

## 論文の内容の要旨

論文題目 Gulf Coastal Urbanism; The influential ideas that have shaped the Gulf's Waterfront with an emphasis on the Metabolist group work in the Gulf (湾岸のアーバニズム：ウォーター・フロントを形成した着想～メタボリスト・グループへの着目をふまえて)

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Urbanization on man-made reclaimed from the sea in general is increasingly emerging as a global phenomenon that many urban planners and designers aim to achieve while designing new or expanding existing cities. While witnessed worldwide, the phenomenon is particularly used in the Arabian Gulf countries (of the Gulf Cooperation Council). This concept has gained a noteworthy attention and recognition in urban design discourse, practice and pedagogy. When new territories are rapidly opening up to development, certain pressures, often political, arise to tap into them for tourism, housing and other development needs and land uses leading to cities expansion including totally new developments into and over the water. How could we balance this phenomenon? What were the challenges to execute such developments? and what are the prevailing forces leading to extensive sea sprawl in the Gulf? What influenced the Gulf countries and cities to change its morphology? What of these forces and factors are cultural to the Gulf Region? and why coastal developments are more attractive than developing inlands? Given this background, this research is conducted with the aim of understanding the nature of the emergent cities and developments built on reclaimed land in the Arabian Gulf to identify the strategic urban design approaches anticipated in urban growth and change employed in urban design practice.

This study outlines the trends of waterfront developments in the Gulf and investigates the source of overseas ideas behind their existence during the recent decades by presenting significant urban and architectural projects located in the Gulf region. These projects showcase the approach to the design of waterfront environments in the Arabian Gulf. Moreover, this research tries to contribute to the persistent discussions, theorize and visualize the literature available on artificial settlements within the literature on Gulf coastal urbanism and exemplify their spatial, social and sustainability aspects.

The dissertation hypothesizes different streams of ideas that influenced waterfront developments within the Gulf; however since the study of all the influences is beyond the domain of the available timeframe of the research, an attempt, therefore has been made to trace major influences with an emphasis on the Japanese Metabolists group. Their later connection to the Arabian Gulf as one source of ideas is looked at in detail, as it marked a dramatic transition from a period dominated by unified urban expansions through the process of planning and engineering on landfill when expanding sites into the water, to a new era characterized by symbolic forms of city design dominated through conceiving cities in the sea, marking a new application to the design and planning practice in the Gulf region. The theories and principles of the Metabolism movement for example exerted new critical influence since the 1960s and contributed to key growths internationally. Also new types of city on the sea ideas emerged and contributed to the change of conception of the city itself. Although such theories are physically remote, those ideas found their way to other cities and contributed to the morphological transformation of the Gulf. This Thesis explores the key drivers of

artificial cities and the reason why the Gulf Region has shifted its focus to expand through manipulating its coastline. While many literature looks at reclamation in the Arabian Gulf, the main tendency in researching about coastal reclamation, has been through concentrating on the symbolic representations achieved by such developments to relate this phenomena to the never ending image creation and to show of power, identity and constant observation and national competition amongst the countries of this region. Moreover, many of those studies delve into environmental impacts of such reclaimed projects; the adverse effects on the marine ecology and the environment, the technological advancement that led to dredging and reclamation practice, and why the Gulf recent urbanization entails reclamation, which is leading to iconic and symbolic urban sprawl, technological solutions, and to describe the economic and political gains. This research tackles reclamation and Gulf urbanism through a different lens; by looking at the domination of international influence and knowledge transfer that transformed the Gulf's urban fabric and what were the reasons for the rapid implementation and constant production of additional lands in the Gulf's sea. This dissertation examines the issue of coastal space production in the context of Gulf region through an investigation of several influential movements; the Japanese Metabolist movement being one of them, which is looked at in particular to investigate the works of Kenzo Tange, Kiyonori Kikutake and Kisho Kurokawa as they have planned and implemented few projects in the Gulf countries during the late 1960s up to the 1980s, with the aim of tracing the avant-garde concepts and intentions of their Metabolism theories within the Gulf.

The research examines the coastal developments in the Gulf since the 1960s, as the legacy of reclamation got imported through foreign paradigms, in which the Japanese Metabolism principles and theories played an important role. Several case studies of built and un-built projects of the Metabolist members that worked in Gulf are selected for their different ideologies and perspectives on their own theoretical platform; Metabolism. Through a series of interviews with planners, engineers, researchers that witnessed those projects in the Gulf, the author tries to shed light on the domination of international planners and highlight the thoughts that created the recent artificial islands and reclaimed cities in the Gulf.

Based on this hypothesis, the dissertation examines the morphological, social, economic and political reasons behind Metabolism theories, its idealistic strategies and principles related specifically to building cities on the sea and tries to understand what has been transferred to the Gulf through the work carried out or conceptualized in the Gulf by some of its members. The analysis then looks at recent artificial developments within Bahrain for it being an extreme case on space exploitation over the Gulf Sea, and explores its planning principles using theoretical and common characteristics of the Metabolism ideologies. The study also measures the impact of decision makers in the formation of artificial settlements; the connection between the people, and the eventual form of the city expansion is rather ambiguous and immeasurable.

The research is formed in seven chapters; the first chapter defines the purpose and rationale of the research, the research objectives and provides elaboration on the methodology which examines a variety of literature and sources that were closely studied and interpreted to draw attention to the themes and methodologies pertaining these reclaimed developments. Qualitative research is used to examine the overseas ideas that traveled to the Gulf and to provide an analytical framework for comparative research, with a combination of methods using; mainly documents and archives analysis and interviews to explore the connection and talk to people whom were involved in those projects at that time. This dissertation argues that a key component of the methodology is fieldwork to build on-the-ground knowledge with critical review of literature, any available research studies and official documentation, information and public debates

shared in newspapers about sea sprawl as a mechanism to city expansion. The comparative study is used therefore to analyze the factors and constraints related to coastal developments in the Gulf. Interviews with planners and architects that were working on seashore developments, and site visits in the Gulf were made to rationalize the reclaimed developments and to look into the main drivers behind their form of development if any is one aspect that the research looks into by examining those case studies.

The second chapter will be multi-disciplinary in focus; firstly it will explore global trends, typologies, urban development methods and trends in urban growth on artificial terrains and strategies used in shaping a number of existing reclaimed cities; it gives an overview of the existing theoreticians that wrote about cities on the sea and provides a theorization of artificial human settlements that translated into the new built urban environment. After reviewing those concepts, an in depth analytical framework is proposed to look into the diverse principles and philosophies that informed the physical and spatial production of human settlements which are illustrated by different precedents in the consequent chapters of this dissertation. This chapter then highlights the emerging discourses on Gulf coastal urbanism; to portray the recent discussions on man made islands in the Gulf.

Chapter three outlines the influential overseas ideas by examining the historical processes and looks at artificial developments around the Gulf, that identifies a series of case studies, set of projects, trends or experiences on man-made city developments that have shaped its seashores. This chapter emphasizes on the historical background and the evolution of Gulf urban expansion and coastal developments, and outlines in detail the strategies employed in those developments to have a clear understanding of current and historic reclaimed sites. It looks into the various local projects and substantial cases to discuss the typologies developed by local and external experts and the related institutions and planning tools used.

Chapter four defines the diverse spatial typologies, political and historical dimensions as well as other associated principles related to works of the Metabolists team in the Gulf. Based on the works of the Metabolists group in the Gulf, the Japanese planners introduced their ideas of planning cities in the water through many of their schemes in Qatar, UAE and Saudi. Though the only reclaimed development that was implemented was the King's palace in Jeddah, those ideas provoked further reclamation in the Gulf as witnessed currently. Thus, this chapter attempts to cover a wide spectrum to trace the projects envisioned by the Japanese group with specific interest on the projects and developments of reclaimed cities from its early inception in the Gulf; this includes their proposed and completed projects, associated plans and details found through different journals, books, publications, and discussions held with some of the planners that were involved in those projects.

Chapter five provides a rough chronological sketch of reclamation and planning in Bahrain; describes the work done during the fieldwork as a first step to understand the artificial settlements genealogy, geography and correlated planning issues within the context of Bahrain; through the analysis of some of the masterplans and existing manmade islands, with the underlying concern of reclamation as a key driver for such tabula-rasa schemes. This chapter additionally investigates the local planning system and planning visions that led to the creation of such development patterns in Bahrain.

Chapter Six synthesizes the discoveries of the Metabolism philosophies, creates a framework to test those thoughts and analyzes them through the recent developments within the Gulf; to look into the extent of such ideas and whether they are still relevant today to manifest themselves across all the Gulf.

Chapter Seven synthesizes the discoveries of the preceding chapters and underlines the works of the Metabolist group in the Gulf which showcased over 20 projects that were carried out by some of its members from the 1960s till the 1980s, with at least 7 projects that entailed reclamation and proposed a linkage to the Gulf's waterfront. Hence, those projects and proposals manifest the beginning of a significant transformation of the Gulf's sea terrain; Metabolism had an aesthetic agenda, which established part of the sea today. The investigation of the concepts of urban utopia carried to the Middle East and the Gulf implies the international influence that contributed to its morphological transformation. Furthermore, by examining the ideologies set out by the Metabolism team members and its application to current planning practice, those concepts are tackled from adaptability and sustainability perspectives, which form part of wider design theories and international practices, however, recent developments lack flexibility, they tend to fix an image to those new master plans which are often static, lack resilience and does not factor those cities as an evolving metabolic process which is ultimately open to change, destruction or further biological growth. It is worth noting that the Japanese Metabolism Movement came as a protest to a situation in Japan, capitalizing on technological advancement that have not fully materialized to date, but its thoughts were unique and applicable to a wider geography despite the fact that their theories have only lasted few decades.