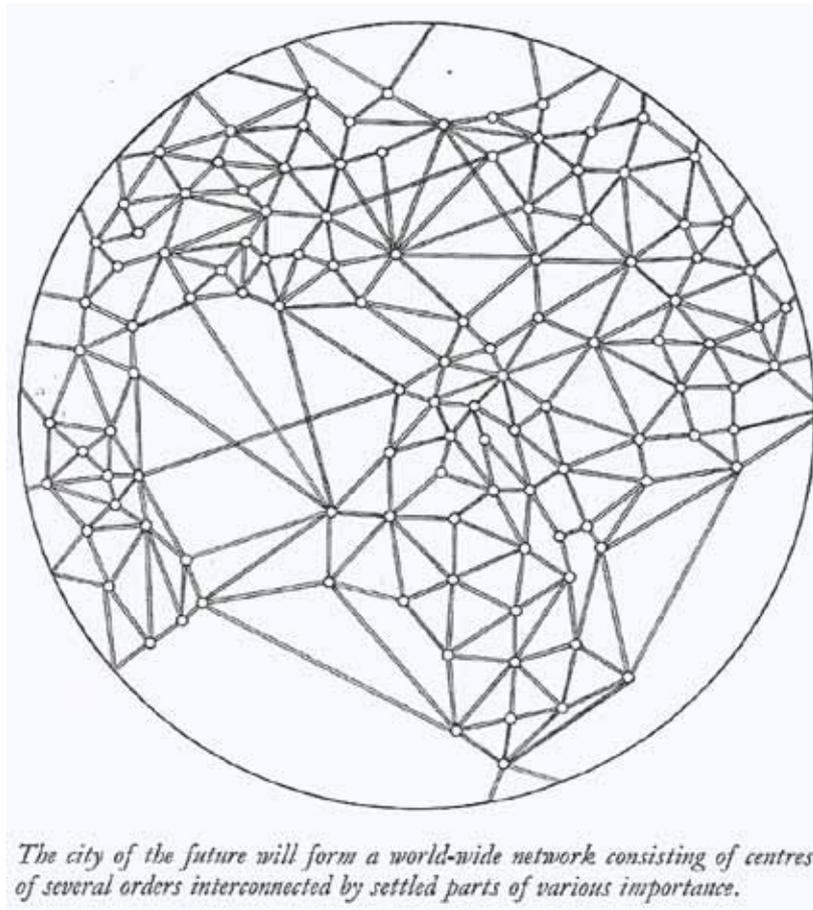
The World-Wide Network.
[*Constantinos A. Doxiadis and his Work* (2009). Athens: Technical Chamber of Greece, p. 438]
Figure 5.2
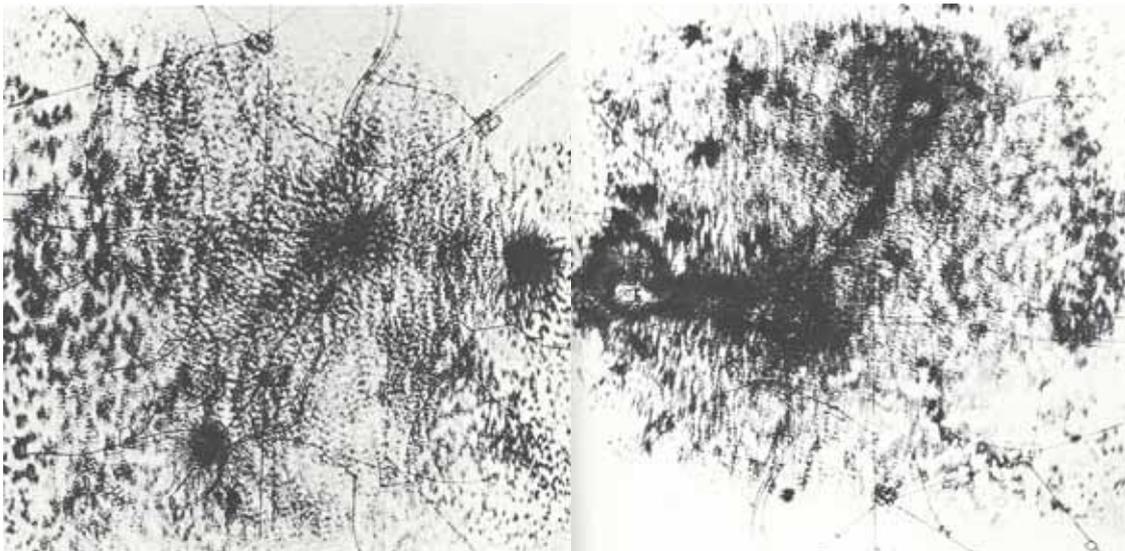
TURA: electro-magnetic model 1920 and 1945
[Doxiadis, C. A. (1966) *Urban renewal and the future of the American city.* Chicago: Public Administration Service, pp. 48-49]
Figure 5.3

At the core of the above paradigms and the broader evolutionary discourse was the understanding of the city in relation to the fourth dimension. The concept of time had always been present in Doxiadis' thinking and planning philosophy. His dissertation analyzed the experience of architectural space after the "moving observer", while the Dynapolis model spelled dynamic growth. It was however in *Architecture in Transition* (1963) that Doxiadis proclaimed time an essential dimension for planning the contemporary city. Human settlements were not static but dynamic entities that grew and declined like any other biological organism. In claiming that human settlements were "unique biological individuals" Doxiadis advocated the need to develop a proper scientific filed dedicated to their study, which was no other than ekistics.[23] Nevertheless, though the biological analogy was "not intended too obscure the social nature of settlements", at the end of the day "questions of social power, social inequality, ideology, political contest, and cultural divergence" were left uncontested.[24]

Doxiadis' connections to cybernetics and system theory were not just theoretical ones. Actually, some of the protagonists of the emerging epistemological currents undersigned the Delos Declarations while others became important nodes in the ekistic network. Apart from the communication technologies guru Marshall McLuhan who eventually discredited ekistics, the father of systems biology Conrad Waddington was a frequent *Delian*, while the planner and systems theorist Richard L. Meier (1920-2007) contributed significantly in the "City of the Future" research project.[25] The most direct connection however between the Macy conferences and Delos Symposia or cybernetics and ekistics was Margaret Mead (1901-78), a cultural anthropologist and one of the most popular academic figures of her time, a true American heroine. Mead is remembered for making anthropology accessible to a non-specialized public, while her writings became the cornerstone of the sexual revolution and the feminist movement of the 1960s.[26] On the other hand, Mead's participation at the Macy meetings and her studies for the RAND Corporation in the late 1940s granted her the reputation of a cultural agitator among rational "hard science"

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[23] See, Psomopoulos, P. and Perovic, M. R. (eds) (2005) 'A reader on Ekistics. Thirty years after C.A. Doxiadis', *Ekistics*, 72(430 to 435), p. 36. The text titled "The science of ekistics" is a slightly edited version of a document extracted from *Ekistics: an introduction to the science of human settlements* (1968).

[24] See, Peponis, J. (no date) 'EKISTICS'. Review of *Ekistics: an introduction to the science of human settlements by C.A. Doxiadis*. Available at: http://www.doxiadis.org/ViewStaticPage.aspx?ValueId=4313 (Accessed: 7 May 2015), pp. 1-2.

[25] Brief references to Meier's connection to ekistics can be found in Wigley, 'Network Fever', p. 100-101.

[26] Mead's fame increased even posthumously when the book *Coming of Age in Samoa: A Psychological study of Primitive Youth for Western Civilization* (1928) was questioned by Derek Freeman thus arousing one of the most intense debates in anthropological circles. Mead had written the book after carrying out field work in Samoa when she was only 23 years old.

brains.[27] Mead and Doxiadis became acquainted in the beginnings of 1963 at the UN Conference on the Application of Science and Technology that took place in Geneva. Some months later she was invited to the first Delos meeting and became a regular participant thereafter. Mead developed a close friendship with Doxiadis and an active role as an ekistician. She disseminated ekistics through lectures and articles, and officially represented the World Society for Ekistics in the United Nations conference in Vancouver, in 1976.

Much alike Doxiadis, Mead was a polymath and her academic temperament exceeded the limits of anthropology. Mead in fact, disseminated her beliefs and ideas extensively using mass media, a fact that was often criticized by her peers. Her strenuous efforts to the understanding of contemporary culture were driven by the experience gained through the study of the local let alone the indigenous. Nonetheless, Mead was committed to the building of a better global tomorrow.[28] In that sense, more than a city planning instrument Mead endorsed ekistics for its holistic and ecological approach, while Doxiadis' educational vision must have called her attention due to her strong interest in educational patterns. On the other hand, Mead's liberal almost unconventional anthropological perspective reinforced ekistics as a multidisciplinary approach to the development of innovative urban environments.

An interdisciplinary and systemic framework of action

Ekistics was conceived both as a knowledge framework for analyzing human settlements and as an approach to the development of integrated solutions to the problems involved. Doxiadis' knowledge field defined an interdisciplinary area that cut through other scientific fields, such as sociology, economy, architecture, or geography. In contrast to these areas that studied different urban aspects or regional scales, ekistics aimed to study all human settlements in every aspect and scale. To do so, ekistics drew on the existing knowledge of the established scientific fields that examined spatial phenomena from their point of view and according to their scope or aims. Nevertheless, ekistics was not meant to be a multidisciplinary field but instead an interdisciplinary area aiming to bring under its auspices existing knowledge and approaches in order to create new methodologies and models for analyzing human settlements. That is to say that the purpose of ekistics was

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[27] The RAND Corporation is a research organization operating under the auspices of the U.S. Air Force and one of the first fruits of collaboration between the War Department, the Office of Scientific Research and Development, and the U.S. military industry. RAND employed Mead from 1948 to 1950 to develop further her study on Russian culture and attitudes toward authority. See, Lutkehaus, N. (2008) *Margaret Mead: the making of an American icon*. Princeton: Princeton University Press, p. 321.

[28] One of Mead's popular quotations was "Never doubt that a small group of thoughtful, committed citizens can change the world".

not bringing together other sciences as autonomous knowledge areas but to establish a new knowledge field. Doxiadis justified this ambitious effort as a necessary solution due to the complexity of the subject of study and the immediate need for action:

> "Let us no waste the time we have by trying simply to coordinate the multitude of important but dispersed areas of knowledge. A simple illustration is necessary to demonstrate how complex the subject is and how meaningless it would be to try to deal with it by the simple coordination of a round table discussion".[29]

The contemporary city was in crisis and traditional disciplines failed to rise to the challenge, principally due to the degree of specialization and the compartmentalization of knowledge. A new field had to provide the common ground for synergistic action having as *sole* objective (all) human settlements. Doxiadis' ultimate aspiration then was to "provide the necessary synthesis for the problems of space within human settlements".[30] In his eyes, the process of synthesis was the outcome of synergetic and networking actions.[31] Apart from its holistic character, and considering the subject of the study, the methodologies used, and the broader goals of ekistics, the "newborn science" was systemic. To start with, the subject of study - that is, human settlements - was defined as a "complex system of five elements", namely nature, man, society, shells (buildings), and networks.[32] A most typical image of the ekistic repertoire featured the interconnection of these elements, initially in a two-dimensional scheme and later on as a three-dimensional

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[29] See, Psomopoulos and Perovic, 'A reader on Ekistics', *op.cit.*, p. 36. The "simple illustration" was a figure that represented the possible combinations of the five ekistic elements and the five sciences-disciplines that were considered principal to the understanding of human settlements. This scheme of supernumerary combinations typified Doxiadis' "simple" but holistic rationale.

[30] "It is the synthesis which is the main task of Ekistics", see, Doxiadis, C. A. (1963) 'Ekistics and Regional Science', *Ekistics*, 14(84), pp. 193–200. In this paper Doxiadis compares ekistics with regional science arguing that the latter could be seen as the extension of geography whereas ekistics as the extension of urban geography. Regional science was founded in the late 1940s after the aggressive campaigns by the American economist Walter Isard that addressed major universities finally leading to the foundation of the Regional Science Association in 1954. In the same vein, Doxiadis promoted ekistics launching his journal, founding the ACE, and organizing the Delos Symposia. Nevertheless, as Pyla explains, "for all its emphasis on embracing different scientific disciplines, ekistics' engagement with other disciplines was rather vague", see Pyla, *Ekistics, architecture and environmental politics, 1945-1976, op.cit.*, pp. 44-45.

[31] In a retrospective article on ekistics, Nash unfolds an account full of mythological parallelisms to end up arguing that "Dinos was a peripatetic master of synthesis and certainly the process was synergetic". His short article is accompanied by a table where ekistics is situated in "the Inter-Epistemological Comparison Chart" compiled by himself. See, Nash, P. H. (1987) 'Ekistics:Systematic synchronized synergetic synthesis', *Ekistics*, (325,326,327), pp. 216-217.

[32] See, Doxiadis, C. A. (1970) 'Ekistics, the Science of Human Settlements', *Science*, 170(3956), pp. 393–404.

model that Doxiadis used to hold while lecturing (Figure 5.4).[33] More than studying these elements separately ekistics was conceived for analyzing their interrelationships.[34] Aiming to study the grey areas in-between the established disciplines and beyond the available knowledge, ekistics purposed the understanding of human settlements as a complex entity, essentially a system.

Moreover, the taxonomic universe of ekistics featured several methodological tools used to classify projects, articles, and miscellaneous ideas according to the ekistic elements, their scale (territorial, temporal, and population-scale), or other factors (economic, social, political, technological, cultural). From the ekistic grid to the Anthropocosmos model, the ekistic matrices (re)presented an analytical view of problems to components that corresponded to one or many scales and concerned one or more disciplines.[35] By the same token, the process of synthesis was based on a similar logic and advanced the combination of concepts and actions from every field and scale to form a holistic program instead of a blueprint. In order to provide a common language for the study and development of human settlements then, ekistics introduced the information coming from established knowledge fields and disciplines in its own system. In that respect, ekistics was conceived as a system that would manage and eventually synthesize other systems. Much alike Norbert Wiener's cybernetics that purposed "the scientific study of control and communication in the animal and the machine", ekistics aimed to establish the (cybernetic) mechanism that would provide humanity a better urban future…

A descriptive and prescriptive science

Ekistics was conceived as a holistic and systemic framework for combining knowledge and coordinating actions, or in other words, the aspiring science was both descriptive and prescriptive. In a first place, ekistics aimed to the understanding of the complex phenomena that characterized human settlements through observing, recording, describing and classifying such information. On the other hand, as a prescriptive science ekistics pointed to the development of policies and solutions to the problems involved, and indirectly purposed the formation of professionals according to its methods and after its theory. Situating ekistics in relation to other sciences, Doxiadis claimed that ekistics had

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[33] To draw another parallel, McLoughlin book's cover was one of the ekistic "logos". Worth noting that McLoughlin referred to Doxiadis and Ecumenopolis in naming the emerging concepts that supported the thesis of an interconnected world.

[34] See, Psomopoulos and Perovic, 'A reader on Ekistics', *op.cit.*, p. 40.

[35] On the taxonomic tools of ekistics, that is, the ekistic grid and the anthropocosmos model, see Psomopoulos and Perovic, 'A reader on Ekistics', *op.cit.*, pp. 70-75. For a comparison between Patrick Geddes', the CIAM, and the Ekistic Grid see, Bell, G. and Tyrwhitt, J. (eds) (1972) *Human Identity in the Urban Environment.* Harmondsworth, Eng.: Penguin Books, pp. 15-37.
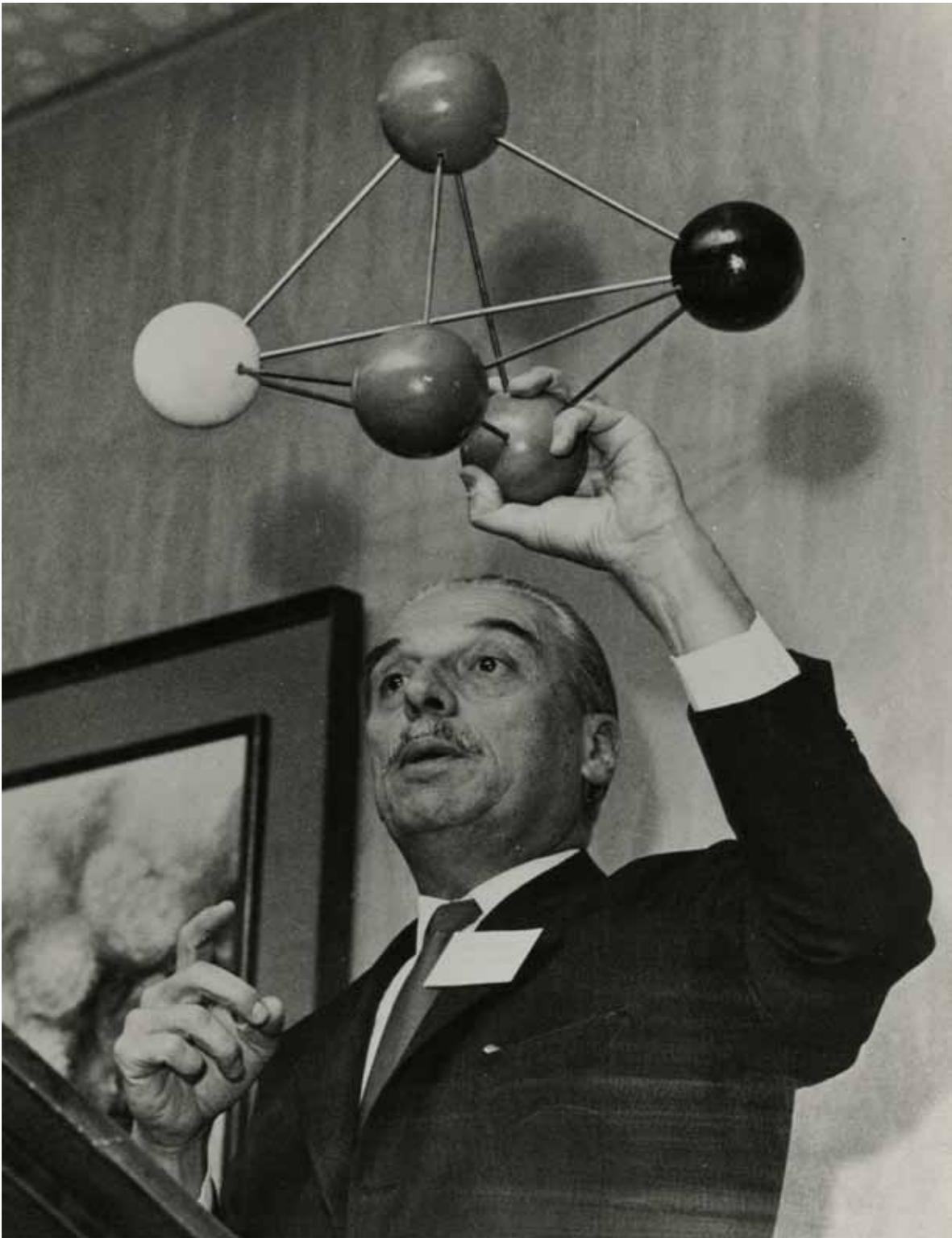
Constantinos Doxiadis lecturing at the Seminar on Regional Planning organized by Kent State University in cooperation with the Aspen Institute for Humanistic Studies, Aurora, Ohio, October 20 - 25, 1967.
Figure 5.4

the same subject of study with geography and that both covered "terrestrial space", meaning the whole range of scales. Nevertheless, the basic difference between them was that the latter was solely a descriptive science, whereas "ekistics and regional science [were] both descriptive and prescriptive".[36]

At the same time, the aspiring scientific field required the formulation of an innovative theory as a comprehensive basis for developing action programs.[37] According to Doxiadis the ekistic theory should be built upon an "objective body of knowledge" coming on the one hand from historical analysis of existing and ancient (extinct) settlements, and on the other hand from observation and experimentation.[38] Paradoxically, Doxiadis claimed that in order to understand human settlements beyond existing theories, ekistics should be based (as well) on empirical analysis.[39] As he contended, "we can only learn about settlements from the settlements themselves".[40] An essential step for the development of a theory then was the collection of information on the contemporary city and its classification according to the ekistic system. To such end, Doxiadis and the ACE developed a series of research programs set to bridge the gap between planning theory and practice. For the establishment of ekistics as a descriptive and prescriptive science was tantamount to the development of a framework both of theory and for action. As I shall analyze, among other things the ACE research programs sought to fuse social and physical planning.

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[36] Doxiadis, 'Ekistics and Regional Science', *op.cit.*, p. 13.

[37] To support his claim, Doxiadis cited Leonard Duhl, a North American psychiatrist and a frequent participant in Delos Symposia who argued that "action programs […] executed without a comprehensive theoretical base can be wasteful and even misleading". See, Psomopoulos and Perovic, 'A reader on Ekistics', *op.cit.*, p. 40.

[38] In *Ekistics:an introduction to the science of human settlements* (1968), Doxiadis described the principles and laws that according to his science reigned human settlements. These were classified as laws of development (creation, development, extinction), laws of internal balance, laws of physical characteristics (size, structure, functions, form, etc.,). The Greek planner contended that "the principles and laws needed as a foundation must have an indisputable validity, since they will form the central body of our theory. They should, therefore, be based on as much experience and as many examples as possible". Suffice to say that these "true, helpful, general and simple" laws stemmed from his own experience and observations, often thought-to-be or presented as scientific criteria. By the same token and when needed, Doxiadis discredited common experience or long-standing beliefs: "[h]owever, there is no reason to believe that what is often called common experience is objective and scientific and not merely the result of some older ideas surviving by inertia, or a total of the incorrect ideas one community has copied from others. Belief and experience are both inefficient and insufficient to enable us to grasp the real issues in human settlements". *Ibid.*, pp. 39-66.

[39] Through empirical analysis, according to Doxiadis, ekistics had "managed to learn more about the inter-relationship of functions within settlements and the contribution which can be expected from other fields of knowledge and discipline." Doxiadis, 'Ekistics and Regional Science', *op.cit.*, p. 18.

[40] Psomopoulos and Perovic, *op.cit.*, p. 39.

5.2 The Research Programs of ACE

From 1963 to the closing of Doxiadis' Institute in 1975, the ACE Research Division undertook numerous research studies, the majority grouped under four main research projects, namely the Ancient Greek Cities (AGC), the "Human Community" (HUCO), the Capital of Greece (COG), and the "City of the Future" (COF). These projects developed over a decade's time, constituted *per se* a comprehensive framework: from the neighborhood scale and the small urban unit to the all encompassing Ecumenopolis, and from the study of the Greek settlements' past to the systematic speculation about the humanity's future the ACE research projects analyzed the contemporary city in different scales and throughout time.

The first ACE research project, initiated in 1960, was titled the "City of the Future," and explored the development of global urbanization patterns. One year later, in 1961, the ACE launched the "Human Community" research project that focused on local scales and aimed to define the optimum size and characteristics of the neighborhood, the urban sub-unit reckoned in ekistics as Community Class IV. The "Capital of Greece" (COG) research project came to bridge the gap between HUCO and COF, focusing on the intermediate metropolitan scale (Figure 5.5). The principal case study was the broader region of Athens Attica, whose development was compared to other metropolitan areas in an attempt to define local and global features in a fast urbanizing world. Though COG was officially initiated in 1964, it included earlier studies such as Doxiadis' proposal for the creation of an administrative pole at the North of Athens titled "Our Capital and its Future" (1960).[41] Doxiadis' interest in ancient settlements as initially explored in his doctoral thesis was resumed by the "Ancient Greek Cities" (AGC) program initiated in 1968 with the financial support of the Ford Foundation. The outcome of the program was published in 24 monographs of great historical and architectural value.

Finally, in 1969, the ACE set to compare thirteen selected settlement patterns, each one located in a different geographical area notwithstanding of the same dimensions (250x250 km). This comparative analysis aimed to "determine which patterns worked best under what conditions", nevertheless the results of the so-called "evaluation of human

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[41] See, Doxiadis, C. A. (1961) *Our Capital and its Future*. R-GA; 202. Doxiadis Associates. Available at: http://www.doxiadis.org/ViewArticle.aspx?ArticleId=14933 (Accessed: 6 September 2015). This document is a translation from the Greek original that was based on Doxiadis' lectures at the Parnassos Literary Society, on 1 February 1960, and at the Athens Technological Institute (ATI), 9 May 1960. This lecture marked Doxiadis' return to the Greek planning scene after almost a decade of absence. "Our capital and its future" basically proposed a strategic framework for the physical planning of the capital during the next forty years. The lecture Another example and one of the firsts DA research projects in Greece was the study of the East Attica coast, namely Saronikos, commissioned to DA by the Greek government in 1959.
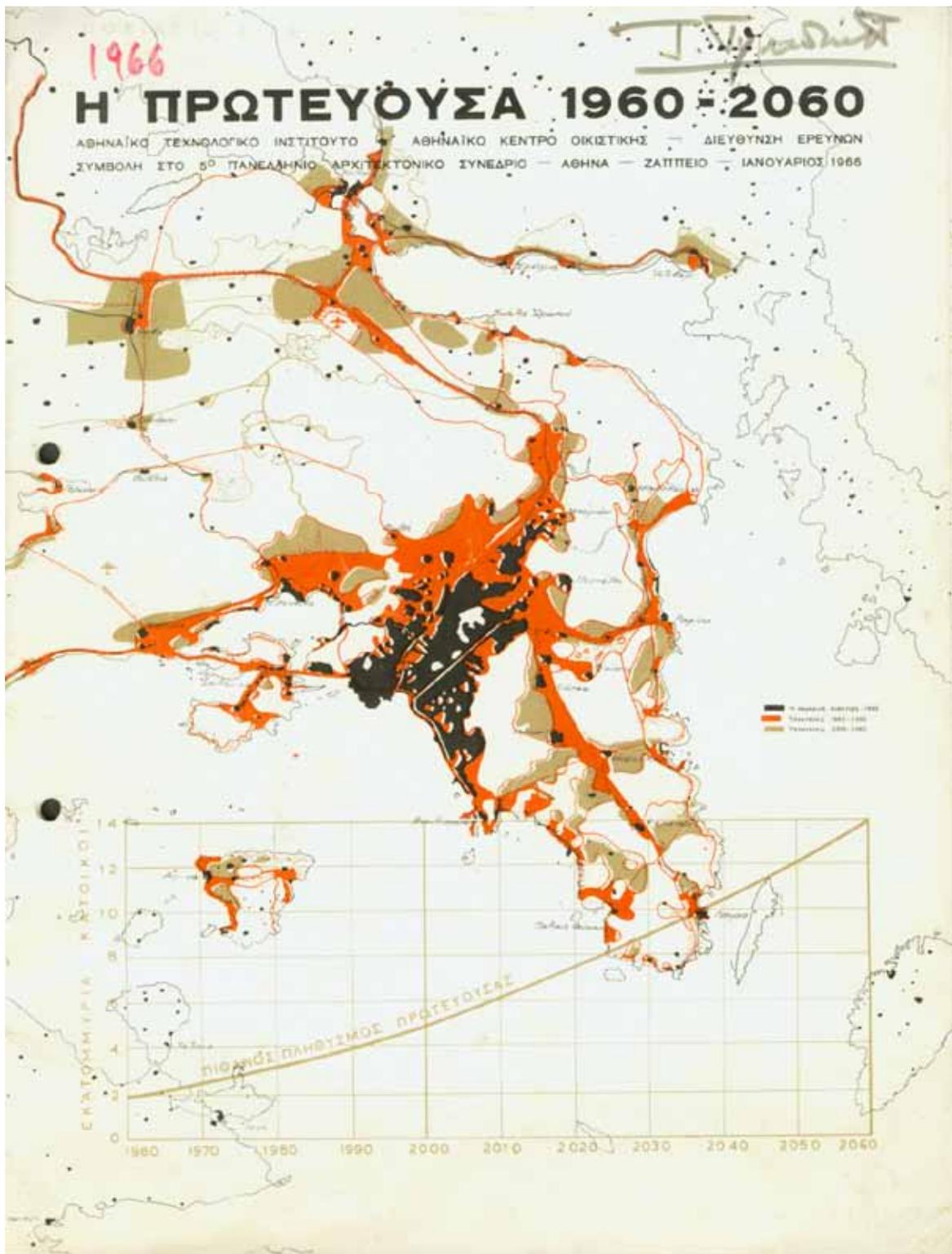
Printed brochure titled "The Capital 1960 - 2060" bearing Jacqueline Tyrwhitt's signature. The brochure presented the Capital of Greece (COG) research program and was issued by ATI/ACE as a contribution to the 5th Panhellenic Architectural Congress.
Figure 5.5

settlements" research project were somehow limited and published in a sole monograph.[42] All together, the information collected by the ACE research projects was a valuable archive that supported the hypotheses of the ekistic theory, while on the other hand informed the planning models and strategies developed in DA projects. For example, the findings of HUCO were used to ameliorate the design of DA neighborhoods, while Dynapolis, the planning model used in the construction of Islamabad and other new towns was explicitly connected to the "City of the Future" program. In this respect, the research projects of the ACE linked the ekistic theory to Doxiadis' urbanism, and sought to legitimate ekistics as a comprehensive framework developed to provide both a knowledge pool for problem solving and a set of systematic solutions. In other words, research aimed both to the consolidation of ekistics as a scientific field and to the legitimization of Doxiadis' planning and design strategies as the product of thorough investigation and analysis. As such, the analysis of the ACE research programs will present from another perspective the tension and contradictions between the ekistic theory and practice.

The City of the Future (COF)

The City of the Future project or COF was a speculative investigation on the evolution and effects of global urbanization, initiated at the Athens Center of Ekistics in 1960 and lasting till the dismantlement of the institute. The project studied the "structure and distribution [of human settlements] over the entire area of the earth" and practically performed a comparative analysis based on data collected from some of the world's metropolises and capital cities. Statistical analysis was one of the program's cornerstones as manifested by the numerous S-curve graphs with projections of variables, such as population, income per capita, the use of energy and natural resources that practically constituted basic hypotheses on global demographic growth, the evolution of global urbanization and mankind itself. To all intents and purposes, the COF research project was a significant pool of data that Doxiadis and his colleagues used to check the pace of global urbanization and ring the alarm of the coming Ecumenopolis. While some condemned the program for its forecasting character Doxiadis contested that "projections into the future are (nowadays) not only possible, but also legitimate and necessary for the proper guidance of both short and long-term planning".[43]

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[42] Some preliminary findings were published in the ACE Monograph No.11. See, 'Building a Better Future: Research Projects of the Athens Center of Ekistics' (1972) *Ekistics*, 33(199), p. 422.

[43] This statement was followed by short and vague analysis on the validity of the projections in different scientific fields and on the shifting public opinion on related issues. As references of the "gradual improvement in projection techniques", the article cited Daniel Bell's "Twelve modes of prediction" and T.J. Gordon and Olaf Helmer's "Prospective à long terme". See, Tyrwhitt, J. (ed.) (1965) 'The City of the Future', *Ekistics*, 20(116),

Actually, the *City of the Future* research project was part of a broader planning current that in the dawn of the 1960s begun to examine the conditions and prospect of the "exploding metropolis" in light of the "population bomb" and depleting resources.[44] The most alarming and widespread account was published in the November 1960 issue of *Science* magazine by von Foerster, Mora and Amiot under the title "Doomsday: Friday, 13 November, a.d. 2026". This was the date that according to the authors' formula and projections based on historical data the world population would become *infinite*.[45] Doxiadis who had premised his theory on the global crisis was intrigued by Heinz von Foerster's prediction and contacted him to know more about the so-called "Doomsday Equation".[46] The population projections of the COF study on the other hand, portrayed an apparently more optimistic scenario prognosticating the stabilization of demographic growth and the coming of a more "static" phase after the exponential growth that was "expected to last somewhere between 100 and 150 years".[47] The flattening out of the population growth curve and the level off of development signified the advent of the Ecumenopolis. The COF research project in fact corroborated with data Doxiadis' world city theory (Figure 5.6).

The COF research program was initially directed by Doxiadis but was conducted by a multi-disciplinary international team that included architects (H. Fathy), physical planners (M. Gomez-Mayorga), academics (J. Tyrwhitt), anthropologists (J. Matos Mar), geographers (G. Gutenschwager) and regional-environmental planners (R.L. Meier), to name some of the participants. Fathy reported on "towns visited in North and West Africa"; Gutenschwager on "American and Canadian Cities"; Matos examined "the City in South America"; Shibata provided "general information on Japanese cities and urbanization problems in Japan"; Fakiolas analyzed the "factors affecting Soviet urban development";

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pp. 4-5.

[44] I refer to William Whyte's *Exploding Metropolis* (1958) and Rackel Carson's *Silent Spring* (1962), both of them widespread publications that portrayed a world of limited resources where technological and demographic growth pushed the biosphere beyond its *natural* limits. As Pyla denotes, "Doxiadis adopted Carlson's view of nature as a complex and highly integrated system" while in several occasions quoted her alarming arguments on the methods of industrial agriculture "to shock people into action". See, Pyla, *Ekistics, architecture and environmental politics*, *op.cit.*, p. 129.

[45] See, Foerster, H. von, Mora, P. M. and Amiot, L. W. (1960) 'Doomsday: Friday, 13 November, a.d. 2026', *Science*, 132(34-36), pp. 1291–1295. Foerster and his colleagues in fact, argued that world population growth advanced at a faster pace than exponential curves depicted. As such, the doubling time of population, that is, the time required for the population to double its size decreased over time practically reaching the value of zero on the "Doomsday".

[46] See, letter from John Papaioannou to Heinz von Foerster, dated 12 January 1961, in *ATO/GSE COF Correspondence 1960-1963 (ERES-SUNDRIES)* (no date). Document, Ref. Code 18755 C-ERES 127. Doxiadis Archives. Foerster replied the letter providing as complementary references Francois Meyer's "L' acceleration de l'evolution" (1959) and Edward S. Deevey's "The Human Population" (1960). Foerster himself was a Macy participant and is considered as one of the architects of cybernetics.

[47] See, Tyrwhitt, 'The City of the Future', *op.cit.*, p. 15.

negative areas for Ecumenopolis, habitability zones E & D
(only connections and compact points allowed within them)

- elevation > 3,000 m, habitability zone E
- 'difficult' and 'very rigorous' climate 2100, habitability zone D

difficult areas for Ecumenopolis, habitability zones E, D & C
(substantial cost involved)

- water scarcity: very high cost, habitability zone D
- water scarcity: high cost, habitability zone C

nodes:
high order
middle order
low order

megalopolis
1,500 km   500 km

zones:
- high density
- middle density
- low density

grids:
major grid
1,500 × 1,500 km = 2,250,000 km²
basic grid
500 × 500 km = 250,000 km²

151.   Ecumenopolis: theoretical configuration of global
axes and centers adjusted for distorting factors

Ecumenopolis: theoretical configuration of global axes.
[Doxiadis, C. A. and Papaioannou, J. G. (1974) *Ecumenopolis: the inevitable city of the future*. New York:
Norton, pp. 380-381]
Figure 5.6

and Jamil Khan informed on the "ekistic pattern in East Pakistan".[48] These geographically targeted surveys were followed by reports focusing on demographic analysis (Papaioannou and Meier), economic and social aspects of a region (Piperoglou and Papaioannou), transportation systems (Meier, Goudas, Papaioannou), or the physical structure of dwellings, buildings, and urban centers (Tyrwhitt, Fathy). As understood, these studies addressed disparate subjects and covered a wide range of scales, and yet as alleged they had a sole aim, that is, to examine the status and pace of global development.

Despite the impressive array of distinguished international experts that undeniably raised the prestige of the project, COF soon came under criticism. Even if most of the ACE collaborators embraced the morality of Doxiadis' ultimate aim to control global urbanization, in some cases the path to its attainment was full of pitfalls and controversies that not everybody was willing to share. This was the case of Hassan Fathy who in vain sought to "reconcile his own fascination with local knowledge systems and Ekistics' rationalist preoccupations" with global urbanization.[49] The abstractness of the project posed as well certain problems. According to Gerald Gutenschwager, an American geographer who participated in the project, lectured on urban geography at the 1959-1960 GSE course before joining the DA, there was little understanding of the overall tasks and goals, while each collaborator contributed to the project using a methodology and theoretical framework of preference. In his own words,

> "The 'City of the Future' research design seemed quite vague to me at the time, and apparently purposely so, with the result that each of the reports from each of the continents was quite different. Each participant was free to make up his own research design; I, for example, used a framework from urban geography having to do with the structure of the city as understood primarily by the 'Chicago School' sociologists and urban geographers at the time. Other architects and planners from other countries had different approaches. In that sense, I'm not even sure what the overall purpose of the project was, although everyone seem pleased with the results".[50]

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[48] A list of the preliminary reports published by the ACE only for the project staff can be found at 'Building a Better Future: Research Projects of the Athens Center of Ekistics', *op.cit.*, p. 52.

[49] See, Pyla, P. I. (2007) 'Hassan Fathy Revisited', *Journal of Architectural Education*, 60(3), pp. 28–39, p. 36.

[50] The phrase is quoted from an e-mail response of Gerald Gutenschwager to the author. See, Theodosis, L.

The most severe criticism however came from Lehrman, who was a vocal critic of the ACE curriculum and had expressed his doubts about the quality of its research programs. His evaluation draft paper was mainly a sum-up of ideas (or in his own words "a more or less spontaneous reaction") that challenged the concept of Ecumenopolis. Taking as granted its connection with the research program, he attacked COF for its unscientific methodologies and the "disturbing air" and tendency present almost on every page of the program.[51] He repeatedly pointed to the uncritical use of *historicism* that in most cases turned the main hypotheses of the study to "predetermined patterns of development", in effect remarking its deterministic nature. All together, Lehrman criticized Ecumenopolis for its megalomania and adverted for its totalitarian central planning and governance aspects.[52] Doxiadis read the paper almost a year later after it was drafted and countered Lehrman's criticism as erroneous and therefore unethical. According to the Greek planner, Lehrman's arguments were based on the mistaken assumption that the COF project adhered to the principles of a certain school of thought, without however specifying which one.[53] Beyond a possible methodological misunderstanding, what preoccupied mostly Doxiadis was the fact that Lehrman had reported his complaints and criticism to the Ford Foundation, the financial supporter of the program.[54]

At the same time, some of the foundation's high rank officials were taking as well a critical stance towards the ekistic investigations. Paul Ylvisaker, director of the Public Affairs Program and Doxiadis' most outspoken critic within the foundation, described the COF report as superficial, and complained about the expend of the foundation's grant for the purposes of that research.[55] Ylvisaker in fact as described in the previous chapter, reproached the ekistic guru for using the FF's granted funds for the purposes of COF

(2012) 'E-mail to Gerard Gutenschwager', 19 July.

[51] See, Lehrman, L. J. (1962) *Draft No.2*. Document, Ref. Code 20150. Doxiadis Archives.

[52] Actually, Lehrman's arguments jumped from one idea to another, referring to disparate concepts such as the "freedom of opinion and education", birth control, and the suspicious coalition of the intellectual elites with the government. More than a critical analysis his paper adhered to the speculative character of the Ecumenopolis.

[53] See, Doxiadis, C. A. (1963) *Lehrman Report ['Εκθεση Lehrman]*. Document, Ref. Code 18941 S-D 6299, S-D 6377. Doxiadis Archives.

[54] *Ibid.*,

[55] Reported in Winnick, L. (1989) *Philanthropy's Adaptation to the Urban Crisis 1987-1989*. Unpublished Report 012158 Chapter VII Part 3 'The Athens Center of Ekistics: The Urban World According to Doxiadis'. Ford Foundation Archives. Paul Norman Ylvisaker (1921-1992) served in the Ford Foundation's Public Affairs Program from 1955-1967. He was a city planner, government official, foundation executive, and dean of the Harvard Graduate School of Education. He was known for addressing urban renewal issues, while he made significant efforts in philanthropy eventually committing the Harvard Graduate School of Education to a public service mission. For an interesting account of Ylvisaker's involvement in urban renewal programs see, Domhoff, W. G. (2005) *The Ford Foundation in the Inner City: forging an alliance with neighborhood activists*, *Who Rules America?*. Available at: http://www2.ucsc.edu/whorulesamerica/local/ford_foundation.html (Accessed: 13 May 2015).

instead for the training of personnel related to the Islamabad project. One of the examples given by Ylvisaker was the enrollment of the American geographer Gerald Gutenschwager who ended up touring North American cities.

Paradoxically, the Ford Foundation sought to utilize and make the most of the COF archive for its own purposes, and in particular for an international survey of urbanization in the developing countries initiated in 1970. The first phase of the program involved the collection of data and was assigned to John P. Robin, K.C. Rosser and Fred C. Terzo, who established their office in the Athens Center of Ekistics.[56] As Rosser explained to Papaioannou, "they did not choose to locate their office in the desert but precisely [there] where they [knew] there [was] a lot of material".[57] At first glance, the FF urbanization survey shared the bona fide goals of the ekistic mission however placed emphasis on the development of the agricultural sectors, education, and economic programming in the developing countries, leaving in a second place the study of (and actions related to) urbanization.[58]

Even if the ekistic warnings had become more than relevant by the end of the development decade the economic priorities of the philanthropic leaders had already changed. In September 1974, the President the Ford Foundation Mc George Bundy announced that the foundation "squeezed like most private philanthropies by falling stock and bond markets and mounting inflation" was considering a 50 per cent reduction in its annual grants.[59] The final grant to the ACE's urban research programs was given in September 1972 as well for the purposes of COF. By that time, Constantinos Doxiadis' enduring enthusiasm for global urbanization problems was fading away as his fatal illness advanced.

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[56] Apparently, an office at Doxiadis' building was rented out for the purposes of the survey till April 1972.

[57] See, Papaioannou, J. G. (1970) *Material for the Ford Foundation Group*. Document, Ref. Code 19186, S-ACE 100:282. Doxiadis Archives. The FF researchers were basically interested in the material concerning the African continent and Papaioannou subsequently provided them the adequate studies.

[58] See, Psomopoulos, P. (1972) *FF and the less developed countries the decade of the seventies [FF και φτωχές χώρες την επόμενη δεκαετία]*. Document, Ref. Code 19186, S-202 4108. Doxiadis Archives.

[59] See, *Herald Tribune* (1974) 'Ford Foundation in Trouble, May Cut its Grants by 50%', 24 September. When the news spread, Doxiadis sent a letter to Bundy expressing the gratitude of the ACE and its decision to dedicate the December issue of Ekistics to "those who had the courage to support new ideas". See, letter from Doxiadis to Bundy (C-ACE 19891), dated 27 September 1974, in *Psomopoulos File: Ford Foundation Presentation, I.U.S. and Correspondence (1969-1977)* (1974). Document, Ref. Code 19186. Doxiadis Archives.

5.3 The Human Community Research Program (HUCO)

If the City of the Future project was global in scope and premised on projections, the Human Community research concerned local scales and studied the existing city. Represented on the Ekistic Grid for example, the former was classified under the Ecumenopolis scale, while the latter corresponded to the intermediate scale of a community or a town (Figure 5.7). The HUCO program was developed to provide the ekistic theory a closer perspective on urban planning or in other words to pursue in a more direct way its main objective, namely the satisfaction of the inhabitants or as abstracted, the satisfaction of Man.[60]

Doxiadis' theory was not the only theoretical postwar current that claimed to *serve* Man. The majority of the urban and architectural directions either representing CIAM's legacy or explicitly constituting anti-CIAM approaches such as advocacy planning, explored in their theories and design proposals the needs of the everyday man and claimed to defend the community's interests. Concepts such as Team 10's "human association", Yona Friedman's "mobile architecture", Kevin Lynch's "mental maps", and Christopher Alexander's "pattern language" set to understand the contemporary city through the eyes of the "user". While most of the postwar architectural discourses originated in the fervent debates staged at the CIAM congresses, their proponents openly blamed the Functional City dictum for the evils of rational planning and the fiasco of mass housing. As Eric Mumford denotes, "the most notable immediate legacies of CIAM was a situation where CIAM became the shared negative symbol of the failures of modern architecture".[61]

Doxiadis' stance towards modern urban principles was equally paradoxical: while the DA projects were built on modernism and drew on central planning principles, ekistics claimed to zoom out from myopic design practices and overtop established models or theories in order to frame anew urbanization problems and provide innovative solutions. Even if in the first place Ecumenopolis cried out the urban universality whispered during decades by CIAM members or if the Delos Symposia revived the cruise of the fourth Congress - to name the most direct connection - the ekistic theory had important deviations from modern urban planning. The best example to analyze these differences and some of the pioneering paths (or dead ends?) explored by ekistics is the Human Community research program.

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[60] Ekistics (after the Aristotelian ethics) purposed human happiness proclaiming that "the main purpose of a human settlement is to satisfy its inhabitants, that is, to satisfy man". Tyrwhitt, J. (ed.) (1976) 'C.A. Doxiadis 1913-75: Pursuit of an attainable ideal', *Ekistics*, 41(247), pp. 309–388, p. 342. Man or *Anthropos* (as denoted in Doxiadis' neologistic vocabulary after the ancient Greek word for human being), was one of the five ekistic elements, and the very first unit of the ekistic logarithmic scale.

[61] See, Mumford, E. P. (2002) *The CIAM Discourse on Urbanism, 1928-1960*. Cambridge, Mass.; London: MIT Press, p. 268

Ekistic unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Com. class				I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Kinetic field	a	b	c	d	e	f	g	A	B	C	D	E	F	G	H
name of unit	Anthropos	room	house	housegroup	small neighborhood	neighborhood	small polis	polis	small metropolis	metropolis	small megalopolis	megalopolis	small eperopolis	eperopolis	Ecumenopolis
population	1	2	4	40	250	1,500	9,000	50,000	300,000	2 M	14 M	100 M	700 M	5,000 M	30,000 M

Fig. 3: Ekistic logarithmic scales and grid: new nomenclature.

Ekistic unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Com. class				I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Kinetic field	a	b	c	d	e	f	g	A	B	C	D	E	F	G	H
population range			3 - 15	15 - 100	100 - 750	750 - 5,000	5000 - 30,000	30,000 - 200,000	200,000 - 1.5 M	1.5 M - 10 M	10 M - 75 M	75 M - 500 M	500 M - 3,000 M	3,000 M - 20,000 M	20,000 M and more
name of unit	Anthropos	Room	House	Housegroup	Small Neighborhood	Neighborhood	Small Polis	Polis	Small Metropolis	Metropolis	Small Megalopolis	Megalopolis	Small Eperopolis	Eperopolis	Ecumenopolis
ekistic population scale	1	2	5	40	250	1,500	10,000	75,000	500,000	4 M	25 M	150 M	1,000 M	7,500 M	50,000 M

Fig. 4: Ekistic logarithmic scales and grid: new nomenclature and ekistic population scale.

Ekistic Logarithmic Scales and Grid.
[Psomopoulos, P. and Perovic, M. R. (eds) (2005) 'A reader on Ekistics. Thirty years after C.A. Doxiadis',
Ekistics, 72(430 to 435), p. 68]
Figure 5.7

The HUCO research project studied the structure and characteristics of the basic urban sub-unit, which according to the authors was the smallest residential community to contain all the necessary facilities for its inhabitants. Represented at the ekistic scale as a Community Class IV, this residential scheme housed a population that ranged from 6,000 to 10,000 people and was "sufficiently large to afford opportunities for a wide range of interactions but small enough for residents to cross on foot and retain the feeling of the human scale".[62] The concept of the *walking Man* in fact, became the principal criterion for defining the optimum size of the main sub-unit, thus its character and "human" scale: according to the authors of the study, the physical dimensions of this unit led to "the formation of a community based on the proximity of people and services, a community that can be called the natural community of walking Man, or the Human Community".[63]

Though never explicitly cited, the "walking distance" concept originated in Clarence Perry's "neighborhood unit", a widespread planning model used in the design of residential districts and new towns.[64] Perry's scheme was published in 1929 by the Committed on the *Regional Plan of New York and Its Environs* and originally referred to an area of approximately 160 acres or 65 hectares. The area size corresponded to a five-minute walking radius measured from the center of the unit, while regardless of its shape the neighborhood should be flanked by arterial streets letting the interior streets only for pedestrian movement so, as often alleged, a child could walk safely to school. Accordingly, the population of the neighborhood more or less corresponded to one elementary school.[65] Finally, Perry's scheme comprised local shops, a church, and a community center, whereas 10 percent of the overall area was destined to parks and open spaces.

The neighborhood unit found a broad application in British New Towns where it conflated with the Garden City movement and Ebenezer Howard's legacy, and was widely espoused by official organizations and planners in the U.S., one of its first applications being the plan for Radburn, New Jersey.[66] Nevertheless, by the late 1940s several voices

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[62] See, the description of the Human Community project in Tyrwhitt, J. (ed.) (1965) 'Research Work of the Athens Center of Ekistics', *Ekistics*, 20(117), p. 83.

[63] See, Doxiadis, C. A. (1972) 'The Human Community (HUCO) - Foreword', *Ekistics*, 33(199), p. 489.

[64] Drawing on the origins of the neighborhood unit Larry Lloyd Lawhon describes it as "a product of a variety of institutional, social and physical design forces of the era". See, Lloyd Lawhon, L. (2009) 'The Neighborhood Unit: Physical Design or Physical Determinism?', *Journal of Planning History*, 8(2), pp. 111 –132.

[65] In the "Neighborhood Unit" theory the population ranged from 5,000 to 9,000 people, whereas a diagram that exemplified Perry's concept was drawn for 2,000 families, or 8,800 people and 1,400 children of elementary school age.

[66] In the U.S. comprehensive planning principles and the working concepts of the neighborhood unit were disseminated by the pamphlet *Action for Cities:A Guide for Community Planning* (1943). As Andrew Shanken analyzes, "[p]lanners had been working with these ideas for some time, but the pamphlet combined them in a

called to the reconsideration of this planning model in the light of ongoing deterioration and race or income segregation phenomena in the constructed residential environments.[67] Against the original intentions, day by day it was becoming clear that its physical standards had failed to bring to fruition *communal environments*, let alone wealth or equality.

On the other hand, planners still strove to define the characteristics that linked the population to a neighborhood. The sense of belonging to a place and being part of a community was discussed at the CIAM 8 congress, organized in 1951 under the theme "The Heart of the City", where the delegates implied the need to reframe the relation of modern architecture and "social collectivity" and consider "the element which makes the community a community".[68] The discussions focused on the importance of public space and the need to develop public facilities typified by the civic center, a concept that had been introduced by Sert in a 1944 essay titled "The Human Scale in City Planning".[69] At the same time, other theoretical currents explored the interest for existing cities and "informal urbanism" typified by squatter settlements, while another presentation attempted to identify the "actual limits" of the center of Paris juxtaposing drawings from different cities.[70] Finally, the neighborhood unit principles and counter-movement theories were resumed by Lewis Mumford in his article "The Neighborhood and the Neighborhood Unit", published in 1954. Among other projects, the American historian referred to a study conducted by Chambert Lauwe that analyzed the everyday trajectories of the Parisians in relation to their professional occupations. Most importantly, Mumford opened his article posing the question about whether the neighborhood unit actually exists, especially within historic cities.[71]

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manual for the lay public, making them popular, practical, and canonical". See, Shanken, A. M. (2009) *194X: architecture, planning, and consumer culture on the American home front*. Minneapolis: University of Minnesota Press (Architecture, landscape, and American culture series), p. 22.

[67] In a report prepared for the American Society of Planning Officials in 1960, Jerrold R. Allaire names Reginald Isaacs, then Director of Planning for Michael Reese Hospital in Chicago as the most vocal critic of the neighborhood unit: "Isaacs rebelled at what he felt was an almost unanimous endorsement of the neighborhood unit as the panacea for all urban ills" soon to find out that he was not alone. See, Allaire, J. R. (1960) *Neighborhood Boundaries*. [Online] Information Report No. 141. American Society of Planning Officials. Available from: https://www.planning.org/pas/at60/report141.htm [Accessed: 29 April 2015].

[68] As Mumford argues, being "the first Congress after the beginning of the Cold War, CIAM 8 was also part of the postwar CIAM effort to find some new basis for an architecture of social collectivity other than socialism". See, Mumford, *op.cit.*, p.203, 215. Despite the criticism to the planning principles that undermined the neighborhood unit, one of the three proposed themes for discussion at CIAM 9 was "the walking radius [of the dwelling] as a universal problem".

[69] *Ibid.*, p. 151.

[70] *Ibid.*, p. 209-211.

[71] Mumford used as references Paris and Venice, where he had began and consequently revised his article. See, Mumford, L. (1954) 'The Neighborhood and the Neighborhood Unit', *The Town Planning Review*, 24(4), pp. 256–270. Chambert Lauwe was a French sociologist who influenced Constant and was therefore cited in

When Doxiadis initiated the Human Community research project the neighborhood unit concept was completing a life cycle from conception and implementation to severe criticism. And yet, the application of its principles did not diminish in lack of alternative planning patterns with such clear guidelines. On the contrary, the increasing housing needs required the application of planning standards for developing new settlements or regulating the existing ones, including fast growing informal settlements mushrooming in the urban outskirts.[72] Doxiadis had faced these issues in creating from scratch extended residential schemes, especially in developing countries. Actually, DA had already carried out numerous projects using the basic pattern of the Human Sector, that is, a 2km by 2km module of mixed use zoning where the maximum walking distance was of half-hour, or a mile and a half (Figure 5.8). Doxiadis therefore initiated the HUCO program in order to define *scientifically* the module used in DA plans. In that sense, his interest in studying and defining further the basic urban unit was not academic but in a first place practical.[73] For the definition of an urban module was expected to ameliorate the Dynapolis model and justify its advantages not only in the urban and regional scale but as well in the community scale. In effect, the HUCO research project aimed to bridge the gap between the ekistic theory and DA practice, providing both a theoretical background and a design methodology.

On the other hand, the re-definition of the urban module was compelled by the emerging global urbanization patterns and the coming Ecumenopolis. Against the rapidly sprawling city the unit of the urban block had lost its relevance as a planning standard, much alike modern urbanism had lost the human scale.[74] In order to plan the City of the Future and ensure the human aspect of Ecumenopolis Doxiadis needed to define a small scale community that preserved such characteristics. This basic unit existed within the city of

the "New Babylon" project, one of the most radical and imaginative urban concepts linked to the Lettrist International *Unitary urbanism* and Guy Debord's psychogeography.

[72] In the case of U.S. planning the neighborhood unit concept was revised as well after the National Housing Act of 1954 that specified requirements "for a community to become eligible for certain forms of Federal assistance in the planning and execution of urban renewal programs". See, Allaire, *Neighborhood Boundaries*, *op.cit.*,

[73] Seen from another angle, the HUCO research program was launched to test and evaluate the principles already implemented in DA schemes. In some cases in fact, the terms "Human Sector" and "Human Community" were used interchangeably. For example, one of the first official documents of HUCO submitted to the Rockefeller Foundation had appended figures from the DA master plans of Baghdad and Islamabad as examples of the application of the "human community". See, Doxiadis, C. A. (1960) *The Human Community: a pilot study of the human scale in the Athens metropolitan area*. Document, Ref. Code 17350 R-EATI 76. Doxiadis Archives, p. 10. In fact, the term "human community" principally referred to the broader planning principles and the research study, whereas the "human sector" term was mainly used for the pattern used in DA urban plans. For the purposes of this thesis these terms will be used as such.

[74] Doxiadis compared the insignificant scale of the city block in the global city to a grain of sand in a plate. See, Doxiadis, C. A. (1961) *Discussion on HUCO [Συζήτηση για HUCO]*. Document, Ref.Code 22702 S-D 3275. Doxiadis Archives.

Fig. 57
The human
community
sector of
western
Baghdad

sector
 1 mosque
 2 school
 3 market
 4 public baths
 5 coffee houses
 6 administration
 7 red crescent
 8 cultural center
 9 public health center
10 police station
11 shops
12 public park
13 sports ground
14 open-air theater
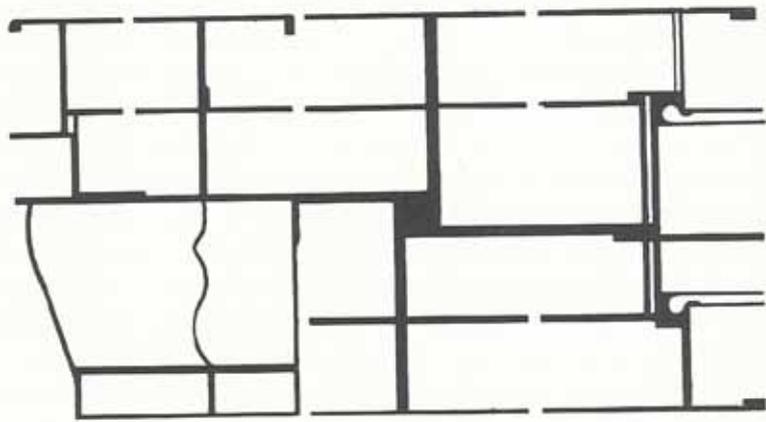
pedestrian
roads
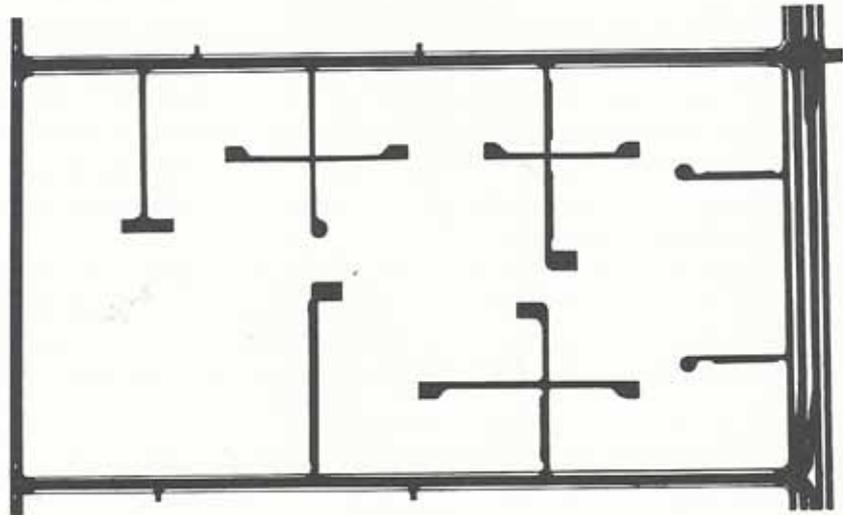
vehicle
roads

The Human Community Sector.
[[Doxiadis, C. A. (1966) `. Chicago: Public Administration Service, p.148]
Figure 5.8

269

the past and HUCO aimed to identify it and reach conclusions regarding its size, population, density, and internal organization. The definition of the *new* urban module therefore had to result from the study of an existing city that had evolved through time. To prove his hypothesis Doxiadis set to analyze his hometown Athens.

The research proposal to the Rockefeller Foundation

The HUCO project was launched in 1961 and was initially co-funded by DA revenues and a Rockefeller Foundation grant, somehow a rare case of a Greek institution's funding considering the shifting of priorities and geographical focus from Europe to developing nations in Asia, Middle East, and Latin America during the postwar years and according to Cold War strategies.[75] At the time, the Rockefeller Foundation (RF) was promoting above all in the U.S. interdisciplinary programs aiming to bridge the gap between scholarship and practice, while on the other hand, it augmented the financial support to initiatives related to urban design.[76] The Athens Center of Ekistics and the Human Community research program fell under both categories.[77]

The discussions on funding HUCO begun in December 1959, when Charles Burton Fahs, the then Director of the RF Humanities Division visited the ACE. Some months later, in June 1960, the Associate Director Chadbourne Gilpatric traveled to Athens and discussed with Doxiadis and Iatridis the research proposal eventually submitted to the RF in September 1960, as "The Human Community, A Pilot Study of the Human Scale in the Athens Metropolitan Area". Fahs - who was specialized in international studies and had

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[75] During the interwar period the Rockefeller Foundation was involved in Greece, supporting financially two major projects of national importance, namely the excavation of the Ancient Agora and the control of malaria. The first project was advanced by the American School of Classical Studies at Athens and comprised both extended excavations and the reconstruction of the Hellenistic Stoa of Attalos as the museum for the recovered antiquities. The second project directed by the International Health Division (IHD) of RF purposed the systematic control of malaria epidemic and the improvement of Greece's public health system. See for example, Giannuli, D. (1998) '"Repeated Disappointment": The Rockefeller Foundation and the Reform of the Greek Public Health System, 1929-1940', *Bulletin of the History of Medicine*, 72(1), pp. 47–72. Both of these projects unfolded in a volatile political context and were conditioned by the influx of hundred of thousands of Greek refugees after the Great Fire of Smyrna in September 1922. Among the politicians who headed campaigns for the pressing health and sheltering needs of the repatriated Greeks, was the Minister for the Resettlement of Refugees, Social Welfare and Public Health, Apostolos Doxiadis, the father of Constantinos.

[76] Throughout the 1940s and 1950s, the RF funded both the establishment of Columbia University's Institute for Urban Land Use and Housing Studies and the University of Pennsylvania's Institute for Urban Research. Moreover, it conceded important grants to Harvard, Yale, the Massachusetts Institute of Technology, and the University of California promoting urban design curricula, supporting publications, and the organization of a 1958 conference on urban design featuring distinguished participants such as I.M. Pei, Lewis Mumford, Louis Kahn, and Jane Jacobs. See, *100 Years: The Rockefeller Foundation* (no date). Available at: http://rockefeller100.org/exhibits/show/social_sciences/urbanization (Accessed: 30 April 2015).

[77] Another possible reason for the RF's financial support to the ACE was the competition between the U.S. philanthropic institutes that used their influence and diplomacy as "soft power" policies in exchange of solidifying their relation with the U.S. establishment. As already said, the "City of the Future" research project had been initiated one year earlier with a Ford Foundation grant.

studied Japanese language, culture, and politics - was one of the proponents of area studies within the RF, and especially of university programs in the humanities and the social sciences.[78] On the other hand, Gilpatric had a deep interest in urban design. Characteristically, he became the man behind a project that paradoxically was acclaimed as a pathbreaking critique to established practices and criticized as the naive housewife's vision on urban life, namely Jane Jacob's *The Death and Life of the Great American Cities* (1961). The pilot study submitted to RF described the framework and guidelines of the research, more or less reiterating the main points of Doxiadis' urban crisis discourse. Calling for action in view of the deteriorating cities the proposal outlined the basic problems and needs of urban development, herein classified in two categories, namely the *structure* and *texture* of the city. Within the first category the city was examined as a system of inter-related functions, whereas the ambiguous term "texture" referred to the basic pattern whose rational repetition would "lead gradually to the formation of well organized cities".[79]

At any rate, the study set the bar high and proposed to analyze the economic, social, technical, political-administrative, and cultural-aesthetic urban conditions. Carrying out the proposed analysis was not an easy task, nevertheless perfectly fitted the programmatic requirements of the RF. In this respect Doxiadis' research proposal emphasized that the interdisciplinary approach provided "the best opportunity for arriving at practical solutions which have value in application".[80] The project was designed to last for two years, had an estimated budget of $150,000, and proposed as a case study the city of Athens. As argued, Athens had the average characteristics of a 2 million people metropolis and the typical problems of "transportation, industry, expansion, [and] land use separation".[81] Moreover, because of its ancient and medieval past, Athens "offered" to the researchers the opportunity to study the evolution of the human community through time. Finally Doxiadis suggested that the geopolitical situation of Greece, a country "in development" (i.e., not a developing country...) between North and South broadened the scope of the study and therefore the applicability of the results.[82]

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[78] Both Fahs (1908-1980) and Gilpatric (1914-1989) during World War II hold crucial posts in the Office of Military Strategic Services, the first one at the Far Eastern Division, while the latter in London and Germany. Moreover, from 1947 to 1949 Gilpatric served in the Central Intelligence Agency in Washington.

[79] See, Doxiadis, *The Human Community: a pilot study of the human scale in the Athens metropolitan area, op.cit.,* p. 2.

[80] *Ibid.*, p. 6.

[81] *Ibid.*,

[82] *Ibid*. Actually, the "Capital of Greece" research project explored Athens as a paradigm of urban development.

HUCO was officially launched in March 1961, financed by DA revenues and a RF grant of $100,000. During its first years, the study was directed by Doxiadis himself, while after 1964, Iatridis took over as project manager. The main research team comprised DA and ACE collaborators joined by foreign experts who contributed with scientific or scholar investigations from their respective knowledge areas, whereas occasionally ad hoc consultants were employed on a part-time basis. For example, the first HUCO meeting was attended by Doxiadis and chief associates (Iatridis, Papaioannou, Pappas, Piperoglou, and Psomopoulos), along the sociologists Otto Pollak and Vincent Whitney from the University of Pennsylvania, Jacqueline Tyrwhitt and Richard Meier as guest participants. In addition, Suzanne Keller, a Professor of Sociology in Princeton University, J. Virirakis a Greek architect specialized in system analysis, and T.W. Fookes, a geographer-planner from New Zealand, made considerable contributions among economists, statisticians, engineers, and computer scientists recruited for the purposes of the research project. Numerous reports, extended publications, and a bulk of internal correspondence register a pathbreaking and complex endeavor that came to last over a decade.

The first meeting took place in August 1961, and was wrapped in abstract thoughts that spanned from the size of the community to issues of governance or means of communication, while some disparate approximations even considered the mental health of the inhabitants or the issue of urban riots. A report prepared by the invited sociologists Pollak and Whitney who joined the project for a three weeks time, summarized their impressions and proposed methodologies for developing the project in short and long-term basis. Naturally, their proposals derived from a sociological approach and suggested the "identification of study areas" according to their spatial characteristics and the composition of the population, using for example variables such as the income level. For the understanding and therefore definition of the community pattern that according to Doxiadis' hypothesis provided "a more satisfactory life than communities based on other scales", the study should primarily consider "the existing patterns of relationship and activities" within a sample of neighborhoods.[83] In order to do so, the sociologists argued, the research had to analyze the time the user spent in different activities within his/her neighborhood or out of it.

Finally, for the purposes of a long-term program, Pollak and Whitney suggested to consider as well everyday life activities like children raising or the study of *social-psychological* factors, such as the stress of a community's inhabitants. The sociologist even made a reference to the "defensive dispersal" planning theory and the new anxieties

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[83] See, Pollak, O. and Whitney, V. H. (1961) *Draft for Discussion: Rockefeller Grant Project - HUCO in Athens*. Document, Ref. Code 18394. Doxiadis Archives.

created by a looming nuclear warfare, wondering "whether shelter facilities in the center of the human community will not contribute more to the satisfactory life of the inhabitants than playgrounds and shopping facilities"![84]

Naturally, the first meeting on HUCO ended with a long list of proposals for developing further the research, and crucial questions concerning its cornerstone concepts. Progressively, it became clear that easily spelled concepts such as the "satisfactoriness" of a community's inhabitants were not just the outcome of design parameters, but they had to be studied in a sociological and even behavioral perspective. More than a mixture of facilities, design specifications, and planning measures, the "human community" was a pattern of social organization. As the researchers delved into the theoretical underpinnings of the "human community" instead of defining its spatial characteristics they had to take a step back and debate the very notion of "community". To these ends, the contribution of the sociologist Suzanne Keller gained in importance.

The sociological perspective in HUCO

Suzanne Keller (1927-2010) was a north-American sociologist often remembered as the first tenured female faculty member of Princeton University. She joined the Athens Center of Ekistics from 1963 to 1965 on a Fulbright grant and afterward she was contracted for a year on a full-time basis. From 1966 onward, Keller collaborated periodically with the ACE for purposes of the HUCO research project in tandem with delivering lectures and participating in its seminars.[85] Progressively, she endorsed the ekistic agenda and put an effort to establish a trustworthy sociological perspective within the self-proclaimed science. Since the very beginning, Keller expressed a deep interest in applied research and therefore in HUCO. In tune with the times and the contemporary debate, she analyzed the concept of the community drawing on contributions both from planners and sociologists, while at the same time she explored the differences between planned and unplanned communities. Keller in fact, was one of the project's most energetic participants and eventually she was entrusted the editing of the Human Community book.[86] It would not be far-fetched to say that Keller was the sociological voice within ekistics.

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[84] *Ibid.*,

[85] Keller returned to the U.S. in 1966 and became a visiting lecturer in sociology, while two years later, she was named professor of sociology in Princeton. She is the author of "Beyond the Ruling Class: Strategic Elites in Modern Society" (1963), and "Community: Pursuing the Dream, Living the Reality" (2003), to name her most popular publications.

[86] To that end, she composed a bibliography on community planning studies and outlined an introduction that would make the book comprehensible to a general audience. Nevertheless, the publication of the research's overall results was never meant to see the light of day. See, letter from Keller to Doxiadis, dated 27 of July, 1970, in *KELLER, S.* (no date). Document, Ref. Code 17844. Doxiadis Archives.

Keller, as most of Doxiadis' companions, was inspired by his vision and commitment to the betterment of human settlements, a mission that was not confined in academic circles but used multiple platforms for debate and dissemination. In the end, Doxiadis was not just the ekistic guru but as well a renowned practitioner whose theoretical principles were allegedly put in practice and tested out in the extended planning commissions of his firm. This combination of theory and practice opened a window to empirical findings that could be used to support or refute assumptions equally made about new town or urban renewal schemes. One of the most pertinent debates of the mid-1960s in fact, concerned the fusion of social and physical planning in view of the deteriorating urban environments developed after quantitative criteria (area size, density, population) and models such as the "neighborhood unit".[87] On the other hand, Doxiadis' insistence on holistic architecture and the interdisciplinary platform of ekistics offered the social scientist an opportunity to participate from the conception to the implementation of planning schemes. As such, Keller acknowledged not only Doxiadis' efforts to define standards or criteria for the "human community", but as well his persistence in actually developing and testing his ideas. In her own words, "he could not stop with originating the recipe, he had to cook".[88]

Despite her sociological background, Keller espoused Doxiadis' systematic thinking represented in grids and analyzed in interlocking scales that facilitated the coexistence and merging of theoretically controversial concepts. For example, in an article titled "Social Class in Physical Planning" Keller analyzed the pros and cons of building mixed communities and presented a number of alternatives for planners who sought to incorporate a sociological perspective in their plans. One of the discussed alternatives was the planning of one-class neighborhoods in tandem with mixed communities.[89] This concept was exemplified by Islamabad, which according to Keller was a successful combination of planned homogeneity at the neighborhood level and heterogeneity at the community level where common services and facilities were provided to ensure the mixing of classes. All in all, Keller praised Doxiadis for his "courage, vision, ambition, charm, and super-charisma" and appreciated his influence not only in the field of planning but as well in social sciences.[90]

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[87] See, Iatridis, D. (1966) 'Social Scientists in Physical Development Planning: a practitioner's viewpoint', *International Social Science Journal*, XVIII(4), pp. 473–493.

[88] See, Keller, S. (1980) 'Planning at two scales: the work of C.A. Doxiadis', *Ekistics*, (282), pp. 172–174.

[89] See, Keller, S. (1966) 'Social Class in Physical Planning', *International Social Science Journal*, XVIII(4), pp. 494–512.

[90] See, Keller, 'Planning at two scales', *op.cit.*, p. 172. In the preface of her book *Community: pursuing the dream, living the reality* (2005), Keller includes an anecdote where she explains that her acquaintance with Doxiadis opened several doors of opportunities.

Conversely, Keller was herself a great asset to the ACE. She propagated the ekistic center to an array of U.S. experts some of them invited for lecturing, consulting, or participating in its International Programs. On her return to the U.S., Keller even sought to associate the projects of the ACE to Princeton University programs.[91] Doxiadis, in his turn, responded enthusiastically when Keller asked him to write the preface to her book *The Urban Neighborhood: A Sociological Perspective* (1968).[92] All the above reflect the good chemistry between the planner and the sociologist who took every opportunity to reassert their common objective of planning a human city for the future.

During her stay in Athens and for the purposes of the HUCO program Keller issued a report eloquently titled "Neighbors, Neighboring, and Neighborhoods in Sociological Perspective" (1965). Her paper outlined the concept of vicinity and the importance of small scale communities in the light of the dilemma of preserving and strengthening local units as places of "social cohesion, compactness, and communication", or carrying its functions through other social structures and spatial units.[93] According to the American sociologist, a neighbor had to be examined as "a distinct social category", while neighboring comprised a range of activities that should be examined according to their formal or informal character, *intensity*, or natural setting (i.e.,home, front door, street, etc.,).[94] Sociological concepts invariably applied to and had practical implications for physical planning and development.

Though some arguments tended to be rhetorical, or even banal, Keller's paper made some interesting points that proposed a different focus for the HUCO program. First and above all, it became clear that physical planners and social scientists had definitely different concepts for the word "neighborhood". Whereas a social scientist understood the neighborhood as a sub-unit and structural component of the community, a planner principally associated the term to Perry's theoretical scheme. Inasmuch, Keller claimed that the distinction between the two concepts was also "that between planned and unplanned neighborhoods".[95] Her paper continued raising certain questions about the

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[91] Keller was willing to apply the questionnaire used in HUCO for the purposes of a Princeton new town research program, and in exchange share its results with the ACE. See, letter from Keller to Doxiadis, dated 27 of July, 1970, in *KELLER, S. op.cit.,*

[92] See, Doxiadis, C. A. (1967) *Preface*. Document, Ref. Code 18022 C-ACE 6632. Doxiadis Archives and the introductory letter dated 10 April 1967

[93] See, Keller, S. (1965) *On Neighbours, Neighbouring and Neighbourhoods: fact and theory*. Document, Ref. Code 19427 RR-ACE:68(105), p. 2. This document outlined the main points of Keller's study and was accompanied by a letter of Doxiadis, dated 6 December 1965 where he expressed his interest and made further comments. Keller's final report was eventually published in ACE report series as "Neighbors, neighboring, and neighborhoods in sociological perspective: a discussion of concepts and selected findings"

[94] *Ibid.*, p. 3

[95] *Ibid.*, p. 3

socio-political aspects of the neighborhood, and pointed to the "neglected factor of social class in physical planning".[96] Keller's report, however, did not challenge Doxiadis' views instead reiterated some of his basic arguments. One of the main conclusions was the need to examine the neighborhood in the context of the rapidly urbanizing world. In a Doxiadis-esque fashion, Keller reflected on the role of planning and design in view of the changing urban conditions that invariably had a considerable impact on "the fate of the local unit in the coming metropolis". In that way, her approach went full circle back to the theoretical binary of locality-universality, and eventually echoed the ekistic cause, that is, the need to plan the "human community" within the Ecumenopolis. Several years after, Keller still argued for the need to consider the small community, not "as an alternative to the modern megalopolis but as a companion to it".[97]

Defining boundaries

Defining the urban module did not just involve exploring the different interpretations of the neighborhood concept, but as well concerned its spatial definition. One of the principal problems of HUCO, the first and necessary step prior to the analysis of the communities' characteristics, was the delimitation of the case studies that practically signified the demarcation of boundaries of the Athenian communities. Identifying neighborhoods in a community scheme or a new town apparently was not a great burden, nevertheless in the case of a consolidated urban area or a historic city the complexity of the task depended on the local conditions and morphology.[98] Athens was fairly a complex case: a city of great history, and yet a short-aged capital whose poor cadastre barely survived the Ottoman rule and was furthermore perplexed by black market acquisitions during the German Occupation. Postwar Athens in fact, was an unplanned and yet rapidly expanding city due to popular self-construction practices, facts that certainly hardened its analysis according to planning standards.

The methodological approaches to the demarcation of boundaries used at the time were manifold and depended on the objectives of the study. In his report to the American

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[96] *Ibid.*, p. 4.

[97] See, Keller, S. (1988) 'The American Dream of Community: An Unfinished Agenda', *Sociological Forum*, 3(2), pp. 167–183.

[98] One of the most characteristic images related to the analysis of an existing city was the scheme known as the London "bubble diagram", drawn by Arthur Ling and D.K. Johnson in 1943 as part of the Sir Leslie Patrick Abercrombie and John Henry Forshaw's comprehensive 1943 "County of London Plan". This peculiar diagram accompanied the "Social and Functional Analysis" of a plan aimed to provide the guidelines for the development and reconstruction of London. As Shanken accounts, the image accompanied the "Social and Functional Analysis" and more than anything else provided an alluring example for the cover of *Fortune* of January 1944. See, Shanken, *194X, op.cit.*, p. 37-38.

Society of Planning Officials, city planner Jerrold R. Allaire explained the criteria employed in such studies that apparently had multiplied in the United States after the introduction of the National Housing Act of 1954, which described the requirements for "a community to become eligible for certain forms of Federal assistance in the planning and execution of urban renewal programs".[99] The criteria of identifying neighborhoods included for example the physical boundaries or major streets of an area, census tract boundaries used for statistical purposes, focal points such as institutions, landmarks, and popular places, and finally criteria based on *communal* features, like ethnic enclaves or the facility service areas. Since all methodologies had pros and cons Allaire recommended a combination of different approaches to meet the needs of each study, and emphasized that "more than a design problem, the task [of choosing and applying delineation criteria] becomes a social problem, a political problem, and an economic problem".[100]

Doxiadis on the other hand, claimed that the problem of the identification of neighborhoods was a *scientific* one, even if he knew that eventually the selected criteria would have to match the case of Athens. Considering for example the location of the elementary schools, a milestone criterion in neighborhood unit design often used as the principal facility in drawing boundary lines, Doxiadis downplayed its significance commenting that most of them in Athens used rented buildings and therefore their location was more coincidental than actually prescribed in a community.[101] Established districts according to police departments or administrative boundaries were equally discarded as "arbitrary and not rational", whereas focal points such as the location of churches were considered insignificant. Doxiadis in fact, considered more important the criteria related to local factors, such as the name of a locality or the historical evolution of a community, nevertheless understood that these methodologies required additional time-consuming studies. Topographical features and infrastructure (denoted as *man-made obstacles*), instead were taken in account. Eventually, Doxiadis agreed to use a combination of criteria for demarcating neighborhood boundaries, however advised his collaborators to place emphasis on the central functions considered indispensable to the inhabitants' ordinary activities. These were principally commercial uses (groceries, bakery shops, etc.,), basic entertaining facilities, and of course, public facilities such as schools or sports installations. As such, the focus of the study became the everyday life and the economic transactions within a community. As Doxiadis asserted, "we should not forget that what we try to do as a scientific group has already been done by the population and the

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[99] See, Allaire, *Neighborhood Boundaries*, *op.cit.*

[100] *Ibid.*, p. 10.

[101] See, Doxiadis, C. A. (1962) *Thoughts on the Demarcation of Community Boundaries in the HUCO project (HUCO Committee meeting 30.10.62)*. Document, Ref. Code 28551 R-HUCO 12. Doxiadis Archives.

merchants".[102]

Eventually, different methodologies were employed and a series of extended field surveys were undertaken toward the definition of the Athenian neighborhoods. While an analysis of such operations would take this thesis too far, an overall description is suffice to understand Doxiadis' persistence on defining an urban module based on "scientific" methods, even if this meant conducting painstaking and costly procedures. Above all, the manifold approaches to the demarcation of boundaries evinced the theoretical and methodological difficulties for defining what a neighborhood is, a problem that Doxiadis sought to resolve by bringing together sociological perspectives and mathematical models.

The first step for dividing the metropolitan area of Athens in neighborhoods was based on the empirical knowledge of a group of planners from DA and ACE and the information acquired from censuses, maps, and aerial photographs. This preliminary division was complemented by a field operation performed in 1961 titled the *Overall Survey* and resulted to the definition of 189 Class IV Communities, that is, neighborhoods corresponding to the "human community" concept. Some months later, the ACE performed another survey called the *Verification Operation* (1962). Its task was to collect raw (non-registered) data on the spatial structure, land uses, facilities, and population of Athens. This was a thorough census that practically registered the location of almost every public service and private facility in the city(!). The analysis that followed the second survey applied the combination of criteria as specified by Doxiadis in the aforementioned internal report, and resulted in the identification of 286 (instead of 189) Communities Class IV.[103] Finally, a third survey completed the field operations and the collection of data, this time based on questionnaires. The so-called *Household Survey* was a six-month operation that surveyed some 3,500 households in 18 communities, a sample of the 286 identified communities. The questionnaire collected information regarding the inhabitants, their residencies, and the neighborhood, focusing on the resident's participation in community organizations, his/her journeys to community facilities and to public services, and the allocation of time spent in the vicinity.[104]

The *Household Survey* was followed by a series of reports that analyzed the collected questionnaires. The "time allocation study" of the statistician and project manager Petros

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[102] *Ibid.*,

[103] See the criteria list in Tyrwhitt, J. (ed.) (1965) 'Research Work of the Athens Center of Ekistics (part B)', *Ekistics*, 20(117), p. 86.

[104] *Ibid.*, p. 92 The questionnaire had as well an ethnographic perspective, since the interviewers included observations "on the type and condition of the house and its furnishings, the setting of the interview and the attitude of the respondent towards it".

Pappas for example, analyzed how, when, and where the Athenians spent their time, thus associating their basic activities to a spatial-temporal framework.[105] Another study headed by John Virirakis used a variable of the questionnaire dubbed *satisfactoriness* to associate the "index of satisfaction" of a community to the income or educational level of its inhabitants.[106] Based on the same data another article titled "social contacts within a community" attempted to formulate a model in order to represent the social interactions within the 18 selected communities (each one of them of approximately 70,000 people) and the variables that influenced them, for example "tradition", "number of friends", or "location".[107]

All together, the above studies sought to ground HUCO on social research and define the concept "neighborhood" after the answers of a representative sample from the Athenian population. Nevertheless, statistical surveys pose certain problems that start from the design of the questionnaire and end with the very interpretation of the results. Keller for example questioned the findings of the surveys since she considered the sample of the interviewed inhabitants "strongly biased in favor of 'spatially-bound- residents".[108] As such, and playing the devil's advocate, the American sociologist challenged the outcome studies claiming that they reproduced a popular and somehow axiomatic view in favor of the local community.[109] As she remarked, "one can look at the materials in a number of ways and reach different conclusions".[110]

On the other hand, the analysis of the questionnaires provided as well information on the importance of facilities for the local centers and their frequency of use by the residents of the area. According to Doxiadis, the "central facilities" criterion was the most relevant for the demarcation of boundaries and the spatial analysis of the Athenian communities. The graphic representation of these findings was a series of star-like schemes that depicted the residents' journeys to specific facilities, for example to bakeries, grocery stores, flower

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[105] The study concluded that more than one in every three adult males worked on Sundays (working activity), that men had outdoor leisure activities in higher proportion than women (recreation), or that shopping was primarily taking place during weekdays, to give some examples. See, Pappas, P. and Virirakis, J. (1972) 'Residents' activities and journeys to work', *Ekistics*, 33(199), pp. 492–498, p. 493 These findings were classified according to the age or income of the respondents, and were prepared as an interest-group analysis.

[106] See, Virirakis, J., Crothers, R. J. and Botka, D. (1972) 'Residents' satisfaction with their community', *Ekistics*, 33(199), pp. 499–502.

[107] *Ibid.*, pp. 501-502.

[108] See, Keller, S. (1971) *The Non-Local 'Community' in HUCO*. Document, Ref.Code 22702. Doxiadis Archives.

[109] *Ibid.* Keller instead favored an approach of equal distance between "the two tendencies of modern urban life towards localism and towards urbanism".

[110] *Ibid.* Ironically enough, Keller's words were at odds with Doxiadis' claims to (his) objectivity and scientific truth.

shops, indoor cinemas, churches, etc. (Figure 5.9).[111] As alleged, studying the everyday life of the inhabitants and getting their opinion about the structure and function of their community, confirmed to a great extent the results of the *Verification Operation* that in a first place was premised on the experience and assumptions made by the researchers. Doxiadis however insisted in developing HUCO after scientific criteria and using different methods that accordingly represented the complexity of the research. As such, the ACE developed a third study based on a mathematical model and the principle of minimization of energy aiming to validate or refute the outcome of the sociological analysis. The new approach to the "neighborhood problem" belonged to the advanced phases of HUCO, and typified a broader theoretical stream within ekistics that sought to integrate mathematics in urban analysis.

The principle of minimization of energy

In 1969, John Virirakis, an architect *turned to* mathematician for the purposes of HUCO, published in Ekistics a paper titled "Minimum Effort As A Determinant Of The Area, Population And Density Of Residential Communities". Its main hypothesis was that "the emergence and growth of cities [could] be interpreted as a social phenomenon arising from people's need to achieve maximum contact, communication and interaction with the least possible effort".[112] A follow-up article of his research was published in 1972 under the title "The minimization of energy as determinant of the grouping of community facilities" and suggested the development of "a theoretical model for the [optimal] distribution of units of community facilities (for goods and services) over a city so as to minimize the energy expended in residents' trips for their use".[113] In both articles and throughout his whole research, Virirakis used mathematics, charts and graphs in order to associate the spatial characteristics of a neighborhood such as its density, area, and population to the "effort" made, or the "energy" expended.

In a first place, the "minimization of energy" concerned the mobility of residents that as alleged corresponded to the lengths of their daily trips. In some cases however the same principle alluded to market concepts such as the establishment of trade, the demand and supply of assets, the cost of a product, or the purchasing power of the citizens.[114]

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[111] See, Tyrwhitt, 'Research Work', *op.cit.*, pp. 104-107.

[112] See, Virirakis, J. (1969) 'Minimum Effort as a Determinant of the Area, Population and Density of Residential Communities', *Ekistics*, 27(163), pp. 362–371.

[113] See, Virirakis, J. (1972) 'Minimization of energy as determinant of the grouping of community facilities', *Ekistics*, 33(199), pp. 503–511.

[114] *Ibid.*,
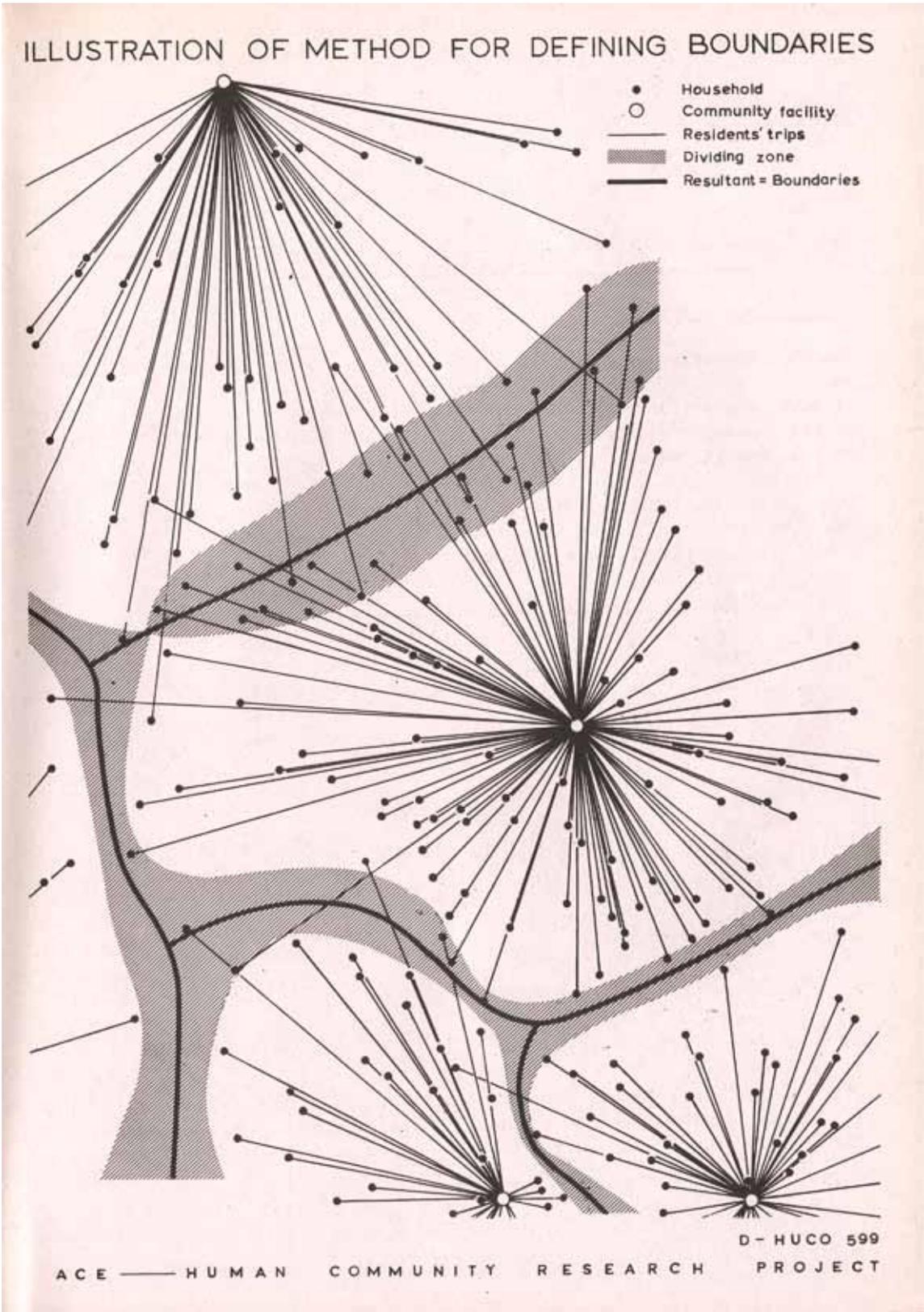
Star networks featuring community facilities as central nodes. Illustration of Methods for Defining Boundaries D-HUCO 599.
[Tyrwhitt, J. (ed.) (1965) 'Research Work of the Athens Center of Ekistics (part B)', *Ekistics*, 20(117), p.103]
Figure 5.9

281

The aim of the second article in particular was to provide an explanation for the spatial distribution of facilities and services within the urban module. All together, the city was conceived as a set of interconnected elements, in effect a system of variables that was regulated by the *desire* or tendency of the residents to spent less energy, be it time, traveled distance, or money. In this respect, Virirakis premised his studies on the actions of the *anonymous protagonists* of the city, that is, its own inhabitants. To put it in another way, Virirakis' research was the scientific-wise way to support Doxiadis' hypothesis about the importance of "the population and the merchants" as urban agents.

In order to explore the research hypothesis with mathematical formulas, Virirakis had to make a series of assumptions, such as for example that "the number of units for each facility in the urban system mainly results from the desire of residents to minimize the energy they expend to obtain that facility", or that the trajectories of the users to the selected facilities were horizontal and linear.[115] The findings pointed to two main tendencies that arguably contributed to an economy in the spatial distribution of facilities. At the city scale, the minimization of effort required the "maximum possible fragmentation of facilities" into different networks, whereas at the local scale it postulated the clustering of facilities either of the same family "for better opportunities of choice", either of different types that featured a similar frequency of use.[116] The combination of the two tendencies therefore, accounted for the distribution of networks of facilities instead of isolated establishments. In practice however, this "mechanism of city functioning", to use Virirakis' term, varied according to a multitude of variables that ranged from the urban topography to the social structure. In that respect, the mechanism was a dynamic element itself and "subject to continuous readjustments imposed by the continuous growth of the city".[117] Though these conclusions were somehow empirical or even biased, by connecting the area, density, and population of an urban unit to the energy expended by the residents in their daily trips to selected facilities, Virirakis' model pointed to the concept of the compact city.[118]

Even if Virirakis did not provide bibliographic references, his assumption was most probably inspired by Zipf's Law, a theory initially formulated in the early 1930s as a model

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[115] Virirakis, 'Minimum Effort', *op.cit.*, p. 362.

[116] Virirakis, 'Minimum Effort', *op.cit.*, p. 363. The first tendency was called clustering by cohesiveness, while the latter clustering by adhesiveness.

[117] *Ibid.*, p. 365.

[118] The term "compact city" was coined in 1973 by the mathematicians George Dantzig and Thomas L. Saaty but was principally associated with the critique of modernist urban planning and the movement spurred by Jane Jacobs' work. Virirakis' study was not directly associated to neither of the above but used a mathematical model to argue for density instead of sprawl.

for linguistics progressively transferred and generalized to other disciplines after the publication of Zipf's seminal book *Human Behaviour and the Principle of Least Effort: An Introduction to Human Ecology*, in 1949. George Zipf's empirical law and its theoretical branches implied that people use the least effort or the "path of least resistance" in order to achieve their goals. This hypothesis was typified in architectural theory by images of worn down paths or foot-trails left after the first snowfalls, basically diagonal lines illustrating the shortest route available between an origin and a destination. These trails otherwise called "desire paths" became a popular metaphor for turning the attention of designers and architects to behavioral sciences and crowd dynamics. In order to give a mathematical expression to the minimization of energy principle Virirakis used the rank-size distribution, and in particular an elementary formula described by the equation P·R=Constant, where P was the population and R the radius of each community represented ideally by a circular area.[119] The rank-size distribution or rule was a mathematical relation broadly used at the time to represent ranking data used for example for the classification of cities according to their size. Nevertheless, like other empirical laws developed after mathematical statistics (i.e., Zipf's law) the rank-size rule was neither accurate nor scientific in its reasoning. Instead it represented a practical approach that naturally had numerous deviations, what is broadly called a rule of thumb.

One of its most widespread applications was (and still is) the description of the relationship between the population size and population rank of the cities of a region, a nation, or even the world. In a similar vein, Virirakis applied the rank-size rule to compare the characteristics of the 286 Athenian communities surveyed in HUCO. The result was that the ranking of these communities "conformed surprisingly well" to the overall theoretical model.[120] Developing further the mathematics of the model, it was found that the most important parameter in defining the magnitude of communities was the population density.[121] Virirakis' research concluded with some implications of these observations for the development of Athens and confirmed anew the demarcation of boundaries, this time based on mathematical equations.

All together, Virirakis' contribution to the HUCO research program typified within ekistics the growing interest in using mathematics for the purposes of spatial analysis, as manifested throughout the 1960s in urban and regional planning. This quantitative

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[119] This part of the research was summarized as "a mechanism of adaptation of community sizes to changing densities". See, Virirakis, 'Minimization of energy', *op.cit.*, pp. 509-511. The mathematical model in fact, was best described in another paper that examined the rank-size and primate distributions in Greece, authored by Lagopoulos and published in Ekistics in 1971. The article analyzed the mathematical relation from its basic form to its logarithmic expression, and its connection to Zipf's law and Christaller's central place theory. See, Lagopoulos, A. P. (1971) 'Rank-size and primate distributions in Greece', *Ekistics*, 32(192), pp. 380–386.

[120] See, Table 3 and Figure 4 in Virirakis, 'Minimization of energy', *op.cit.*, pp. 509-510.

[121] *Ibid.*, p. 511.

approach to problem-solving characterized Doxiadis' analytical thinking and calculative spirit since the very beginning of his career. Doxiadis Associates in fact became broadly known not for its architectural aesthetics but for providing holistic solutions based on statistics and data analysis. Mathematics was used for example in commissions that included transportation models, but as well for the internal organization and programming of the numerous departments and companies of DO.[122] With the establishment of the "Doxiadis Associates Computer Center" (DACC) in 1964, DA became even more competent supporting its consulting services with computer analysis. The DACC in fact, was the first Information Technology company in Greece and among the first five electronic systems in Europe to use the pioneering Univac 1107 system, also known as the Thin Film Computer.[123]

This *computational-mathematical* approach progressively gained ground in the ekistic theory and eventually the ACE introduced in its curriculum a seminar titled "Mathematics and Ekistics". Starting with a series of lectures in 1972, the seminar aimed to introduce the participants, in their majority students of the Polytechnic University, in the basic concepts of mathematics and explain their significance for architecture and urbanism.[124] Moreover, the seminar comprised lectures on urban and architectural semiotics, allometry, cybernetics, network analysis, and even on the newborn game theory. Innovative concepts such as cellular automata conflated with the work of Roland Barthes, the "environmental psychology" of Kevin Lynch, or the groundbreaking book of John von Neumann and Oskar Morgenstern "Theory of Games and Economic Behavior," (1944).[125] Eventually, Doxiadis himself acknowledged mathematics as one of the milestones of ekistics. In the beginning of 1970s the "science" of human settlements was getting closer to the logic of mathematics leaving in a second place its sociological approach and claims.

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[122] Doxiadis described the use of mathematics in his work in the introductory lecture for the "Mathematics and Ekistics" ACE seminar in 1974. See, *General Scientific Matters: Mathematics* (no date). Document, Ref. Code 22482. Doxiadis Archives. In addition to the above, he referred to the Greek Reconstruction period when he collaborated with the mathematician and professor Maurikios Mprikas, and gave the example of the Tehran Action Program in order to denote the importance of mathematics for developing the DA planning philosophy.

[123] For a brief account on the establishment and development of the DACC see, Drimiotis, A. (2009) 'The Contribution of C.A. Doxiadis in the Development of the Information Technology in Greece', in *Constantinos Doxiadis and his Work (vol.1)*. Athens: Technical Chamber of Greece, pp. 50–59.

[124] Some observations on the course of the seminar and the initial response of the participants are described in Psomopoulos, P. (1972) *Seminar on Mathematics [Σεμινάριο Μαθηματικών]*. Document, Ref. Code 22482 S-ACE3:1086. Doxiadis Archives.

[125] The description of these seminars can be found in the file *General Scientific Matters: Mathematics, op.cit*. Worth denoting that in 1971 the ACE organized a public discussion on "Art and Cybernetics" as a complementary event to the "Computer Art" exhibition held at Goethe Institute, in Athens.

The mathematization of reality: a critique of HUCO

The introduction of mathematics in ekistics and its use for the purposes of HUCO was not without flaws. One of its most prominent critics in fact, was Vittorio di Giorgio, an Italian mathematician of Greek origin who joined Doxiadis' center from 1971 to 1974 in order to develop further the performed mathematical analyses.[126] Though still at a young age, Di Giorgio played a significant role in outlining the guidelines of the "Mathematics and Ekistics" seminar, and lectured broadly on the relation of urbanism and mathematics. Inasmuch, Di Giorgio was involved in DA projects that applied mathematical models in scenario planning, such as a commission for Northern Ohio and a study concerning the development of a network of urban centers in Nigeria, called "Nigeria 3003".[127] When Di Giorgio was asked to review the mathematics used in HUCO he unleashed a severe criticism targeting the way the formulas were used.[128] According to the mathematician, the HUCO research applied a completely erroneous methodology that used the findings of the case study analysis as hypotheses. Instead of premising the research on solid theoretical schemes, he continued, the study employed rather arbitrarily abstract axioms that afterwards were justified by mathematical models. Even if these models were developed correctly, Di Giorgio claimed, problem solving was not about resolving equations, but principally had to do with the *mathematization* of reality, that is, how to translate a specific problem into mathematics. As he concluded, this was a common error among projects that used mathematics for the development of urban and regional models.

Beyond the use of mathematics then, the main problem of HUCO was methodological and had to do with its theoretical background and the very conception of the working hypothesis. The HUCO project originated in a specific problem of community planning simply resumed by the phrase "*which* facilities to locate *where* and for *how many*".[129] Its working hypothesis stipulated the existence of a module or unit within modern cities where tradition, security, and "patterns of social life, such as friendships, work and interest relations" survived the alienating effects of modern technology and automobile invasion. While researchers debated whether such communities should build the future city or get

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[126] Apparently, Di Giorgio was a personal choice of Doxiadis, who described him as a young and promising mathematician interested in working "with us". See, Doxiadis' sign to his collaborators, dated 24 April 1971, in Doxiadis, C. A. (1971) *DI GIORGIO, V*. Document, Ref. Code 17815. Doxiadis Archives.

[127] The project for Northern Ohio was eloquently called the Northern Ohio Urban System and abbreviated as NOUS, that is, "brain" in Greek. The project "Nigeria 3003" was initiated in early 1970s but was developed after Doxiadis' death.

[128] See, Di Giorgio, V. (1973) *Conclusions from the HUCO study [Συμπεράσματα Μελέτης HUCO]*. Document, Ref. Code 29008. Doxiadis Archives. Di Giorgio's report was a handwritten draft sent to Doxiadis in September 1973. At the end of his paper, Di Giorgio made some proposals in order to correct the most obvious errors of the research most probably for the publishing of the book on the "Human Community".

[129] See as well, 'Research Discussions: the Human Community' (1967) *Ekistics*, 24(145), pp. 508 – 510.

discarded as "nostalgic anachronisms and impeders of freedom and mobility", HUCO aimed to the definition of the urban module as a walking-distance neighborhood.[130] More than a consolidated theory however, the neighborhood unit was a concept whose application varied according to the location and programmatic requirements of the project. Nonetheless, when Doxiadis decided to study Athens in order to assess and further define the characteristics of such model he ignored the very factors that make up a neighborhood especially in cities that have evolved through time. Beyond the factor of proximity and the empirically defined walking-distance yardstick of ten minutes then, the concept of the neighborhood was hardly embedded in a theoretical framework, as well manifested in the long debate on what actually a "community" *is*. To put it in another way, the hypothesis of the study was wrong from the very moment Doxiadis used Athens as a pool of data without setting the assumptions that would permit the understanding of a neighborhood as a spatial unit detached from the political or social dimension a city indisputably has.[131]

This problem became even clearer in the successive steps taken for the delimitation of boundaries. As analyzed, the Athenian neighborhoods-case studies were initially defined based on the experience of DA planners who were familiar with the capital, then drew on field surveys and a questionnaire that registered the everyday life and opinion of the residents, and eventually used an empirical law in tandem with its mathematical models. Naturally, each one of these methodologies prescribed the research in a different theoretical framework. Most importantly, the first two operations (*Overall Survey* and *Verification Survey*) defined rather arbitrarily an urban module whose analysis provided the data (*Household Survey*) introduced in mathematical formulas that anyhow represented (and resulted from) empirical laws.

The perplexity of these operations and the absence of a theoretical model assessed by the working hypothesis - instead of resulting from it -, is best understood when analyzing one of the first reports where Doxiadis described his thoughts and set the guidelines to be followed by the program. As the ekistic guru contended, if the population of Athens - at the time estimated at 2 million inhabitants - was divided in a hundred communities, these were

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[130] *Ibid.*,

[131] And again, HUCO was not the only example of such methodological confusions. Unfolding his critique to large-scale planning models, Douglass Lee concluded that the produced models had almost nothing to do with the theory used: "[o]ne example is the gravity model, which was fitted to aggregate data based on existing land-use patterns and trip behavior, and then employed as a behavioral explanation of future patterns. In between, a formal theory was developed to rationalize the transformation, on the postulate that households located so as to minimize some type of trip purpose. Other examples take such forms as 'like households tend to attract each other', […] 'commercial activities are usually found in clusters', …". See, Douglass B. Lee Jr. (1973) 'Requiem for Large-Scale Models', *Journal of the American Institute of Planners*, 39(3), pp. 163–178, p. 169. To a great extent, Douglass seminal critique applies to the HUCO research program and the overall planning and working philosophy of Doxiadis, as I will discuss further in the thesis' epilogue.

to contain 20.000 people or 5.000 families. Had the research results confirmed this hypothesis, "the human community [would have been] greater than previously thought".[132] If on the other hand, the study resulted to 200-300 communities, Doxiadis continued, the "human community" would have an average of 10.000 people or 2.000 families, a number that approximated the "human sector" model used in DA schemes. Inasmuch, and according to Doxiadis experience, the urban units or sector should measure 1x1 kilometer and contain from 500 to 2000 families. Not surprisingly then, while the first phase of the study and the *Overall Survey* found 189 Communities Class IV, the following methods and the *Verification Survey* resulted in 286 communities.

More than invaliding the overall HUCO research, this analysis is meant to draw the attention to Doxiadis' "top-down" rationale that undoubtedly influenced the studies of his collaborators. To a certain extent, the project was driven by Doxiadis' effort to corroborate the existence of an urban module and provide the ekistic theory with a planning model that could be applied both in new towns and the extension or renewal of existing cities. Doxiadis was a man of action, a planner who aspired to contribute the most to the betterment of human settlements, in the first place promoting a theoretical approach that aimed to the understanding and planning of a global equilibrated urbanization, but as well being the managing director (CEO) of a global consulting and construction firm. Nonetheless, at the intermediary step of research Doxiadis' clear-cut discourse was problematic as eventually evinced by the methodological perplexities analyzed above. In other words, the ACE research programs put in evidence the paradoxical nature of Doxiadis' expectation to integrate theory and practice within ekistics.

5.4 The anxiety of complexity

> Thinking has its strategies and tactics too, much as other forms
> of action have. Merely to think about cities and get somewhere,
> one of the main things to know is what *kind* of problem cities
> cities pose, for all problems cannot be thought about in the same
> way. Which avenues of thinking are apt to be useful and to help
> yield the truth depends not on how we might prefer to think about
> a subject, but rather on the inherent nature of the subject itself.
> Jane Jacobs[133]

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[132] See, Doxiadis, *Discussion on HUCO, op.cit.*

[133] See, Jacobs, J. (1961) *The Death and Life of Great American Cities*. Random House. Reprint, New York: Vintage Books, 1992, p. 428

In the by now classic *The Death and Life of the Great American Cities* (1961) Jane Jacobs reflected on "strategies of thinking" and their significance for city planning. One of her seminal contributions was the conception of the contemporary cities as "problems of organized complexity", namely problems with many variables that nevertheless interrelated into an organic whole.[134] Contrary to the problems of disorganized complexity where "statistical methods hold the key" due to the infinite number of variables better described by the probability theory, city planning should consider simpler tactics that Jacobs called "habits of thought". For the comprehensive understanding of cities did not rest on methodological tools that analyzed infinite of variables eventually reducing the problem to simplicity, but from the study of everyday processes and actions of individuals taking place in the street, the neighborhood, and the city itself. In that respect, Jacob called city planners, business men, and legislators alike to "think about processes", "work inductively", and "seek for 'unaverage' clues involving very small quantities, which reveal the way larger and more 'average' quantities are operating".[135] The keyword in Jacob's unconventional but inspiring discourse was "organized complexity". Though the term was inspired by Dr. Warren Weaver's essay on the history of scientific thought, Jacob was clear in keeping distances from the scientific language and concepts that prominent planning theories were eager to embrace, in most cases uncritically.[136]

Ekistics was imbued with this "scientific temper" however Doxiadis claimed to base his theory on inductive methods, the collection and analysis of raw data, and the observation of urban and regional phenomena.[137] The "human community" research program was such a case: unlike the other ACE research programs that considered global urbanization processes (the "City of the Future") or metropolitan development (the "Capital of Greece"), HUCO examined the Athenian communities separately and in comparison in order to describe the structure and function of the whole city. In examining the way residents used public facilities and retail, even if in an elementary way, the study considered everyday

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[134] *Ibid.*, p. 433.

[135] *Ibid.*, p. 440.

[136] Jane Jacobs drew on the 1958 *Annual Report of the Rockefeller Foundation* where Dr. Warren Weaver - an American scientist, mathematician, and science administrator - distinguished the ability to deal with problems of simplicity, disorganized complexity, and organized complexity as the three stages that denoted the evolution of scientific thought. Challenging the widespread use of biological metaphors in architecture and the overall pseudoscientific approach to planning, Jacobs claimed that "[b]ecause the life sciences and cities happen to pose the same *kinds* of problems does not mean they are the *same* problems. The organizations of living protoplasm and the organizations of living people and enterprises cannot go under the same microscopes". *Ibid.*, p. 439.

[137] See, Psomopoulos and Perovic, 'A reader on Ekistics', *op.cit.*, p. 39.

processes that opened a window on issues of community organization and to a "bottom-up" approach to the understanding of the city. To a certain extent then, HUCO was the research project that best approximated the concept of "organized complexity" within ekistics. Instead of using projections of (infinite) variables in order to portray an urban future, HUCO studied an existing city in order to understand its actual and present transformations.

Inasmuch and towards such objective, the HUCO research followed two different methodological approaches, namely one coming from social sciences (humanities) exemplified by the work of Suzanne Keller, the other one drawing on mathematics and empirical laws (sciences) typified by Virirakis' studies. In that sense, the ekistic explorations of the "human community" - even if within the specific framework and limited scope of a research program - sought to marry the "two cultures" of planning, namely the sociological perspective with the calculative spirit of "hard sciences".[138] Finally, the perplexed methodologies and contradictory results brought HUCO to a dead end.

To break this theoretical deadlock Doxiadis used the overall long-range methodological scheme of systems analysis.[139] As alleged, the study of the local neighborhoods was based on an *operational analysis* where communities were examined as a system, otherwise defined "as an integrated assembly of interacting elements designed to carry out co-operatively a predetermined action".[140] As such, the process of analysis was illustrated by a typical systems theory diagram depicting the inputs, the output, the *processor*, and the so-called feedback mechanism (Figure 5.10).[141] According to this methodological scheme, planning was the process of moving back and forth between the hypothesis of the study and its findings in order to bring closer for example a set of programs to the perplexed world of practice. Just as the scientist measured the outcome of a dynamic system and calculated anew the solutions in order to achieve the stability of the system, the planner had the possibility to ameliorate his plans in order to respond to the actual needs of the society.

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[138] The term "two cultures" echoes Snow's thesis regarding the *Two Cultures* of science. As the British scientist originally argued in his 1959 Rede Lecture, "the intellectual life of the whole of western society" was divided between two polar groups and knowledge cultures, namely the "literary intellectuals" and the physical scientists, a fact that impeded solving major problems. See, Snow, C. P. (1959) *Two cultures and the scientific revolution*. New York: Cambridge University Press,1961.

[139] "The methodological approaches used in this project include both long and short-range methods designed to provide adequate guidance and sufficient flexibility. The general, long-range methodological scheme employed is that of system analysis". See, Tyrwhitt, 'Research Work', *op.cit.*, pp. 83-84.

[140] *Ibid.*,

[141] The inputs represented the ekistic elements *found* within the community, the output was identified as the objective of the study (that is the fulfillment of the residents' needs - biological, psychological, and economic - measured by the resident's satisfaction), while the *processor* described the interactions within the system.
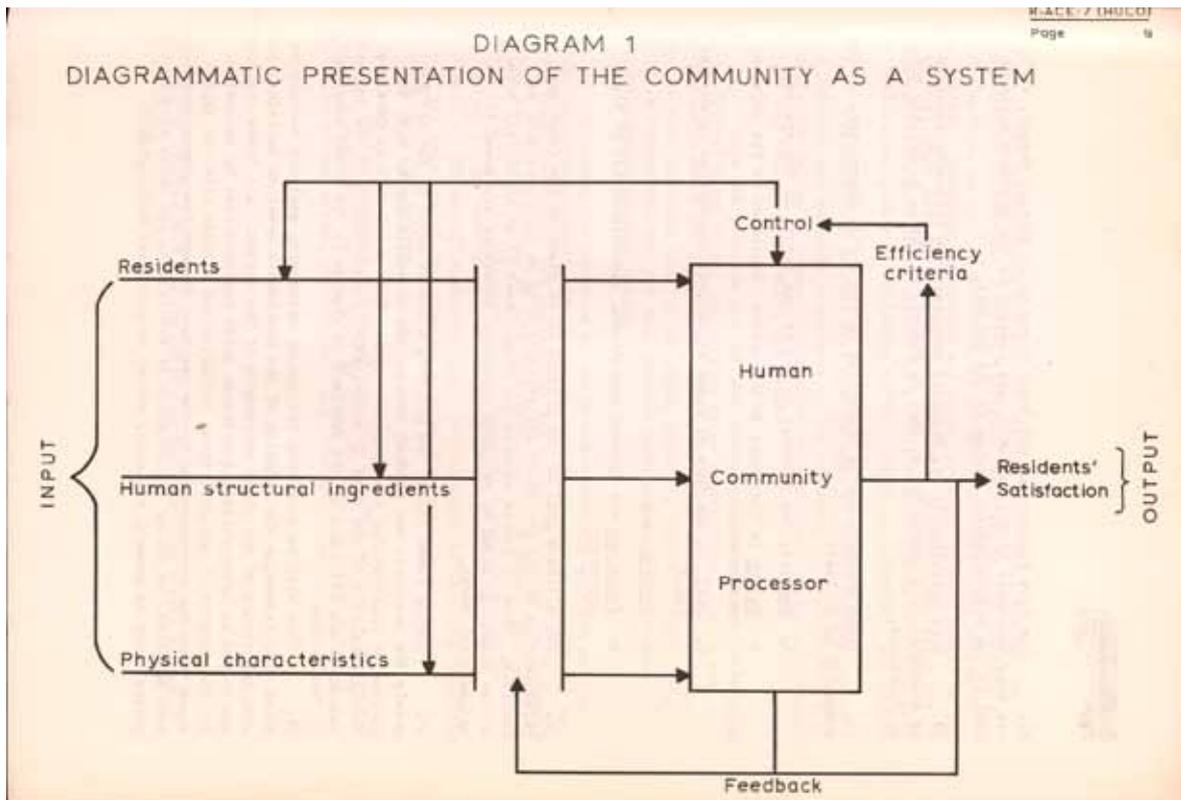
Diagrammatic Presentation of the Community as a System.
[Tyrwhitt, J. (ed.) (1965) 'Research Work of the Athens Center of Ekistics (part B)', *Ekistics*, 20(117), p. 84]
Figure 5.10

This was precisely the function of the feedback mechanism, which supposedly ensured "that the planners' correction and the output are introduced into the system as input to bring its performance nearer to the objectives".[142] Conceptualizing the city (and the whole world) as a system and presuming the existence of a feedback mechanism then, the planner claimed to control not only the design but above all the implementation of his plans. As described in HUCO, "whenever significant discrepancies occur between the actual performance of the system and its objectives, the control – the planner – intervenes to ameliorate its efficiency".[143] Effectively, in defining the human community and trying to overrule the paradoxes of the contemporary city Doxiadis espoused the theoretical principles of system analysis. Ekistics was put on the track of systems theory eventually coming to a dead-end.

A city is not a tree - A city is a city

One of the most characteristics examples of Doxiadis' persistence in understanding the city exclusively through a systemic framework was the anecdotal debate raised by Christopher Alexander's article "A City is not a Tree". In his classic article, Alexander argued for the need to understand the city as a semi-lattice instead of a tree structure. While the former represented different "ways of thinking about how a large collection of many small systems goes to make up a large and complex system", the tree structure was identified with the hierarchical organization, functional zoning, and the separation of land uses. As examples, he named "the separation of pedestrians from moving vehicles, a tree concept proposed by Le Corbusier, Louis Kahn and many others", "the separation of recreation from everything else" as conceived by CIAM theorists, or the "total separation of work from housing" initially proposed by Tony Garnier's industrial city and "then incorporated in the 1929 Athens Charter".[144] The semi-lattice structure instead represented the complexity of the overlapping activities in mixed-use urban areas, an urban model that Alexander strongly advocated against the simplicity of the tree structure. Alexander's article was originally published in *Architectural Forum* in 1965, and soon was hailed as a pathbreaking study that blended spatial analysis and mathematics.[145] When

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[142] *Ibid.*,

[143] *Ibid.*,

[144] See, Alexander, C. (1972) 'A City is not a Tree', in Bell, G. and Tyrwhitt, J. (eds) *Human Identity in the Urban Environment.* Harmondsworth, Eng.: Penguin Books, pp. 401–428.

[145] Alexander's article was published in several journals and anthologies, one of them being the *Human Identity in the Urban Environment*, a collection of articles that bore the ekistic signature including as well selected declarations of Delos. Alexander who was originally educated in sciences (chemistry, physics, and mathematics) before being awarded a doctorate in architecture at Harvard, is recognized as the father of

the article was reprinted in *Ekistics* in June 1967, Papaioannou urged Doxiadis to read it without further delay saying that it had "a direct bearing on [his] recent theory of overlapping ekistic fields" and therefore he might "be interested to use the corresponding mathematical terminology".[146] Straightaway, Doxiadis assigned Carabateas, an Assistant Professor of Mechanical Engineering at M.I.T. and head of the DA research brand since 1965, to write a report on the semi-lattice theory and its application in Alexander's paper. Carabateas briefly explained the origins and basic properties of the recently-established mathematical branch and concluded that though Alexander's mathematic definition of a semi-lattice was not accurate its application basically accounted for two main points: "the segregation of activities to certain areas [reduced] the complex semi-lattice structure of the product to a simple tree structure", and that therefore "the semi-lattice structure should be maintained in good planning".[147]

When Doxiadis started to write an article titled "a City is a City", he must have wanted to respond to the buzz generated by Alexander's research. Though the article was never published, a handwritten draft depicts Doxiadis' answer as a sound manifestation of his denial to espouse or even to delve into Alexander's ideas.[148] The Greek planner initially argued that the city could not be conceived in physical terms as a tree or "root system" due to the "interconnections between all its branches", instead its road network should be structured as a grid, which he considered "the best physical expression of the democratic principle of equal choices for movement in all directions".[149] On the other hand, considering the clustering and organization of facilities or services Doxiadis argued that the city could be represented schematically by a hierarchical system and therefore compared to a tree.[150]

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pattern language, while the *Notes on the Synthesis of Form* (1964) was an influential reading in computer science throughout the 1960s.

[146] See, Papaioannou, J. G. (1967) *Memo Papaioannou*. Document, Ref. Code 20843. Doxiadis Archives.

[147] See, Carabateas, E. (1967) *Elements of semi-lattice theory*. Document, Ref. Code 20843 S-101 225. Doxiadis Archives.

[148] In one of his pocket cards Doxiadis had noted "A city is not two-dimensional. A city is not a star. A city is not a dead organism. A city is not abstract. A city is not a pyramid". The note was written in August 1967 and most probably depicts Doxiadis' first thoughts for his "reply" to Alexander. It ended with the handwritten phrase "A city is a city?" See, Doxiadis, C. A. (1967) *Ekistic Synthesis: a City is a City (Working File)*. Document, Ref. Code 20843. Doxiadis Archives.

[149] *Ibid.*,

[150] Doxiadis used as an example the grouping of retail facilities in centers of lower or higher order. Even so, and to prove his argument right, he did not mention the horizontal connections between the elements of the same order.

Doxiadis' tentative "a City is a City" was not the fruit of an intellectual incapacity to grasp the meaning of Alexander's article, but of his insistence in understanding the city as a set of hierarchically structured entities.[151] In a certain way, his' optimism for crafting solutions was premised on Jacob's understanding of the contemporary city as a set of "problems of organized complexity". If these problems were identified, solutions could be given. This was the kernel of ekistics and the principal reason for undertaking research programs.

On the other hand, Doxiadis' "organized complexity" was more quantifiable and *ordered* than complex. He understood both problems and solutions in a centralized fashion, or in other words the architecture of *his* networks was more centralized than decentralized or distributed. In Doxiadis' eyes, putting order to chaos was premised on scientific methodologies, statistical analysis, and mathematical modeling. For the main purpose was not just to understand the complexity of the city but to regulate it according to the ekistic rules. The answer to whether his perseverance and attempts in controlling reality originated in a deeper anxiety for providing solutions, or in "a sense of insecurity derived from understanding the complexity of the problems and challenges", remains one of his enigmas.[152]

Paradoxically, the findings of HUCO corroborated the complexity of the web of urban functions. The difficulties and inconsistencies of describing the interrelation of urban units in a tree structure became clear when the ACE research team tried to identify the boundaries between the Athenian communities. The pattern that best approximated the analysis of the inhabitants' everyday activities was a set of nodes (attractors) with catchment areas that differed in density, area, or frequency of use. These areas in no case nested into each other, instead featured other kinds of network topologies that defied the simplicity of a tree structure.[153]

In the end, both Doxiadis' discourse and the ekistic theory remained adhered to systems theory. The shift of theoretical framework and direction is best understood comparing the ekistic principles in the early and late 1960s. Doxiadis launched his theory based on five

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[151] On the other hand, anticipating this kind of rationale, Alexander presented psychological experiments related to the processes of grouping and classification in order to explain why "designers, limited as they must be by the capacity of the mind to form intuitively accessible structures, cannot achieve the complexity of the semilattice in a single mental act".

[152] "As Psomopoulos has beautifully pointed out, maybe such an extreme desire of controlling reality is the expression of a sense of insecurity derived from understanding the complexity of the problems and challenges". See, Muscarà, C. (2009) 'The Doxiadis - Gottmann Exchange', in Constantinos Doxiadis and his Work (vol.2). Constantinos A. Doxiadis and his Work, Athens: Technical Chamber of Greece, pp. 200–208, p. 207. The answer to this or similar "Doxiadis' enigmas" depends more on the point of view of every author than in Doxiadis, whose approach was clear cut.

[153] Ironically, Christopher Alexander himself had made a similar comment drawing on Ruth Glass' redevelopment plan for Middlesbrough, a project initiated in 1944 that as well performed a spatial analysis of an existing city. After trying to demarcate the actual neighborhood boundaries, Glass concluded that local social networks were better represented by a system of nodes and that the nodes and their respective catchment areas were not confined within the same spatial sub-unit, that is, the same neighborhood.

assumptions, namely human happiness (the ultimate goal in the creation of human settlements), the unity of purpose (interdisciplinary approach), the hierarchy of functions (classification of functions and scales), the four dimensions (settlements as dynamic entities developing over time), and the existence of "many scales for many masters" (transportations means and technological advances).

In 1969 however the Greek planner "updated" the principles that "guided Man's relation to space" naming the maximization of potential contacts, the minimization of effort, the optimization of space, and the optimization of the environment's quality.[154] Though equally abstract and arbitrary, the later assumptions related to actions and processes as denoted by the suffix "-ation". By the late 1960s, Doxiadis' modernist discourse of a hierarchy of functions and the car invasion had been replaced by a systemic discourse that placed emphasis on networks, global interconnectedness and equipoise.

Ekistics then could be read as one of the theoretical streams that successfully espoused the developments of a broader epistemological revolution after Doxiadis' efforts to advance "scientific" tools and methodologies for urban and regional planning. On the other hand, the *science of human settlements* was eventually brought to the deadlock of the systems approach to planning. As Brian McLoughlin explained in a working paper titled "The Systems Approach to Planning: a Critique" (1985) written sixteen years after the publication of his seminal book, during the 1950s and throughout 1960s the systems approach was "a widespread *idea in good currency*".[155]

One of the reasons for its successful transcription to planning was its abstract and universal nature, which at the end of the day "offered prizes for all - to bureaucratic empire builders, to academics wanting disciplinary distinctiveness and academic 'respectability', to the modelers and the symbiotic computer salespersons".[156] Coming from a scientific background and drawing on statistical techniques and mathematical models, the systems approach was welcomed as a "value-free", holistic, and accurate method for decision-making. The possibility of controlling more data and parameters made planners confident to extend the scope of their programs both in terms of space and time. Planning *became* comprehensive, for systemic methodologies permitted the processing of a vast amount of data.[157] This was the case of the City of the Future research program and the Urban

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[154] See for example, "The four principles of ekistics" in Tyrwhitt, J. (ed.) (1972) 'Discussions on Ekistics: Nature, Man, Shells, Society, Networks. Summary of the Athens Ekistics Months 1963-1971', *Ekistics*, 33(197), pp.244-245.

[155] See, McLoughlin, J. B. (1985) *The Systems Approach to Planning: a Critique*. Working Paper. University of Hong Kong - Centre of Urban Studies and Urban Planning.

[156] *Ibid.*, p. 20.

[157] On the other hand, Douglass Lee considered the all-encompassing pretension of large-scale models as one of the seven sins, he called *hypercomprehensiveness*: "in retrospect, it is clear that nothing is gained from

Detroit Area project analyzed in the epilogue. The results of this "enhancement" however proved to be adverse: abstractness turned to vagueness and planning practice was progressively disconnected from the "urban realities". Due to the introduction of excessive and often irrelevant data, the simulation models were practically useless and the efforts to manage the city as a whole exceeded by far the cost of less *advanced* and yet more effective approaches.[158] Urban and regional planning was distanced even more from the social dimension of the city. In other cases the scientific aura of systems theory was used to legitimize top-down approaches guided by the hand of the expert, however with unfortunate results.

Eventually, at the dawn of the 1970s, the systems approach was criticized from *within*, when disciples of the quantitative-positivist tradition started to contemplate planning through the prism of Marxism restoring its socio-political issues at the core. The gap between the two cultures of planning became a chasm.[159]

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combining so many purposes into one vehicle, and failure to separate ends (and hence means) can be regarded only as intellectual laziness. Trying to do everything at once simply means that all are more likely to be done poorly". See, Lee, 'Requiem for Large-Scale Models', *op.cit.*, p. 164.

[158] McLoughlin refers to the marginalization of people who "could have made a more effective contribution", denoting that "it is precisely the highly abstract and vapid nature of the systems paradigm which (in the UK at least) has held back the real possibilities of deeper understanding of both urbanization and planning". See, pp. 21,15. Apparently, this critique to systems theory cost McLoughlin a position as a professor of planning in the U.K. On the other hand, in their more recent critical account Michael Batty and Stephen Marshall cite McLoughlin's book (1969), and denote that "the disastrous experience with top–down management of cities, particularly through public housing and the vast cost of maintaining this enterprise, forced government to reconsider the role of planning". See, Batty, M. and Marshall, S. (2012) 'The Origins of Complexity Theory in Cities and Planning', in *Complexity Theories of Cities Have Come of Age An Overview with Implications to Urban Planning and Design*. Berlin, Heidelberg: Springer Berlin Heidelberg, pp. 21– 45, p. 29. Surprisingly enough, in *Fractal Cities* (1994) Michael Batty and Paul Longley referred to Doxiadis' *Ekistics* (1968) as "one of the most complete statements of the organic approach to city planning", and used his examples of four cities (London, New York, Paris, and Tokyo) in the computation of fractal dimensions for urban growth. See, Batty, M. and Longley, P. (1994) *Fractal cities: a geometry of form and function*. London: Acad. Press, pp. 33, 236.

[159] In the words of Juval Portugali, "the result was a split in the study of cities between two camps: 'positivists' who advocated a quantitative-scientific approaches and proponents of Structuralism, Marxism and phenomenology (and more recently postmodernism) who advocated qualitative, hermeneutic and critical approaches". See, Portugali, J. (2012) 'Complexity Theories of Cities: Achievements, Criticism and Potentials', in *Complexity Theories of Cities Have Come of Age An Overview with Implications to Urban Planning and Design*. Berlin, Heidelberg: Springer Berlin Heidelberg, pp. 47–62, p. 51. David Harvey and his move from *Explanation in Geography* (1969) to the classic *Social Justice and the City* (1973) typified these changes.

EPILOGUE

Doxiadis Plans Detroit

6.1 Detroit: From the 'Motor City' to the Rustbelt

> Motto: 'Speramus Meliora; Resurget Cineribus
> (Latin: We Hope For Better Things; It Shall Rise From the Ashes)

Detroit is one of the greatest paradigms in modern planning.[1] Its urban and social history perfectly exemplifies the growth and decline of Fordism, the assumptions and hazards of a model premised on technological progress and consumerism. At the first quarter of the 20th century Detroit emerged as the industrial core of a whole nation, a magnet of opportunities and urban prosperity dubbed the Motor City. Rural-to-Urban migrant workers from the South flooded the city searching for a place in Henry Ford's promise land, after the proclamation of the famous $5 per day program. When during the Second World War the automotive industry was converted to produce the armament and machinery for the Allies, Detroit was honored by President Roosevelt as "the great arsenal of democracy". These were years of extraordinary economic dynamism fueling the growth that boosted Detroit to rank fourth on the list of America's largest cities. By the mid-1950s Detroit's population was estimated to more than 1.8 million.[2] During the same period however, the city and in particular its central areas witnessed the deterioration of its building stock and public space alike, and a dramatic demise in population that progressively turned to what is broadly called the "white flight", that is, a massive migratory movement of white middle and upper class population to the suburbs. Despite the complexity of the problems involved, the administrative authorities kept their faith in planning as a remedy for urban ills. Detroit's bid for the Olympic Games of 1968, driven by Mayor Jerome Cavanagh and supported by President Kennedy, is exemplary of an illusory optimism for the future.[3]

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[1] See, Daskalakis, G., Waldheim, C. and Young, J. (eds) (2001) *Stalking Detroit*. Barcelona: Actar, pp. 10-13.

[2] Precisely in the 1950s Detroit reached the population of 1.849.568 inhabitants. See, "Table 23. Michigan - Race and Hispanic Origin for Selected Large Cities and Other Places: Earliest Census to 1990", in Gibson, C. and Jung, K. (2005) *Historical Census Statistics On Population Totals By Race, 1790 to 1990, and By Hispanic Origin, 1970 to 1990*, U.S. Census Bureau. Available at: http://www.census.gov/population/www/documentation/twps0076/twps0076.html (Accessed: 29 July 2015).

[3] Jerome Cavanagh described 1965 as "Detroit's finest hour" and called Detroit "the most cosmopolitan city of the Midwest". See, Detroit Olympic Committee (no date) *The Detroit You've Never Met*. Available at: https://www.youtube.com/watch?v=l9uWSNbHEps (Accessed: 8 August 2015).

The transition of Detroit from heyday to urban crisis does not have a single nor straightforward explanation. Its transformation and misery can be understood only as the convergence of macroeconomic policies and everyday practices, and only by analyzing the impact of structural changes in industrial production along the complex and intertwined histories of race, residence and work.[4] In a first place, the growth of Detroit followed closely the steps of the automotive industry, which flourished in this city due to the confluence of the availability of raw materials, abundance of workforce and capital.[5] The ferocious growth of Fordist capitalism however carried the forces that ultimately devoured the cradle of car industry. The structural changes in automotive production, industrial policies, the proliferation of the car, and the construction of kilometers of state highways had a considerable impact on the demographic and spatial characteristics of the city. At the beginning of the twentieth century the central neighborhoods of Detroit augmented their density along the assembly lines of Highland Park; a few years later the metropolitan area was consolidated after the establishment of the River Rouge complex in Dearborn, just to name the most exemplary case. The fragmentation of the assembly line and the consequent decentralization of the industrial plants increased the movement of the working force in the periphery. Effectively, the overdependence of Detroit on the automotive industry defined its most significant urban transformations. When the automation of production and the growth of the tertiary sector begun, the Big Three - that is, Ford, General Motors and Chrysler companies - not only decentralized but as well outsourced part of their operations dismantling further the local ties of the workforce with the city.[6] Ironically, the automotive industry was the driving force behind both Detroit's unprecedented economic boom and collapse.[7]

Seemingly, the transition of Detroit city to a "black metropolis" was a parallel process. The influx of migrant workers changed radically Detroit's demographic composition and increased significantly the density of the central neighborhoods. Single family houses

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[4] As Thomas Sugrue argues in a carefully documented and compelling account "it is only through the complex and interwoven histories of race, residence, and work in the postwar era that the state of today's cities and their impoverished residents can be fully understood and confronted". See, Sugrue, T. J. (1996) *The origins of the urban crisis : race and inequality in postwar Detroit*. Princeton, N.J.: Princeton University Press, p. 5.

[5] A mid-nineteenth century Detroit took advantage of its geographical location in the region of Michigan - one of the richest country in premium materials (coal, copper, wood, salt) - to gain a foothold by processing raw materials for emerging industries (steel and metallurgy, chemical and pharmaceutical) and for the construction of locomotives and wagons. See, Fernández, Á. B. (2009) 'Urban Evolution and Memory of the Industrial City [Evolución Urbana Y Memoria De La Ciudad Industrial. Futuros Para La Ciudad De Detroit]', *Cuaderno de Investigación Urbanística*, (63), p. 11.

[6] *Ibid.*, p. 60.

[7] See, Schumacher, P. and Rogner, C. (2001) 'After Ford', in Daskalakis, G., Waldheim, C., and Young, J. (eds) *Stalking Detroit*. Barcelona: Actar, pp. 48–56.

became rooming houses and apartment buildings to roof the workers who flocked to the city. As a 1966 building inventory described, "[a]*dditions* were built on the sides and rear until most of the lot was covered. These alterations in established districts not only doubled the number of people in the given area but resulted in a deterioration in the quality of housing as buildings crept up on each other and mutually shut off light and air".[8]

On the other hand, most of the workers were African Americans who came to the city in search of a better pay and living conditions. Unlike the *de jure* racial segregation of South established by the Jim Crow laws, in North American cities the "separate but equal" doctrine was deployed by the discrimination of employment, bank lending practices and, above all, based on patterns of housing segregation enforced by formal treaties and informal agreements.[9] Progressively, African-American migrants were marginalized in the inner city and its dilapidated and forgotten neighborhoods.[10] The urban renewal projects only came to compound the existing problems.

Furthermore, development not only increased the working class, but also the administration. As the automotive industry grew so did its bureaucratic corpus, therefore incrementing the number of white-collar workers.[11] The increase of the administrative jobs then consolidated a new class whose purchasing power enabled her to move to the outskirts of the city. The displacement of the middle class to the periphery left a gap in the central neighborhoods that was occupied by African American workers whose reliance on an outdated public transport hardened the access to the new industrial plants. The immigrants of the '50s were trapped in growing and persistent ghettos, while the city was progressively divided by racial lines.

Against that background one can understand from a different perspective the previous inventory that named the deterioration of housing as one of the reasons for the exodus toward the expanding suburbs:

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[8] See, Cendroski, C. (1966) *Existing Conditions in the Central City*. Document, Ref. Code 23458 R-USA-DT62. Doxiadis Archives. Moreover, almost three-quarters of the building stock of this period were frame construction; given its short life span, it was only natural that by early 1960s central Detroit was facing extended blighted housing problems.

[9] See, Sugrue, *The origins of the urban crisis, op.cit.* Sugrue's treatise on the means and practices of racial segregation in Detroit is exemplary.

[10] Lamentably, in several accounts the decline of Detroit is uncritically associated or even attributed to "colors". As Sugrue has successfully argued "the segregation of blacks in decrepit housing in deteriorating neighborhoods became seemingly irrefutable evidence of black irresponsibility, fecklessness, and cultural impoverishment". See 'Symposium on Thomas J. Sugrue: The Origins of the Urban Crisis*' (1998) *Labor History*, 39(1), pp. 43–69.

[11] Sugrue exemplifies this change by the "organization man", namely "corporate paper pushers who had made it into the middle-class through discipline and conformity". See, Sugrue, T. J. (2004) *From Motor City to Motor Metropolis: How the Automobile Industry Reshaped Urban America*, *Automobile in American Life and Society*. Available at: http://www.autolife.umd.umich.edu/Environment/E_Casestudy/E_casestudy.htm (Accessed: 22 July 2015).

"When an American family feels that it can afford better house, it moves to a 'better' neighborhood. On a large scale, the result of these movements has been a constant turnover of population from older to newer neighborhoods, up to the city limits, and over, into the suburbs. Replacing old structures with new ones has not been the practice. It is cheaper to build a new home, on a new lot, on a previously undeveloped plot of land, than it is to buy several lots with old homes standing on them, and tear them down, to rebuild in existing areas. A new home in a new area has a very great appeal to the American middle class".[12]

Suburban life became the dream of the American middle class, away from the shadow of Detroit's plants and far from the smoke, fumes and noise of the factory. The precondition for the new way of living however was car ownership; the automobile became the symbol of mobility hence freedom. The final piece of the "sprawl puzzle" was the 1956 Interstate Highway Act that turned the landscape into the real estate *pie*, opening the road to the suburbia.[13] Most importantly, the automotive industry took the opportunity to decentralize its plants along the public infrastructure investments. While public policies supported private mobility, mass transportation declined thus turning Ford's axiom that every worker should be able to buy his car, to a necessity instead of an option. In any case, Detroit's extension did not follow a planned pattern "but a kind of *leapfrog nature of urban growth* that scattered people, businesses, and industry over a broad landscape".[14] Where the new freeways intersected the urban fabric, huge parts of the city were demolished, tearing down neighborhoods and moving away people.

Effectively, the above phenomena their origins and symptoms formed **a vicious circle** with serious consequences soon unfolding throughout the region. The exodus of the upper-middle class to the suburbia signified as well the flight of capital, while the decentralization of industrial plants reduced drastically government revenues (tax dollars). Detroit city became obsolete, and the polarization between the suburbs and central neighborhoods grew. Soon the racial segregation embedded in land and housing policies

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[12] See, Cendroski, *Existing Conditions in the Central City, op.cit.*

[13] As Melosi has eloquently put it, the Interstate Highway Act of 1956 came to aliment the automobile's "voracious appetite for land". See, Melosi, M. V. (2005) *The Automobile Shapes The City*, *Automobile in American Life and Society*. Available at:
http://www.autolife.umd.umich.edu/Environment/E_Casestudy/E_casestudy.htm (Accessed: 22 July 2015).

[14] *Ibid.,*

turned to a confrontation for the *control* of the city.[15] Eventually, the *white* exodus to suburbia and the hardening ghettoization of the inner city were the opposite sides of the same coin rolling on the thin line of residential segregation and racial inequalities. As Detroit's neighborhoods assumed blackness and whiteness the city became a time bomb.

Between urban renewal and community planning

> "What white Americans have never fully understood - but what the Negro can never forget - is that the white society is deeply implicated in the ghetto. White institutions created it, white institutions maintain it, and white society condones it".[16]

During the 1950s and 1960s successive master plans and extended social programs sought to combat Detroit's population loss. The rapid deterioration of the city and the agitated ambient of the omnipresent racial conflict forced the public authorities and private institutions to take action, among them the City Plan Commission, the Community Renewal Program office, the organization of the Model Neighborhoods Program, the Metropolitan Detroit Citizens Development Authority (MDCDA), and the Southeast Michigan Council of Governments (SEMCOG) that resulted from a 4-year government-funded regional plan called TALUS.[17] The new programs (Community Renewal Programs) differed significantly from the previous urban renewal projects in investing in the social renewal of the slums, for example by creating civic and health care centers. In effect, the community renewal programs sought to reconcile the federal government with the population that had suffered the "unfortunate" effects of past master plans.[18] In particular, interventions like the "Gratiot Redevelopment Project" originally conceived in 1946 but

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[15] See, Thompson, H. A. (1999) 'Rethinking the Politics of White Flight in the Postwar City: Detroit, 1945-1980', *Journal of Urban History*, 25(2), pp. 163–198.

[16] See, *Report of the National Advisory Commission on Civil Disorders* (1968). Summary of Report. United States. Government Printing Office. Available at: http://www.eisenhowerfoundation.org/docs/kerner.pdf (Accessed: 31 July 2015).

[17] The Transportation and Land Use Study (TALUS - SEMCOG Preliminary Plan for Southeast Michigan 1969) was a public transit study funded by a grant from the U.S. Department of Housing and Urban Development in order to orient highway construction in the region. As documented in Doxiadis Archives, TALUS and the UDA program interchanged data and had common points in their analyses. The links between the UDA study, SEMCOG and some of the aforementioned planning initiatives are documented in Pryor, R. V. (1970) *Initial Thought on Developing a DA Liaison Work Strategy*. Document, Ref. Code 23523 R-USA-DT 162. Doxiadis Archives. According to Pryor - apparently a student of the Graduate School of Ekistics who most probably was involved in the Detroit project - "our effort must seek to strengthen SEMCOG as one of the few tools for positive regionalism in the whole UDA area".

[18] See, Fernández, 'Urban Evolution and Memory of the Industrial City', *op.cit.*, p. 33.

after a decade substituted by the Lafayette Park project, and the construction of the Chrysler freeway (Interstate 75) advanced extensive demolitions in the eastern areas of Detroit, where the majority of the inhabitants were black low class workers.[19] Neighborhoods such as the blighted Black Bottom and Paradise Valley - the famous cultural district of Afro-Americans owned businesses - were buried under federal highways, and the core of the African-American community was heavily affected.[20] Moreover, the informal pressures or restrictive agreements of the real estate market deprived blacks from accessing housing on equal terms, thus hardening the anyhow problematic relocation to other parts of the city. Altogether, the African American community was restricted in ghettos aggravating the feeling of social injustice.[21] Characteristically, the urban renewal programs remained in the collective memory as "Black Removal", while the extended highway projects were nicknamed "federal bulldozers".

The new political promises came with Lyndon Johnson's Great Society and with programs like War on Poverty and the Model Cities Program that sought to reduce social differences and heal the wounds of the Jim Crow era. The War on Poverty in particular, included social benefits for the slum dwellers and aimed to foment education and employment, while the Model Cities sought to strengthen citizen participation in processes related to planning city, inter alia. To be sure, Detroit headed the Model Cities Program using $490 million of substantial federal funds to stimulate economic growth.[22]

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[19] On the site of the "Gratiot Urban Renewal Project" was eventually built the Lafayette Park, a residential complex authored by Ludwig Hilberseimer, Ludwig Mies van der Rohe, and Alfred Caldwell. See, Thomas, J. M. (1997) *Redevelopment and race: planning a finer city in postwar Detroit*. Baltimore: Johns Hopkins University Press (Creating the North American landscape). According to Schumacher and Rogner, Lafayette Park "offers the most legible post-war example of these principles of modernist planning applied to the renovation of the city of Detroit", applying the logic of "differentiation (zoning and distinct functionalist articulation of each zone), repetition (homogeneity of each zone) and hierarchical integration (transport system)". See, Schumacher and Rogner, 'After Ford', *op.cit.* Today there is an ongoing debate about the removal of the Interstate 375, that is, the auxiliary route of I-75 that crosses downtown Detroit. See for example, Gallagher, J. (2014) *When Detroit paved over paradise: The story of I-375*, *Detroit Free Press*. Available at: https://web.archive.org/web/20140706215028/http://www.freep.com/article/20131215/OPINION05/312150060/Black-Bottom-Detroit-I-375-I-75-paradise-valley-removal (Accessed: 31 July 2015).

[20] Historical accounts present Paradise Valley as an island of racial integration where blacks and whites sat next to each other. See for example, 'Detroit's Black Bottom and Paradise Valley Neighborhoods' (2012) *Walter P. Reuther Library*-, 4 May. Available at: https://www.reuther.wayne.edu/node/8609 (Accessed: 31 July 2015).

[21] According to Goodspeed, "[T]he 120-acre 'Gratiot Area Redevelopment Project' area was razed, displacing 1,238 dwelling units and more than 7,000 residents". See, Goodspeed, R. (2011) 'Citizens need voice in Detroit renewal', *The Detroit News*, 2 June.

[22] The Model Cities Program ended in 1974 and failed to meet its principal objectives, that is, to cure urban ills and reduce social inequality. One of the main reasons is that it was practically initiated in 1969, that is in a substantially different political context of its inception. In 1968, the New Federalism of Nixon dethroned Lyndon Johnson's Great Society and the Model Cities program was progressively eclipsed by "brick and mortar"

Nevertheless, and despite the efforts of the mayor Jerome Cavanagh P. who supposedly counted with the support of black and white voters, racial segregation, deteriorating housing, and unemployment hardly improved. The passing of time damaged the fragile trust between communities and the idea that blacks were milking federal and state benefits spread among whites. On the other hand, the increasing number of arrests of Afro-Americans gave the impression that the model city was turning in Mecca crime, thus legitimizing further police brutality and discrimination.[23] Detroit was definitely divided.

When on 23 July 1967, a police raid a speakeasy bar on North West Side the confrontation spread to the streets and throughout the city turning into one of the most extended and bloodshed riots in the history of the U.S[24]. In every respect, the 1967 riots was a turning point in the urban history of Detroit and marked the decline that continues till date.[25]

6.2 From the All-Electric City to the Megalopolis

In 1965, the Detroit Edison Company commissioned Doxiadis Associates a comprehensive study of Detroit and its adjacent area aiming to propose regional patterns for its future growth. Endorsed enthusiastically by Walker L. Cisler, the Chairman of the Board of the Detroit Edison, DA prepared jointly with the Wayne State University a prolific 3-volume study titled "Emergence and Growth of an Urban Region: the Developing Urban Detroit Area". Effectively, this was Doxiadis' greatest project in the U.S. It lasted for almost five years; it was patronized by one of the biggest companies in Michigan, and counted with the support of local institutions. And yet, Detroit was meant to be Doxiadis' own *Waterloo*.

Walker L. Cisler (1897-1994) and Constantinos A. Doxiadis had deep respect for each other and evaluated highly their professional and personal relationship fostered over the

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projects. See, Weber, B. A. and Wallace, A. (2012) 'Revealing the Empowerment Revolution: A Literature Review of the Model Cities Program', *Journal of Urban History*, 38(1), pp. 173–192.

[23] See, Thompson, 'Rethinking', *op.cit.,* p. 179.

[24] On 24th of July, President Lyndon B. Johnson complied with Governor George W. Romney's request and authorized the use of federal troops in order control anew Detroit. The 1967 riots was not the first time that the hostility between Detroit's black and white communities ended to civil unrest. In June 1943 a three-day confrontation began on Belle Isle ending with Federal troops intervention and 34 dead. During the 1960s and throughout the U.S. several riots outburst, most notably the Watts rebellion in Los Angeles, 1965, and the Newark riots (New Jersey) only a week before the Detroit ones. Against that background and while rioting was still underway in Detroit President Lyndon Johnson appointed the Kerner Commission to investigate the race riots that were sweeping the nation.

[25] Today, Detroit ranks among the poorest cities in the United States, has high rates of unemployment, crime, high school drop out, while its population had dropped over 50%.

years in several projects all over the world.[26] Their relationship goes back to 1948 when they both worked for the implementation of the Marshall Plan in Greece. Cisler was one of the American experts that manned the European Recovery Program in the aftermath of the Second World War. He was appointed chief of public utilities at General Dwight Eisenhower's Supreme Headquarters Allied Expeditionary Force (SHAEF), and he managed to rebuild electrical power plants in the war-torn Europe. In Greece, Cisler participated as an adviser in what is considered Marshall Plan's most significant contribution to the modernization of the country, that is, the development of the national power network, as already said inspired in the New Deal's Tennessee Valley Authority.[27] On his return from the war, Cisler got successively promoted in Detroit Edison and in 1964 he became the chairman of the board. He was actively engaged in the development of atomic energy and participated in international cooperation programs that purposed the peaceful use of nuclear power.[28] All together, Cisler was a prominent scientist, a highly considered expert, and a powerful business man with connections to the U.S. corporate and government establishment. Luckily for Doxiadis, his vision for a wealthy and technologically advanced Detroit matched the ekistic promises for an organized way of life (Figure 6.1).[29]

The commission of the Detroit plan goes back to 1963 when the Detroit Edison Company asked DA to survey the possibility for expanding its distribution system.[30] Doxiadis responded with great skepticism, for at the time there was no comprehensive plan for the development of Michigan and therefore such expansion would be impossible to adjust "to the future needs of the region".[31]

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[26] Characteristically, Doxiadis modeled his curriculum vitae after Cisler's, as said due to its clarity and comprehensiveness. See *General Scientific Matters: C. A. Doxiadis' Curricula Vitae (1964 - 1970)* (no date). Document, Ref. Code 21938. Doxiadis Archives.

[27] Walker Cisler's expertise laid the foundations for the establishment of Greece's Public Power Corporation in 1950, while AMAG alumnus Ken Iverson as well participated in those projects. See, Machado, B. and George C. Marshall Foundation (2007) *In search of a usable past : the Marshall Plan and postwar reconstruction today*. Lexington, Va.: George C. Marshall Foundation, p.66.

[28] In 1960, Walker Cisler visited atomic power stations in Soviet Union hoping to contribute to the establishment of a common understanding. See, Emelyanov, V. S. (1960) 'Toward Close International Cooperation in Atomic Reserach', *Bulletin of the Atomic Scientists*, 16(8), p. 324. The Bulletin of the Atomic Scientists was founded by Manhattan Project Scientists in 1945. Starting in 1947, its cover has repeatedly featured the iconic "Doomsday Clock", an image representing a countdown to a possible global catastrophe.
[29] According to Philip Deane, Cisler was a fervent supporter of Doxiadis' ideas. See Deane, P. (1965) *Constantinos Doxiadis: master builder for free men*. Oceana Publications, p. 130.

[30] See, *Suggestions for the Drafting of a Development Plan for the Detroit Region and for the Adaptation of the Expansion Program of the Detroit Edison Co System to this Plan* (1963). Document, Ref. Code 23402 DOX- UA 7-8. Doxiadis Archives.

[31] *Ibid.*, On the contrary, Doxiadis adverted, such plan could have "economic repercussions on the company" and result to "an inadequate supply service to consumers".

Photograph showing Constantinos Doxiadis and Walker Cisler during a presentation of the Urban Detroit Area (UDA) Research Project - probably the one that was held in Port Huron, Michigan, USA, on October 16, 1969.
Figure 6.1

On the other hand, the lack of a regional plan posed a great challenge to the celebrated planner who proposed as an "ideal solution" the "drafting of an overall plan for the future development of the Detroit region" in order to guide both public and private investments.[32] In 1965, Detroit Edison consulted with DA the creation of a new town planning scheme titled "All-Electric Community". Effectively, the project described a "model community that would significantly improve home and community living by the imaginative exploitation of electrical energy and its applications".[33] Meant to be built from a scratch, this "self-contained" community was part of the new town movement that burst in the United States when industrial corporations entered the construction field. As Doxiadis confirmed to his collaborators, "[t]he Detroit Edison Co. [wanted] to enter into the field of urban development as several other big American Corporations started doing like the Aluminum Corporation of America, the Reynolds Aluminum, the United States Steel, the Kaiser Group, etc.,"[34]. Effectively, companies like General Motors, Humble and Goodyear were investing into the growing sector of real estate propagating a safe and *entertaining* residential environment for its future inhabitants, often combined with small industrial parks in order to attract business and commerce.[35] Since the New Deal era, several greenbelt towns and garden cities have been founded in North America, most notably Greenbelt in Maryland, Radburn in New Jersey, and Levittown in Pennsylvania. At that time however, the most popular example was the 6,800-acre community of Reston, built by Robert E. Simon in the vicinity of Washington. Philip Johnson had named it as "the most advanced planning in housing", Victor Gruen as "the most courageous effort toward the building of a New Town" and Doxiadis was eager to know its planning costs and funding.[36]

The preliminary reports of the study comprised a description of the project (size, density, uses), inquires on its funding, and a survey of the established New Towns in Great Britain

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[32] *Ibid.*,

[33] Doxiadis Associates (1965) *Policy Determinations and Basic Characteristics of the All-Electric Community*. Document, Ref. Code 23422 DOX-USA-A11. Doxiadis Archives. Though in the United States already existed settlements advertised as "all-electric", Detroit Edison and Doxiadis purposed the "total application of electricity" beyond home use in the architecture and infrastructure of the community.

[34] See, Doxiadis, C. A. (1965) *All-Electric City of the Detroit Edison Co.* Document, Ref. Code 20067 R-USA-A 21. Doxiadis Archives.

[35] Playgrounds, parks and golf courses appeared in new town blueprints as recreational facilities in order to "meet the modern phenomenon of increasing leisure time". See, Bray, T. E. (1965) 'Building Cities: More Companies Enter Business of Developing Complete New Towns', *Wall Street Journal*, 7 January.

[36] On 14th of August, a DA collaborator named Fair sent a cablegram requesting data on Reston's financing and planning costs. See, Fair, L. (1965) *Request for Data*. Document, Ref. Code 20067 C-USA-A4754. Doxiadis Archives. For Johnson's and Guen's statements, see *Time Weekly Magazine* (1965) 'Modern Living - New Towns', 21 May.

and in the U.S[37]. The next step considered different possible locations for the "All-Electric Community". Initially, Alexandros Kollaros proposed to locate the new town at the North-South corridor between Detroit and Flint.[38] Doxiadis' counterproposal instead, suggested development along the East-West axis, that is, the Detroit - Ann Arbor corridor toward Chicago due to the higher incomes and the mixture of industrial, educational, and cultural uses. On the other hand, Doxiadis tackled the rather delicate issue to consider the interests of Detroit Edison for developing its properties located at the north of Detroit, and therefore proposed to discuss as well another East-West corridor, in particular the one passing from Port Huron and Flint.[39]

Nevertheless, neither the above proposals nor the employed criteria were considered *scientific* enough to convince Doxiadis of their validity. The drafting of a comprehensive plan for the Detroit region was once again on the table, and this time the Edison Company agreed to sponsor a research study. The project was baptized Urban Detroit Area (UDA) and surveyed an extended area of 23,000 sq. Miles that comprised 25 of the 83 Michigan counties, 9 counties in Ohio and 3 counties in Ontario, Canada.[40] In Doxiadis' eyes, the only way to develop major projects, such as the construction of a new town or the expansion of an infrastructure system, was "to study the area on a scale large enough to include dynamic changes in the foreseeable future, in terms of both space and time".[41] In other words, a comprehensive regional plan was necessary to coordinate public and private investments and match the interests of a planned and laissez-faire economy. Considering the practical difficulties of harmonizing federal and state infrastructure, the construction industry, and even the local planning commissions, Doxiadis claimed that physical planning had to be contemplated in the early stages of decision-making by

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[37] See, Doxiadis Associates (1965), *Policy Determinations*, *op.cit.*, Appendix I and Appendix II.

[38] Kollaros was one of Doxiadis' closest collaborators serving at DA from 1955 to 1971. He headed the Detroit Office and became the Vice - Chairman of DA. In 1971, he left DA along A. Symeon and S. Kondaratos and founded a company for environmental studies. In an interview with the author, in June 2012, Kollaros explained that DA had grown too much and that he preferred to work for smaller scale commissions. The secession of these three associates had a considerable impact on Doxiadis.

[39] In an internal report Doxiadis explained the difficulties to reach a decision and the need to reconcile Detroit Edison's interests with the common good for the city. He explained that this possibility should explicitly feature at the report since it was destined to Detroit Edison alone, and not to Wayne University. See, Doxiadis, C. A. (1965) *Site of the electric community DETROIT [Θέση ηλεκτρικής κοινότητας DETROIT]*. Document, Ref. Code 23431 R-USA-A 36. Doxiadis Archives. During the initial discussions on the electric city in fact, Ed George on behalf of the Edison officials expressed the interest "in the development of the area north of Detroit, actually the center of Detroit Edison's service area". The first discussion took place on 9th of June, with the participation of Mr. Ed George, Dr. Doxiadis and Messrs. George Lloyd and A. Collaros. See, Kollaros, A. (1965) *Developments on 'All-Electric' Project*. Document, Ref. Code 20067 R-USA-D 35. Doxiadis Archives.

[40] The study was initially called Developing Urban Detroit Area and abbreviated as DUDA, a rather ironic acronym for Doxiadis' positivist (and top-down) planning philosophy, since in Hispanic spells "doubt".

[41] See, Doxiadis, C. A. (2005) 'Method for synthesis: the I.D.E.A. and C.I.D. methods', *Ekistics*, 72(430 to 435), pp. 131–140.

cabinets or private developers alike, and on the other hand extend its time framework to 30-40 years. As such, the Detroit plan had to be comprehensive, colossal in its scope, and premised on computer analysis and simulation models.[42]
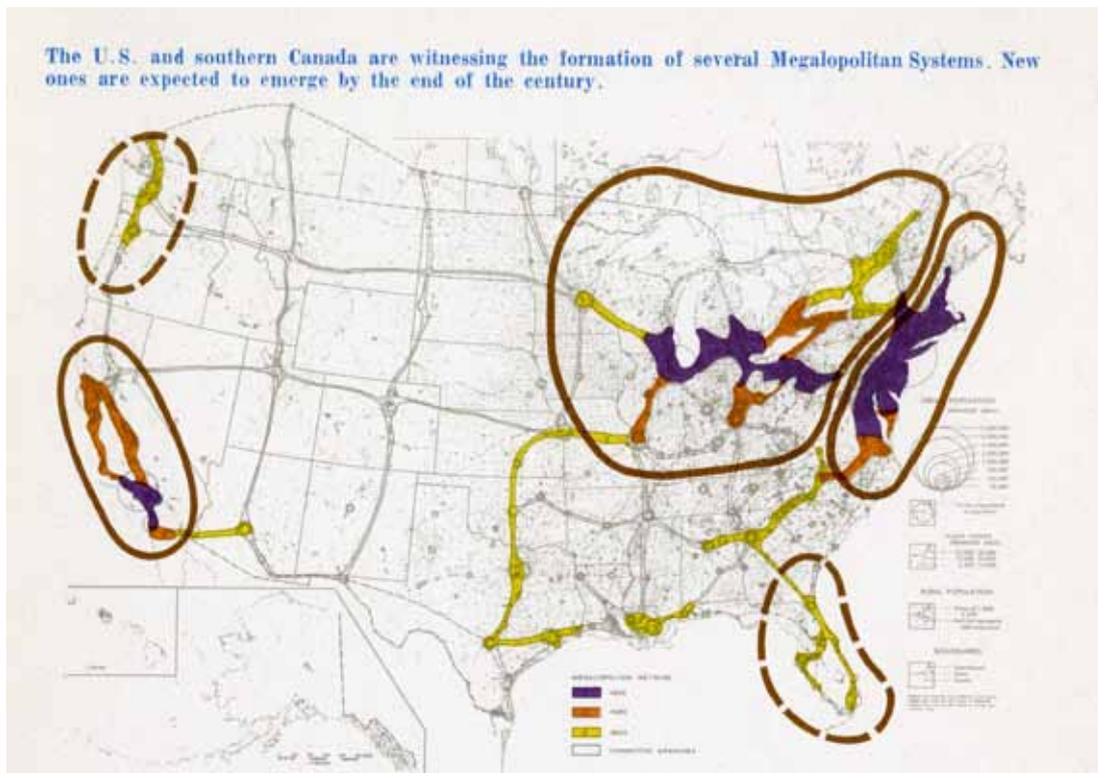
The Great Lake Megalopolis Research Project

The need to understand and define the urban and regional phenomena that influenced the city of Detroit gave rise to another research project, namely the *Great Lakes Megalopolis* (GLM). As the title implied, the project studied the conurbations of the broader Detroit area and beyond, speculating on the emergence of a "continuous" urbanized area around the Great Lakes. The term "Megalopolis" had been already coined by the French geographer Jean Gottmann (1915-1994) in the seminal book *Megalopolis* (1961), where he described the urbanized corridor of the five metropolitan areas of the north-eastern coast of the United States, that is, Boston, New York, Philadelphia, Baltimore, and Washington. Gottmann was the first to focus on the extraordinary dynamics of urbanization and the trend of increasing activity concentrations observed in several parts of the world.[43] Doxiadis on the other hand, contributed significantly to the establishment of the Megalopolis as a regional pattern (Figure 6.2). In the ekistic hierarchy of urban systems in fact, Megalopolis was a stage prior to the futuristic Ecumenopolis and in every respect an experience much closer to the urban realities of his era. In that sense, the Greek planner and the French geographer shared a pioneering view on emerging urbanization phenomena, and yet their studies took similar but different theoretical paths.[44]

A few years later, in March 1975, the World Society for Ekistics (WSE) - jointly with the Leman Group Inc. - organized in Toronto the "Great Lakes Megalopolis" Symposium, with the participation of prominent personalities such as Buckminster Fuller, Margaret Mead, Peter Nash, Marshall McLuhan, and Jean Gottmann to name a few. In his lecture, Jean

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[42] See, Doxiadis, C. A. (1965) *Thoughts on the continuation of the DETROIT program[Σκέψεις πάνω στη συνέχεια του προγράμματος του DETROIT]*. Document, Ref. Code 23431 R-USA-A 15. Doxiadis Archives.

[43] Undeniably, Gottmann's study became a fundamental reference for urban and regional planning. On Jean Gottmann see, Muscarà, C. and Psomopoulos, P. (eds) (2003) 'In the Steps of Jean Gottmann (three parts)', *Ekistics*, 70(418-423). Calogero Muscarà is the guest editor of this tribute to the French geographer.

[44] On the relationship of Doxiadis and Gottmann and the parallelisms between their professional trajectories, see Muscarà, C. (2009) 'The Doxiadis - Gottmann Exchange', in *Constantinos Doxiadis and his Work (vol.2)*. Athens: Technical Chamber of Greece, pp. 200–208, p. 204. According to Muscarà, Doxiadis and Gottmann first got in contact sometime in 1960, most probably owed to Papaioannou. In the 1961 NAHRO research on urban renewal and the American City Doxiadis uses as a reference Gottmann's recently published study in relation to the ekistic scale and its stages. The term Ecumenopolis in fact, appeared for the first time "officially" in Doxiadis' work the same year. Effectively, the two conferences of NAHRO (the first on 21 March 1960, the second one on 29 October 1961) mark the change In Doxiadis' thinking from the Dynapolis and the urban-architectural scale to the regional scale and the appearance of the Ecumenopolis concept. In that sense, the acquaintance with Gottmann and his work on the Megalopolis must have been crucial to Doxiadis.

The formation of several "Megalopolitan" systems in the U.S. and Canada.
[The Developing Great Lakes Megalopolis Research Project: An Introduction To The Project
(Pamphlet, 1968)]
Figure 6.2

Gottmann asserted that "the concept of megalopolis [applied] to very large polynuclear urbanized systems endowed with enough continuity and internal interconnections for each of them to be considered a system in itself".[45] The kernel of the *megalopolitan* system then was the web of interrelationships involving both infrastructure lines and more *fluid* networks. The French geographer in fact maintained that "a necessary condition of a megalopolis is a hinge articulating two or more networks, one being a national internal network, and another an international and overseas network".[46] In the case of the Great Lakes, its navigable waterways between Canada and U.S. represented the international boundary.

Be that as it may, the GLM research was initially conducted within the UDA project however soon unfolded independently as part of the "City of the Future" research project (COF). A descriptive account of the project was published in the Proceedings of the Institute of Electrical and Electronics Engineers (IEEE) in 1968, in a paper titled "the Emerging Great Lakes Megalopolis". Doxiadis defined Megalopolis as "the urban concentrations which comprise within them several metropolitan areas and several minor settlements interconnected in a system which is beginning to operate as one", and stretched the importance of transportation networks for the structure and operation of such system.[47] To reach a *scientific* definition the employed methodological analysis drew on structural criteria, (i.e. population, area or density rates), functional criteria (i.e. economic activities and administrative aspects) or growth criteria (i.e. change of uses). Even so, Doxiadis emphasized the difficulty of reaching a clear definition.[48]

Another feature worth mentioning is the comparative analysis of the Northeast and Great Lakes Megalopolis that Doxiadis Associates performed using statistical data such as population density and growth, social and economic indexes like income, employment and median school years, as well as the total of housing units, their values and rents.[49] The

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[45] See, Gottmann, J. (1976) 'Megalopolitan Systems Around the World', *Ekistics*, 41(243), pp. 109–113.

[46] *Ibid.*, p. 110. Conclusively, Gottmann specified quantitative criteria for defining a Megalopolis, such as the density of the settlement and a minimum amount of population that he set at 25 million inhabitants. On the other hand, he placed a great emphasis on the cultural dimension of this regional system that he considered a "huge *social* and *economic mosaic*" and an incubator of trends.

[47] See, Doxiadis, C. A. (1968) 'The Emerging Great Lakes Megalopolis', *Proceedings of the IEEE*, 56(4), pp. 402–424.

[48] *Ibid.*, To sort out the bulk of data the study applied the Principal Component Analysis technique, a statistical tool that as alleged reduced the numerous variables to a limited number of components able to describe and eventually delimit the megalopolis. As I will discuss below, this methodology was as well applied in the Detroit Plan.

[49] Apart from Gottmann's study that clearly served as a fundamental reference for the GLM research,

outcome of this comparison was the rather interesting concept of a time lag between the two urbanized regions, estimated at 30 years (Figure 6.3). Eventually, the preliminary geographical definition of the Great Lakes Megalopolis considered the emergence of three major clusters, namely those of Chicago-Milwaukee, Cleveland-Pittsburgh, and Detroit while its Canadian extension passed via London (Ontario), towards Toronto, Montreal-Ottawa and the Quebec cluster (Figure 6.4). Effectively, in Doxiadis' study national borders "disappeared" before the significance of regional transportation and infrastructure systems.

Seeing like a planner

Throughout his career Doxiadis lectured with an apostolic fervor against the proliferation of the car pointing to the alterations the "machine" brought to contemporary life. To exemplify the destructive forces of the automobile Doxiadis often used in his lectures and writings "the story of a square". The parable described the transformation of the neighborhood's square where he used to play as a boy after the cutting down of trees in order to pave the way for the automobile. Since the arrival of the "machine", the square, the neighborhood, and eventually the whole city would never be the same.[50] One of the ekistic objectives then was to plan a "human city" compatible with the automobile.

In Doxiadis' eyes, Detroit's decline was intrinsically connected to the predominance of the automobile over public space. According to his rationale, every passing day the new freeways brought more cars in the city, while parking lots mushroomed in vicinity to business and commercial strips.[51] Considered all together in fact, the physical imprint of motorized mobilization increased to such extent that dispersed the urban fabric and dismantled community life (Figure 6.5).[52] Going even further and trying to answer the

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additional reference studies included the extensive work of Jerome P. Pickard who already in 1959 had published the *Metropolitanization of the United States*, and Richard L. Meier' work on Japan conurbations conducted as part of the City of the Future project. See, Doxiadis Associates (1968) *Summary and Evaluation of the Studies Conducted within the UDA Research Project for the Great Lakes Megalopolis*. Document, Ref. Code 25346. Doxiadis Archives.

[50] See for example, Doxiadis, C. A. (1960) 'The Death of our Cities', *Ekistics*, 10(61), pp. 298–307. Abstracted from a speech delivered during the 5th Working Conference on Urban Renewal, NAHRO, at Chapel Hill, North Carolina, United States, March 21, 1960.

[51] Doxiadis' interpretation of Detroit's decline is unfolded in Doxiadis, C. A. (1967) *Thoughts on the Central Zone of DETROIT [Σκέψεις πάνω στη κεντρική ζώνη του DETROIT]*. Document, Ref. Code 25364 CR-USA-A 14. Doxiadis Archives.

[52] In effect, the maps issued by Doxiadis Associates in UDA perfectly portray the increment of the percentage of space destined to the car over the years. See, Doxiadis, C. A. (1970) *Emergence and Growth of an Urban Region: The Developing Urban Detroit Area - A concept for future development (vol.3)*. Detroit: Detroit Edison Company, fig. 204-206. Apparently, Doxiadis used the same maps lecturing at the University of Michigan in Ann Arbor and concluded: "Here Gentlemen, you see already the cancer of traffic pressures eating away the healthy urban tissue". Governor George Romney attended the conference. See, Palaiokrassas, J. (2009) 'C.A.

social and racial phenomena affecting Detroit, Doxiadis attributed the continuing suburbanization to the deficiency of the transportation network to deal with the growing volume of cars and its collateral effects. In the absence of a regulating plan, he explained, traffic pressures "suffocated the city to death" eventually *driving away* upper-class residents. Consequently, the empty houses were changed to flats and rented to middle or low class workers (Figure 6.6). Since most of the times low class implied blackness, inner-city neighborhoods gradually turned into ghettos.[53] More or less like in "the chicken or the egg" dilemma, Doxiadis' rationale presented the ghettoization of Detroit's center as an ill effect of the automobile. Instead of looking into the socio-economic aspects of the urban crisis, the celebrated planner tried to justify the *white flight* as the outcome of a malicious transportation system.[54]

In a similar vein, he understood the segregation of blacks in the deteriorating central areas principally as a result of misleading regional policies but barely discussed the everyday housing practices that marginalized further the Afro-American community. According to the Greek planner, segregation was not just racial or economic but above all characterized the differences between urban and rural areas.[55] To give an example of his quantitative perspective, Doxiadis dubbed the blighted center of Detroit a "bottomless pit".[56] Though the term might get interpreted as politically incorrect, it was actually inspired in a curvilinear graph that depicted the per capita income of the inhabitants in relation to the distance from the CBD (Figure 6.7).[57] To go even further with his representational language, the Greek planner asked his collaborators to calculate the speed of the incrementing poverty by comparing the curves of 1949 and 1959. When he presented to Walker Cisler the results of the UDA analysis, Doxiadis announced with emphasis that "the bottomless pit widens at the speed of 1.5 inch every hour"![58]

Doxiadis' Way of Working in USA', in *Constantinos Doxiadis and his Work (vol.1)*. Athens: Technical Chamber of Greece, pp. 62–68. According to Melosi, in 1953 Detroit "streets and parking made up 49.5 percent of the central city". See, Melosi, *The Automobile Shapes The City*, *op.cit.*

[53] See, Doxiadis, *Thoughts on the Central Zone, op.cit.*

[54] Doxiadis' rationale was severely criticized by Kollarou who argued that the worsening of the transportation system was a result instead of a cause of the overall decline. See, Kollarou, K. (1967) *Comments On The Draft Report Entitled 'Considerations For A Program Tending To Face The Problems Of The City Of Detroit' Dictated By D*. Document, Ref. Code 25364 CR-USA-A 16. Doxiadis Archives.

[55] See, Woodson, S. (1969) 'Doxiadis terms Detroit riots only a sympton of crisis', *The Ann Arbor News*, 17 December, p. 13.

[56] As Doxiadis informed his collaborators, "we shall mean by *Pit* the total area which lies between the center of a city, if it declines and once it starts declining, and the highest region around. This *pit* is represented mostly by incomes of people although this may coincide with other phenomena". See, Doxiadis, C. A. (1967) *Considerations on the Central Region*. Document, Ref. Code 23476 R-USA-DT 80. Doxiadis Archives.

[57] See, Palaiokrassas, 'C.A. Doxiadis' Way of Working in USA', *op.cit.*, p.66.

[58] *Ibid.*,

Illustration depicting the "Thirty Year Time Lag" between the Great Lakes and the East Coast Megalopolis.
[Doxiadis, C. A. (1966) *Emergence and Growth of an Urban Region: The Developing Urban Detroit Area - Analysis (vol.1)*. Detroit: Detroit Edison Company, p. 83]
Figure 6.3

The Extent of the Great Lakes Megalopolis.
[The Developing Great Lakes Megalopolis Research Project (Pamphlet, 1974)]
Figure 6.4

312

YEAR 1916   Fig. 203   YEAR 1950   Fig. 204   YEAR 1969   Fig. 206

Built-Up Area – 36%
Expressways, Streets, Alleys, Parking And Open Spaces – 64%

Built-Up Area – 33%
Expressways, Streets, Alleys, Parking And Open Spaces – 67%

Built-Up Area – 27%
Expressways, Streets, Alleys, Parking And Open Spaces – 73%

Evolution of Physical Decline in the Detroit Central Business District 1916-1969.
[Doxiadis, C. A. (1970) *Emergence and Growth of an Urban Region: The Developing Urban Detroit Area - A concept for future development (vol.3)*. Detroit: Detroit Edison Company, p. 157]
Figure 6.5

Percent Change In Total Population · Detroit Central City · 1950-1960 / Percent Nonwhite Households · Detroit Central City · Year 1965
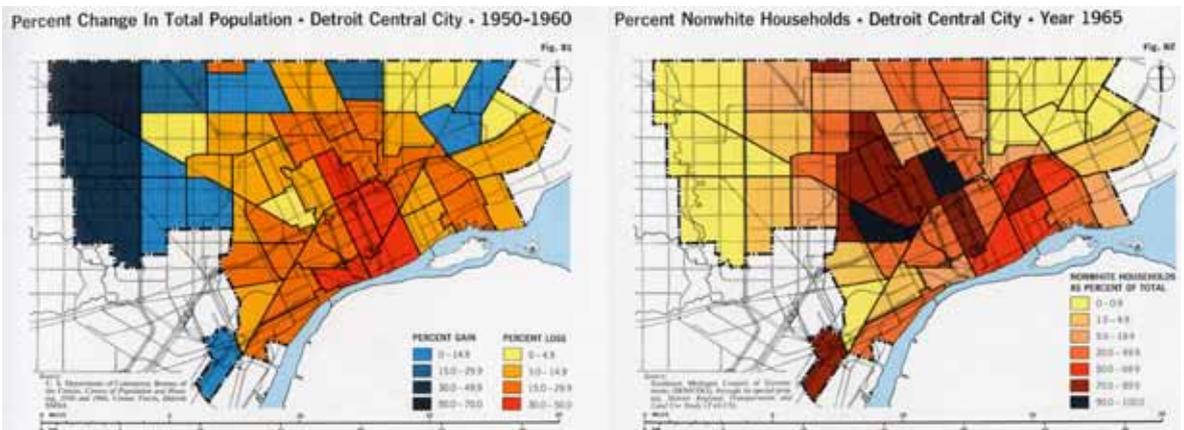
Percentage Change in Total Population - Detroit Central City - 1950-1960 / Percentage Nonwhite Households - Detroit Central City - 1965.
[Doxiadis, C. A. (1970) *Emergence and Growth of an Urban Region: The Developing Urban Detroit Area - A concept for future development (vol.3).* Detroit: Detroit Edison Company, p. 85]
Figure 6.6

313
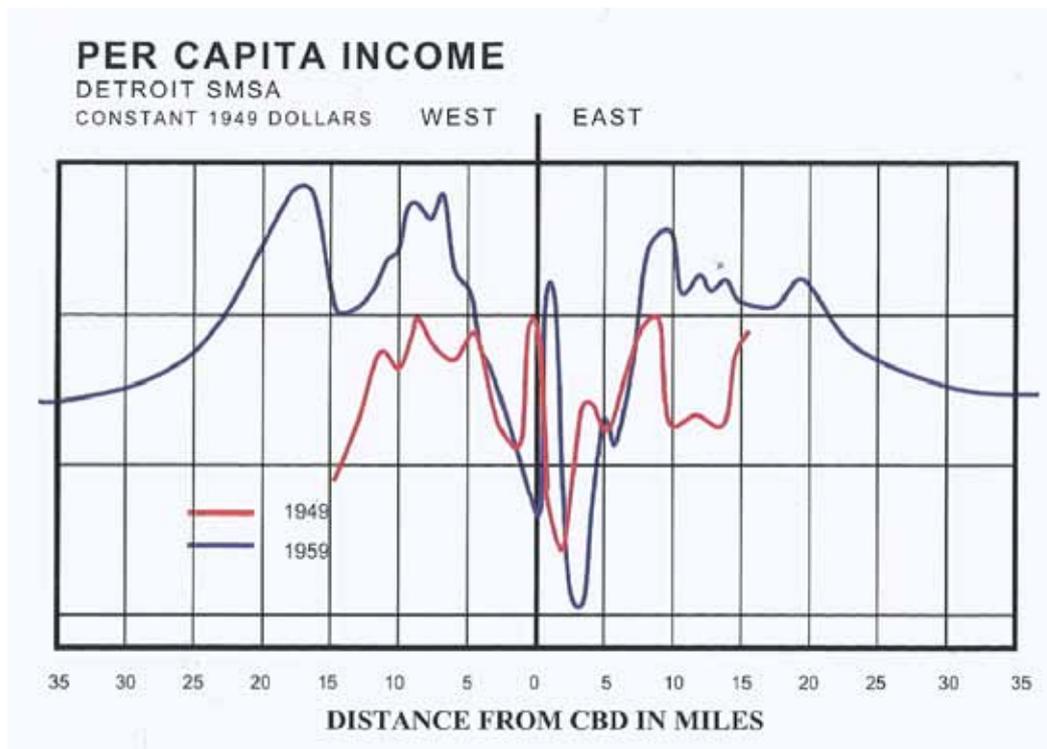
The graph depicts the per capita income in relation to the distance from the CBD of Detroit.
The graph inspired Doxiadis to name the center of Detroit a "bottomless pit".
[Palaiokrassas, J. (2009) 'C.A. Doxiadis' Way of Working in USA', in *Constantinos Doxiadis and his Work (vol.1). Constantinos A. Doxiadis and his Work,* Athens: Technical Chamber of Greece, pp. 62–68.]
Figure 6.7

Prompted by his faith in planning, Doxiadis' interpretation of Detroit's crisis assumed a spatial meaning, oversimplifying the complexity of its nature. Downplaying the importance of numerous political, economic, and social factors including police abuse, black militancy, economic inequality and rapid ghettoization in the city's neighborhoods, Doxiadis insisted on understanding the riots as a symptom of a crisis originating in "territorial forces".[59] If the crisis was interpreted as a result of spatial disorder, a scientifically developed regional and urban structure could after all put order to chaos.[60]

6.3 The Urban Detroit Area Plan (UDA)

The Urban Detroit Area project (UDA) was carried out in three phases, each one followed by a lavish publication. The first volume titled "Analysis" (1966) comprised an inventory of the existing conditions, the description of the past trends, and the objectives of the study. The second volume titled "Future Alternatives" (1967) started with the conceptualization of an array of regional patterns as options for growth, and concluded to a unique Concept-Plan, presented in the 3rd volume of the research under the title "A Concept for Future Development" (1970).

At first glance, the UDA was a solid study based on a thorough analysis of data, rigorous methodologies, and even computer analysis or simulation models.[61] The study began with the formulation of a hypothesis for the broader region of Detroit and for the year 2000. This hypothesis was based on population projections and the extrapolation of the urbanization trends (Figure 6.8). For example, the study analyzed the changes from agricultural to urban uses registered from 1900 to 1960, or the alterations in Michigan counties' residential densities observed from 1940 to 1960. The outcome of this analysis reaffirmed the problems already observed in the central area of Detroit and warned for the

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[59] "More and more I am convinced that we have two types of forces related to human settlements, not national nor racial not economic but territorial and non-territorial, this is my case". See, Doxiadis, C. A. (1970) *Considerations on GLM Strategy*. Document, Ref. Code 23523 R-USA-A 197. Doxiadis Archives. Doxiadis argued that people looting and rioting were foreigners and not locals who instead were desperately looking after their properties. Wanting to analyze further the problematic symbiosis of the different communities, the father of ekistics rather unfortunately referred to the emerging global corporations and their impact on local development.

[60] Commenting on the safety in the central cities, Doxiadis ascribed the problems of order and control to the physical characteristics of the built environment: "first, we lose security because, instead of having streets, we have a wild pattern of open lots. There is no structure; therefore there is no order…". See, Doxiadis, C. A. (1970) *Considerations and Information on Security and Safety in Central Cities*. Document, Ref. Code 23523 R-DUS-WS 2. Doxiadis Archives.

[61] For a review of the UDA plan focusing on its methodology, see Schneider, J. B. (1972) 'Doxiadis' Detroit: Forty-Nine Million Alternatives', *Journal of the American Institute of Planners*, 38(5), pp. 332–333.

Urban Development in UDA - by Major Land Use (1965).
[Doxiadis, C. A. (1970) *Emergence and Growth of an Urban Region: The Developing Urban Detroit Area - A concept for future development (vol.3).* Detroit: Detroit Edison Company, p. 283]
Figure 6.8

316

increasing pressures in the overall area.[62] Consequently, the study devised numerous scenarios for the development of the region based on a combination of planning parameters (population distribution, densities, transportation networks, speeds of transportation, maximum travel time) and basic assumptions for locating uses and transportation nodes (urban centers, educational and research centers, industrial poles, ports, airports, etc.). These combinations were represented in a matrix of parameters that aimed to represent the complexity of the problem in a quantifiable and visually legible way.[63] According to the UDA study then, Detroit could evolve into 49 million ways![64]

The selection of the most *suitable* solution became the subject of another methodology called I.D.E.A., standing for Isolation of Dimensions and Elimination of Alternatives. As its carefully chosen title denotes, I.D.E.A. was a methodological funnel for comparing, evaluating, and finally eliminating alternatives or *possible urban futures*. The analysis was accomplished in eight steps, "progressing from a theoretical number of tens of millions of alternatives to some tens, a few and finally one" (Figure 6.9).[65]

This process was complemented by the simultaneous application of another method called Continuously Increasing Dimensionality method, or C.I.D., that practically increased the input of parameters in the successive steps of the model. In other words, as the initial assumptions of the study considered phenomena at the macro-scale, the C.I.D. method permitted the introduction of "phenomena of a lower order" to be examined in advanced steps of the model. As such, the C.I.D. method maintained the evaluation process "open" to changes or inputs different from the initial assumptions of the planner.[66] The I.D.E.A. method then, was a large-scale methodological tool set to structure and evaluate *infinite* alternatives, while the C.I.D. method was the **feedback mechanism** of that process. Practically however, while these systemic models were premised on computer analysis, mathematical equations, and simulation models, a great part of the principal assumptions was based on Doxiadis Associates empiricism.

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[62] See, Doxiadis, C. A. (2005) 'Method for synthesis', *op.cit.*, p. 134.

[63] The conception of these alternatives was premised on the morphological analysis approach developed by Fritz Zwicky (1898-1974), a Swiss astrophysicist and inventor of jet engines who participated at the Athenian ekistic seminars. Zwicky's method was as well represented in a three dimensional grid called "Zwicky box". The General Morphological Analysis was pioneered by Zwicky as a method for researching complex problems that contained numerous and non-quantifiable parameters. See, Ritchey, T. (2011) *Wicked Problems - Social Messes Decision Support Modelling with Morphological Analysis*. Berlin ; London: Springer (Risk, governance and society).

[64] Doxiadis was eager to demonstrate the complexity of a problem or a solution by the infinity of alternatives resulting from every possible combination and represented in an ekistic grid. In this case, and for "practical purposes", the study made only five assumptions for each basic parameter! See, Doxiadis, 'Method for synthesis', *op.cit.*, p. 136. This rationale stood at the antipode of Jacob's concept of "organized complexity" as commented in chapter five.

[65] *Ibid.*, p. 132 The methodological scheme is depicted in figure 2.

[66] *Ibid.*, pp. 132-133.
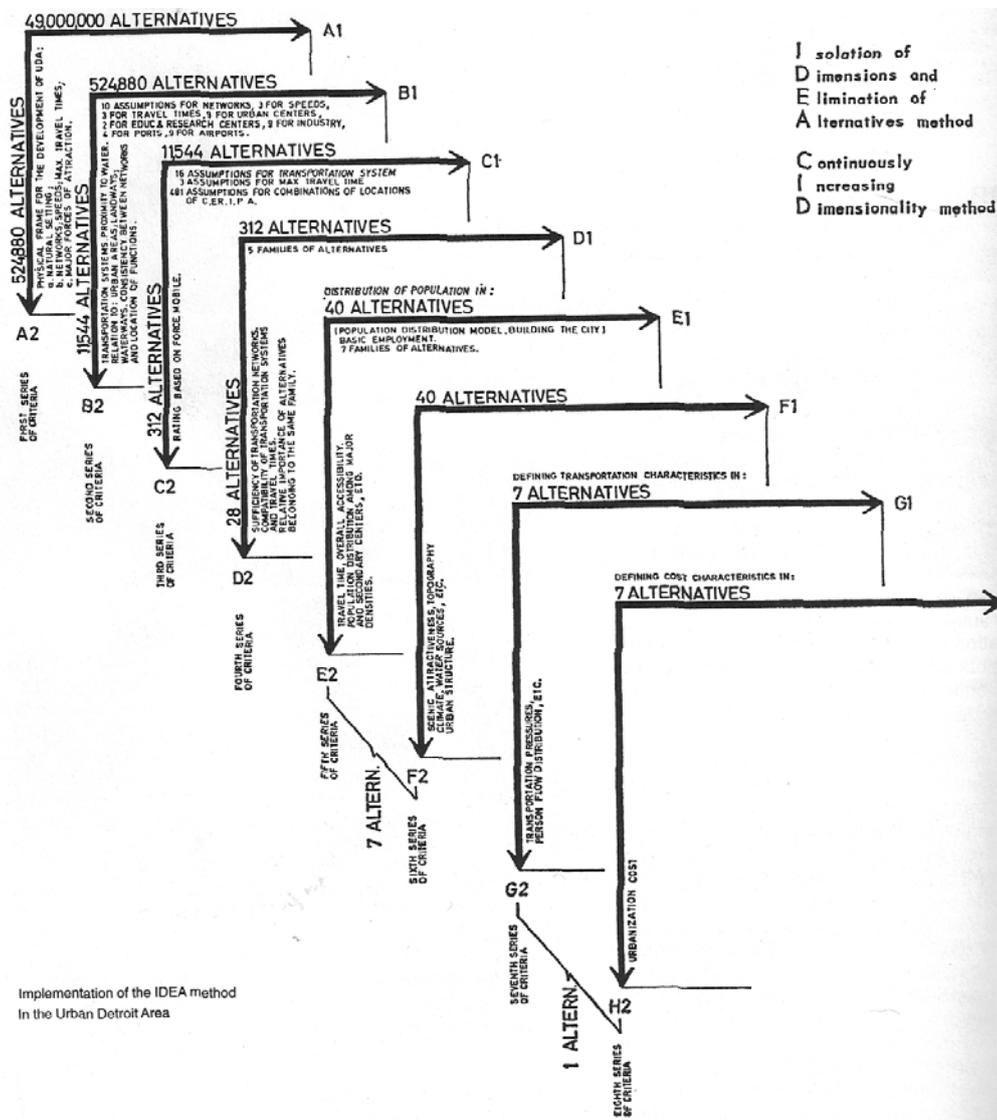
Implementation of the IDEA Method in the Urban Detroit Area.
[Doxiadis, C. A. (2005) 'Method for synthesis: the I.D.E.A. and C.I.D. methods', *Ekistics*, 72(430 to 435), pp. 131–140, p. 132]
Figure 6.9

The Concept - Plan

The third volume of the study presented a multifarious and much-promising set of programs called the Concept-Plan (Figure 6.10). It comprised actions "at all scales, on all types of structures and functions", and considered their implementation in three phases, each one for every decade till the year 2000.[67] The proposed programs in fact, not only comprised spatial policies and projects, but claimed to "initiate parallel efforts to resolve those problems which [were] not directly related to the physical structure".[68] Accordingly, the identified problems were classified under thematic categories such as natural environment (N), demography (M), socio-economic (S), physical (P) and institutional structure (G), and represented graphically in a grid.[69] In total, UDA comprised 40 programs of action: for instance, there were actions corresponding to the despoliation of land resources (N2) or to the lack of recreational areas (N3), as well as programs referring to the decline of population in the center (M3) and the heavy reliance of the regional economy on a single industry (S1). Other actions addressed the economic (S9) or racial segregation (S10) while a series of programs brought forward the need to coordinate the networks of the area (i.e. P2, P6, P7), ameliorate housing conditions (P10) and introduce facilities in the central areas (P11).[70] As specified, the implementation of every program should be pursued by a coalition of public agencies and private institutions. In this respect, Doxiadis sought not only to mobilize public organizations but as well to convince private developers and stakeholders to participate in the regeneration of Detroit under the auspices of his comprehensive plan.

Taking one step further, the UDA team summarized the aforementioned programs in five strategies called key programs that were expected to contribute to the solution of the largest number of the identified problems, thereafter paving the way for the implementation of the overall Concept-Plan.[71] The first strategy concerned the revitalization and remodeling of the existing cities focusing on Detroit's center. The aim was to stop the dismantlement of the city and reverse the trend of the *white flight*. The second key program however moved to a completely different direction and proposed the

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[67] See, Doxiadis, C. A. (2005) 'Toward the implementation of the Concept-Plan', *Ekistics*, 72(430 to 435), pp. 141–164.

[68] *Ibid.*, p. 141.

[69] The UDA study in fact, comprised several matrices that represented graphically the interrelation of problems, programs and agents of action. These grids were used by Doxiadis both for understanding the problems and for organizing the implementation of the proposed solutions.

[70] The forty programs are described in Doxiadis, 'Toward the implementation of the Concept-Plan', *op.cit.*, pp. 152-161.

[71] *Ibid.*, p. 163.
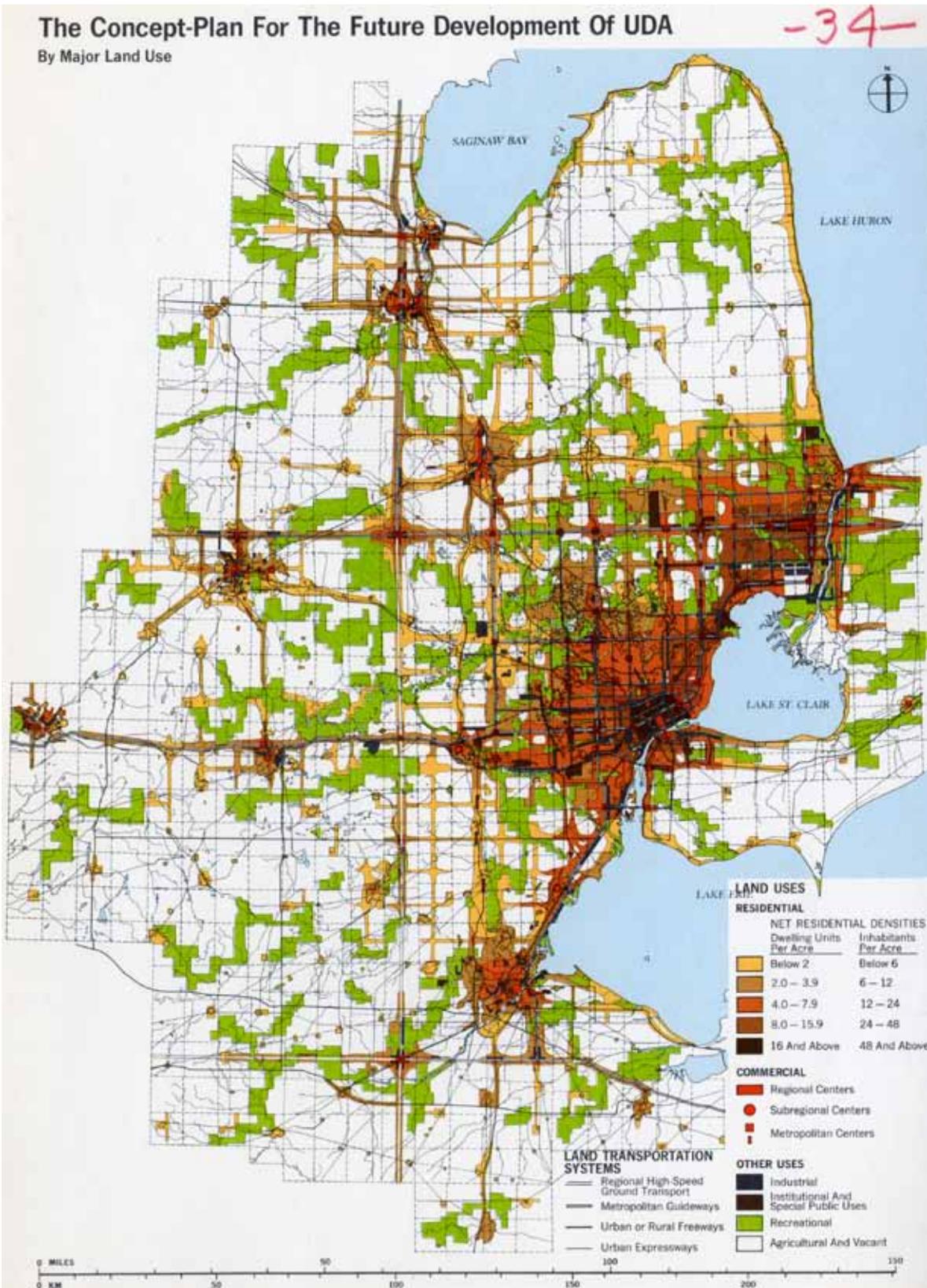
The Concept - Plan for the Future Development of UDA - by Major Land Use.
[Doxiadis, C. A. (1970) *Emergence and Growth of an Urban Region: The Developing Urban Detroit Area - A concept for future development (vol.3)*. Detroit: Detroit Edison Company.]
Figure 6.10

320

creation of a "twin city" in St. Clair County in the vicinity of Port Huron. This new town was conceived with the aim to host major functions, guide development, and equilibrate the "urban forces sprawling uncontrollably throughout the area" (Figure 6.11).[72] According to the population projections of the UDA and the Great Lakes Megalopolis research program, Doxiadis presumed the continuing growth of the city and the broader region and therefore sought to ease future urban pressures on Detroit. Accordingly, the creation of a new pole was expected to direct regional growth along the shoreline of Lake St. Clair and St. Clair River, and on the other hand to stimulate development at the north of Detroit, where Detroit Edison had its properties. Moreover, the third strategy proposed the development of a major east-west transportation axis passing from St. Clair and southern Flint, where it met at right-angles another regional highway (Figure 6.12). Considering the growing volume of transactions between Canada and United States, this axis was conceived as a corridor of national and international importance and was complemented by an extensive transportation network aiming to facilitate commuters and commerce across the interurban and regional system. The UDA in fact, studied different types of transportation means for the urban and regional system according to their speed and travel time, among them the monorail, subway and a high-speed electric train with Montreal as a terminal station.[73] Private cars on the other hand were envisaged as dual-mode vehicles with the option to circulate either in Automated Guideway Transit (AGT) controlled by a computerized system, either driven as conventional cars in streets and highways (Figure 6.13a,b).[74] Much alike its glorious past, the *imaginary* future of Detroit was intrinsically linked to mobility!

The fourth key program proposed the development of ten new cities conceived as urban centers of regional importance, the most important one being the pole in St. Clair. These new cities were nodal points in the regional transportation system, all together conceived as an "organic whole" (Figure 6.14). Creating from a scratch a regional system of new cities and extended infrastructure sounded more a fictional scenario than a development plan, and yet Doxiadis' proposal conflated with a national policy debated at the time in the Congress as a response to the deterioration of the American city. After almost a decade of a fervent debate on housing legislation and construction, President Johnson's New Communities Act of 1968 promoted a substantial package of incentives for building new

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[72] *Ibid.*, p.141.

[73] The High Speed Ground Transport (HSGT) connecting Montreal and Detroit was expected to reach a speed up to 250 miles/h. See, Kollaros, A. (2009) 'The Research Project for the Urban Detroit Area, USA', in *Constantinos Doxiadis and his Work (vol.2)*. Athens: Technical Chamber of Greece, pp. 76–94.

[74] See, *The Detroit News* (1969) 'Into the 21st century: the story of the developing Urban Detroit Area', October. This report was published as a special supplement to The Detroit News and was prepared by the Detroit Edison Company.

The New Twin Urban Center in St. Clair County -Year 2000.
[Doxiadis, C. A. (1970) *Emergence and Growth of an Urban Region: The Developing Urban Detroit Area - A concept for future development (vol.3)*. Detroit: Detroit Edison Company.]
Figure 6.11

322

THE BEST ALTERNATIVE
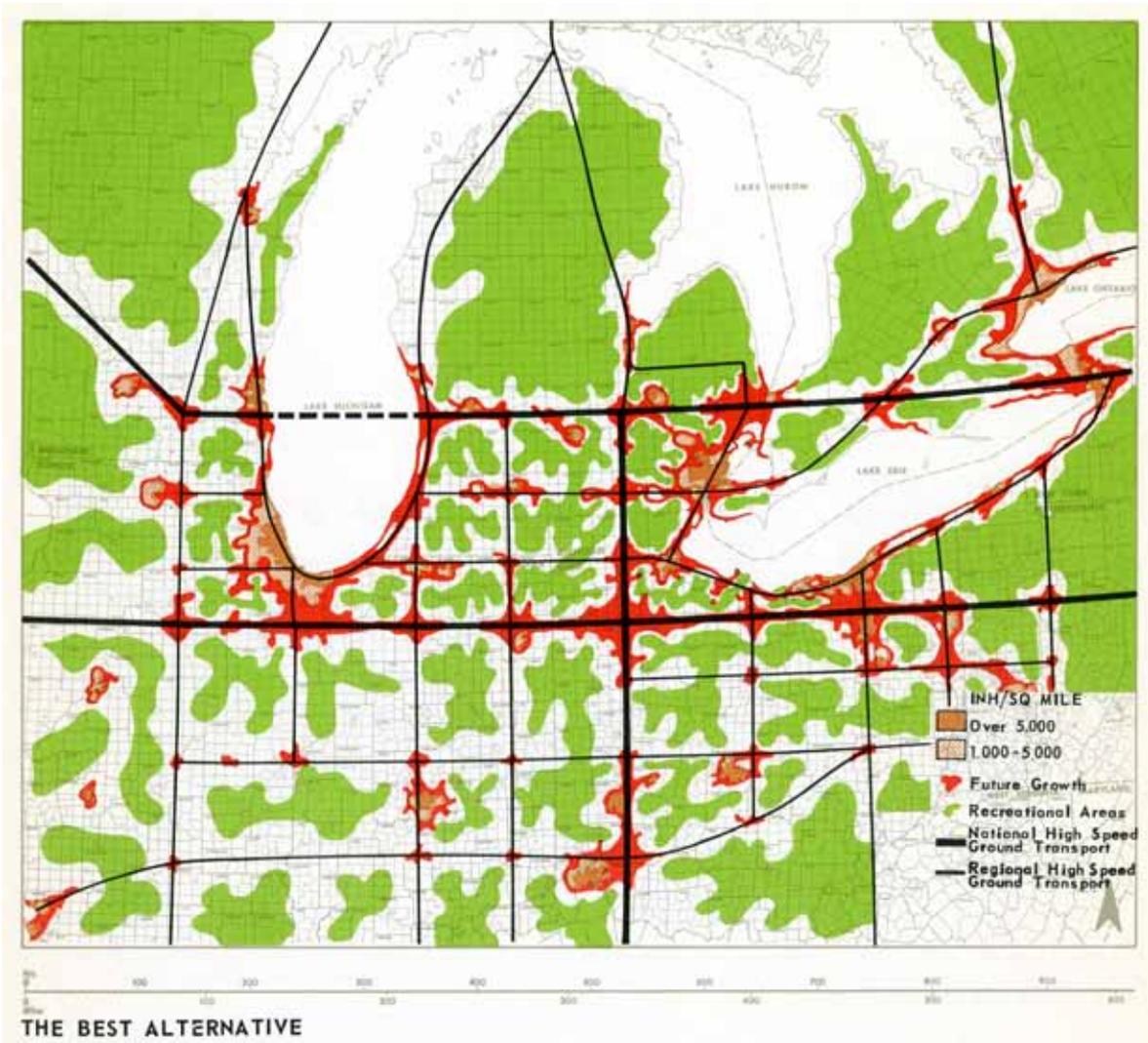
The Development of the Major Transportation Axes in the Great Lakes Megalopolis region.
[The Developing Great Lakes Megalopolis Research Project (Pamphlet, 1974)]
Figure 6.12

THE KEY
TO PLANNED GROWTH:
NEW LAND
TRANSPORTATION NETWORKS

The Old and the New Serve the UDA

The map at left shows, in black, the principal highways and freeways of 1970. The radial pattern has been supplemented by some major north-south and east-west highways largely serving to connect secondary urban centers of the UDA.

In red is shown the new National-Regional network proposed for the 21st century. The wider red lines (of which there are three) show those portions of this network with national significance. The narrower red lines indicate the regional network.

The blue grid lines are the Metropolitan system. For the shorter hauls, at correspondingly slower speeds, the worker of the 21st century will use this network to get to and from his job.

It is estimated that half of travel will be handled by the automated grid network in the year 2000; and half by the conventional highway-freeway system.

Thus, the more familiar forms of highway vehicles we know today, buses, trucks and automobiles, will still be serving 50% of the needs of the UDA 30 years from now.

Growth Follows Transportation Routes

Today, the Urban Detroit Area is chiefly expanding in the metropolitan area and along the six corridors. One serious result is that the triangular areas between the corridors and out from the city are not adequately served by efficient transportation. In these areas, pockets of stagnation have occurred; they will continue to show little growth until better transportation routes serve them.

In 2000, high-speed transportation axes will alleviate the population pressure and traffic congestion on the six corridors and on metropolitan Detroit. These transportation networks, on which will travel high-speed vehicles, will provide alternative routes to all locations within the UDA and to national and international centers beyond the UDA.

The heaviest volume of traffic will be carried on the localized metropolitan network. These arteries are more closely aligned because they serve the more densely populated areas. One form of transportation suggested for this grid is the dual-mode vehicle shown on the next page.

A Rapid Transit System Connects Metropolitan Detroit with Other Centers of UDA. The engineers of the UDA Research Project do not predict the precise hardware of the rapid transit system of 2000 A.D. It may be monorail, subway, elevated or high-speed interurban train. But it will exist, in one or more forms, to serve the regional needs of the UDA, linking Metropolitan Detroit with Ann Arbor, Toledo, Flint, Pontiac, Port Huron, Windsor, the new center, and other urban centers of the UDA, and to connect them one to another.

WOODWARD NORTH

6

New land Transportation Networks in the UDA region.
[*The Detroit News* (1969) 'Into the 21st century: the story of the developing Urban Detroit Area', October, p. 6]
Figure 6.13a

324

Motor Traffic on Automated Highways. There's nothing science fictional about this drawing of a UDA transportation system in the year 2000. This is an artery of the new metropolitan network at an intersection with the new regional grid. It shows a series of personal dual-mode vehicles traveling at computer-controlled speeds which maintain intervals between vehicles and prevent accidents. "Dual-mode vehicle" means that it can be operated automatically on the computer-controlled guideways and will proceed independently under driver control on conventional streets and highways when it leaves the guideways. It will be quieter and safer than automobiles of 1970, and it will almost certainly not produce the same volume of pollutants.

COMPUTERIZED DUAL-MODE VEHICLES AND 250-MPH TRAINS WILL SERVE UDA

High-Speed Electric Trains. Originating in Montreal, the high-speed train at the right stopped in Toronto, London and Sarnia. Here we see it pulling into the station at the new urban center south of Port Huron. From here it will speed west to Flint, Grand Rapids, Milwaukee and beyond at up to 250 m.p.h. Through the major urban centers, these long-range trains will go underground, surfacing where population densities are sparse enough that no nuisance is created.

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Dual-Mode Vehicles and High-Speed Rail in the UDA region.
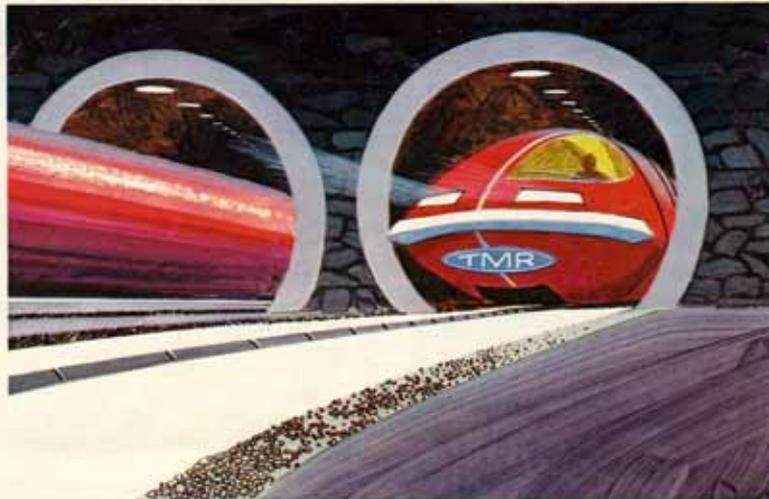[*The Detroit News* (1969) 'Into the 21st century: the story of the developing Urban Detroit Area', October, p. 7]
Figure 6.13b
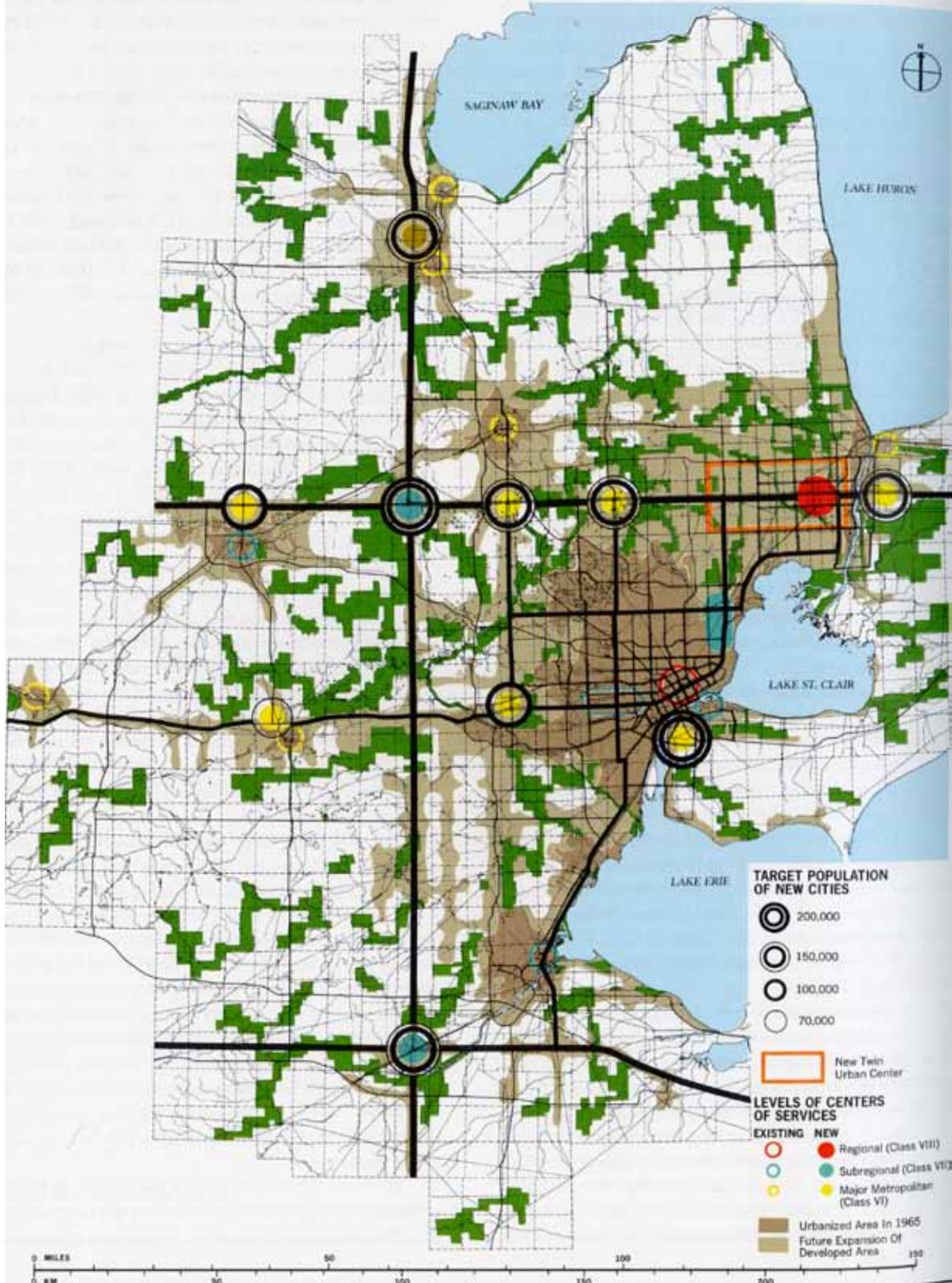
The New Cities in the UDA region - Year 2000.
[Doxiadis, C. A. (1970) *Emergence and Growth of an Urban Region: The Developing Urban Detroit Area - A concept for future development (vol.3)*. Detroit: Detroit Edison Company, p. 356]
Figure 6.14

towns as part of the "Great Society" program.[75] One year later, the final report of the National Committee on Urban Growth Policy titled "The New City" called the federal government to support financially the creation of 10 major new cities of 1,000,000 people each, and of other 100 smaller cities averaging 100,000 people.[76] It was in that context that the UDA project was heralded as a unique opportunity for the State of Michigan to take a position of leadership in "creative urban development".[77] Taking a step further, Doxiadis proposed to conduct a plan of action in order to acquire and reserve land for future development through the formation of landbanks.[78] Finally, the fifth key program stipulated the reservation of natural areas designated to the recreational facilities of the inhabitants and the preservation of the natural environment. At a time when concepts like resource depletion and global pollution emerged along the criticism of unrestrained and unlimited growth, ekistics offered a strategy for handling both development and environmental protection.

All in all, the Urban Detroit Area study proposed a long-term multifaceted plan that envisaged the development of the broader region - effectively a part of the Great Lakes Megalopolis - with Detroit as its legitimate center (Figure 6.15). The organization of the territory was based on an extended transportation system and the construction of new towns based on the planning principles of the Human Sector and the broader theoretical principles of the Greek planner.

On the other hand, Doxiadis' plan comprised specific city-scale proposals, such as networks of pedestrian corridors for the complete separation of the pedestrian movement from vehicular traffic, or the elimination of the open parking lots in order to re-establish the continuity of Detroit's center and ensure its safety (Figure 6.16).

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[75] For an excellent discussion of the new towns legislation and debate in the U.S., see Biles, R. (1998) 'New towns for the Great Society: a case study in politics and planning', *Planning Perspectives*, 13(2), pp. 113–132.

[76] See, *Emergence and Growth of an Urban Region*, (1970), *op.cit.*, p. 357 and Biles, *op.cit.*, p. 120. As Biles accounts, the Committee was organized by "Laurance G. Henderson, an urbanist whose earlier lobbying efforts had resulted in the allocation of government funds for historic preservation". Henderson in fact, "secured the necessary funding from the Ford Foundation to conduct a 2.5 week study of urban growth policy in Europe".

[77] On 16 June 1969, Constantinos Doxiadis was summoned to contribute in the hearings of the Ad Hoc Subcommittee on Urban Growth that was created to consider the challenges of the American city in the horizon of 30 years time. The hearings took place in Washington D.C., and apparently the hearings started a little earlier in order to have more time with Doxiadis, who right after the meeting flew back to New York. The father of ekistics was heralded as a world-known urban planner. He explained before the committee the basic principles of developing a region as a Daily Urban System (the ekistic approach to commuting areas that allegedly exceeded the metropolitan ones) and his opinion of creating new towns as part of a regional system. The Subcommittee was part of the Committee on Banking and Currency of the House of Representatives of the Ninety-First Congress. See, Doxiadis, C. A. (1969) *Population Trends*. Washington D.C.: U.S. Government Printing Office. Moreover, Doxiadis' statement was complemented by two articles, namely "A City for Human Development", and "Man's Movement and His City".

[78] See, Doxiadis, C. A. (1970) *Detroit - Considerations on the New Towns*. Document, Ref. Code 25364 CR-USA-A 23. Doxiadis Archives.

The New Physical Structure For Southern Michigan And UDA Deriving From The Emerging GLM
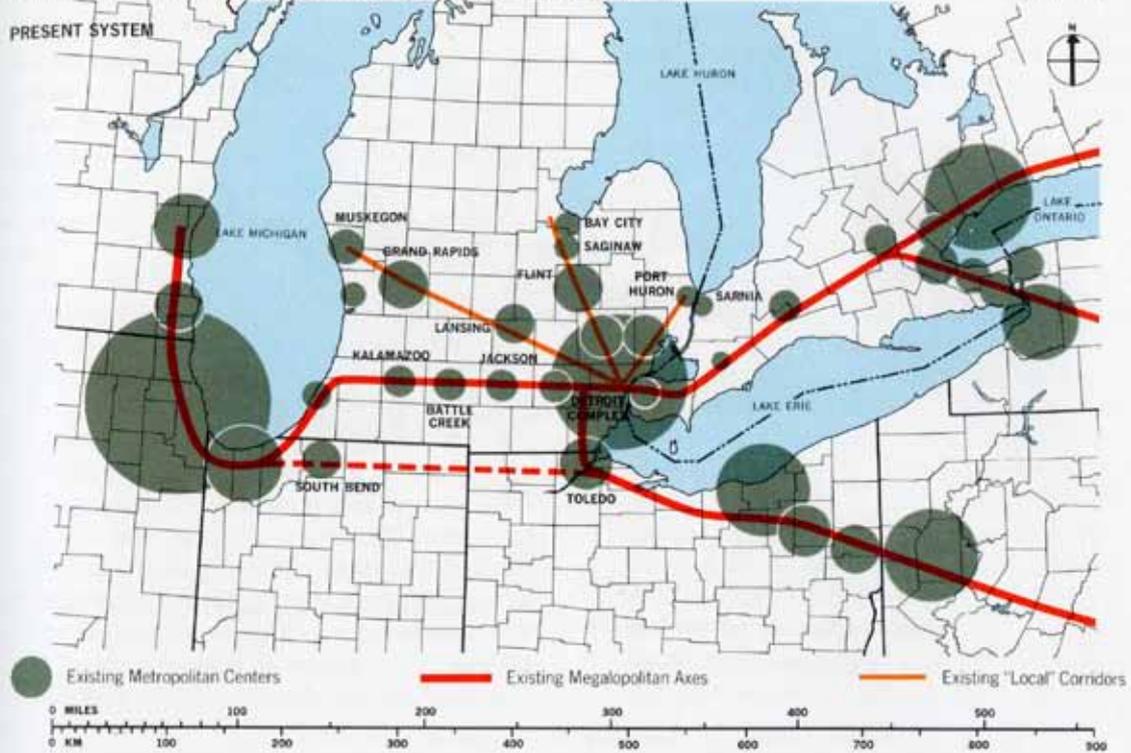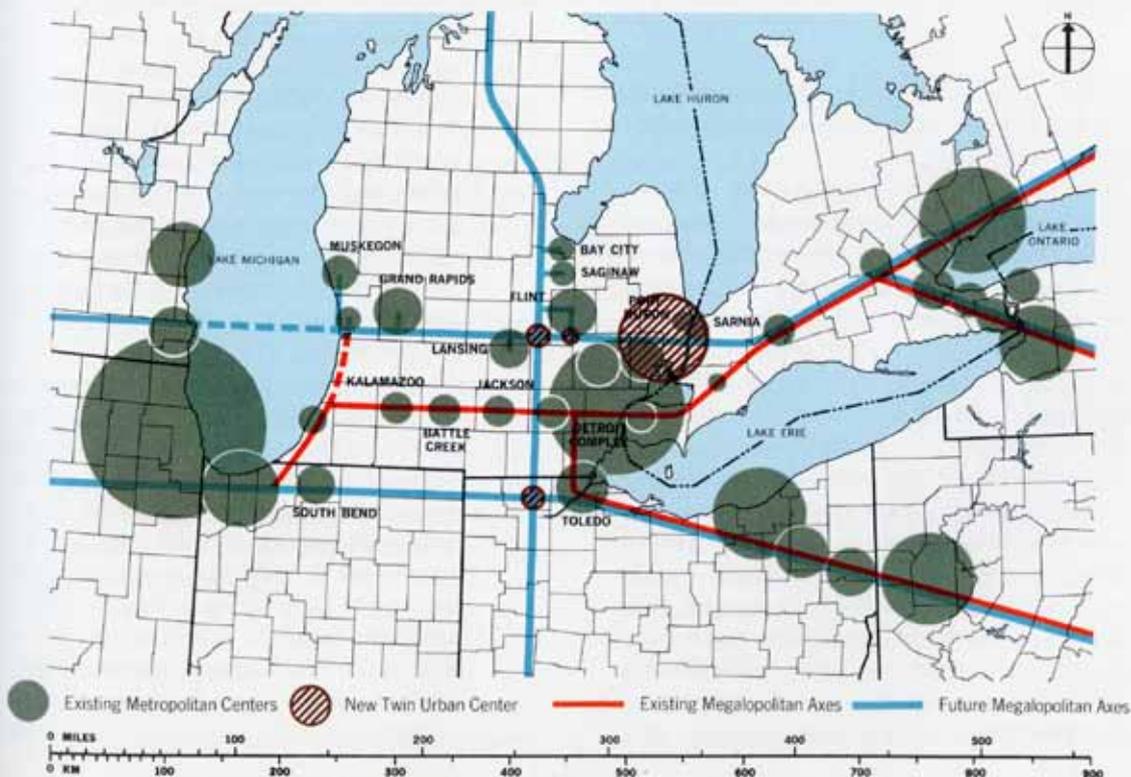
Major Axes and Urban Centers in Southern Michigan and the UDA region.
[Doxiadis, C. A. (1970) *Emergence and Growth of an Urban Region: The Developing Urban Detroit Area - A concept for future development (vol.3).* Detroit: Detroit Edison Company, p. 229]
Figure 6.15

328

Compare this view of a section of Woodward Avenue with that shown on the previous page. The basic changed ingredient is that emphasis has been placed on the human scale. True, physical changes are evident, but the purpose of these changes is to meet human needs and not to accommodate material requirements.

A NEW DETROIT...
EMERGING FROM THE PAST

The Old Landmarks Will Still Be There

Downtown Detroit will still be recognizable in the year 2000. Familiar skyscrapers tower over the Straits, and Judge Woodward's radiating avenues—Michigan, Grand River, Woodward and Gratiot—are discernible. But most vehicular traffic is underground and most workers and shoppers come to downtown Detroit by rapid-transit systems. As a result, the hideous surface parking lots have largely disappeared, replaced by shops, mini-parks, small businesses and town houses.

There is little pollution. The river has been cleaned up so that there is good swimming and fishing. The air is clean and fresh. Factories have moved, in many instances,

and their furnaces, foundries and generators no longer rely on coal and coke. There are no sanitation problems — thanks to improved incineration facilities. Trucks are nonexistent on surface levels. Even the noise level is drastically reduced.

This is the prediction of the Urban Detroit Area Research Project. It is not a promise. It is based on the probability of high-speed transportation routed around or under metropolitan Detroit, rather than funneled through it and on the probability of the new urban center near St. Clair which will absorb much of the doubled new growth of the UDA by 2000.

A Pleasant Place to Visit

Metropolitan Detroit, in the 21st century,

should be a very agreeable place to live in, to work, shop or visit. Its plants will be largely dispersed to other areas of the UDA and its slums will disappear, their inhabitants moving to areas where there will be parks, proper educational facilities, and decent housing. All these will be closely linked with the cultural, commercial and mercantile advantages of the metropolis.

Major thoroughfares, such as the concept of Woodward Avenue shown above, will once again become vital centers of human activity. Separated from the noise and dangers of the transportation requirements of the city, pedestrians can browse the shops or just sit in the tree-and-shrub lined plazas and relax.

Rendering of downtown Detroit depicting the separation of the pedestrian zones from the vehicular traffic.
[*The Detroit News* (1969) 'Into the 21st century: the story of the developing Urban Detroit Area', October, p. 9]
Figure 6.16

329

The Concept-Plan therefore, promoted actions and projects at several scales, starting from the regional successively passing to the metropolitan scale, and finally focusing on the remodeling of the Central Business District of Detroit. These actions that corresponded to the forty main programs were classified according to their scope and time framework in three categories, namely the *Immediate Impact*, the *Change and Therapy*, and the *Growth and Change* category.

Nevertheless, the UDA study had been conceived as an all-encompassing framework for the development of the region, a system of actions that had to be carried out as a whole. As such, Doxiadis suggested the immediate implementation of the forty main programs: "[s]ince all 40 programs form part of an interrelated system, they cannot solve any of the problems effectively unless all are undertaken simultaneously".[79] The interconnectedness of this systemic approach was overwhelming and Doxiadis was eager to face problems of different scales and nature. As he characteristically claimed, "even the greatest effort to improve poor housing conditions in central cities by actions at several levels may not succeed if safety and security is not guaranteed, if air pollution is not controlled and if the central cities continue to decline".[80]

What is more, the organization of the overall study - from the classification of the identified problems to the levels of action and agents of implementation of the Concept-Plan - interlocked with the broader system of ekistic units, and unfolded in accord with Doxiadis' planning philosophy. Beyond doubt, this methodology made UDA a hierarchically structured study easy to comprehend. On the other hand, several actions were nested within each other according to the scale of the proposed project, therefore making UDA rigid to carry out. For example, according to this methodology, the revitalization of Detroit's CBD depended (as well) on the development of the twin urban center located in St. Clair County, that is, on a higher order (bigger scale) intervention.

In regard to the implementation of the Concept-Plan, the study identified the agents and organizations that should promote the proposed programs and policies according to the intervention scale. The creation of an international airport or infrastructure connections to Canada for example, were of national importance and therefore came under the jurisdiction of the federal government, while the State of Michigan was identified as the most adequate authority for carrying out regional programs. For the metropolitan Detroit - denoted as Central Region Area - the study distinguished the Southeast Michigan Council of Governments (SEMCOG) as the most competent organization, but as well referred to the local authorities of St. Clair and other counties affected by the proposed

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[79] See, Doxiadis, 'Toward the implementation of the Concept-Plan', *op.cit.*, p. 148.

[80] *Ibid.*,

interventions.[81] Finally, for carrying out urban plans in the city of Detroit and its CBD, the UDA identified the city authorities, local organizations, private agencies, and stakeholders who had estate properties or had showed a broader interest for the renewal of the center. As the UDA stipulated however, the responsibility for the implementation of the whole plan should be entrusted to "a single agency encompassing the entire area with clearly defined powers of coordination".[82] In effect, the complexity of the all-embracing nature of UDA was one of the reasons for its failure, and yet it was not the only one.

Population projections and the optimism in Doxiadis' planning philosophy
Taken all together, the Concept-Plan was a grandiose set of programs that envisioned a bright future for Detroit and the Great Lakes Megalopolis. In Doxiadis' eyes this was no utopianism but the outcome of scientific planning based on the systematic analysis of data, rigorous methodologies, and proposals that were in accord with federal policies. Effectively, UDA was a holistic system of diagnosis and synthesis for combating Detroit's complex problems and promoting growth.

Nevertheless, the basic parameter of the study, that is population growth, proved to be erroneous or highly overestimated. Based on the demographic trends of the period 1940-1964, the UDA assumed the doubling of population of the whole area, from about 7.5 million in 1970 to 15 million in the year 2000.[83] In the case of the metropolitan area of Detroit, which in 1960 counted 3,540,000 inhabitants, the UDA's scenario prognosticated a 126% of population increase (!) totaling to the fictitious number of 8 million people.[84] And yet, the population projections of the UDA study were not the result of a miscalculation in a mathematical model neither the malfunction of the primitive computer system, but an erroneous interpretation of the existing trends. In other words, the Plan for Detroit clearly mirrored Doxiadis' optimism for a prosperous and well-managed future. To be sure, in the 1940s, Detroit City increased its population by 13.9%, but during the decade 1950-1960

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[81] *Ibid.*,

[82] *Ibid.*,

[83] Actually, the study featured low, medium and high figures for population growth. The average annual rate of 1.9% for the period 1960-2000 was the medium figure that corresponded to the population of 15 million people for the year 2000. See Kollaros, 'The Research Project', *op.cit.*, Table 3, p. 88.

[84] *Ibid.*, pp. 87-88. At that time, even the U.S. Bureau of the Census had rather *optimistic* population projections. For example the lowest figure of the projections for the population of U.S. at the turn of the century reached the 291.000.000, when actually in 2000 America barely reached 281.000.000. Moreover, the UDA study was not the only one to use this methodology and assume such figures. For instance, the projections to 1970 and 1980 and the distribution by county given by J.F. Thaden Institute for Community Development (Michigan State University, March 1961) were mathematical projections of past trends, as well. See, Carabateas, E., Barbatis and Hadjidimos (1966) *Preliminary Projections and Distribution of Population, Employment, and Densities in the UDA Region According to Present Trends*. Document, Ref. Code 23457 R-USA-A 51. Doxiadis Archives.

net-migration figured a negative value of 9.7%.[85] When the UDA project started the signs of a decrease in Detroit's population had already appeared. In fact, a study titled "Michigan in the 1970s" conducted by Professor D. Goldberg from the University of Michigan alerted about a tenebrous future for the city if the trend observed between 1960 and 1964 was to continue. The DA collaborators were aware of this study and adverted that even the lower estimation of the UDA was "somewhat higher" compared to Goldberg's projections.[86] In order however to support Doxiadis' grandiose scheme the UDA reports were based on the trends observed between 1940 and 1960 and considered the period 1960 -1964 as a *transitional* one, assuming "at least zero net migration from then on".[87] For the Goldberg projections signified the failure of Detroit to "keep up to its real role and exploit its position at the center of gravity of the Great Lakes Megalopolis". Effectively, as the DA collaborators commented, Detroit was condemned if *present trends* were to continue.[88] Doxiadis on the other hand was optimistic:

> "This is one of the most delicate and most important projects […]
> It is quite clear that the last projections have been over
> impressed by the decline of the rate of growth after 1960. Our
> experience, though, shows as well as other economic projections
> which you have made within the last days, like the ones of the
> Chrysler Corp. that we should expect economic growth in the
> area which has not been witnessed before (*sic*)".[89]

The main reason for Doxiadis' faith in the alleged unprecedented economic growth of Detroit was the potentiality of the Great Lakes Megalopolis. As the Greek planner presumed, the proximity to raw material production of fossil fuels and iron ore - boosted by international shipping along the waterways of the Great Lakes - ensured the ongoing

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[85] See, Nikitopoulos, B. and Barbatis, C. (1965) *Considerations about the Population Densities of Detroit Area*. Document, Ref. Code 23431 R-USA-A 44. Doxiadis Archives.

[86] Caparis, E. (1966) *Population Projections UDA*. Document, Ref. Code 23458 R-USA-D 48. Doxiadis Archives.

[87] As alleged, this argument was supported by a 4% increase of population observed during 1964, the largest annual population increase registered since 1956. The study that corroborated this statistic had been released by the Detroit Metropolitan Area Regional Planning Commission in 1966. See, Caparis, E. (1966) *Long-Term Perspectives Urban Detroit Area - Preliminary Population Projections to 1980 and 2000*. Document, Ref. Code 23458 R-USA-D 51. Doxiadis Archives.

[88] "If net out-migration continues up to 1985 as assumed above, the situation thereafter might be even worse than that depicted by Prof. Goldberg", Caparis, *Population Projections UDA, op.cit.*

[89] See, Doxiadis, C. A. (1965) *Thoughts on the First Phase [Σκέψεις πάνω στη πρώτη φάση]*. Document, Ref. Code 23431 R-USA-A 38. Doxiadis Archives.

development of the whole area along the growth of the country's heavy industry.[90] Moreover, the sufficiency of water - a factor Doxiadis considered critical against the first signs of global resource depletion - for industrial and residential purposes and the urbanization of the Canadian coast lines were some of the competitive advantages of the GLM compared to other fast-growing regions like California or Florida.[91] Finally, the growth of suburban housing and corporate investment in other areas within the UDA counterbalanced the adverse conditions that prevailed in the Motor City.

Doxiadis concluded that planning had to be conceived at the scale of the Megalopolis in order not to repeat the mistakes of the past and assure a harmonious development for the whole region, the urban centers, and Detroit alike. For the Megalopolis could *accommodate* the pressures of development that otherwise suffocated the urban centers.[92] On the other hand, the celebrated planner warned that without a plan to foster development at the north of Detroit the city would be unable to attract population anew, since the industrial and economic forces were directing growth along the Cleveland - Chicago corridor. Detroit instead had to play the role of a major economic and administrative center in the Great Lakes Megalopolis. As such, the central city was envisaged as a corporate hub for banks, company headquarters and hotels, able to provide the plurality of the urban environment that firms need. Doxiadis' "global Detroit" had a bright future.

Eventually Detroit did not undergo that type of switch.[93] Rather ironically considering Doxiadis' rationale, one of the principal reasons for Detroit's economic decline was its over-dependence on a single industry, namely the automotive. Though this problem was identified in the UDA study as one of the main socio-economic obstacles, a descriptive framework of actions was not suffice to change the course of what turned out to be a

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[90] As Sugrue analyzed, "Detroit was ideally situated to be a center of the American automobile industry… the coal regions of mountainous Pennsylvania and West Virginia were no more than a day away by rail. The great steel mills of Pittsburgh, Youngstown, Cleveland, Gary, and Chicago were all within a few hundred miles of the city. The iron and copper ore regions of northern Michigan and Minnesota were easily accessible by ship. At the confluence of east and midwest, Detroit's central location gave its auto producers easy access to the capital and markets necessary for its phenomenal growth". See, Sugrue, *From Motor City to Motor Metropolis, Automobile in American Life and Society, op.cit.*

[91] See, Doxiadis, *Thoughts on the First Phase, op.cit.*

[92] *Ibid.*,

[93] Contributing to the analysis of the "Megaregion" concept, Sassen contrasts Detroit and the English manufacturing towns with the example of Chicago, which shows that "becoming part of a knowledge economy is not simply a question of dropping a manufacturing and agro-industrial past, and then proceeding to converge on the headquarters-services-cultural sector axis". See, Sassen, S. (2007) 'Megaregions: Benefits beyond Sharing Trains and Parking Lots?', in Goldfeld, K. S. (ed.) *The Economic Geography of Megaregions*, p. 74. The Trustees of Princeton University. These collection of essays was sponsored by the Policy Research Institute for the Region at the Woodrow Wilson School of Public and International Affairs, Princeton University, and the Regional Plan Association.

downward spiral.[94] The accelerated globalization of economy in the 1960s, the outsourcing of services, and the introduction of automation changed radically the characteristics of the automobile industry and the workforce of the predominating economic function in the region was cut down radically.[95] When the effects of macroeconomic policies converged at the accumulated ills of suburbanization, racial conflict, and housing segregation, crisis stigmatized Detroit as well as other cities of the so-called Rustbelt. From the end of the 1960s till the beginnings of the 21st century the Great Lakes area witnessed a major loss of population and the annual growth decreased from 2.15% to almost 0.5%.[96] The Motor City's engines were condemned to rust.

An urban renewal scheme to save the day

Doxiadis' last attempt to *revitalize* Detroit took place in the early 1970s and against the city's ongoing decline. The "Edison Center Development" (1970-1973) was a planning scheme for developing the company's estate in a 52-acre area in the vicinity of the Central Business District (Figure 6.17).[97] Along the construction of the company's headquarters, the study proposed the renovation of the existing offices and services buildings and the development of a residential community, an enclosed plaza, shopping facilities and the necessary parking structures. In total, 600 residential units appeared in high rise structures whereas 496 units were designed as low rise terraced housing. In that way, the "Edison Center Development" project aimed to reverse the suburbanization trends and stimulate further private investments in the area, objectives that according to the authors of the study addressed the "dilemma of modern American urban life" and showed the company's commitment to the city of Detroit.[98]

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[94] After several years in a rather rare manifestation of self-critique, Doxiadis assumed that in the case of Detroit the study did not estimated correctly the economic forces of the overall area. See, Doxiadis, C. A. (1971) *DUS*. Document, Ref. Code 25364 CR-USA-A 24. Doxiadis Archives.

[95] Suggesting that early, unheralded globalization may have exacerbated urban decline in Rustbelt cities, Judith Stein's critical comments open a different perspective in Sugrue's account of Detroit's crisis. See, Judith Stein's contribution "Opening and Closing Doors", in 'Symposium on Thomas J. Sugrue: The Origins of the Urban Crisis*', *op.cit.*, pp. 52-57. It is precisely the coexistence and convergence of local and macroeconomic forces that makes Doxiadis' Plan for Detroit an interesting case study.

[96] Officially, the stagnation of population growth was acknowledged in the early 1970s. In a recent analysis conducted by SEMCOG based on the U.S. Bureau's Census 2010, the total population in the city of Detroit declined from 951,270 in 2000 to 713,777 in 2010, a decrease of 237,493 or 25 percent. See, *2010 Census Data for City of Detroit Neighborhoods* (2011) *Semcog*. Available at: http://www.semcog.org/ (Accessed: 27 July 2015).

[97] At the time, the Detroit Edison Company owned 14 acres in the area of study. See, Doxiadis Associates (1971) *The Edison Center Development: A Plan and Proposals for Renewal Prepared for the Detroit Edison Company*. Document, Ref. Code 23519 DOX – USA – WS 58. Doxiadis Archives.

[98] Doxiadis Associates, *The Edison Center Development, op.cit.*
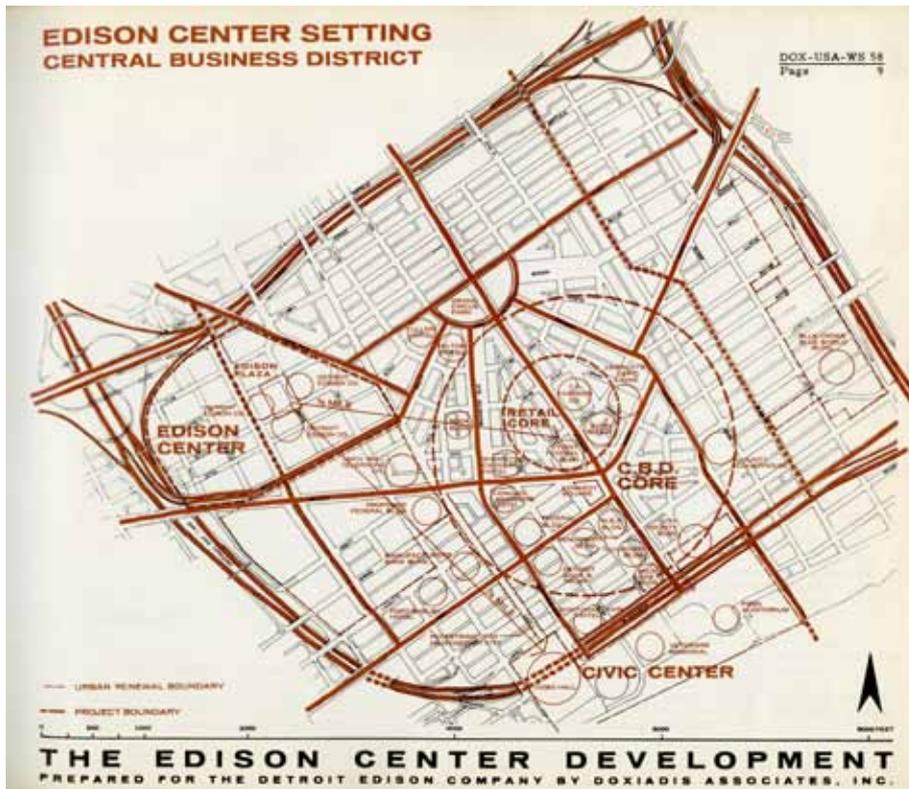
The Location of the Edison Center Development Plan.
Figure 6.17
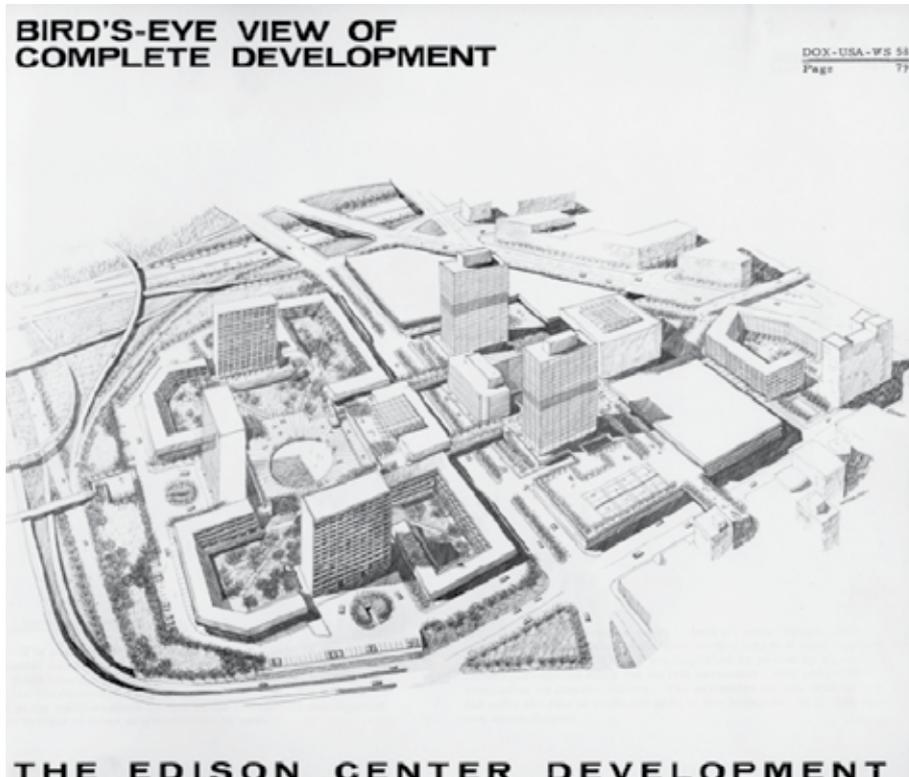
Proposal for the Edison Center Development Plan - Bird's Eye View
Figure 6.18

Though DA had already the experience of the UDA project in Detroit, the new study included a residential market analysis performed for the Detroit Edison Company by the Bechtel Corporation, one of the largest privately owned companies in the States. The Bechtel report examined the market potential of residential uses in the area and suggested the development of "moderate income housing, with some low income units", especially in the western part of the area due to its blighted condition.[99] In that way, the Edison Center could benefit from Urban Renewal policies and public subsidy programs, such as the Detroit City Plan Commission's Concept and the Model Cities Program, thus overcome problems of land ownership and cover costs of real estate. The DA study instead suggested that low cost housing was not compatible with the broader program and activities. Eventually, the residential units were destined to "professionals, young people, childless couple and others preferring a CBD location (*sic*)" of a higher income range and small families and childless couples of a moderate income range. As the market analysis study postulated, the future residencies were destined to those who had "little or no social and financial dependency upon community assistance services".[100] Apparently, this term denoted a "politically correct" way to exclude low-class families and Afro-American tenants.

On the other hand, the architectural design of the "Edison Center" pictured a private community with some clear barriers of spatial segregation. The residential community in question was completely separated by the adjacent freeways and aspired to recreate the character of a small (*human*) community with interior green spaces (Figure 6.18). Moreover, a system of walkways was designed to connect the future residential units to a community center across (and over) the Third Avenue, to the Edison Plaza. Whereas the concepts of the neighborhood unit and the community or civic center had long ago formed part of the international planning vocabulary, the Edison Plaza was advertised as an innovative design element, effectively an enclosed *public* space meant to be air-conditioned the year round and connect the office buildings of the Edison Center. According to Doxiadis, the enclosed plaza was envisaged as the miniature of a city's "properly operating downtown", a space where human contact and communication could flourish "without being exposed to the usual dangers of declining downtown areas".[101]

In effect, the concepts embedded in the architectural design of the Edison Center were not

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[99] *Ibid.*, p. 29.

[100] *Ibid.*, p. 54.

[101] See, Doxiadis, C. A. (1971) 'Downtown Detroit recreates history', *CBDA Newsletter*, July. As Doxiadis argued, the project was developed to "help the people working in the office buildings around to communicate with each other, to go downstairs to a small square to do some shopping, to visit some restaurants and it is at this level of the Edison Plaza dedicated to the pedestrians that human contacts will begin to find again their proper shape, their proper form".

that different from Gruen's "shopping town" architecture, a building typology born and raised in the cradle of America's Cold War Utopia.[102] In this case however, Doxiadis' plaza and the overall developmental scheme embedded in the center of Detroit, providing shelter - or containment? - not from the bomb but from the enemy *within*. All in all, the Edison Center Development project was meant to be Doxiadis' last implication in Detroit's planning affairs. Neither this privately financed scheme nor other much advertised capital injections, such as the Renaissance Center, sufficed to reverse the downward spiral and resolve the social and racial problems that hammered the Motor city.

The envisioned paradox

> How to explain the paradox that urbanism, as a profession, has
> disappeared at the moment when urbanization everywhere - after
> decades of constant acceleration - is on its way to establishing a
> definitive, global "triumph" of the urban condition?[103]

Today, in an officially declared urban world and one step closer to the absolute numbers of Ecumenopolis (global population and built environment) Doxiadis' ideas, programs, and their trajectories do worth revisiting. Among them, the Urban Detroit Area project stands out as a bold vision that portrayed a glorious future for the city of Detroit at the heart of a prosperous Great Lakes Megalopolis, but above all for being practically of no use to the tragic reality of the Motor City. Doxiadis prescribed his plan in a comprehensive analysis and action framework that examined Detroit's development from the city to the regional scale, effectively a pioneering perspective on urban systems. His methodological approach was systemic, premised on statistics, and supported by innovative at the time computer analysis. The proposed solutions echoed a heroic modernism that placed emphasis on regional infrastructure and in accord with federal policies advanced during Lyndon Johnson's mandate. And yet, Doxiadis' XL planning scheme failed to address the complexities and challenges of the blighted inner-city originating in racial segregation and materialized by discriminatory housing practices. Doxiadis and Cisler's faith in *scientific* planning sought to transcend Detroit's conflictive reality, eventually obscuring the *here* and

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[102] See, Mennel, T. (2004) 'Victor Gruen and the Construction of Cold War Utopias', *Journal of Planning History*, 3(2), pp. 116–150. Actually, in 1950 Gruen started to work on a decentralization plan for Hudson's department stores in the broader area of Detroit. His proposals were grounded on defense concerns against the omnipresent threat of the atomic bomb, what I have referred to in Chapter Two - and after Dudley's treatise - as the defensive dispersal theory.

[103] Koolhaas, R. (1995) 'What Ever Happened to Urbanism', in *S,M,L,XL*. New York, N.Y: Monacelli Press.

now in favor of a global *tomorrow*. Even if optimism was a necessary condition in order to reverse the downward spiral of recession and break the feedback loop between global economic decline and the inability to respond to the new challenges, the comprehensiveness of Doxiadis' planning philosophy and proposals turned to rigidity.

The fall of Detroit and Doxiadis' own *Waterloo* should be understood against the background of a deepest crisis that shook both postwar optimism and confidence in modernism.[104] During the 1960s modernist architecture and planning came under a fierce criticism typified in American planning by Jane Jacobs and Robert Moses' legendary struggle over Manhattan's urban design. Over the same period, the architectural infatuation with science seemed to come to an end. The systems approach to planning was eventually discontinued as the complexity of the contemporary city overrode the deterministic behavior of macro models, who, like dinosaurs, collapsed rather than evolved.[105]

On the other hand, Detroit heroically spearheaded the path of scientific management epitomized by Henry Ford's assembly lines, only to discover some decades later the hazards of industrialization and consumerism. Fordism in fact, imbued every facet of modernity including architecture and urbanism as clearly evinced in Detroit's (sub)urbanization patterns spurred by the proliferation of private mobility. Detroit was supposed to epitomize modernization and - according to Walter Rostow's model - enter the final stage of development where the welfare state would manage in symbiosis with the private sector an affluent democratic and egalitarian society. Lyndon Johnson's Great Society commitment to public housing, education, health care, and eradication of poverty was expected to achieve such ends. And yet, the Age of High Mass Consumption concealed the dystopian reality of economic inequality, class and racial segregation.

During the 1960s distinct socio-economic phenomena became catalysts for dismantling some of the assumptions and myths of modernity deep rooted in the American society itself: the Vietnam War, student protests, the emergence of radical environmentalism, and the "crisis" of the nuclear family are only some.[106] Rostow's doctrine, the very idea of

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[104] Charles Jencks for example has announced that the moment of Detroit's deepest crisis coincides with the 'Death of Modern Architecture'. Cited in Schumacher and Rogner, *op.cit.* The UDA then, coincided with a turning point in architectural theory and urbanism.

[105] See, Douglass B.Lee Jr. (1973) 'Requiem for Large-Scale Models', *Journal of the American Institute of Planners*, 39(3), pp. 163–178.

[106] Nils Gilman accounts for the collapse of modernization theory and quotes Noam Chomsky's "double myth of social sciences" - the myth of political benevolence and the myth of scientific omniscience - as significant changes in postwar America. See, Gilman, N. (2007) *Mandarins of the future: modernization theory in Cold War America*. Baltimore; London: Johns Hopkins University Press, p. 250

development and above all the confidence that the United States should provide a universal model and navigate the decolonization of the Third World collapsed.[107] In that respect, the extraordinary trajectory of Constantinos Doxiadis begun in the mid-1950s in the developing world and "came to an end" in the Automotive Capital of a nation that aspired to provide the guidelines for global modernization.[108]

Taken all together, Detroit's history manifests the dynamic and complex nature of urban systems, and presents one of the greatest planning paradoxes. Contemporary accounts have dubbed Detroit a shrinking city when the major problem of its metropolitan area has been its unchecked sprawl.[109] While the central areas have succumbed to the exodus of its inhabitants, the metropolitan area has maintained the overall population and considerably augmented its wealth per capita.[110] Today, Detroit's metropolitan area seems to have undergone a malignant disease that has left disconnected spots of urbanization in a *terrain vague* of dilapidated buildings, vacant lots, and ruins of the industrial era. Paradoxically, Detroit has both shrunk and sprawled, each phenomena depending on the definition of the "city"! Most importantly, both definitions support respective urban and regional policies or projects, for example the demolition of vacant housing and the consolidation of the inner-city by means of capital injections and entrepreneurial visions.[111]

On the other hand, a fervent debate on infrastructure systems and transportation networks as means to guide economic growth and sustainable development in the Detroit region

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[107] See, Wallerstein, I. (2002) 'The Eagle Has Crash Landed', *Foreign Policy*, August, pp. 60–68.

[108] Worth mentioning that Constantinos Doxiadis was a supporter of Lyndon Johnson's Great Society programs and even circulated an internal report promoting ekistics under the title "Considerations on the Great Society". See, Doxiadis, C. A. (1964) *Considerations on the Great Society*. Document, Ref. Code 2711 DOX-USA-A no.9. Doxiadis Archives. Moreover, Doxiadis was acquainted to President Lyndon Johnson who congratulated his personally when the Greek planner was granted the third Aspen Award for the Humanities in 1966, saying that "his work to improve man's environment has enriched the lives of millions". See Lyndon Johnson's telegram 29 July 1966, in *General Scientific Matters: Aspen Award 1966* (1966). Document, Ref. Code 22037. Doxiadis Archives. One year later the two men would meet at the International Conference on Water for Peace, in Washington, D.C. Finally, when Lyndon Johnson was the Vice President of the USA he visited the Korangi project area accompanied by A. Tsitsis, Chief Representative of DA in Pakistan.

[109] On shrinking Detroit see for example, Okrent, D. and Gray, S. (2010) 'The Future of Detroit: How to Shrink a City', *Time*, 11 November.

[110] Benfield explains why the metro Detroit area has not shrunk bur rather increased in Benfield, K. (2011) 'Detroit: The "Shrinking City" That Isn't Actually Shrinking', *The Atlantic*, 10 June. Available at: http://www.theatlantic.com/national/archive/2011/06/detroit-the-shrinking-city-that-isnt-actually-shrinking/240193/ (Accessed: 8 August 2015).

[111] Among them, worth mentioning "WEBward", the scheme of the entrepreneur Dan Gilbert who has purchased several properties around Woodward Avenue in order to reinvent Detroit's center as a technological hub. The first enterprises to move in, are Gilbert's Quicken Loans and Twitter. See for example, Spaces, P. for P. (no date) 'Detroit Leads the Way on Place-Centered Revitalization', *Project for Public Spaces*. Available at: http://www.pps.org/projects/detroit-leads-the-way-on-place-centered-revitalization/ (Accessed: 8 August 2015).

seems to revisit the days of the Great Lakes Megalopolis. Starting in 2009 in fact, the Regional Plan Association and the project "America 2050" have advanced policies and recommendations to guide national investments in regional corridors. This concept in fact unfolded under the theoretical umbrella of the term Megaregions.[112] Arguably then, a principal concern of future planning endeavors is understanding the challenges and undertaking action in different spatial scales, questions that were at the core of Doxiadis' plan. Paraphrasing Koolhaas, Doxiadis' paradigm has fallen into oblivion when the comprehensive understanding of urban and regional processes is most needed.

Be that as it may, and even if the understanding of the city as part of a regional system - and in certain aspects a global one - is indisputable, local phenomena and bottom-up approaches should not get underestimated neither overwhelmed by "sustainable", "resilient", or "smart" much-promising visions. Scientific or data-driven approaches *per se* cannot solve planning problems, for planning is intrinsically connected to the social, political and economic milieu. Ironically enough, interdisciplinarity was the main assumption of ekistics. Envisioning Detroit's post-industrial future one should definitely look into its past.

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[112] "America 2050 is a national initiative to meet the infrastructure, economic development and environmental challenges of the nation as we prepare to add about 130 million additional Americans by the year 2050". See, *About Us - America 2050* (no date). Available at: http://www.america2050.org/about.html (Accessed: 8 August 2015).

CONCLUSIONS

"Wicked Problems" and the Past of our Urban Future

This research has explored different episodes of Constantinos Doxiadis' career and has analyzed the theoretical instruments and institutional vehicles of ekistics, the so-called science of human settlements. It has emphasized the importance of local and global factors for the development of the DA projects, and has examined the ekistic programs in relation to broader epistemological developments. These were closely connected to events and processes understood by the Cold War narrative.

Doxiadis' vision for the betterment of human settlements was born out of the crisis. The humanitarian nature of his efforts is reflected in his persistence on the importance of housing for economic growth and the advancement of aided self-help policies. Theoretically his approach and solutions were global in conception but local in their expression.[1] Nevertheless, the implemented projects of DA and the research programs of the ekistic center question the efficiency of his comprehensive system, and instead reveal the contradictions between his theory and practice. These were principally symptoms of his ambition to develop a holistic framework for planning the *City of the Future* and his belief in a global equipoise.

Development and Cold War anxieties

Much alike other theoretical currents and professional pathways, the emergence and consolidation of DA and ekistics involved the anxieties and opportunities of the rivalry between the East and the West. Doxiadis came on the scene vis-à-vis the reconstruction needs of the war-torn Greece before jumping at the fertile ground of developing countries where international programs and financial aid packages proliferated. Some years later the ekistic planning crusade was pursued against the mounting problems and the urban renewal challenges of modernity's postwar home, i.e. the American city.

Each particular context involved a different dose and ingredients of the ever-changing Cold War confrontation. The Truman Doctrine and the Marshall Plan opened the way for the implementation (even if only in part) of Doxiadis' reconstruction program. In the case of Iraq, the Development Board's ambitious campaign was set to turn the country to the West only to be overridden by the pan-Arab "revolution" breezing through the Middle East. The successive regime changes hardened and eventually annulled the implementation of

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[1] Actually, the saying "think globally, act locally" is often attributed to the microbiologist and environmentalist René Dubos who was a proponent of ekistics and participated in the 1972 Delos Symposion.

Doxiadis' multifarious housing program.

In the case of Detroit, neither political instability nor financial means seemed to be problems in plain sight, and yet the affluent American society was sweeping under the suburbia's rug the debris of the blighted inner city. Whereas Doxiadis with the unconditional support of Cisler proposed a "scientifically" devised framework of solutions and action programs to combat progressively urban ills and manage urban sprawl, the outburst of the 1967 riots exposed the shaky foundations of the American dream. Throughout the 1960s, a series of international and local events amplified the critical voices against American values and steadily brought the decline of the modernization theory. The project that promised to drive developing countries along the modernizing path of the West and far from the communist dreamworld was condemned to disappear in the 1970s. Along these structural changes unfolded the Urban Detroit Area project, Doxiadis' own *Waterloo.* Eventually, the course of Doxiadis' planning empire was tied to the fate of the development model of the West.

Placing ekistics in the Cold War context and drawing parallels to the modernization theory is neither to say that Doxiadis was a hawk (as some of his acquaintances actually were…) nor that he deliberately promoted U.S. ideals above the ekistic ones. The Greek planner certainly took advantage of his connections with American experts and philanthropic foundations with a clear anti-communist agenda, therefore tipping the balance and securing important commissions for his firm. Nevertheless, his discourse was differentiated from the Western (i.e. U.S.) modernizing model principally in two points: he rejected universal standards of economic development and instead advanced physical planning and housing as cornerstones for economic growth. To such purpose, he urged the redefinition of the architect as a master builder, and advocated the active involvement of planners in decision-making processes.

Doxiadis' main concern was the provision of housing, a goal he pursued by all means. For the purposes of the Greek Reconstruction program and against the deprived economy of the Greek State, he organized aided self-help housing schemes in tandem with the provision of building materials. On the other hand, he promoted legislative measures (KH' Resolution) to facilitate the reconstruction of the Greek cities based on private capital, even if this was in principle against central planning mechanisms. The *Greek Ecumenopolis* became a kind of a self-fulfilling prophecy as private construction practices pushed the boundaries of the capital beyond the administrative limits. When in the 1960s Doxiadis sought to manage with his plans the Athenian growth, he was in part facing the

results of his own actions.[2]

In Iraq on the other hand, Doxiadis applied elementary industrial production technologies, and above all unfolded an impressive administrative mechanism to meet the extensive housing needs and comply with tight schedules. Despite the intention to adapt housing to the extreme climate conditions, the use of mass production techniques was decisive for the final outcome. Despite the efforts to match local realities and customs, the built communities reflected to a greater extent the socio-political ends of the successive regimes than the (easily proclaimed) humanitarian ideals of the Greek planner. In other words, Doxiadis was successful in delivering a national housing program however one should ask whose objectives he was complying with. The paradox of promoting *democratic* (i.e. Western) values to insular societies became even more apparent in cases of augmented densities and spatially-socially segregated communities (Sadr City).

To a certain extent, Doxiadis fell into these contradictions due to his commitment to development. Even if in his discourse the Greek planner challenged the existence of universal standards giving priority to local particularities, the urban future he envisioned was global, inevitable, and was called *Ecumenopolis*. The mission of ekistics was to put the foundations and provide the tools for planning this urban future. During the 1960s Doxiadis dedicated great efforts to debate the problems of human settlements in international forums and promote educational and research programs. Educating planners was an important but long-term task. Ideas were taking too long to be accepted and time limits were too short for waiting.[3] It was precisely the sense of an omnipresent urban crisis and the anxiety of building a better tomorrow that urged Doxiadis not only to advance ekistics but as well to undertake immediate action with his planning firm. Responding to the housing shortage or planning new towns were actions that Doxiadis considered pieces of the Ecumenopolis puzzle, and therefore professionally and ethically justified. Future needs legitimated present actions.

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[2] Throughout the 1960s Doxiadis issued seminal proposals for development of Athens, in accordance with the Ecumenopolis theory and ekistic methodologies. In 1972, DA was commissioned the Regional Plan of Athens by the regime of the Colonels, thereafter arousing public criticism. To use a popular metaphor originating in chaos theory, Doxiadis' involvement in the Athenian urbanism could be described as a "butterfly effect". His official proposals sought to confront the sprawl partly originating in his own legislative measures.

[3] Doxiadis often cited Buckminster Fuller, who had "computed that it takes twenty two and a half years for an idea to be accepted", before warning that "Spain will double the size of her cities in fifteen". See, Deane, P. (1965) *Constantinos Doxiadis: master builder for free men*. Oceana Publications, p. 10

Modernism(s) and systems

Modernisms by definition are built negotiating the relationship between modernity and tradition. Since the early 1930s, the discourse on urbanism was dominated by the Athens Charter, the separation of land uses, and the dichotomy between the modern and the historic city. After the dissolution of CIAM however, new approaches sought to respond to the challenges of building in new territories and for greatest numbers, while taking in account the "user's needs". Constantinos Doxiadis' answer to the housing crisis and demographic growth was holistic in scope and systemic in its methodologies. Ekistics in fact embodied the modernist ambition to manage and eventually bring to equilibrium the forces of global urbanization, nevertheless preserving human scale and historic values. To do so, it combined statistics and computer analysis with sociological perspectives.

Naturally, this all-or-nothing approach had numerous blind spots and deadlocks that ekistics tried to break by espousing systems theory. Put into practice however the systems approach to planning proved to be an empty promise. The concept of feedback mechanism perfectly exemplifies the pretension to plan and manage the city by funneling the societal concerns. In the same vein, the I.D.E.A method and the rationale of the UDA program for Detroit typified Doxiadis' ambition to tame urban and regional development for the commonweal.

All together, Doxiadis inherited a modernist discourse, stretched its approach to the global plane, and merged it with pioneering currents. Nevertheless, ekistics eventually failed to walk modernism beyond the dead end. One of the main reasons was that ekistics remained essentially modern. To put it in another way, the limitations of ekistics were Doxiadis' own ambitions and optimism. Since the very beginning, the ekistic guru committed himself to the betterment of human settlements and strongly believed that a properly devised scientific system could tame the forces that threatened the contemporary city. To emphasize the viability of this endeavor and differentiate ekistics from Utopian visions, Doxiadis called that place Entopia, that is, "in place".[4] Entopia was an attainable ideal, a city that *could exist* between reason and dream, "a place where the projections of the artist and the builder [merged]". According to Doxiadis, the means to "reach" such place were quantifiable and systemic.[5] Once the malfunctions of the city-machine or the

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[4] See, Doxiadis, C. A. (1966) *Between dystopia and utopia.* Connecticut: The Trinity College Press. This publication included three lectures delivered by Doxiadis in 1966 (being the Trinity Lecturer-in-Residence), namely "Towards Dystopia", "Escape to Utopia", and "Need of Entopia". Entopia was a way to differentiate ekistics from contemporary theoretical currents that Doxiadis discarded for nurturing utopias.

[5] Entopia had quantifiable parameters. For the purposes of a paper on Entopia, Doxiadis asked one of his collaborators to analyze mathematically the correlation between the number of contacts of a person and the density of the area. See, Carabateas, E. (1966) *Number of contacts in different densities.* Document, Ref. Code 20811 RR-GEN-A 95. Doxiadis Archives.

pathologies of the city-organism - to use the two metaphors interchangeably - were correctly identified, the right (optimum) solutions could be given. The infinite parameters in the ekistic equations mattered little due to the confidence that complex problems could always get solved using the right methodologies.

And yet, a great deal of the urban problems lacks a clear definition precisely because of their social nature.[6] For in the socio-political arena there are no absolute truths or ideal standards to plan for, but contested issues to deal with. What is more, due to the interconnectedness of the urban problems, the solutions to certain aspects generate or reveal other problems. To all intents and purposes, the city is a contested territory, a place of contrasting perspectives between stakeholders, and where policies can hardly be "optimal solutions". If planning systems like ekistics have failed it is precisely due to their monolithic nature and alleged comprehensiveness. After all, the very idea of a perfectly planned and managed city is a chimera and so is the global equilibrium.

Misreading ekistics?

Ekistics was a serious attempt to come to terms with the nascent urban conditions in a world slowly turning into a global village. Driven by Doxiadis' passion and funded principally with DA revenues, ekistics evolved to a movement that debated the consequences and management of global urbanization. Due to its interdisciplinary and experimental character, ekistics should be read as an early attempt to bridge two cultures of city planning, namely the "quantitative" approach originating in positivism and the "qualitative" approach related to sociological concerns. Though this ambitious project never yielded the expected results, the Greek planner was successful in bringing housing at the core of the development discourse and advancing the understanding of the contemporary city as a key issue for resolving the inconsistencies between the local and the global.

Seen from another angle then, the failure of ekistics could be interpreted as the misreading of its potential. Instead of exploring the actual possibilities of his planning system, Doxiadis was anxious to provide the cornerstones of a holistic scientific framework destined to analyze every type of settlement and resolve every problem. Even if ekistics was conceived as an open system that welcomed contributions from the professional and scientific community - that is to say that ekistics might have evolved as a

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[6]   Rittel and Webber have coined the term "wicked problems" to describe problems of social policies that are highly resistant to solutions. See, Rittel, H. W. J. and Webber, M. M. (1973) 'Dilemmas in a general theory of planning', *Policy Sciences*, 4(2), pp. 155–169. Rittel's investigation as well originated in the criticism to "systems analysis", see Rittel, H. W. J. (1972) 'On the Planning Crisis: Systems Analysis of the 'First and Second Generations'', *Bedriftskonomen*, 8.

common project beyond Doxiadis' signature - its world saving agenda was too much of a burden. To the extent that Doxiadis remained attached to the *City of the Future*, the ekistic approach to the smaller scales or specific problems atrophied. Paradoxically for being a man of action, Doxiadis found more comfort in the Ecumenopolis than in the present city.

To put this argument in another perspective, the strenuous efforts of Constantinos Doxiadis and his colleagues may have led to the foundation of the Habitat for Humanity nevertheless the challenges of poverty and housing are far from being won. Even if numerous UN summits have reiterated the urgency to take measures against the crisis, be that alimentary, housing or environmental, action is inextricably connected to politics. Some of the issues at stake then are to what extent these institutional channels are effective, or what kind of framework do we need to respond to local and global problems? Given their interconnectedness, how do we move from one scale to another? Should our structures be hierarchical and tree-like or do horizontal networks yield better results and according to which criteria?

To understand the actual possibilities and scope of planning is to raise awareness about the evolution of the contemporary city and take in account the everyday agents of change. Such accounts undeniably fall within the scope of the historiography of architecture and urban history. Instead then of reaffirming Doxiadis' maxim that the world's population has become urban, or conversely of rejecting the oracle of Ecumenopolis as a futuristic pipedream, future research should carefully consider the origin and implications of his warnings, and above all their significance for present action. Failing to do so, urban and regional planning is reduced to fashionable strategies and buzzwords (i.e., smart cities) either legitimized or rejected by the hard-to-challenge notion of development.

Eventually, the paradoxes in Doxiadis' work and theory may as well be interpreted as the outcome of his desire to control reality and put order in the urban chaos.[7] Whether such desire was the outcome of megalomania or of the anxiety to provide solutions, has to do more with an appreciation of Doxiadis' personality than with his work *per se*.

In the end, the greatest challenge in Doxiadis' actions was their realism. Doxiadis believed strongly in the ekistic cause. He believed in the ethos and ideals of modernity, in the power of *Anthropos* to create and ameliorate human settlements. On the other hand, he criticized both visionary architectural schemes and the predicaments of The Club of Rome, the former for offering Utopian visions, and the latter for being trapped in Dystopia.

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[7] "To Dinos, Victor over Chaos". As Panayis Psomopoulos accounts, Jacqueline Tyrwhitt wrote these words "on the wreath of wild flowers she placed on Dinos Doxiadis' grave, on the day of his funeral…". See, Psomopoulos, P. (1985) 'Jaqueline Tyrwhitt and the Athens Center of Ekistics', *Ekistics*, 52(314/315), p. 442.

Ultimately, the only path left for ekistics was to confront the crisis and pursue solutions. This might as well be interpreted as Quixotism. One thing is certain. Until the end of his life Doxiadis remained faithful to the ekistic vision for the betterment of the human settlements. Doxiadis was one of the last moderns.

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