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Kent School of Architecture
PhD Thesis
January 2020

Primary Supervisor: Dr. Timothy Brittain-Catlin
Secondary Supervisor: Prof. Gerald Adler
European architects at the confluence of tradition and modernity in the Persian Gulf, 1954-1982

Ben Tosland

2020
The Middle East is characterised as having a remarkable lack of prejudice against modern architecture, despite its rich tradition of building; the most advanced ideas are welcome.


The architectural situation all over the world seems to be going into another phase. Thumbs down on what is called ‘monumental architecture’... but the wheel goes round and round and there will be another day.

Paul Rudolph, writing to Jørn Utzon in 1972
Historicism claims that nothing is of greater moment than the emergence of a really new period. This all important aspect of social life cannot be investigated along the lines we are accustomed to follow when we explain novelties in the realm of physics by regarding them as re-arrangements of familiar elements.

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<th>Full Name</th>
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<tbody>
<tr>
<td>AA</td>
<td>Architectural Association</td>
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<tr>
<td>ADA</td>
<td>Arriyadh Development Authority</td>
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<tr>
<td>AIOC</td>
<td>Anglo Iranian Oil Company</td>
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<tr>
<td>ARAMCO</td>
<td>Arabian-American Oil Company</td>
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<tr>
<td>ATBAT</td>
<td>Atelier des Bâtisseurs</td>
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<tr>
<td>BBPR</td>
<td>Banfi Belgiojoso Peressutti Rogers</td>
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<tr>
<td>BP</td>
<td>British Petroleum</td>
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<tr>
<td>BP ARC</td>
<td>BP Archive</td>
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<tr>
<td>CIAM</td>
<td>Congrès Internationaux d’Architecture Moderne</td>
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<td>CJW</td>
<td>Candilis-Josic-Woods</td>
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<td>DA</td>
<td>Doxiadis Associates</td>
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<td>DOX SAU</td>
<td>Constantinos A. Doxiadis Archives (Saudi Arabia Files)</td>
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<tr>
<td>ETH</td>
<td>Eidgenössische Technische Hochschule</td>
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<tr>
<td>GAMMA</td>
<td>Groupe d’Architectes Modernes Marocains</td>
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<td>gta Archiv</td>
<td>Alfred Roth archive held at ETH Zurich</td>
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<tr>
<td>HOK</td>
<td>Hellmuth Obata and Kassabaum</td>
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<td>IQC</td>
<td>Iraq Consult</td>
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<td>KEO</td>
<td>Kuwait Engineering Office</td>
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<tr>
<td>KNA</td>
<td>Kuwait National Assembly</td>
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<td>KOC</td>
<td>Kuwait Oil Company</td>
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<tr>
<td>MARS</td>
<td>Modern Architectural Research Group</td>
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<td>MENA</td>
<td>Middle East and North Africa</td>
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<td>MLA</td>
<td>Max Lock Archive (University of Westminster)</td>
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<td>MoMA</td>
<td>Museum of Modern Art</td>
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<td>MSM</td>
<td>Minoprio Spencely and Macfarlane</td>
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<tr>
<td>NIOC</td>
<td>National Iranian Oil Company</td>
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<tr>
<td>OPEC</td>
<td>The Organising of the Petroleum Exporting Countries</td>
</tr>
<tr>
<td>PAGON</td>
<td>Progressive Architecture Group Oslo Norway</td>
</tr>
<tr>
<td>RIBA</td>
<td>Royal Institute of British Architects</td>
</tr>
<tr>
<td>SEFRI</td>
<td>French developer, acronym unknown</td>
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<tr>
<td>SOM</td>
<td>Skidmore Owings Merrill</td>
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<tr>
<td>SSH</td>
<td>Sabah Abi-Hanna’s practice founded in 1961</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<td>UEA</td>
<td>University of East Anglia</td>
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The driving force behind variations in the architecture of the Gulf between 1954 and 1982 was a complex assemblage of geopolitics, changing cultures and advancements in architectural discourse. The timeframe selected for this thesis spans part of the post-Second World War period and is intended as an illustration of change in architectural style in the West in the context of the rapidly changing political and economic scene of the Gulf. The historiography of the architecture in the Gulf during this period has been notoriously Eurocentric, focusing both on the architects from the West and the Gulf’s geographic area. This thesis by contrast promotes an understanding of Western architecture in the Gulf through an assessment of patterns in geographical and global architectural contexts. In doing so, it advances an understanding of global movements of architecture, raising questions about architects from the Gulf whose work is misunderstood. Where possible, this thesis has used work from architects such as Mohamed Makiya, Kamran Diba, Rifat Chadirji and others to contextualise regional architectural development against the backdrop of the five Western-led case studies which are the focus of this thesis. Case studies are structured in chronological order and include: Max Lock’s Ubullah housing scheme (1956); Candilis-Josic-Woods’ housing for the National Iranian Oil Company in Abadan (1956); Alfred Roth’s work in Kuwait from 1964-1974; Doxiadis Associates’ Riyadh Plan (1968-1972); and Jørn Utzon’s Kuwait National Assembly (1972-1982). Overall, the case studies illustrate a conflict between the traditional forms and spatial syntaxes of Arab architecture and the contradictory theories and forms of Western-induced modernism. Furthermore, these case studies show how local, regional and global examples of architecture intertwine with the selected projects; the thesis assesses the complex assemblage of physical and political conditions Western architects faced when designing in the region during this period. By using original archival material, this thesis gives a fuller picture of the global architectural scene and deepens the understanding of architectural development within the Gulf during this period.
This thesis began in 2015 with various conversations with members of staff at the Universities of Sheffield, East Anglia (UEA) and most importantly with Professor Iain Jackson at the University of Liverpool. I am indebted to the staff at UEA and the University of Sheffield for their patience and support in the learning of both History (BA) and Conservation and Regeneration (MA). Specifically, at UEA I would like to thank my tutors from undergraduate, Dr Sarah Spooner and Dr Jon Gregory. They also helped immeasurably at the outset of this project and encouraged me with initial research and writing. Without Dr Joel Halcomb and Professor Tom Williamson at UEA, I would not have been as enthused to write about history as I have been, and it is to them I owe a great deal for their time and constructive criticism as an undergraduate student. At the University of Sheffield’s School of Architecture, I am grateful for the tutorship of Dr Jo Lintonbon, John Paul Walker and Mark Emms – as well as my peers (particularly Ilan Bitterman and Le Qiu) – for further initiating an interest in architecture and the built environment, rather than completing the MA as a means to an end.

At the University of Kent, I would like to thank Dr David Haney for his contribution to my academic development, encouraging me to find new avenues of thought and to expand into uncomfortable areas of thinking; I also wish him well in his new life outside of academia. I am thankful to Professor Gerry Adler for his advice and useful conversations over the course of the last few years. Throughout the whole project, Dr TimothyBrittain-Catlin, has shown enthusiasm and interest in my topic and work; his fortitude and encouragement across the length of the PhD process has been unwavering. I am eternally grateful for his help at every stage, particularly in the last few years, and the time and dedication he has devoted to reading drafts of work and commenting on every mis-placed (or missed) comma and debating many of the thoughts presented in this thesis. My friend, and fellow PhD candidate, Khaled Sedki, has also played an unofficial, but nevertheless valuable role, in discussing, debating and creating new strands of thinking in the past few years at the University of Kent, and to him I offer my gratitude. I should also thank my friend, Mike Rayner, who has proofread much of this PhD, and caught most of the grammatical and spelling errors that erroneously went unnoticed. I would also like to thank the administration staff in the Kent School of Architecture for their organisation and encouragement. I am thankful to the University for offering me the Vice-Chancellor’s scholarship, without this I would not have been able to complete my studies; as part of this, I have had the opportunity to teach several undergraduate modules, and I am grateful to the students of these for making those seminars fun and engaging, I wish you all the best in the future.
Without the help of countless workers at archives and libraries, much of the research in this thesis could not have been conducted. Specifically, thanks should be given to those who work at the Max Lock Archive, University of Westminster; Chris Barker who diligently photographed the material from the Shadrach Woods Archive held in the USA; staff at ETH Zurich’s gta Archiv, which houses Alfred Roth’s archive; staff at Doxiadis Associates’ archive in Athens; and the Aalborg City Archives staff for their help with Jørn Utzon’s material. I would also like to thank those at the BP Archives at the University of Warwick for their help with material relating to Wilson Mason and Partners, and other work pre-1952 in southern Iraq and Iran. Staff at the RIBA Library in London have been helpful throughout, as I often found myself studying there. Likewise, to those who work at SOAS, the British Library and the National Archives at Kew.

On a personal note, I am thankful to my parents and younger sister for their unconditional love and support throughout life, and particularly for letting me live back at home while I wrote up the final chapters of this thesis. Special thanks go to my partner, Meredith, for her love, patience and support over the past few years, which without I would be far less happy and content with life. I am thankful to all my friends and housemates from the past few years for always being at the end of the phone or keen for a beer or two to take the edge off the PhD process. I am grateful to those at Tavernor Consultancy for employing me towards the end of my studies, and for engaging me in some of the most interesting architectural and planning projects in London, I am truly indebted.

Finally, I would like to thank the internal examiner, Dr Manolo Guerci, and the external examiner, Professor Iain Jackson, for their time in reading, engaging and examining my thesis. The viva-voce took place in July 2019, and was a lively conversation about the project, the reasons for it and the methods behind obtaining the conclusions reached. Their kind words and encouragement leave me wanting to further my studies and research and aim to publish parts of this thesis.

Ben Tosland, January 2020
Figure OP. 1 Initial mind map from 2015, detailing the potential themes and case studies
Research Context
Introduction to Research Context

The expanding and ramifying concepts of regional dynamics have caused a broadening of the general approach to all matters that deal with the survival and well-being of man. Thus, we find today that a ramified field as town planning can no longer be approached narrowly from only one angle or one point of view. No longer are the dynamics inherent in the planning of city and region satisfied by the projection of city or regional streets, however wide these streets may be. The field of town planning, dealing with the complex features of growing societies-in-flux, must be expanded to encompass and involve comprehensively the different mitigating forces and factors that impinge on a given situation.¹

This thesis begins in 1954, at the start of a period of rapid change and development in the urban, and once rural landscapes of the Persian Gulf that prior to the nineteenth century, only nomads had traversed. Then, those with imperial interests in the far east built ports and outposts to supplement their trade routes, until William Knox D’Arcy’s exploration discovered oil at Masjed-i-Soleyman, Iran, on the 26th May 1908 causing Western focus to turn towards the Gulf and its economic prospects. The extent of change becomes clear through an assessment of the region’s urbanisation, espoused in its architecture, which developed largely in the post-war period. Further, changes became apparent in the influences of external sources upon those who commissioned and subsequently built, these new environments. The post-war period in the Gulf became a ‘showplace’ for architects and planners from the Gulf nations, Africa, the far east, the socialist east, as well as Western designers.² The Gulf proffered an opportunity for architects to experiment with established thought and to advance theoretical positions, whilst expanding their oeuvre of work. It would not be possible to study the influences upon the form and scale of architectural interventions in the Gulf in one study, as such this thesis places an emphasis on assessing previously unstudied works placing them within the global architectural context.

Figure 1.1 Map of the region, showing the countries and cities concerned in this thesis (Author, 2019)
The local contexts within which this new architecture played out are important to the overall considerations, through assessing how architects’ ideas were informed by the surroundings of their given sites, should they consider this at all. Owing to the precarious position of these cities and nations, due in part to the exponentially growing economy, some Gulf nations plotted their futures within the global context, wishing to be at the forefront of innovation, a notion to be kept in mind when studying the new architecture in the region. Politically, this context is charged due to its geographical location on trade routes, but also its position in relation to long-haul flights from the western hemisphere to the eastern. There was a degree of political and economic wrangling during this period in geopolitical events and the effects they had on architecture: at the centre of this thesis is this geographic centrality, but also the position between the capitalist west and socialist east of nations in complex positions as autocracies, democracies or protectorates, the statuses of which changed throughout the post-war period. This thesis picks up the Gulf’s development narrative at the beginning of the Cold War and traces the changes to the urban landscape through five architectural case studies, assessing the ideas of architects within the complex political and economic landscape. The case studies, themselves (in chronological order) – Max Lock’s housing at Ubullah in Southern Iraq, Candilis-Josic-Woods’ (CJW) oil company housing in Abadan, Alfred Roth’s work in Kuwait, Doxiadis Associates’ (DA) plan for Riyadh and Jørn Utzon’s Kuwait National Assembly (KNA) – all exemplify these varying factors upon their schemes, through the altering requirements of clients, the architectural context and the changing visions of the nations themselves.

By assessing architectural development in the Gulf between 1954 and 1982 (fig 1.1) this thesis will show how modernity and tradition converged to create a regional design procured by Western architects. As such, the structure of thesis centres around a series of chronological case studies, intertwining the global architectural context, demonstrating the development of architecture by Westerners in line with wider architectural and political events. The earlier cases look to examples more rooted in the function of the building, and thus the inter-war architectural ideologies not necessarily associated with appearance, but more the metaphorical machine. In the post-war period, the move to more expressionist pieces of architecture played out within the Gulf, and more literally in the 1970s onwards, with the advent of post-modernism.

The thesis begins with Max Lock’s work to show these parallels across cultures, architectural movements and the tangled issues of nationalism and post-colonialism. Lock’s influences differed those of from the usual modernist architect, through focusing on metaphors associated with organisms and the biological theories of Patrick Geddes’. CJW and Alfred Roth exemplify this further but were more engrained within the ideas of functionality alongside the conversations and outputs of CIAM. Yet, it is clear through studying their influences they tried to create an architecture created from traditional elements as well as modern theories.

More latterly, DA’s work typified the capricious urban landscape taking a more literal approach to tradition; Utzon’s approaches to the design of the KNA took into account his own architectural influences and the design language he had developed, while making a building for a client that wanted a statement of identity. There is a degree of complexity to their buildings, especially when shown as an argument for a national development of
identity, which they so often were. The architects’ work formed part of what Benedict Anderson called ‘imagined communities’, in their role in creating nations’ identity. Anderson pointed out that national communities are imagined because ‘not even the smallest nation will ever know most of their fellow members, meet them, or even hear of them, yet in the minds of each lives the image of their communion’ and yet it is in this ‘imagined’ portrayal that architecture plays a crucial role, as it provides a tangible object, projecting an image that people can identify with, associating themselves with their land, culture and its politics; examples being, the Houses of Parliament in London, the Sydney Opera House in Australia or the Forbidden City in Beijing.3

Numerous studies on the Gulf take into account individuals’ work, architecture at a city scale and urban growth within national contexts, but no work looks at the regional forces at play in the creation of appearance. A thesis on such a subject intends to both cover areas not discussed in the literature, and to pose new questions, establishing lines of enquiry on the topic which may consider previously understudied architects’ work. The confluence of tradition and modernity was most apparent between 1954 and 1982 for Western architects working in the Gulf. Geopolitics, economics and various social factors within a wider global picture of political and architectural context have links with an increase of built scale in projects and their intensification. By using Lock, CJW, Alfred Roth, DA and Utzon’s work, this thesis will demonstrate that instead of a specific aesthetic definable as a Gulf architecture - as with Lewis Mumford’s definition of the Bay Region Style regarding design in San Francisco - buildings procured by Westerners in the Gulf gradually increased in scale and intensified in the use of Arab and Persian style ornament.

These changes to the built environment are of interest to architectural historians due to the diversity of building type and motivation for the chosen style, fitting in with the wider global narratives surrounding modernism and post-modernism. By assessing the development of Western designed buildings in the Gulf, it is clear there is a creation of ‘regional’ architecture drawn from a synthesis of architectural, geographical and political contexts, that draw upon both tradition and modernity. The morphology of buildings during this period changed drastically from those clearly influenced by the European styles of modernism to constructions that resemble expressions of traditional Arabian architecture. Leading on from these points and through analysis of the five case studies by Western architects, this thesis will also assess and critique the theory of critical regionalism, indicating weaknesses with regards to architecture foisted upon the Gulf by Westerners between 1954 and 1982.

Mark Crinson remarked in the introduction of Empire Building: Orientalism and Victorian Architecture (1996), that ‘in simple terms’, one might view nothing but ‘absurdity in the image, say, of a Lincolnshire church modified and set down on the hot, dusty maidan of some tropical city’ asking ‘is English imposed on these locations?’4 Slightly modified, this point and the question asked ring true to European modernism and the Western influence on Gulf architecture in the twentieth century. There is an incongruity

in building something that would not look out of place in Denmark within the dusty, arid desert lands of the Persian Gulf; yet, this fallibility within architecture in the region is common and understanding the reasons for it important. Esra Akcan’s *Architecture in Translation* (2012) contributed to this debate, by conversely showing that the urban planner Hermann Jansen (fig 1.2) and a Turkish news reporter both posited that ‘modernism was smoothly translatable’, in reference to the importing of a residential block of housing designed for a German city to Turkey. Alongside European building, the theories that surround architecture play out within the built environment as a physical manifestation of thought and theory from the time. The collision of architecture and geopolitics within the twentieth century is prominent; following mass decolonisation, Western architectural theory, through necessity not choice, made attempts to understand the built environment in former colonies. Subsequently, Western constructs of approaches to architecture such as critical regionalism are apparent in the prevailing architecture of the Gulf during this period.

**Figure 1.2** Hermann Jansen’s plan for Ankara (1932) as discussed in Esra Akcan’s work (Basdogan, G. (2016) Building Modernization, unpublished conference paper)

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The introduction of modernity in the post-war period in the Gulf coincided with uncomfortable tensions in nations such as Iran and Iraq with links to Western colonial powers. The construction of buildings of all scales within this period in the name of nation-building was highly representative of Western powers implementing their theory and imprinting their aesthetic on a place. On a small scale, Wilson Mason and Partners’ work in Iraq and Iran during the 1930s and 40s focused on European settlers through the construction of classically proportioned villas as a precursor to oil worker housing by CJW, Lock and Fry Drew and Partners. Elsewhere, but within the Middle East, Le Corbusier’s Baghdad Gymnasium (fig 1.3; 1956) is reminiscent of his work at Chandigarh (fig 1.4), thus implementing Western-founded theory in foreign lands looking to forge an architectural identity. The geopolitical and economic forces that allowed for these creations have parallels with the embryonic phases of the case studies chosen in this thesis. In many respects, this colonially tinged context is one factor in the causing of post-war architects to begin using traditional design methods, materials or circulation patterns based on anthropological reasoning and sociological surveys. For Gulf nations, the era following Britain’s lessening role in the world coincided with new oil riches and was a factor in architecture’s development. Advancements in building technology led to the formation of an architecture unbound by a single style in the Gulf. Subsequently, Arab design influence complemented a boosted political and economic position in the world for the Gulf nations; in the words of Lawrence Vale ‘a wide variety of regimes have used urban design and architecture to advance a nationalist agenda, and this ‘design politics’ operates at all visible scales’, which neatly encapsulated the progression of architecture and design while there was a period of change in national relationships and weakening British influence.

Figure 1.3 Sketch for the Baghdad Gymnasium by Le Corbusier, intended to form a central role in the Baghdad Olympic bid for 1956, although it did not get built until c.1985 under Saddam Hussein’s regime (ArchDaily)

RESEARCH CONTEXT

It is common for architectural histories, particularly of the Gulf, to confine the scope of study to within a physical or cartographical border. If the focus is larger than the nation, it generally misses out regions and will look entirely at global forces. When dealing with countries in a region such as the Middle East, taking a regional approach is imperative owing to the ever-changing nature of its peoples and the desert environment; borders, or boundaries, in this setting are not rigid like a line on a map, but indistinct and can vary dynamically according to phenomena such as the location of clouds. The nature of the Gulf lands is traditionally ephemeral; the idea of ‘sedentarisation’ is held in direct relation to urbanisation and the creation of culture, its concept and relationships between the two ways of living, define the Gulf city.

In opposition to the changes to traditional ways of life, Abdelrahman Munif’s novel, *Cities of Salt* (1987), summarised how the character Miteb felt about outsiders leaving their mark on the landscape in which he dwelt; he said, ‘the wadi has seen and heard more people come through than there are grains of sand here, and none of them ever left a trace. There’s no trace or memory of them left’, exemplifying the strong traditions and ephemerality. In contrast to these notions of ephemerality, Eric Hobsbawm asserted that nations are both ‘novel’ and ‘constructed’ through what he called the ‘invention of tradition’ which is what Anderson later referred to as ‘subjective antiquity’.

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to it that is not bound by borders, and it is only through these antiquated, exaggerated, narratives of tradition could the patrons of modern architecture in the Gulf justify the scale, types and forms of buildings they oversaw throughout the twentieth century.

2.0 Global Architecture, Modernism and Planning Background

2.1 Many of the architects and planners selected for study in this thesis have similar backgrounds owing to their Western upbringing. They mostly come from Europe and have different national identities, they all have links to Western educational institutions, taught in Western academia and share the same connections to first generation modernists such as Le Corbusier. Others have associations to Sir Patrick Geddes (1854-1932), ensuring a more organic background. Geddes was a biologist who encouraged sociological led planning of cities due to his belief that they were like organisms. How these theories meet causes a clash between tradition and modernity. The architects chosen for this thesis were all members of groups of theorists including CIAM, MARS, Team X and those who attended the Delos Symposia. These relations to Western theory usually meant that the chance to work somewhere like the Gulf was a good opportunity to experiment in the application of modernist theories; however, most architects chosen for this thesis differ from this viewpoint through examining sociological factors and surveying the built environment. This period falls after the publication of a widely-read essay by Henry Russell-Hitchcock (1946), who suggested that the ‘international uniformity of modernism’ was now open to variation, expressing his belief that modern architecture offered ‘a vehicle of expression for regional and national particularities.’ For someone like Roth, regarded as one of the last true functionalists and modernists inspired by Le Corbusier, the opportunity to design schools, houses and offices in the Middle East, with a focus on Kuwait, was too good to pass up. It allowed Roth to build for the social context and climatic elements, something which he would not get a chance to do in Europe; that said, his buildings appeared as though a European architect produced them due to their geometrical forms and internationally sourced materials.

2.2 At no point in the development of Gulf architecture between 1954 and 1982 was there a specific moment one might term the zenith. Designs of each period spanned style and scale, whilst developing and growing. Geopolitical events are the influence of geography, economics and demography on the politics of a state. Throughout this thesis, these three stimuli play a role in the dictation of change in politics and subsequently their manifestation through the architectural schemes and projects that occurred in their wake. The focus here is the quantity of completed projects drawn up by Western architects working in the Gulf. There appears to be a focus on different countries and cities at a given time throughout the Western architecture journals, often coinciding with international shifts of power and external influences. A special edition of *Architectural Digest* (1957) edited by Raglan Squire called ‘In the Middle East’ covered the development of new architecture in the Gulf featuring essays by people such as Jane Drew and a focus on the latest Western produced buildings.

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11 Held between 1962 and 1974, the DELOS symposia was held each year in June and was an event which planners discussed Ekistics for human settlement.

in the Gulf, the significance of this body of work is noted throughout the thesis.13 The collection of articles looks at the MENA region including the immediate nations that border the Gulf, providing an understanding of the wider architectural context on an area which was affected by similar events and cultural aspects.

The production of architecture by Le Corbusier and his disciples had a sizeable impact on the development of buildings in the Gulf. Georges Candilis, Shadrach Woods and Roth all had direct links with Le Corbusier having worked in his atelier at varying points. Candilis and Woods both worked with the French architect Michel Écochard in north Africa, known for his work in Damascus and had worked extensively with Le Corbusier. The networks of people working in the Gulf from the West at the time was extensive. All of the architects assessed had an ongoing commitment to symposia and gatherings such as the CIAM, Team X, PAGON and MARS groups, with their work in the Gulf benefitting climatic research and cultural theorising of architecture. This created an aesthetic that would define ‘modernity’ often becoming associated with the economic success of an area. This would infiltrate around the world into countries where European influence extends from the coloniser. Instead of progress, Western styled architecture symbolises regression and colonial power which was a by-product of architectural patrons commissioning what they believed to be world leading architecture. Despite this move away from the European styled modernism, many of the buildings constructed in the period by Western architects featured a ‘dual nationality’ within their designs; for instance, Utzon included an ‘artistic syntheses’ combining the Nordic traits of a ‘rational sense of clarity with a sense of tactility and intimacy’ in the designs for the KNA (fig 1.5).14 This contributes to the idea that biographical elements are of paramount importance in the production of architecture, alongside the assemblage of other factors.

Two schools of thought in planning and architecture utilised in the Gulf during this period stem from competing organicist and functionalist ideas.

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Organicists, including Geddes who worked with people like Mumford, held influence over Lock and Doxiadis, both of whom this thesis has studied at length. Geddes was known for pioneering planning techniques and sociologically-led research, he had an immeasurable influence upon the organicists of the twentieth century, even influencing those of a more functional disposition. He was a biologist that thought that the city ‘was a system for the social and spatial organisation of human life’; his writings and teachings of planners reflected this. Some Arab planners demonstrated from the 1960s onwards that there was a growing movement against purely functional, utilitarian ideals. Saba George Shiber, the Lebanese planner and architect, became ‘distressed’ by the ‘mutilation’ against the ‘organic principles of urbanism’ within Kuwait and the Gulf nations. Vitally, Geddes’ aim, according to his biographer Volker M. Welter, was to understand ‘the city, its emergence, its functioning and its regional context in order to plan its future’, a notion adhered to by his followers. The functionalists, including Le Corbusier and Sigfried Giedion, commanded influence over CJW, Roth, and by the proxy of PAGON, Utzon. Although they worked with similar methods to Geddes, using diagrams and grids, their systems focused heavily on pragmatism rather than cultural factors, as this thesis shows. These two broad distinctions are important throughout the thesis and demonstrate some of the underlying reasons for design choices.

The major influence upon the change in design philosophy is external to architecture. Geopolitical events that took place in the world parallel to building projects and decolonisation disrupted the morphology of styles. This was from the distinctly European, through to an intensely Arab style of architecture primarily influenced, albeit inadvertently, by European theory and practice. Architects did not impose ‘Europeanism’ upon nations. The very notions of modernism in some ways imparted a hegemonic, globalised ideal that could fit anywhere in the world; although as the theories behind it developed and arguments among architects raged, the production of architecture under the broad term ‘modernism’ became varied and unique. According to diarist Zara Freeth, in Kuwait the locals preferred the new European forms of architecture, which is testament to modernism; Tanis Hinchcliffe, however, asserted that it was not that they liked it, there were major sections of society that believed their country, as part of the Gulf nations, could lead the world in architectural development.

According to diarist Zara Freeth, in Kuwait the locals preferred the new European forms of architecture, which is testament to modernism; Tanis Hinchcliffe, however, asserted that it was not that they liked it, there were major sections of society that believed their country, as part of the Gulf nations, could lead the world in architectural development. This view transcended borders and cultures, despite its European foundation, and was desired by people from the Gulf. Furthermore, Crinson argued that ‘the ‘International Style’, as associated with modernism, was a misnomer, a term better suited to neoclassicism rather than modern architecture developed out of its surroundings’. This is due to the rigid rules of classical architecture enforcing uniformity contrasted against the prevailing freedom of regional expression exemplified in modern architecture. Through major and influential additions to the literature and the scars of imperialism

16 Shiber, The Kuwait Urbanization, p. 5.
17 Welter & Lawson, (eds.) The City After Patrick Geddes, pp. 10-11.
20 Crinson, Rebuilding Babel, p. 172.
showing throughout the world, modernism, like British colonial architecture, began to represent something else; it became apparent that it was the aesthetic of informal empire, and that those nations with new money, contemporary cities and a desire to create identity wanted to move away from past relationships with the West.

2.6

The intensification of Arab design over time becomes progressively apparent throughout this thesis, dovetailing with architectural development in the West demonstrating more of an interest in regional styles of building in the post-war period, latterly merging with post-modernism. In the first few chapters, the architects primarily research the functions of buildings and their spatial configuration, rather than assessing the appearance of a building. In 1960, Shiber marked a change in this through establishing a concern for aesthetic, motif and ornamentation in a diary entry:

*If I get ahold of the planning and design of Kuwait in the way I want, I will create the renaissance city of the century. I will stay if I can co-ordinate art, architecture and planning. I will chuck it if bureaucracy and jealousy will interfere. I will serve these people honestly and well and will check all the parasites. I will work for good design with Arabesque motifs.*

The publication of DA’s report for Riyadh (1972) occurred when buildings in the Gulf became more ‘Arab’ in style, eight years after Shiber’s motif, aesthetic based proclamation. DA encouraged the use of mashrabiya, smaller window openings, and featured crenelated roofs and imitation mud on the elevations within their design guidance, with architects then utilising this in the ensuing period; DA did not influence the architects working in the period, but their work reflected the growing nostalgia felt at the time within these architecturally developing countries contrasting the points made by Hinchcliffe and Freeth as time elapsed. Use of Arab ornamentation is related to the growing autonomy of Gulf nations in this period as countries like Kuwait developed their own independent, internal politics enabling them to choose who procured the architecture of their nation. This also coincided with larger global architectural movements which began to reject modernist thought of previous decades, allowing ornamentation to become fashionable again.

3.0

3.1

**Geopolitics**

Geopolitical events correlate with architectural changes during this period. Sometimes it is difficult to prove that events could have had a specific effect on architects’ work. They may not have written about it in their correspondence or the archives consulted may not have held relevant material. However, where there is a correlation there is a clear relationship between the event, its outcome and the effect on the built environment. After all, architecture reflects contemporary politics; Italian fascist buildings, German Nazi buildings and British colonial buildings are all recognisable of their regimes (fig 1.8; fig 1.9; fig 1.10). In an interview with *The European*, Norman Foster expressed these sentiments:

Architecture is an expression of values – the way we build is a reflection of the way we live. This is why vernacular traditions and the historical layers of a city are so fascinating, as every era produces its own vocabulary. Sometimes we have to explore the past to find inspiration for the future. At its most noble, architecture is the embodiment of our civic values.22

Furthermore, there are cases where what gets passed off as a ‘demonstration of national identity is more typically a drive for identity of a much more personal and parochial kind’, regarding the associations of architects to schemes on a national scale, or to do with identity creation.23 Lawrence Vale suggested that this is true of Chandigarh and Le Corbusier, or Louis Kahn and the Capitol complex in Dhaka; by assessing cases such as Utzon’s work in Kuwait and Doxiadis’ planning of Riyadh and the concentration on ‘traditional’ elements, this idea is further proven.24 The KNA is a building that exemplified Utzon’s oeuvre, with its big swooping curves, flexible plan form and sensitive use of natural and artificial light, the collaborative nature of state-run institutions working with Utzon clarify Vale and Foster’s point further, shown in the fifth chapter. Vale also ascribed this notion to the ‘megalomania’ of dictators, such as Nursultan Nazarbayev in Astana, Kazakhstan.25 Kuwait differed to this, through the ruling family’s desire to provide extensive welfare cover to its people. But it was the image of the KNA that manifested this desire, through its provision of extensive public space in its public square and a large public gallery.

The geographical scope does not cover other areas which may also follow the same rules of this paradigm by scale increase or aesthetic intensification. For example, the increasing number of building projects in Iraq during the 1950s, most notably Baghdad, encouraged Western star architects to build and plan projects on new, unimaginable scales in ground-breaking designs. The catalyst for this was the growth of consumer-based oil wealth in the country. This building effort by Western architects came to a halt following the 1958 Iraq Revolution and the ushering in of a new period of power. Iraq then orientated towards the Soviet Union’s sphere of influence. This did not stop development, but the country used more Iraqi or eastern European architects including Rifat Chadirji (who founded his practice Iraq Consult in 1952), or Miastoprojekt from Poland (fig 1.6; fig 1.7).26 Following the various economic oil booms in each country from the region, new trade routes with the West opened. This was to fuel the West’s increasing reliance on fossil fuel powered engines and machinery. Political

24 Doxiadis Associates’ use of traditional elements in Riyadh is a direct contrast to the modern plans for sections of Baghdad and in Islamabad, showing the practice as something of a chameleon in moulding its work to the patron’s vision and concerns about identity.
25 Ibid.
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Figure 1.6
Miastoprojekt’s work for housing in Baghdad, following the 1958 Revolution (Stanek, L. ‘Miastoprojekt goes abroad: the transfer of architectural labour from socialist Poland to Iraq (1958-1989)’).

Figure 1.7
Miastoprojekt’s work for housing in Baghdad (Stanek, L. ‘Miastoprojekt goes abroad: the transfer of architectural labour from socialist Poland to Iraq (1958-1989)’).
thought and actions thus shifted with the West's trade interest in – and oil dependence on – the Gulf nations. This money funded a building boom in the middle of the twentieth century; the style in which they were constructed altered in accordance with geopolitical events, foreign allegiances and the gaining of independence. In 1973, the Yom Kippur War, and subsequent oil embargo, was to have the biggest effect on the economies of the Gulf and therefore urbanisation. The oil embargo placed on Western countries which supported Israel inflated the price of oil, as it showed Gulf nations the price Western nations were willing to pay for it.

The main catalyst for urban development and migration into the Persian Gulf was the growth of the oil industry coinciding with development of industrial techniques enabling global mass-production. The finding of oil in abundance at Masjed-i-Soleyman in 1908 occurred after a lengthy scientific and political process, initiated by the initial commission granted to William Knox D'Arcy in 1901.27 In the centuries prior to the finding of commercial quantities of oil, where discharges were noted, industries formed around the ‘caulking’ of boats and the ‘binding’ of bricks.28 Iran was an introverted state at the turn of the century, ‘barely distinguishable’ as an economic entity despite its location on silk and cloth routes into Asia from Europe and trade relations with the East India Company.29 The company required the importation of workers, who then required accommodation forcing large scale urbanisation which the oil companies funded through speculative investments and their increasing income. The First World War curtailed the production of oil, but did not stop entirely as the British Royal Navy had grown dependent on Iranian oil for the war effort, requiring production to continue, thus ensuring the oil industry did not stagnate in its formative days.30

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These three images all show buildings that are reflective of a regime or the geopolitical events of the time which led to their construction. (L-R) Palazzo della Civiltà, EUR, Rome (1937) (Wikipedia); The bottom of the Glockenspürurm of the Olympiastadion in Berlin, designed by Werner March in 1934 (photo by author, 2015); St John’s Cathedral, Hong Kong – the oldest Anglican cathedral in the Far East – built in 1849 and representative of the British colonial power from the time (photo by author, 2017).
Changing Appearance: Development of Architecture and the Influence of the Region

This thesis proposes a distinction between regionalism understood as appearance, and an otherwise complex theoretical paradigm that is irreducible to a style. The study of regionalisms and their development within the Persian Gulf is important to the wider, global literature of modern architecture. Owing to rapid economic development, newly rich governments looked outwards to developed countries for architects trained in Europe and America to design their buildings. There are also important buildings by non-Western architects, such as Hassan Fathy, Heydar Ghiai (fig 1.11) or Mohamed Makiya (fig 1.12), constructed in this location and period which play a significant role in the development of architectural typologies in these nations.

Western academic interest in architecture outside of itself proliferated from the 1980s onwards; this overlapped with the development of postcolonial literature, and architecture’s abandonment of the modernist movement. Added to this was an interest in tropical architecture and modernism from academics such as Robert Home and furthered by Iain Jackson, both of whom concentrate on Western influences within the tropics. Kenneth Frampton’s Modern Architecture: A Critical History had, until the fourth edition, omitted tropical, or ‘third’ world architecture altogether. In the preface of this edition, Frampton stated that a ‘disturbing Eurocentric bias

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has been evident in all the received histories of modern architecture.\textsuperscript{32} Vandana Baweja discussed opinions such as these as if they were comprising a new revisionist approach to modern architecture which challenged the Eurocentricity of the modernist historiography, ensuring that the plight of the colonised is told through ‘highlighting how they were active agents in the domestication and transformation of modernist architecture and planning ideals.’\textsuperscript{33}

Global modern architecture altered its style during the second half of the twentieth century, with a more regional focus taking place across the world. The first to term this as critical regionalism was Alexander Tzonis and Liane Lefaivre in the article ‘The Grid and the Pathway’ (1981), with Frampton authoring an article in 1983 on the same topic titled ‘Prospects for a Critical Regionalism’ in the journal Perspecta and appearing in Hal Foster’s \textit{Anti-Aesthetic: Essays on Postmodern Culture}.

Yet, regions outside Europe are still largely ignored in \textit{Modern Architecture: A Critical History} despite awareness of the topic.\textsuperscript{35} William J. R. Curtis wrote about regionalism and critical regionalism in \textit{Modern Architecture since 1900} in the global sense.\textsuperscript{36} While Curtis looked at several examples of this, he talked about specific architects and their works across various regions and how this was adapted in various case studies, including the works of Balkrishna Doshi.

Analyses of critical regionalism have argued that its philosophy is too ‘Western’ in the attempt to understand architecture outside of Europe and the West. Thorsten Botz-Bornstein articulated its failures as an ‘attempt to install a Western critical model in the non-West [that] was a postcolonial undertaking.’\textsuperscript{37} Botz-Bornstein used the example of Keither Eggener to argue that critical regionalism was an ‘optimistically designated postcolonial formation of colonialism,’ stating that it is a ‘revisionary form of imperialist nostalgia.’\textsuperscript{38} This, he stated, is in line with the arguments put forward by Jane Jacobs in her model of postcolonial architecture established in \textit{Edge of Empire: Postcolonialism and the City} (1996).\textsuperscript{39} Botz-Bornstein argued that although the use of Western architects in other regions of the world is in itself a paradox, critical regionalism does speak out against Western globalisation in order to protect identities. Botz-Bornstein used examples from Kuwait, Saudi Arabia, Korea and China to show that this critique does not apply in all instances.\textsuperscript{40} Asseel Al-Ragam departed from Botz-Bornstein’s work by assessing regionalism through the lens of ‘critical nostalgia’, but only in the specific case of the Smithsons proposals for Mat Buildings following their Kuwait Urban Study (1968) (fig 1.13).\textsuperscript{41} She argued that Kuwait’s apparent nostalgia at the end of the 1960s was viewed as a ‘sentimental longing for the past brought about by social, economic or political disruptions in the present’.\textsuperscript{42}

\textsuperscript{32} Ibid.
\textsuperscript{37} Botz-Bornstein, \textit{Transcultural Architecture}, p. 3.
\textsuperscript{38} Ibid.
\textsuperscript{39} Ibid.
\textsuperscript{40} Ibid.
\textsuperscript{42} Ibid.
Throughout this period there is a struggle for those oppressed by oil companies to gain rights and housing that functions to cultural requirements. Following geopolitical events, such as the nationalisation of oil companies in Iran and the crowning of the new Kuwaiti Emir, Abudullah Al-Salim Al-Sabah in 1950, the once lowly status – in the eyes of the Western nations -- of those from these regions rose. This, however, gave rise to an ‘awareness of subject positions of race, gender, generation, institutional location, geopolitical locale, sexual orientation – that inhabit any claim to identity in the modern world’ which, subsequently, is demonstrable within the new architecture of the region in these periods, manifested in the construction of Western style hospitals, schools and universities, for example. Arguably, the awareness of this hierarchy was prevalent long before the independence and autonomy shown through governance in the region, with dissent and protest being rife in capital cities and company towns in the decades and centuries preceding the finding of commercial quantities of oil.

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Methodologies

Topic Selection

This project began in 2015 following an email conversation with Professor Iain Jackson at the University of Liverpool. The conversation came about through an interest in the architect Jane Drew, of whom Jackson was imminently publishing a major book on hers and Maxwell Fry’s careers. Instead of focusing on a specific architect, Jackson’s suggestion was to pillage the BP Archives, held at the University of Warwick, to find a topic on projects not yet studied, with a focus on architecture in the Persian Gulf. One of the first articles consulted at this time was Mark Crinson’s ‘Abadan: Planning and architecture under the Anglo-Iranian Oil Company’, published in 1997 which gave initial context to the architecture and planning in a Gulf company town. The initial idea from here was to assess Wilson Mason’s work in more depth, placing it within the architectural context of the time, but following the publication of ‘The Architecture of the British Mandate in Iraq: Nation-Building and State Creation’ by Jackson in 2016, it was decided that too much work using similar materials had been completed on the architects and that the focus needed to shift to a different timeframe. At the time, the literature generally focused upon architecture within countries or cities, not assessing the similar influences across borders in the creation of a similar oeuvre of work. The archival work already completed at the BP Archives formed useful historical context in analysing the post-war period through assessing the architectural morphology of the region in relation to modernity, politics, power and events.

As stated above, the selection of a geographical area that crossed borders was imperative to assess the wider architectural patterns in this period, to show that they are not exclusive to any one nation. The Gulf is a useful case study to show this given how recent the secret Sykes-Picot Agreement of 1916 is regarding the drawing of borders. These countries were new, in an administrative context, and an amalgamation of different peoples brought together under new flags; so how does an architecture represent this mix and how did Western architects exploit such a problem? In answering this, questioning tradition and modernity was important, as each nation understood ideas of heritage and identity differently; perceptions of this changed quickly, with no one definitively preferred style of building creating a unique mix of architecture. Through the selection of case studies – discussed below - this thesis shows how Western architects interpretation of tradition and modernity altered throughout the twentieth century in the Gulf, often expressing these issues through ornament, style and expression in physical building forms. Choosing these themes followed a background reading in nationalism, geography and geopolitics, questioning regional variety and homogeneity, attempting to assess the variables in each selected city and nation. Other historians, as discussed in the Literature Review and throughout the thesis where relevant, have pointed out that architecture’s association with politics and power is important; it is also necessary to show that style comes into these considerations and has its parallels with contemporary Western architectural discourse.

Figure 1.14 Port Offices in Basra, designed by James Mollison Wilson of Wilson Mason and Partners in 1929, showing the imperial styled classicism of the pre-war period, exemplified in much of Wilson Mason’s work in the region (Joyce, B. (2017) ‘The Building of Baghdad’, RIBA Journal)

Figure 1.15 Air Terminal in Basra, designed by James Mollison Wilson in 1937. (Joyce, B. (2017) ‘The Building of Baghdad’, RIBA Journal)
Geographical Selection

A large geographical study area is necessary to assess the flows and fissures of architectural ideas within the region as conducted by architects in this period. The reason for studying the region, through one-off case studies that are linked geographically, is that the Western architects in question come from a background where they are concerned with the broad modern movements of architecture, the ideologies associated with it or the terroir of the site. Architects took influence from the area’s culture and climate making judgments from conversations with their clients, tours of ‘similar’ locations and observations of the landscape of their given sites. Assessing one off buildings, within the local built context – whether this be the ‘traditional’ vernacular or the contemporary built context - including structures by Westerners, opens new lines of analysis and understanding in the pressures on the built environment within the region.

There are whole countries omitted in the selection of the five case studies, which is an obvious problem with the choosing specific buildings and architects’ work to study. Westerners worked in countries such as the UAE, Bahrain and Oman in this period and their work is also worthy of serious study; to supplement the case studies, buildings from these nations are used to contextualise these works. By not selecting them for study in this PhD does not mean that they are not subject to the same effects and impacts that global geopolitics and the regional events had on building in this period. The nations and cities chosen for study in this PhD are affected by colonial issues and external power battles between superpowers which primarily concerned themselves with the price of oil and ease of its extraction. Invariably, architecture’s links to this geography is at the centre of events and economics, with its forms altering to represent the varying changes in this landscape.
Architectural Selection

The thesis’ structure centres on five specific case studies which critics might suggest are idiosyncratic, or ‘one offs’, but they are representative of the wider concerns and ambitions of the cities, nations and region within which they are located. Because of these limitations, the thesis perhaps misses some fine-grain detail and different ways of analysing the buildings in questions, but through using understudied examples of Western built architecture in the region, it begins new conversations about the role of Western architects within the Gulf and other regions in the world. Each chapter explains where the building is situated within the geopolitical climate of the period as well as its local architectural context. Where this thesis differs to other works, is that this context casts a wider net to look at both the significant works in the region – architects and practices spoke amongst each other about their varying experiences and works in other cities and nations, to gauge the potential experience of working in the Gulf – other works might focus just on the specific city in which their study focuses on, the typology, or the oeuvre of the architect in question. The buildings selected were done so carefully, as they represent the region, nation or city at the time of construction, showing the overall paradigm of changing regional architecture amidst the global (in this case Western led) phenomenon of modernism which as Charles Jencks pointed out in Modern Movements in Architecture contradicts itself endlessly through ‘indecision based on aesthetic, functional, global and regional preferences’, promoting a stylistic approach to architecture history.46

5.6

The architectural and geographical selection for this thesis are not mutually exclusive of each other in the aim to prove that there is a Western created obfuscation of borders through architecture; this happens through the desire to strive for a built identity in this period, and an interest in ‘purchasing’ the latest radical architects, as exemplified by the construction of Baghdad through Western idioms and architects in the 1950s and Kuwait through the 1960s and 70s.47 During the 1950s, the issue was that architects designed in a Western style, taking into account climate and occasionally social factors, but little ornament was displayed; latterly, climatic and cultural issues were often adhered to but there was a more superficial reading of Arab aesthetics tying in with the notion Edward Said asserted that Westerners viewed everywhere east of Europe as being the Orient, a point made in the chapter assessing Alfred Roth’s Kuwaiti work.48

5.7

Within the thesis, there are numerous typologies of building selected showing that regional issues within Western designed architecture are their own creation and that they span the function of every Western designed building in the Gulf. It analyses different typologies in the context of other, contemporary buildings, often with a singular function – as with the modern souks of Kuwait against the KNA; the purpose of this is to demonstrate the changes in style and architectural language which feature across typologies. Lock’s plan for the Ubullah neighbourhood juxtaposes that of DA’s plan for Riyadh, but both are equally concerned with ideas of typology and interest themselves with the existing landscape and townscape within their cities of focus. Again, viewing these projects through the contemporary projects

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5.8

Most importantly, the case studies from which each chapter is based upon are all understudied in their own right, meaning this thesis uses the architects’ work and archival materials in a new, unique way to illustrate an argument that might not necessarily have been made without looking at them. This in turn, adds material to their own careers and the European context from which most of them spent their working lives in. Lock’s work is underappreciated across architectural history, which contrasts to Utzon’s, but the Assembly building is under-analysed with its influences for design misunderstood, as explained in the fifth chapter. While the KNA might not be the most important building in the city – or of Utzon’s wider opus - it represents a more global pattern in constructing large buildings in pursuit of something that is both unique and representative of a nation was not limited to Kuwait, as with the creation of the nation of Bangladesh and Louis Kahn’s work in Dhaka. In the case of the KNA, arguably it failed to resonate with the architectural context, standing close to the shoreline, hemmed in by a major road; where other projects, like the modern souks are built within the fabric of the city, the KNA fails in its civic attempts and is not easily accessible despite other gestures, including the public gallery.

5.9

Selection of specifically Western architects for study is crucial to the overall positioning of the thesis within the history of Western architecture. For some time, there has been an interest in the effects of cross-cultural exchange, recently with Neil Jackson’s book Japan and the West: An Architectural Dialogue (2019), Esra Akcan’s Architecture in Translation: Germany, Turkey and the Modern House (2012) and recently with exhibitions in Western institutions such as Inspired by the East held at the British Museum in London during 2019. This thesis adds to this growing literature on this theme, assessing new ideas and notions within an analysis of architecture and thought manifested within a specific geographical area – in this case, the Persian Gulf. This is not to say architects from the Gulf are not worthy of study, but an assessment of their work is due with Western historians neglecting architects such as Mohammed Makiya or Rifat Chadirji in global pictures of architecture history. Further, their work was influenced by architectural precedents on local, regional and international scales; to parochialize their work as regional is inappropriate, as their influences are as international as modernism itself and their case studies provide important context to the work of Western architects in the Gulf through their modernist tendencies, nevertheless much of their work takes from the local political and economic factors.

Projects not Selected for Detailed Study

Numerous projects in the Gulf by Western architects would have made for suitable study material but were each not chosen for specific reasons. Many of those not studied could fit into new typological studies themselves, including focusing on infrastructural projects, the construction of power stations, the architecture and engineering of structures associated with water or the buildings of the welfare state, focusing on Kuwait. The elimination of other projects to study occurred as part of the selection of themes, timeframes, geography and focus on Western architects, which
all related to emerging research questions. Some projects ruled out when choosing the scope of study included landscape architecture, including Tehran’s parks (Ferdowsi Park, Niavaran Park and Melat Park, for example). This further extended to the designs of university landscapes, having considered Sultan Qaboos University in Oman in depth (fig 1.17). Other projects considered for selection included that of the King Saud University in Riyadh, which fell outside of the timeframe of project selection; their considerations early on the process still influenced the study contextualising many of the projects this thesis assesses.

Using specifically Western architects limited the scope of works studied in this thesis, as already suggested, there were many Western educated Arab designers that worked in the Gulf during this period which would have been worthy of study. Where relevant, non-Western architects are weaved into the narrative of the thesis to recognise their significant role in the cultural exchange during this period. This shows that the case studies chosen are not idiosyncratic examples and that the architecture of Westerners in the Gulf during this period forms just a small part of the wider history of modernism, tradition and architecture produced in the region. A non-exhaustive list of the significant architects, landscape designers and planners considered in detail, but not used as a focus, included: Hassan Fathy, Rasem Badran, Mohamed Makiya, Kamran Diba (fig 1.18), Rifat Chadirji, Michel Écochard, Lawrence Halprin, Macklin Hancock, Richard Boedecker, Minoprio, Spencely and Macfarlane (MSM), Wilson Mason and Partners, SOM, HOK, PACE, TAC (fig 1.19), Arne Jacobsen, Marcel Breuer, Sayed Karim, Peter Barber and Farmer and Dark. Their works all influenced this thesis to some degree, through analysing the types of buildings they produced and where these are situated within the culture of the Gulf, its existing architecture, the nation’s architectural direction and global architecture.
Projects that were of direct interest to this thesis were those of Farmer and Dark (fig 1.20) and their role in the modernisation of Kuwait through the construction of power stations in the nation. The issue regarding this was the scope of material available at the time of study, with little to assess in the way of correspondence with the State or drawings for their various projects. Sayed Karim (fig 1.21) produced many important projects during this time, regularly working in the Gulf; like Roth, he worked at ETH Zurich for a time but mostly focused his career in Egypt on projects such as the Al-Nasr masterplan, an extension to Cairo. Karim also has no available archive to consult (in part due to a fire in his office destroying much of his work), meaning a focused chapter on his career would have been difficult, even though he did work in Riyadh in 1950, before the timeframe this thesis studies it contextualises earlier works in places such as Ahmadi, Abadan and Basra by Wilson Mason and Partners.49

Extensive research carried out into the careers of Maxwell Fry and Jane Drew contributed to the overall study, despite not having a chapter focused specifically on them. Their work on company towns coincided with both CJW’s work in Abadan and Lock’s work during this period in Basra, Ubullah, Um Qasr and Margil. Because there is a considerable degree of crossover between Fry and Drew and Lock and CJW on an individual basis, it was easier to focus on Lock and CJW and apply Fry and Drew’s work where necessary.

There are certain typologies this thesis could have assessed, should it have followed a different structure focusing upon other topics. One of these is the construction of modern souks in Kuwait. In the period following 1952, Kuwait built many different souks using several different Western architects, including prominent names such as Marcel Breuer. Modern designed souks collided with tradition in many respects, in terms of their function, relationship with tradition and the move away from a specific type of building which forged a role within the urban fabric of Arab and Gulf cities. These new, modern, souks often combined car parks and residencies and were a new typology in themselves. A chapter focusing on the souks would work within this thesis, but archival material available had limitations and it was felt other Kuwaiti projects were more important than these in the selection of case studies.

Architecture, architectural solutions and spaces created or designed by Western architects are the focus throughout this thesis. There is a case that master plans, schemes and urbanism by MSM, Lock, Raglan Squire, Wilson Mason, DA, Colin Buchanan and the Smithsons could have formed
a thesis, instead of the specifically architectural focus. However, the role of these named planners in the creation of the architecture discussed in this thesis is of importance and an assessment concluded where necessary. In some cases, like that of Lock and DA, this thesis dedicates whole chapters to their work only focusing on a fragment of what they produced because of the abundance of archival material available. This portion relates to the creation, or promotion, of a style of building drawn from historic buildings viewed as being traditional by the architects. There are similar parallels in the above planners’ works, but a work focusing on these would benefit from assessing the whole of their master plans and what they meant for Gulf society.

**Timeframe Selection**

The selection of the period 1954-1982 coincides with the first and last case study chosen for this thesis. Most importantly, it spans a period large enough to examine changes in architectural form and the development of spatial syntax. This is necessary to gauge the geopolitical events and economic effects, asserting that architectural form, power and identity are all intertwined and not mutually exclusive of each other. The effects of globalisation are significant in this era, just as the second generation of European modernist architects began to make their architecture. One of the roles this thesis attempts to play is that of a mediator between architects and events alongside the changing attitudes of clients and their briefs for projects. Resulting from globalisation, architectural movements and influence crossed the world, and inevitably, there are distinct links between the European architects working in this period as well as those working elsewhere in the world; these are associated with the changes in architectural theory and output elsewhere, meaning that the buildings are generally contextualised at different geographical scales throughout the thesis. The period of study, therefore, takes into account the development of modernism into post-modernism, which also coincided with revisions of critical theory and the introduction of post-colonial ideologies, causing correlations between buildings and their overarching context. Thus, the twenty-eight-year period which this thesis examines may seem broad but is necessary to judge how global pressures affect the regional scale in the Gulf at the hands of Western architects.

The specific choice of 1954 as the beginning point is merely because the first chapter deals with Lock’s planning work in southern Iraq. In truth, the depth of study begins in advance of this to assess the context of tradition in this part of the world. It also considers other major plans and buildings constructed prior to 1954, specifically that of MSM’s work in Kuwait during 1952, which contextualises and juxtaposes Lock’s sensitive work. The end date is concerned with the completion of Utzon’s KNA. Choosing this date also presented some issues, as the effects of the morphology of Western designed architecture in the Gulf continued after the completion of the building and many more similar examples to the KNA proliferated during this period, as with Henning Larsen’s work which are still considered in this thesis.

**Thematic Selection**

A stylistic assessment of architecture fashioned by Western designers in the post-war period forms part of the overall thesis. There are several methods of assessment available, with the potential to use various philosophical positions or post-colonial lenses. The choice of a more literal, positivist,
stance is crucial to understanding the morphology of architectural design and attempting to recognise the reasons for the changes. To better explain this focus on the physical, the *Rise of Realism* (2017), by the philosophers Graham Harman and Manuel DeLanda, focused part of their discussion on the relationship of ‘objects’ to events.\(^5\) These have the potential to include buildings, or the creation of specific buildings styles, in relation to ‘events’, these arguments about objects can also be applied to the conception of physical items that do not exist or were not built, in that it is still possible to chart how architects’ ideas conformed to the architectural patterns presented and how this was affected by events. DeLanda broadly concluded that actions undertaken by objects create the contents of the world.\(^5\) Regarding this thesis, the idea of interlinking events and objects (architecture, buildings, etc) is vitally important, specifically in relation to the formation of regional architecture during the period.

As suggested above, there are problems associated with a focus on individual schemes and it might be easier to pursue types, materials or cities as a common denominator. It is necessary to view the detailed examples in this thesis within the panorama of wider architectural history at the local, regional and global scales. These detailed examples represent the contemporary global architectural scene, and rather than acting as trailblazing pieces of architecture (which their patrons may have desired), they simply add to the narrative of the development of the built environment in the Gulf during an intensely complex period of history. Thus, the case studies chosen are not merely snapshots of history but are situated within the bigger pictures of architectural history. The structure of each chapter’s formation is to place each case study within the context of global architecture and to assess other elements which suggest reasons for its building and decisions behind its overall form, analysing what its appearance is suggestive of.

**Constraints**

Linguistically, studying in places that predominantly speak Arabic or Persian formed a constraint in dealing with correspondence and works written in these languages. Studying Western architects who worked in English enabled a clearer understanding of material outside of visual elements, ensuring a better understanding of the nuances in their writing. Much of the material in the archives by foreign architects is in English, as this is the common language between a lot of the external consultants employed by the clients to work alongside the local architect, should one oversee the project. Using architects that worked in their second language also presented its own issues, in that their intentions may not tally with their own writing. Studying architects from the Gulf, such as Kamran Diba or Mohamed Makiya, will make for important studies in the future through assessing their impact on the built environment in the region, accessing their work by people with a better understanding of their native language is imperative. This thesis primarily focuses on the importance of Western architects’ work in the Gulf and their relationship with the European discourse from which they were primarily situated as an answer to the linguistic constraints.


\(^{51}\) Ibid.
This project did not require any field work in the analysis of the case studies as it primarily takes an a priori position. Some cases, like the CJW Abadan housing, or many of the buildings designed by Roth remain unrealised, and therefore would not benefit from site visits but understanding their concepts theoretically is necessary is gaining a clearer picture of Western architectural methods. There is a focus on form in this thesis where it considers ornament and space; to some extent, it is about the experience of space, but is neither phenomenological in its approach nor is it dependent in this space being tangible, as it is about the influences upon Western architects practicing in the Gulf. It assesses the ideas that formed space and buildings – even if they remained on the drawing board - arguing that the intentions behind buildings extensively changed during this period, resulting from external events and the changing attitudes of the clients. In addition to this, field work and site analysis of buildings would warp the understanding of the plans and ideas as many buildings have been subject to insensitive alterations, damage from fighting or razed in their replacement by newer buildings. Using field work alongside other methods, such as archival research, might yield different results, and they may not be as lucid in the placing of these buildings within their architectural context. As such, archival material may suggest one thing and the physical building another, prompting questions about the building’s morphology and the thesis becoming a narrative about the specific building and its life after construction. This thesis seeks to not become a story about the building’s finished appearance, but assesses the ideas and influences behind structures designed by Westerners at the confluence of tradition and modernity (fig 1.22).

Material: Archives Used
Consulting archives, visiting libraries and scouring Western architectural magazines was necessary to uncover information for this thesis. Comprehensive international archival materials come from: the Aalborg City Archives (Utzon), Roth’s personal archive held at ETH Zurich; Woods’ archive at Columbia University in New York; and the Doxiadis Centre’s archive in Athens. These archives appear to be unhindered by politics, holding most things from drawings to correspondence giving a full picture of these projects. There are problems with various bits of material. For example, CJW’s Abadan work leaves various ambiguities due to the
fact this archive is primarily drawings, with little written reference to their work in Abadan. This forces a reliance upon the visuals for analysis, other secondary sources that focus on their careers, and small captions on the back of images. In the United Kingdom, materials from the Max Lock Centre at the University of Westminster underpin the majority of the first chapter, but because of his various working relationships with other architects in the period, utilisation of the material elsewhere in the thesis is paramount. Drew’s drawings, held by the RIBA Library in London, for Fry and Drew’s work in Gachsaran, Iran provide context to oil-town building in the post-war period in the first two chapters. Background information, both on the political and architectural elements prior to 1954, primarily comes from both secondary material and primary sources from the BP Archives and the University of Warwick. In the research of this thesis numerous archives were used, mostly focusing specifically upon the architects – e.g. the Max Lock Archive – but there were also other institutions utilised, such as those at the National Archives at Kew, which shed light on the British government’s involvement in the procurement of buildings. Material relating to geopolitical events and the procurement process of some large-scale projects in Riyadh also comes from here.

There are many constraints surrounding the choice of archives. They might not be able to supply all the information required, giving only a partial picture of how and what influenced the design process of buildings. A limitation of this thesis is that it has not used any archival research from the Gulf to make its assessments; this, however, need not be an issue. Most of the architects had correspondence with the relevant representatives from Gulf nations, and these materials were all discovered in the assessment of their respective archives. Other secondary work on the political and governmental workings of the cities and nations studied have used archives in the Gulf, and their conclusions – such as those in *Kuwait Transformed* (2016) by Farah Al-Nakib – have aided the work in this thesis. Finding relevant and usable material in Gulf archives is generally unreliable, in the case of Kuwait this is because of the damage done to museums and archives in the first Gulf War, and the looting of materials by the Iraqi armed forces. Additional complications arise in the usage of archives in general, in that gaining exhaustive material is not possible due to human error; through utilising other research methods alongside the archive means achieving a more complete picture of the study topic is possible. Finally, the use of archival material is problematic in its interpretation and to what degree this is necessary; prior knowledge to the overarching context of the subject is necessary to not miss out on vital pieces of information that provide unexpected links elsewhere in the thesis, or within the architectural project being researched.

The constraints discussed so far - coupled with the complexity of the ideas behind architectural intentions, their influences and the process of building in this period - present further challenges and ways of framing the projects. There are ideas utilised by other authors that are important to this study, keeping them in mind when considering architecture in this period and region is necessary to an extent, but not imperative in the creation of its conclusions. There is an awareness in this thesis that architectural solutions are contiguous with power, identity and nationalism; this is in line with the raising of the importance of these topics in the literature. Instead of focusing entirely on these external themes, and using existing literature, it is necessary to take a broader view of the region, beyond
national boundaries, to assess other architectural reasons for the change of style rather than pure nationalism. With a complex geographical region, such as the Persian Gulf, the influences on the changes in architecture are innumerable, as such it would not be possible to assess each stimulus against the case studies but pick out some of the more important aspects. However, there are ideas – such as Deleuze and Guattari’s assemblages – which neatly apply to the production of architecture and this multitude of influences on its production. This thesis has taken numerous literal influences on the architects and planners it assesses, such as their own field work, conversations and written work, to inform its conclusions. But it is the ideas surrounding tradition and modernity that provide an interesting confluence in an assessment of why and how architecture developed as it did in this region.

Selecting these archives provided an added constraint. In the collating of material to write this thesis, many choices needed to be made regarding the topic, its scope and the focus. Putting together the materials from these archives adds to the understanding of the broader picture of Gulf architecture and Western design involvement, as these architects or their projects have not received the same in-depth analysis together in one place. What this shows is that there are similar effects on all of their works and that both client/architect relations are just as important as the variety of types of tourism the architects did in their personal lives, the variety of academic interests they had and the impact of geopolitical events or effects like globalisation upon their works. The choice of these archives was therefore not arbitrary. Utilising archives that housed specific architects work was necessary in the understanding of their careers and projects but choosing them based on what material was available (i.e. correspondences, financial information etc.) also provided an insight into the organisation of the project outside of the architectural office. This was relevant to the understanding of the production of architecture and how it changed in the period this thesis studies.

System and approach to interpreting the material

The chronological selection for the structure of the thesis was necessary to show the effects of change across the period studied. A thematic structure may work, too, but lends itself to repetition of subject matter, especially when linking architectural form to specific moments and events in time. For example, one could not discuss the creation of a specific spatial typology, like the courtyard and successfully analyse it, because the events that occurred in the twenty-eight-year timeframe remain the same, influencing each type of spatial syntax differently. In this case, one would have to explain the link to the change in each period, which worked well for smaller pieces of writing, such as conference papers, but failed when applying it to structure the thesis. Using chronology and studying each individual case study within the wider context clarifies architectural elements in this period allowing for a deeper understanding of the individual architects and their projects which are understudied in the literature.

At points, this thesis will take a stylistic approach to architectural history given that appearance was a major consideration for architects attempting to impress their clients and the populace. In an interview contextualising an exhibition on Sayed Karim in 2018, the curator, Mohamed Elshahed, suggested that architects of the time were primarily concerned with materials and available technologies, saying that Karim said of the
international movement in an issue of Egyptian architecture magazine, *Al Emara* (1939), that ‘the world is moving in this direction, because we all have access to the same materials, so it’s no wonder that the architecture is looking more and more the same’. The architects in this thesis generally utilise these materials in the construction of buildings in the Gulf, but gradually moved away from the comparable styles utilised in Western nations, using similar materials in new ways. Because of this, a stylistic approach to architecture remains necessary when assessing this period and the changes in the production of buildings. As such, looking at theories such as critical regionalism, or the forces behind organicist and functional outlooks of architecture is necessary, but also understanding pressures behind tradition and modernity is also critical. As such, attuning architecture to local cultural and climatic conditions, in the context of geopolitics and events affects the overall form; these conditions are unique to the Gulf and in constant flux, ensuring the built environment’s mercurial nature in this region.

A note on the Persian Gulf’s title

The Persian Gulf naming dispute concerns the body of water at the centre of the countries assessed in this thesis. It is named after the land of Persia – the Western exonym for Iran – and has been contested by Arab countries since the 1960s, a contestation rooted in Arab nationalism. Ancient geographers, Strabo and Ptolemy established the name Persian Gulf, and as such European mapmakers followed suit for centuries. The naming of this body of water presents numerous dilemmas, given that Iran and the disputing Arab countries that surround it, are all featured within the analysis. In some ways, this is a typical example of both Western intervention and the divisions between the lands that surround it. In no way is the thesis title intended to be a provocative statement about Gulf politics, as its focus is an assessment of architecture – which of course is not mutually exclusive to politics – though it does not make a stance on the complexities of Arab-Iranian relations. As a matter of simplicity, it might be better to refer to it as ‘the Gulf’, but this is also a provocation to Iranians, who have censored copies of Western magazines such as the *Economist*, in the past for dropping the ‘Persian’ from the epithet; a similar and serious case emerged in 2008 when the Iranian government took exception to Google Maps’ labelling of the Gulf as both the Arabian and Persian Gulf. The stance of the US, UN and European nations is generally to refer to it as the Persian Gulf, because ‘Iran is the largest country adjacent to this water body which possesses the longest coast’. This, however, raises several contradictions elsewhere in the world, with the naming of other bodies of water, such as the English Channel, where France is the largest nation bordering it with the longest coastline. The title of this thesis includes Persian in the name to geographically orientate the reader, and given that the focus is on Western architects, it seems best to refer to the body of water as what it would have been known as to them, even though this issue is something which cannot be ignored and is recognised that it primarily stems from issues pertaining to Western imperialism and reactions against this.

Literature Review
This literature review assesses the relevant works on architecture, geography, nations, ideas and design theory associated with this thesis; it is by no means an exhaustive account of the literature available on the subjects this thesis has used, nor does it consider every work assessed in the creation of this PhD. In part, this is a survey to show key ideas behind the arguments in this thesis, with the relevant works on each architect, nation or city being utilised within the specific chapters. The purpose of the literature review is to provide an overview of the condition of architecture and its influences at the beginning of this broad period of development, across the selected geographic area. A further reason is to position the thesis within the complex multidisciplinary academic background which it contributes to. Through a literary assessment of the geographic area, ideas of tradition, modernity and other problems that arise from these topics, a clearer understanding of the positioning of ideas and influences behind buildings, which this thesis assesses, will be made. In addition, this review surveys works of authors that associate themselves with non-Eurocentric architecture and planning. It will look at the global architectural context and its associated reading, coinciding with other methods of architectural assessment, including critical regionalism.

Cultural Exchange: Architecture, Urbanism and the Persian Gulf

The historiography of architecture in the Middle East – specifically the Gulf - has proliferated since around the turn of the millennium. This is in part as a reaction to postcolonial polemics of the 1980s, but also because the first waves of post-oil building in the Gulf was becoming viewed as heritage as the architecture belonged to the generations that went before those who used it. The idea of the cultural exchange has become prominent in architectural literature. Some of the most important work since 1990 is by Mark Crinson, with works including Empire Building: Orientalism and Victorian Architecture, Modern Architecture at the end of Empire (1996), Rebuilding Babel: Modern Architecture and Internationalism (2017) and ‘Abadan: planning and architecture under the Anglo-Iranian Oil Company’ (1997). The latter, is an important article on the construction of Abadan, which framed the development of the Western company town outside of Europe, through an analytical lens, providing architectural and political background to the period immediately prior to the timeframe this thesis studies. Crinson’s article built broadly upon the ideas disseminated in Khalid Sultani’s article ‘Architecture in Iraq between the Two World Wars’
(1982), which surveyed architecture by British architects in Iraq and was one of the first academic pieces to do so. In the inter-war period, the position of the world was different to that which the thesis studies, and Crinson’s work juxtaposed this epoch prior to the nahdha, or awakening in the post-war period, that authors such as Asseel Al-Ragam discussed in her PhD, a similar period that this thesis studies. Although it investigated a different era, Crinson’s Empire Building aligns with the ideas surrounding colonialism’s relationship to architecture and urbanism that are put forward by authors such as Anthony King, Al-Ragam and Iain Jackson, which are also discussed in this thesis.

In addition, more important work on the region has been compiled by Farah Al-Nakib, Al-Ragam and Reem Alissa, who all focus on Kuwait’s urban history and various themes that surround the interpretation of building in the country throughout the twentieth century. Al-Ragam generally deals with notions of historicism, nostalgia and identity, often framing buildings or urban situations within these themes. Al-Nakib’s work on Kuwait focuses more on the urban environment and its creation. This included sociological analysis of the country, with less of a focus upon the spaces that other historians assess. However, her work is vital in the understanding of Kuwait’s position during this period and provides much political context to the nation’s development, which this thesis bases its understanding upon; other articles by Al-Nakib also include focuses upon protest in public spaces and Kuwait’s promotion as a ‘modern spectacle’, suggesting it as an important nation architecturally within the global context (fig 2.1). Adding to this overall literature, Peter Lienhardt, framed Kuwait’s urban development in his work Disorientations: A Society in Flux: Kuwait in the 1950s (1993), which looked at Kuwaiti ‘society in flux’ after the first major plans for Kuwait were produced by MSM in 1952. In this, he successfully captured Kuwait’s fervour for modernisation, while still locating itself in a small trading outpost on the Gulf. Describing his arrival in 1953, he said ‘the commotion of digging and building gave one the feeling the whole city of Kuwait was a vast construction site’, providing an imagery for the razing and rebuilding of the city for Kuwait’s ‘Golden Era’ (al-‘asr al-thahaby) in the years 1946 to 1982 (fig 2.2).
Figure 2.1 An image of Safat Square, the centre of Kuwait City, taken in 1952 at the real beginnings of fast urban change in Kuwait (George Rodger, Magnum Photos 1952)
Figure 2.2 The setting out of oil pipes which funded Kuwait’s urbanisation, the photo was taken by George Rodger on his visit to Kuwait (George Rodger, Magnum Photos 1952)
Esra Akcan’s scholarship deals with themes of cultural exchange, with her most important work being *Architecture in Translation: Germany, Turkey and the Modern House* (2012) through which she looks at architectural forms in those two countries and assesses how and why they might be that way through a post-colonial lens, while using translation as an analytical tool. Similar themes preside in other recent architectural works, including Neil Jackson’s *Japan and the West: An Architectural Dialogue* (2019) and Lukasz Stanek’s *Architecture in Global Socialism: Eastern Europe, West Africa and the Middle East in the Cold War* (2020). All three works are chosen here as they analyse this notion of architectural translation, or cultural exchange, in a different manner to one another. Stanek’s expertise lies further in the writing of Henri Lefebvre, so the links between space creation and Marxist ideas are prevalent in his book. Jackson takes a far more positivist stance, and analysed the possible methods and means of connection between forms that feature in Japanese and in Western architecture. While Akcan’s work is firmly rooted in studies of post-colonialism, through her references to authors such as Gayatri Chakravorty Spivack and Homi Bhabha, their use of language as a tool within translation assessed how this affected architectural forms.

Other works that expand on the idea of cultural exchange, but do not implicate it as explicitly, have also influenced ideas in this thesis. These works are more specific to the region of study, but the work of Deborah Middleton, Panayiota Pyla and Leftis Theodosis’, concentrated on Constantinos Doxiadis and his practice also show cultural exchanges to a degree on various geographical scales. They generally take the form of studying a case study, such as his Baghdad Plan, work in Riyadh or his planning ideologies. Middleton’s work focused on DA’s Riyadh plan, but did not assess the architectural elements and associations to tradition, this thesis describes these promoted physical forms in the fourth chapter, placing them within a wider, geographical context as well as the global architectural context.


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65 *Akcan, Architecture in Translation.*


68 *Middleton, Growth and Expansion.*

Two further important works, specifically on Kuwait, come in the forms of PhD theses by Reem Alissa (2012) and Muhannad Al-Baqshi (2010). Alissa's focused on the development of Ahmadi in Kuwait, planned and implemented in the late 1940s as one of the last British-run oil company town masterplans and designed by Wilson Mason and Partners, who had longstanding business relationships with various oil companies. Her thesis, like Al-Baqshi’s, looks at the ‘intersection of oil and space’ further ‘highlighting the role of oil as an agent of political, social and cultural change at the level of the everyday urban experience.’ Alissa argued that Ahmadi’s colonial modernity ‘was targeted at the expatriate employees of the company [KOC],’ she add that this was more keenly adopted by Kuwaitis after independence in 1961. Al-Baqshi’s thesis takes a more nationalistic approach to the production of space, by focusing on Kuwait as a whole. His thesis engaged with the morphology of Kuwait, from looking at British and imperial influences of space, to judging the conception of modern architecture in Kuwait in regards to ‘cultural nationalism.’ He focused attention to Kuwait’s school programme, with six-pages dedicated to Alfred Roth’s architecture, providing some of the only critical work on the Swiss architect’s career. He discussed other similar typological works in Kuwait, including Tripe and Wakeham’s schools which Roth criticised negatively in reports, although analysis in Al-Baqshi’s thesis frames their work positively. Al-Baqshi concluded his short section on Roth by pointing out the shocked reaction to the lack of regional elements in Western designed schools in Kuwait. Both of these works provide important national context to the production of space in Kuwait during the timeframe this thesis analyses, by looking at the scene prior to modernisation either telling Kuwait’s national narrative (in Al-Baqshi’s case), or drilling down into a local case study (in Alissa’s).

One of the most important bodies of work on Kuwait produced in the past decade are the two volumes on Modern Architecture Kuwait (2016 and 2018), published by Roberto Fabbri, Ricardo Camacho and Sara Saragoça. The first volume contains a gazetteer of buildings built in the post-war period. The authors deemed these to be of enough interest to provide a blurb and some images of the schemes to either promote further

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71 Alissa, Building for Oil, p. 1.

72 Ibid.


74 Ibid, p. 134-140.

75 Ibid.

research on them, provide context to other architectural histories or promote their conservation today. Not all the schemes were built, and where they are the authors provide a note on the current condition of the building; which given the recent efforts to save Arthur Erickson’s Al-Sawaber residential estate showed this as more of a piece that highlights the internationally important pieces of architecture in Kuwait arguing for their conservation.77

The second volume is a series of essays on differing topics that concerned Kuwaiti modernisation, which utilised the first volume’s context to place the buildings within a specific discourse. Included, was a chapter by Roberto Fabbri on Kuwaiti schools and pedagogy, as well as an essay on the Sief Palace and the Finnish architectural couple Reima and Raili Pietilä by Thorsten Bötz-Bornstein.78

Nationalism and Identity

Lawrence Vale’s contribution to architecture, urbanism and ideologies on a global scale is vitally important in understanding the Gulf’s identity and how this intertwines with power. His seminal work is *Architecture, Power and National Identity* (1992) which argued that throughout history, politics has influenced architecture and urban design. Within this he discussed capital cities designed prior to the Second World War, including Washington D.C, Canberra, New Delhi and Ankara; he also talked about modern capital cities, including Chandigarh, Brasilia, Abuja and Dodoma.79 His wider oeuvre continues this tradition, and in a more recent chapter from 2014, he furthered this original analysis.80 In ‘Capital Architecture and National Identity’, Vale focused on as much the design of cities, but also where they are located.81 He linked architecture to power and politics more generally without analysing the architecture and planning details of projects. He discussed briefly the idea of tradition, and how this is linked to nationalism – he defined nationalism as being a ‘congruent whole’, using Ernest Gellner’s definition, proclaiming that ‘tradition is an idea related to nationalism’.82

Regarding this thesis, Vale mentioned Doxiadis’ ‘modernist’ city of Islamabad, but did not describe it in detail, just suggested that its location is near the border of India and the military stronghold of Rawalpindi.83

Architecture and Globalisation in the Persian Gulf (2013) summarised many case studies across the Gulf from the mid-twentieth century, up to the modern day, in a bid to assess architecture’s relationship to globalisation.84 Each chapter generally focused on a city (title example ‘Kuwait City, Kuwait’) or a theme (e.g. ‘British Architects in the Gulf, 1950-1980’).85 This latter example, is an article by Tanis Hinchcliffe, which suggested that British architects worked in the Gulf when there was an

80 Ibid.
81 Ibid.
82 Ibid.
83 Ibid.
84 Fraser & Golzari, *Architecture and Globalisation in the Persian Gulf Region*.
85 Ibid.
economic downturn in Britain, and that plans and schemes were affected by geopolitics, using Max Lock’s Basra work as an example, because it was not being implemented because of the Iraqi Revolution. This is an idea disagreed with by the author of this thesis in his article ‘Planning southern Iraq: placing the progressive theories of Max Lock in Um Qasr, Margil, and Basra in the context of Iraqi national development, 1954-1956’ (2019). The author suggested that it was more down to Lock’s focus on the local, and neglect of focus regarding the national scale in the linkage of major cities across Iraq, which was the plan’s downfall - this point is made in the conclusion of this thesis. Murray Fraser’s conclusion in *Architecture and Globalisation* is significant to the study of the Gulf, and it also disseminated his stance on globalisation. Fraser talked about the ‘fetishization of public displays of power and wealth’ in relation to large-scale buildings that make little reference to their context; his idea of globalisation is one where ‘multiple points of influence impact on each other, and these in turn are influenced by interaction with countless other nodes’. This forms a neat parallel with Deleuze and Guattari’s assemblages, and Manuel DeLanda’s ‘Assemblage Theory’.

The writings of Benedict Anderson, Eric Hobsbawm, Gellner and Tom Nairn all concern themselves the notions of nationalism and identity, a few ideas from these thinkers underpin many of the points that the architecture this thesis analyses made through their inception. In *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (1983), Anderson opened his argument by saying that:

> Theorists of nationalism have often been perplexed, not to say irritated, by these three paradoxes: (1) the objective modernity of nations to the historian’s eye vs. their subjective antiquity in the eyes of nationalists. (2) the formal universality of nationality as a socio-cultural concept – in the modern world everyone can, should, will ‘have’ a nationality, as he or she ‘has’ a gender – vs. the irremediable particularity of its concrete manifestations, such that, by definition, ‘Greek’ nationality is sui generis. (3) The ‘political’ power of nationalisms vs. their philosophical poverty and even incoherence.

He then brought up that Tom Nairn said:

‘Nationalism’ is the pathology of modern

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90 Anderson, B. *Imagined Communities*, p. 5.
developmental history, as inescapable as ‘neurosis’ in the individual, with much the same essential ambiguity attaching to it, a similar built-in capacity for descent into dementia, rooted in the dilemmas of helplessness thrust upon most of the world (the equivalent of infantilism for societies) and largely incurable.91

These very notions are important in the creation of an identity but coincide with the ideas Fraser touted regarding the ‘fetishization of wealth and power in architecture’. Outside of the fetishized architecture, the implementation of important state-owned schemes began across the Gulf including mass-housing, hospitals, school programmes and infrastructure; the building, designs and forms of these took influence from, and was often procured by, European architects and planners and were decidedly less sculptural than other buildings intended to invoke national feeling or identity through their forms (as with the Kuwait National Assembly (KNA)). To counter the idea of fetishization, Al-Ragam has assessed notions of nostalgia in her writing, showing that there is a balance within the creation of the built environment between the one-off architectural expressions - often coinciding with Vale’s assessment of capital cities and government buildings - as well as large-scale projects, like housing, schools and hospitals, built out of an idea of necessity; nostalgia is invoked through the modern idioms but in traditional forms, as with Roth’s schools’ architecture, for example.92

Hobsbawm espoused his ideas on tradition across several books, although *The Invention of Tradition* (1983) is most relevant for this thesis. This is a volume of essays he edited, within which he wrote the introduction, further including his own essay on German national identity and its creation in the years following unification. The edition focused predominantly on Western nations (or territories) and their invention of tradition. The volume included essays on nations such as Scotland and Wales, arguing that items such as the kilt and tartan patterns were invented in the nineteenth century to forge nationalistic ideals.93 Where this becomes relevant is in the creation of cities and nations in the Gulf, which seemingly resulted from the oil boom and Gulf nations’ intensified relationship with the West. For this, Hobsbawm stated that ‘Invented tradition’ is taken to mean a set of practices, normally governed by overtly or tacitly accepted rules and of a ritual or symbolic nature, which seek to inculcate certain values and norms of behaviour by repetition, which automatically implies continuity with the past.94 For example, with DA’s plan for Riyadh, there was a degree of focus on ‘tradition’ through their assessment of forms in the locale within their wider master-plan; the use of tradition in their plan is reflective of the forms and ideas common with the contemporary period in architecture and planning in the Gulf. The construction of ‘traditional’ styled buildings, like the Sief Palace’s extension by the Pietillà’s in Kuwait or with the King Saud

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91 Ibid.
University in Riyadh, exemplifies this; it was also witnessed in Henning Larsen’s work in Riyadh in the 1980s and 1990s, as well as in the post-Islamic classicism of Mohamed Makiya.  

4.0 Architecture outside of Europe

Within Western academia there has been a growth of interest in architecture and urbanism outside of the West. In many cases, these buildings and bodies of work are framed within colonial history, particularly when focusing upon the architecture procured by non-Western designers. Authors already discussed, or mentioned that fall within this framework for studying include Crinson, Iain Jackson and Anthony King. Jane M. Jacobs’ *Edge of Empire* (1996) is an important text that assessed how the British Empire ‘carved its way through space: possessing and ordering territories across the globe’, although, this work covered ‘First World cities’ and the principles of colonising through spatial definition or ‘social engineering’. In addition to this, Robert Home’s scholarship is also important in setting a basis for urbanism’s relationship with colonialism, specifically in *Of Planting and Planning: the Making of British Colonial Cities* (1997); this added to Jacobs’ work by assessing British colonial cities outside of the First World, including cities and nations such as India, Sierra Leone and Nigeria. These works deal with the export of British urbanism, rather than viewing it as a cultural exchange. Arguably, this exportation acted as a blueprint for all nations to use when planning new towns and cities into the twentieth century, which Home deals with in the later chapters where he assessed decolonisation and post-war reconstruction.

Crinson’s work, *Empire Building* (1996), (mentioned above in 2.2) is also relevant to this literature; he expanded upon this within his chapter for *Architecture and Urbanism in the British Empire* (2016) titled ‘Imperial Modernism’. He set out to explore countries in the ‘Near East’, rather than the tropical nations Home looks at, or the first world countries that Jacobs assessed. He used the works of Edward Said in *Orientalism* (1973) to frame aspects of colonialism in Victorian architecture; in doing so, he sets out the book into two sections, with the first half dealing with Victorian architectural discourse, and the second applying this to the physical buildings and case studies. The above works, particularly that of Crinson and Home, have undoubtedly influenced further case or architect specific works such as Iain Jackson and Jessica Holland’s work *The Architecture of Edwin Maxwell Fry and Jane Drew: Twentieth Century Architecture, Pioneer Modernism and the Tropics* (2014), which focused on Fry and Drew’s pioneering work in the tropics, looking at the ‘transnational practices and the new forms of modern architecture developed in post-colonial territories’. In addition to

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98 Ibid.
100 Ibid.
101 Ibid.
Modern Architecture since 1900 (1982), William J. R. Curtis’ work extends to an important monograph on the Indian modernist architect Balkrishna Doshi, which forms part of a wider literature on this architect’s career and adds to the non-Eurocentric bias within Western academia. Other books on Doshi include works by James Steele and Mateo Kries which sought to place Doshi’s work within India’s national psyche, in a similar fashion to how this thesis seeks to position certain architects within the creation of identity within nations.103

James Steele’s work on Doshi highlighted that the architect was not merely regional, he was practicing modernism, but his type was rooted in that of nation creating, drawing from ‘tradition’ and ‘custom’, exemplifying earlier works analysed here by Hobsbawm and Anderson.104 Recent works in prominent newspapers, journals and books have focused on similar architects working within a modernist framework that represented their nation, including Minnette De Silva, Geoffrey Bawa, Yasmeen Lari, Roberto Burle Marx (fig 2.3), Hassan Fathy and Charles Correa (fig 2.4), to name but a few. Although they use ‘tradition’ within their designs, uses of their buildings are rooted in modernity and state creation, expressing a nation through architecture and planning, further tying in with Vale’s work, mentioned above. This thesis responds to these works and context


104 Hobsbawm, The Invention of Tradition; Anderson, Imagined Communities.
by showing that Western architects in the Gulf during this period utilised modernism in their buildings, while constructing for the nation. In doing so, they created an architecture recognisable across borders within the region, as opposed to the nuanced modernisms of the aforementioned architects; tan awareness of these architects’ works is important for this thesis to build upon Crinson, Jackson and Holland, Home, King and Jacobs’ publications.

Appearance and Poetics of Construction

There was a drastic change in the appearance of inter-war and post-war modern architecture. Numerous works chart this period of change, establishing an important historiographical role in the formation of scholarly understanding, these books predominantly posit themselves as overviews of modern or twentieth century architecture. Through reading Frampton, Curtis and Charles Jencks, one gets a reliable overview of the morphology of modern architecture in the twentieth century. Generally, they charted the changes in more rigid forms depicted by the grid during the inter-war period, championed by CIAM in both metaphor and building, and exemplified by architects such as Mies van der Rohe, altering to expressionist shapes used by Le Corbusier in post-war projects such as Ronchamp Chapel or La Tourette (fig 2.5; fig 2.6).  

5.0

5.1

Figure 2.5 Exterior of Sainte Marie de La Tourette priory, near Lyon in France, designed by Le Corbusier and built between 1953 and 1961. (https://bearleaderchronicle.com/097-le-corbusier-la-tourette/)

105 Jencks, Modern Movements in Architecture; Frampton, Modern Architecture; Curtis, Modern Architecture since 1900.
projects within the modern movement, but also provide key architectural context to this thesis.

5.2

Le Corbusier had a continual relationship with the east throughout his career, as demonstrated throughout the above overviews and exemplified in more specific literature on his life and work. In Le Corbusier’s first written work, produced in 1911 and published in English posthumously (fig 2.7), he documented his journey to the east (his Grand Tour) via Budapest, Bucharest, Brindisi, Pompeii, Athens and Istanbul, among other places.106 He toured mosques and souks as part of this journey, where he witnessed first-hand ‘alien’ vernaculars, some of which arguably influenced his later career.107 Subsequent examples of his work featured instances of working outside of Europe, perhaps most significantly Chandigarh; its influence is referenced throughout this thesis in its relation to master-plans in the Gulf as well as the forms and appearances of buildings he designed for the Capitol Complex. Le Corbusier’s work in Chandigarh is extensively covered in the overviews of modernism, monographs on his career, books that specifically assessed the city, and retrospectives on the city’s success or failure.108 Its position in the context of nation-building and identity is also noted. In addition to Le Corbusier, other architects worked extensively at Chandigarh, which are also covered in their own respective histories; this is the case with Fry and Drew’s housing in the city, covered in Jackson and Holland’s monograph on the architects as well as an important article by Jackson on their housing at Sector-22.109

107 Ibid.
Critical Regionalism

5.3

The literature surrounding this topic is an important sub-section contributing to the ways people have analysed types of modernism that draw from tradition and the locale. Critical regionalism is an approach to architecture founded through a retrospective analysis of architecture history by Alexander Tzonis working with Liane Lefaivre; among other important writers on this topic, Frampton has devoted much of his work to exploring these ideas. Many have criticised it, with Crinson explicitly saying that it was an ‘inherently conservative viewpoint in which the original sense of a political critique of capitalism is lost, leaving only backward-looking romanticism’. Frasier, ‘The Scale of Globalisation’, p. 387.

5.4

Lefaivre and Tzonis have written extensively, theorising critical regionalism since 1981. They published a vast – but not exhaustive – collection of their essays, articles, papers and chapters within a book titled *Times of Creative Destruction* (2017). The introduction covered a similar story to that of other publications by the same duo, when summarising critical regionalism, leading one to question whether they have exhausted their own literature regarding the topic. Their introduction outlines the era following the Second World War as being one of the most creative in history, describing mega-constructions as using ‘flourishing spatial acrobatics’ allowing for technologies to dictate the forms of new buildings and structures, tying in with what Frampton has termed the ‘poetics of construction’. Tzonis, A & Lefaivre, L. (2017) *Times of Creative Destruction*, (London: Routledge), p. 1.
Tzonis and Lefaivre looked to Lewis Mumford in support of their claims of regionalism throughout their writings. This is no more prominent than in their article specifically devoted to Mumford titled ‘Lewis Mumford’s Regionalism’ first published in the *Design Book Review* in 1991, republished in *Times of Creative Destruction.* Mumford, like other planners of international renown during the twentieth century, looked to the human-scale, repeatedly arguing for planners to consider the human rather than mass-building of infrastructure, decimating neighbourhoods and sense of place. Mumford believed that proponents of the international style, such as Walter Gropius and Sigfried Giedion, placed too much emphasis on the ‘premium of facades’ rather than rooting architecture within the landscape. Mumford cited the ‘new and native’ known as the ‘Bay Region Style’, which Lefaivre and Tzonis point towards his ‘anarchism’. They extend this by arguing that Mumford was far from anti-modernist; however, he believed that ‘regionalism in architecture is a necessary part of modernism’ and used examples that show his appreciation for modern engineering, specifically the case of Brooklyn Bridge. It is clear from their writing on Mumford that they do not entirely believe that regionalism was founded by him, but it was advanced at a time when people fervently believed modernism and the international style to be the solution to problems of mass city building. These thoughts and ideals asserted by Mumford specifically relating to regionalism are subservient with this thesis’ aims and focus on the Gulf, specifically relating architecture that was not regional coinciding with the development of a critical regionalism.

Regionalism and its roots, however, can be found much earlier. Vitruvius (c.80-79 BC - after c.15 BC) believed a regional architecture had developed across the Roman Empire due to the specific external and internal physical constraints. His belief in this directly opposed the Roman aims of achieving architectural, moral and theological hegemony across the areas under the influence of the Empire, creating contradictions in his theories on regionalism. Lefaivre and Tzonis drew upon Vitruvius’ ideas, when discussing Johann Goethe’s *Sturm und Drang Manifesto von Deutscher Baukunst* (1772) in which he discussed the ‘power of architecture’ to make people aware of their ‘common past’ and ‘participate in their collective memory’. This argument asserted by Goethe might not seem entirely relevant in some Gulf states whereby the erasing of the existing town over a period of decades had taken place. However, through an ‘al nahdha’, as discussed in works by Al-Ragam and Al-Nakib, Kuwaitis have learnt about their past through modern buildings. These include Ecochard’s Kuwait National Museum (fig 2.8) and Utzon’s KNA (among others), created as vehicles to echo the past while demonstrating a new era through modern

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113 Ibid.
114 Ibid.
117 Ibid, p. 11.
118 Ibid, p. 15.
119 Al-Ragam, *Towards a critique of architectural Nahdha.*
design. In Saudi Arabia, similar undertakings occurred in the 1980s with the building of the King Saud University in a similar style to the mud houses of the Najd region and with the construction of the buildings around Dir’ija Square, built in a similar vein. Rooted in the regionalism that Vitruvius discussed, these examples unwittingly echo the thoughts of Goethe.

5.7

Both Frampton’s 1983 article ‘Prospects for a Critical Regionalism’ and the chapter ‘Critical regionalism: modern architecture and cultural identity’ are similar, using the same quotes, case studies and arguments. Frampton defined critical regionalism as a movement that does not replicate the vernacular as ‘this was once spontaneously produced by the combined interaction of climate, culture, myth and craft.’ Critical regionalism drew upon these ‘constituencies’ that create a vernacular architecture, but does not produce a pastiche, utilising modernist principles of architecture. Frampton discussed the paradox of critical regionalism while Lefaivre and Tzonis do so similarly but in considerably more depth. Frampton argued that critical regionalism is a paradox due to cultural influence on architecture, which generally evolves through the impact of other cultures. Frampton stated:

*The concept of a local or national culture is a paradoxical proposition not only because of the present obvious antithesis between rooted culture and universal civilisation but also because all cultures, both ancient and modern, seem to have depended for their intrinsic development on a certain cross-fertilisation with other cultures.*

Frampton argued that as a movement it is a commitment to ‘place rather than space’, moving on to state that the ‘stress on place’ may also be ‘misconstrued as affording the political space of public appearance’, formulated by Hannah Arendt in *The Human Condition* (1958).

5.8

Critical regionalism is not a driver of the debate in this thesis, but its conservative, and sometimes superficial, viewpoint on the ‘poetry of construction’, is a necessary balancing point to the other methods of analysing architecture. Much of this Literature Review has assessed authors rooted in a Marxist outlook, often assessing buildings through a post-colonial lens. Critical regionalism, however, is an important and influential sub-strand of architecture history, which needs consideration and awareness when dealing with spatial design and building fabric utilised throughout this thesis.

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123 Lefaivre, & Tzonis, *Critical Regionalism*.


1: Max Lock’s Ubullah Neighbourhood Plan
Chapter 1

1.0 Introduction

In the period 1954-1956, the architect, educator and planner, Max Lock (1909-1988), produced plans for several towns and cities within proximity of one another in southern Iraq. The first began with the Director General of Ports and Navigation, Sami Fattur, appointing Lock to plan Um Qasr in 1954 (with the report published in March 1955), sixty miles south of Basra. The second, also by the same client, was for the area of Margil (January 1956), north of Basra, set to be subsumed by neighbouring townships making one urban area. The third plan was the New Basrah Plan (1956) produced to effectively link the areas of Ashar and Margil, but within the wider vision of Iraq’s national development. The client for this was the Iraq Development Board; they employed Lock based on earlier successes in Britain and abroad in Jordan, where he worked for the UN. These proposals focused on ‘local studies of human requirements for the future development of the Port town’, but also featured varying degrees of interest in other more infrastructural issues; the synthesis of this formed the overall planning strategy with each report covering each theme to a different extent. In August 1956, Lock published his Ubullah plan, which unlike the other three plans, predominantly focused on housing and civic design; this is the most relevant plan for this thesis, showing how an architect and planner rooted in European modernity drew upon local tradition.

1.1 Focusing on the Ubullah Neighbourhood, builds on work published in ‘Planning southern Iraq: placing the progressive theories of Lock in Um Qasr, Margil, and Basra in the context of Iraqi national development, 1954-1956’. As part of a series of wider masterplans in southern Iraq, Lock specifically provided a series of pattern-book houses for families, the spatial language deployed was an architectural response to the climatic and cultural conditions of the area. Placing this scheme within this context of Lock’s three other plans is important, but also framing it within its architectural context of the time is crucial. One of the most important schemes from the time is Fry Drew and Partners’ oil town construction at Gachsaran in Iran. Fry Drew and Partners’ work at Gachsaran was built and still exists, providing a useful case study to analyse Lock’s unrealised work against; this is also useful to compare their methods, placing it within the context of other modernist plans of the time. Lock had worked prolifically in the United Kingdom up to and during the war time on plans for northern industrial towns until the early 1950s when his focus became markedly more

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127 MLA denotes Max Lock Archive (University of Westminster)
His planning methods were progressive compared to many of his contemporaries, rendering himself as an important, yet overlooked, planner of the mid-twentieth century within the literature. The geographical and political context is imperative in understanding Lock’s work in southern Iraq. Basra is one of three former Ottoman vilayets, or provinces, that make up modern day Iraq, alongside Baghdad and Mosul; each had its own ‘Vali’ in Istanbul operating as separate administrations. Mosul, a mountaneous region to the north of Baghdad, primarily relied upon Anatolia and Syria for its trade and economy. The region around Baghdad traded directly with Iran, also supported by a more agricultural economy. Basra, in the south, was ‘orientated toward the Persian Gulf’ and primarily traded further afield with places such as India, but ethnically and religiously, identified themselves more with the neighbouring Iranians (fig 3.1; fig 3.13).

The geographical and political context is imperative in understanding Lock’s work in southern Iraq. Basra is one of three former Ottoman vilayets, or provinces, that make up modern day Iraq, alongside Baghdad and Mosul; each had its own ‘Vali’ in Istanbul operating as separate administrations. Mosul, a mountaneous region to the north of Baghdad, primarily relied upon Anatolia and Syria for its trade and economy. The region around Baghdad traded directly with Iran, also supported by a more agricultural economy. Basra, in the south, was ‘orientated toward the Persian Gulf’ and primarily traded further afield with places such as India, but ethnically and religiously, identified themselves more with the neighbouring Iranians (fig 3.1; fig 3.13).

Figure 3.1 Map of the region close to Basra (1955), showing the proximity of Margil to its north and Um Qasr approximately 60 miles to the south. Also note the spelling of Al-Zubayr as Zobair, the town is important in the production of traditional, yet modern, architecture in the Lock plans. (MLA 3.26)
In 1956, Basra was a date producing port-city on the Shatt al-Arab close to the Zubair (Al-Zubayr) oilfields in the south of Iraq, which remained under indirect British influence. Britain held interests in the region since the mid-eighteenth century when it was part of a route to India. Basra was a strategic point on the Arabian Peninsula for Britain, with proximity to oil fields in Abadan and Kuwait and large shipping ports enabling access to interests further afield. The Ubullah housing scheme’s spatial layout is evident, to an extent, on satellite images today, although there is little evidence to suggest its construction. The 1958 Revolution which removed and killed the pro-British and Hashemite King Faisal II, in a military led coup, is one factor in the abandonment of Lock’s plans. The period ensuing 1958 meant the British lost favour in Iraq through the abandonment of the Baghdad Pact, signed in 1955 which symbolised Iraq’s pro-Western, pro-British orientation of policy, quickly becoming redundant. The British-led Iraq Development Board became obsolete following the 1958 Revolution. However, it is more likely that his plans were not utilised due to the Baghdad-centric focus in this period and because Lock’s major plan, the New Basrah Plan, did not provide the infrastructure desired linking it to the other parts of the country.

Lock had become aware of Patrick Geddes’ work during his time studying at the Architectural Association (AA). Those who worked with Lock were equally devoted to Geddes’ ideas, with close colleagues such as Jaqueline Tyrwhitt even publishing a book on his work in India. His ‘exhaustive’ town planning work in India spanned eighteen different towns in the period 1915-1919 while he was holding a position at Bombay University. Geddes’ influence in India had an effect on Fry and Drew when they produced plans for Sector-22, as Iain Jackson showed in ‘Maxwell Fry and Jane Drew’s early housing and neighbourhood planning in Sector-22, Chandigarh’. He shows that Tyrwhitt was publishing her work on Geddes in India, as Fry and Drew were publishing their ‘seminal work on Tropical architecture’. These links, between Fry and Drew, Tyrwhitt and Lock further manifested themselves in the Ubullah scheme and his other plans in southern Iraq.

Geddes’ influence is prominent within the focus on the fabric of the city and the urban grain, but the conflicted factors of modernisation and requirement of large-scale infrastructure is at odds with this element of Lock’s planning theories. This comes to a head within the Um Qasr and Margil plans which are for industrial urban areas. The plan for Basra contradicted this, by rather focusing on human aspects and sense of place instead. In terms of the idea of ‘place’, Aristotle articulated what it is in Physics, explaining that ‘the phenomenon of replacement seems to make it clear that there is such a thing as place’, arguing that the ‘place’ does not move, while the objects

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140 Ibid.
142 Ibid.
within it do, essentially suggesting that places are always changing. Thus, when Lock’s plan allowed for people to alter and change the environment, he planned a place within Aristotelian terms. Within the Ubullah scheme, Lock’s attention paid to the creation of architecture centres on anthropological and cultural research completed in the region, drawing on traditional forms of architecture and cultural habits.

Through addressing Lock’s Ubullah housing scheme, this chapter will assess his influences, previous work and where this fits within his other projects in southern Iraq. This chapter measures his work within the wider geopolitical context of Iraq, and thus, the region. It will argue the importance of schemes such as these within the architectural context of the Gulf. A clearer understanding of Lock and the Iraqi architectural setting will become apparent and the role which Westerners played in this. In doing so, understanding the clients employing Lock to complete these plans (and other Western led projects taking place in Iraq in this period) will become apparent. This chapter explains three plans analysed in a published article on Lock’s planning work in southern Iraq, elucidating the omission of the Ubullah Neighbourhood Scheme. Throughout, this chapter will attempt to place the Ubullah scheme within the wider picture of global modernism and how Lock’s focus on tradition and context fits in with this.

Max Lock: Biography

There are few attempts to write a succinct biography on Lock. His religious background, coupled with his academic experience and architectural networks, are imperative to understanding the sensitivities and nuances in his schemes. A Quaker, conscientious objector and ‘key’ member of the International Voluntary Service for Peace, Lock’s progressive thinking characterised his lengthy career; he worked with countless eminent planners and designers on various projects or in universities across the world. During the 1930s, Lock joined the Modern Architecture Research Group (MARS), with other prominent British architects, including Wells Coates and Maxwell Fry. MARS acted as an offshoot of the CIAM, expanding Lock’s networks and influence within the first generation of European modernist architects. In 1939, he completed ‘Cedar House’ in Harrow in a restrained Scandinavian inspired modernist design (fig 3.2). The scheme responded to its context through natural materials, clad mostly in timber and surrounded by birch, chestnut, beech and fir trees featuring a monopitched roof and a fenestration that spanned the length of the façade and exemplified his contextual approach to architecture. Trips to Sweden reaffirmed his views that architecture was for people, an attitude that manifested itself within his town planning and regional designs for Ubullah. This thought process was expanded upon in an article by Lock published in the Journal of the Royal Institute of British Architects, where he discussed how Sweden’s democratic values informed architecture of the ‘people for the people… serving a human and social purpose’, aligning his beliefs through architecture and planning.

144 Lock, M. (Lecture), November 1957, ‘Design in Music and Architecture’, and letters in the archive show he was a senior and founding member of the International Voluntary Service for Peace (MLA 10.3).
145 Ibid.
147 Ibid.
Figure 3.2 Max Lock's Timber House in Middlesex for a family, as shown in the Journal of the Institute of British Architects, (March 1939)
Figure 3.3 Hartlepool Headland before Lock’s reinterpretation (1948) (MLA 3.26)

Figure 3.4 Lock’s plan (1948) retained St Hilda’s church and ‘well-built’ terraces close to the sea, but inserted blocks of flats to replace the areas of what he and his team felt were inadequate housing; the retention of the church was as much to do with its townscape quality as well as the cultural and communal values (MLA 3.26)
Building on his theoretical and architectural outlook, Lock worked extensively in Western academic institutions. In 1941 Lock was Head of School for the School of Architecture and Design at the University of Hull. During the school’s evacuation from Hull he turned his thoughts to post-war reconstruction. Lock and his team of planners, sociologists and geographers produced The Hull Regional Survey: A Civic Diagnosis, which was radical in its approach and use of diagrams, visual aids and in its adoption of Geddesian philosophies. Further major commissions included plans for the Hartlepools (1946-48) (figs. 3.3; fig 3.4), a plan for Portsmouth and District (1948-49) and the Bedford Plan (1950-51), all places badly damaged in the war, where he could attempt to enact Geddes’ ‘civic surgery’ approach, which he would interchangeably refer to as ‘conservative surgery’. This entailed extensive analysis of the urban area, informing which buildings or areas were blighted enough to be demolished and rebuilt, and which were deemed positive contributors to the townscape’s appearance meriting their remained existence.

In addition to Geddes, Lock’s extensive international travel influenced his planning and architectural ideals. This is evident in his archive, which holds an extensive collection of slides and photographs of places such as Brazil, India, Pakistan and Ceylon. The latter trips were lecture tours, funded by the British Council whereby he visited places touched by colonisers that had large English-speaking populations. In 1956 he worked as a visiting critic at the Harvard Graduate School of Design, where Josep Lluis Sert was head of school and he regularly mixed with people such as Serge Chermayeff and fellow Geddesian disciple, Lewis Mumford. Continuing from this, his employment to provide a plan and survey of the fifth largest city in oil rich Nigeria, Kaduna, in 1967 was drawn from his experiences in Middlesbrough and Hull, owing to its development being a product of rapid urbanisation. The Kaduna Plan was arguably more developed than Lock’s plans for southern Iraq, with transportation viewed as a key factor. Additionally, much like with the plans for northern England in the 1940s, there was a stronger emphasis on data collection and conservative surgery within the city.

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149 Lock’s collection of slides can be found at the Max Lock Archive at the University of Westminster

150 McClelland, ‘Inventorying Armagh’, p. 3.


Iraqi and Regional Context: Politics, Imperialism and Urbanisation

Historiography widely agrees it was meddling Western powers, such as Britain, that caused large-scale political instability by drawing arbitrary geographical borders with little consideration for existing people and cultures. Iraq’s borders were confirmed in the period following the First World War and the collapse of the Ottoman Empire, using the Sykes-Picot Agreement to divide up the Middle East between French and British spheres of influence, resulting in a lack of historical, religious and ethnic homogeneity causing a confused national identity.\(^{153}\)

Throughout the 1920s and 30s, Britain’s interest in Iraq intensified. The complex composition of the population spread across the three distinct geographical regions imparted difficulty onto the British in their search for a monarch for the newly created state.\(^{154}\) Protection of interests in the region was an issue for Britain; they desired imperial communications with India and the protection of the Iraqi and Iranian oil fields, without the burden of governing a ‘volatile’ population.\(^{155}\) The British asserted that the first monarch of the new kingdom should be Amir Faisal, a field commander in the Arab Revolt and the king of the Syrian kingdom, which had been dismembered in the fallout of the First World War.\(^{156}\) The Iraqi population remained sceptical of the choice of a British chosen king, but it meant the British had the upper-hand in the scramble for oil concessions throughout the 1920s, with Faisal signing a seven-year deal with what would become the Iraq Petroleum Company.\(^{157}\) In return for this political wrangling, Britain offered protection to Iraq, through its bases designed so that no other power could intrude on its area.\(^{158}\) Faisal I was relatively popular among the newly formed nation through his arguing for Iraqi independence and success in admission to the League of Nations in 1932, following recognition of its sovereignty.\(^{159}\)

Faisal II ascended the throne in 1939, with the majority of power lying with the regent, Prince Abd Al-Illah (brother-in-law of King Ghazi [1933-39]), who held this position until Faisal II ‘came of age in 1953.’\(^{160}\) Socially, Iraq had not improved since the end of the war, with figures suggesting that up to eighty percent of Iraq’s population lived in rural areas ‘and, or, in abysmal conditions’.\(^{161}\) In the mid-1950s, Iraq was not urbanising at rates other states in the region, as Kuwait under Shaikh Abdallah Al-Salim Al-Salah, had been. Successive governments had too narrow a base of support that they were unwilling to address questions of social reform for fear that any ‘alteration to the status quo’ would ‘alienate’ landowners and other groups, on whose support the successive regimes’ existence depended.\(^{162}\) Faisal II’s pro-British and pro-Western stance during this period was symbolised by the signing of the Baghdad Pact, the weakest of the Cold War alliances,

\(^{155}\) Ibid, p. 197.
\(^{156}\) Ibid, p. 197.
\(^{157}\) Ibid, p. 198.
\(^{158}\) Fieldhouse, *Western Imperialism*, pp. 72-3.
\(^{159}\) Cleveland & Bunton, *A History of the Modern Middle East*, p. 198.
\(^{160}\) Ibid, pp. 310-311.
\(^{161}\) Ibid.
\(^{162}\) Ibid, p. 311.
with the aim to keep British military forces within the country.\textsuperscript{163} Iraq’s parliament was unlikely to approve a renewal of the previous arrangements made through beliefs that the British military presence infringed on their sovereignty.\textsuperscript{164} Iraq removed itself from the Baghdad Pact following the Soviet sympathising July Revolution of 1958, led by Brigadier Abd Al-Karim Qasim, when the military overthrew King Faisal II’s monarchy.\textsuperscript{165}

British influence in Iraq stemmed from interests in regional natural resources as well as protecting Eastern imperial interests. Proceeding the Suez Crisis in 1956, the British role in the world was severely diminished and resulting from the military coup of 1958 – a product of distrust, repression and mass-censorship – Britain’s and western influence on Iraq terminated immediately. With it, went the business created through Britain’s protectorate status to the young nation. The post-war era saw some attempts to build and create a national identity in Iraq with the tumultuous period of politics causing the abandonment of major schemes by Western ‘star-architects’ of the day. These included plans by Frank Lloyd Wright for an Opera House (fig 3.5), proposals by Le Corbusier for a stadium, partially later realised in the 1980s under Saddam Hussein’s Ba’athist regime, Walter Gropius’ university campus design (figs. 3.6; fig 3.7) and a civic centre by Alvar Aalto aimed to build national identity and improve infrastructure, as had Lock’s various projects in southern Iraq.\textsuperscript{166}

\begin{figure}[h]
\centering
\includegraphics[width=0.8\textwidth]{figure3.5.png}
\caption{Frank Lloyd Wright’s plan form for an opera house for Baghdad (1957), which was never realised (ArchDaily)}
\end{figure}

\textsuperscript{163} Ibid.
\textsuperscript{165} Cleveland & Bunton, A History of the Modern Middle, p. 311.
Figure 3.6 Drawing of the Science and Engineering library (1954), featuring extensive solar shading in the facade details (Harkness, The Walter Gropius Archive, p. 221)

Figure 3.7 Perspective of a mosque at Walter Gropius and TAC's designed campus for Baghdad University, never realised (1954) (Harkness, J. The Walter Gropius Archive, p. 233)
Iraq and Nation Building

Large-scale projects produced the backdrop of glitter over and above the infrastructural projects that would ensure the new nation functioned as a country, rather than the three former Ottoman Vilayets. These important buildings by Western architects all attempted to import their own ideologies within their designs and often imitated the Arab designs to a poor degree, prompting criticism. With the scrapping of many Western led proposals after 1958, schemes thought up by Eastern architects, primarily from Poland, became popular in the ensuing period due to the new political siding with the Soviet Union and the Eastern sphere of influence. The Iraq Revolution did not affect just the designers but many of the Western clients working in Iraq and it was events such as these that ended this trend of Westerners working here, impacting upon the narratives of nation building in Iraq.

Such clients, were founded to aid the management of the new wealth and included the Iraq Development Board. They were the ‘instrument’ through which Iraq carried out an extensive development programme, implemented through a hastily drawn up six-year plan approved by parliament in 1951. Reasons for its failure during its existence are threefold: there was a lack of communication between the Iraqi government and the board, there was an absence of political stability to back the plan fully, and lastly, there was not the technical expertise required in the official circles to approve their plans. The Board’s plan stipulated the need for education and public health programmes, which, it was believed, would create ‘more efficient human beings who would make greater contributions to the economic and political development of the nation.’ Several British officials sat on the board, including M. G. Ionides, the former secretary of the British National Council of Building Material Producers and Director of Development in Jordan. It was documented that in the creation of irrigation systems, the Board generally opted for American and British consultants while French and German contractors regularly won work because of attractive low bidding; contracts were rarely kept inside Iraq. The Board undertook an ambitious programme linking major cities of Iraq with surfaced roads building a ‘complementary system of secondary feeder roads’, mostly focusing upon the building of infrastructure. The part of the programme that accelerated most quickly was the construction of public buildings, schools, clinics, hospitals, and low-cost housing, which also included the planning of major towns and cities such as Basra, Mosul and Baghdad. Also comprised in the programme was the construction of a new royal palace, a parliament building and a museum, designed by Western architects. Following the chaos of the July Revolution in 1958, the Iraq Development Board ceased to exist terminating many projects.

173 Ibid, p. 185.
Town Planning in the Region

As many commentators have noted, modernisation and nation building often contradicted the conservative ruling ideologies, particularly in the cases of Iraq, Iran, Kuwait and Saudi Arabia. Minoprio Spencely and Macfarlane (MSM) produced a plan for Baghdad (fig 3.8) preceding a plan produced by Doxiadis Associates (DA) a year later. DA’s plan, completed in 1958 after three years’ work, focused on a planning model of ‘expansion, control and efficiency, which he would term ‘dynapolis’ allowing the city to grow to three times its size in 1958 of one to three million. This differed greatly to the plan MSM produced, of which their focus was to ‘establish the principles of efficient town development and growth’, looking specifically at the large-scale redevelopment plans for central areas also taking into consideration the limits of town growth, rather than looking at the exponential growth that DA later proposed. MSM also explicitly stated the requirement for a ‘drastic reconstruction and opening up, that is necessary in the old, congested central areas’, which is directly at odds with the civic surgery that Lock practised in Britain and at the time in Basra’s old centre.

MSM’s 1952 overhaul of the old town in Kuwait decimated the old city, including the city walls that defined its boundary (fig 3.9). The plan provided a utilitarian, functional, contrast to the organic planning produced by Lock. MSM had worked on large scale new town plans in Britain, their most well-known being Crawley, completed in 1950. ‘A difficult commission’, Anthony Minoprio admitted; the Kuwaitis wanted a new city, but all MSM could give was ‘what we knew’, importing the same theories as had upheld the British post-war ‘new town’, as they believed them to be the most advanced ideas in global town planning. The plan for Kuwait placed great importance on zoning areas, with the central business district in the historic core, with suburban housing units and zones on the periphery showing MSM as acting as ‘agents of Empire’ (fig 3.9). Before the plan’s production, open spaces, parks, sports grounds and playing field were non-existent in Kuwait, with provision of these stressed in their final plan. The degree of focus on the creation of open spaces can be compared to the importance Lock placed on parks and leisure areas within Um Qasr, Margil and Basra. While these were MSM’s recommendations, it was also the wish of the Kuwaiti ruler Abdullah al-Salem al-Sabah (1950-1962) that the new city was functional, well-planned, with ‘good communication networks’, in order to make Kuwait a ‘modern’ metropolis. Critics of the plan, including Reem Alissa and Al-Nakib, have argued the plan

Footnotes:
175 Fieldhouse, Western Imperialism, pp. 69–80.
176 Lock’s own annotated version of the: Minoprio, Spencely and Macfarlane, The Master Plan for Baghdad (1954) (MLA 1.3)
179 Ibid, p. 3.
Figure 3.8 Minoprio, Spencely and Macfarlane’s Baghdad plan for 1956, showing the different zoned elements (https://modernbaghdad.tumblr.com/post/124148561184/a-master-plan-for-baghdad-by-british-planners).

Figure 3.9 Minoprio, Spencely and Macfarlane’s plan for Kuwait in 1952, again showing the zonal type of planning in the areas outside of the city centre. (Kuwait Municipality Archives; in Al-Ragam, ‘The Destruction of Modernist Heritage: The myth of Al-Sawaber’.)
encouraged decentralisation and sprawl, focusing on the needs of the car. MSM’s work countered Lock’s approach of conservative surgery, and focused on planning in line with British policy produced in the Town and Country Planning Act (1947) and the New Towns Act (1946). MSM recommended building a functional, but homogenised, style of city that displaced people away from its centre, disregarding the existing Arab urban grain that had developed in the centuries prior to its development based upon their previous experiences.

Squire’s plan for Mosul conformed with Lock’s ideology more than the utilitarian plans produced by MSM for Kuwait and Baghdad. Iraq’s amalgamation of three vilayets into one nation was prevalent in Mosul and shown through its infrastructural links to the rest of modern Iraq; this is in contrast to its position near Nineveh, the former capital of the Assyrian Empire located on an ancient route from Europe to central Asia orientated east to west, rather than the new north to south focus resulting from nationalistic ambition. Necessary improvement to communications and infrastructure with the new capital of Iraq, Baghdad to Mosul’s south, was a major focus of the plan. Where Lock used urban fabric that existed in his earlier plans in Middlesbrough and Hull, the post-war reconstruction needs in Britain favoured the clearance of whole sites (fig 3.10; fig 3.11; fig 3.12). Unlike MSM in Kuwait, Squire recommended that there should be minimal ‘mutilation’ of property. To do this, it was necessary to remove whole buildings or blocks of buildings to provide access to Mosul’s high-quality heritage, as a form of his own civic surgery. In Squire’s words the plan would ‘enable a rational road system to be evolved, aerate the closely packed districts, permit roads and squares, but enough for car parking, and established conditions of amenity comparable with those in newer parts of the town, thereby arresting any serious exodus from the area and preventing the creation of a slum.’

187 Squire, ‘In the Middle East’, pp. 73–108.
188 Ibid, p. 74.
189 Ibid, pp. 73-108.
190 Ibid, pp. 73-108.
Figure 3.10 Max Lock’s plan for Middlesbrough (1946) hailed as ‘a People’s Plan’ by the press at inception in 1945, showing an idealised version of the new centre with a boulevard and new housing replacing blighted areas. In other parts of the plan, housing deemed adequate remained (MLA 3.26)
CHAPTER 1: MAX LOCK

\[\text{Image 113x427 to 559x807}\]

\[\text{Image 113x35 to 367x414}\]

\[\text{Figure 3.11} \] Axonometric drawing of the proposed town with a central boulevard showing new blocks of flats among the old terraces, with prominent gables (1946). (https://teessidepsychogeography.wordpress.com/2013/04/15/max-locks-middlesbrough-survey-plan/)

\[\text{Figure 3.12} \] Max Lock (L) conducting public engagement while planning Middlesbrough (1945) (MLA 3.26)
Lock’s Trilogy of Plans: Um Qasr, Margil and Basra

The three main plans produced by Lock during this period differed greatly, demonstrating the breadth of his professional abilities. The article ‘Planning southern Iraq: placing the progressive theories of Lock in Um Qasr, Margil and Basra in the context of Iraqi National Development, 1954-1956’ covered Basra’s existing condition and the local geographical context of the other plans. The context of these three plans is necessary to understand the housing scheme Lock produced for Ubullah in 1956. Um Qasr was intended to be Iraq’s major port, situated on the Gulf. Margil was the location for the port of Basra on the Shatt-al-Arab, with the intention of enabling growth to house more people. The re-planning of Basra city centre included a comprehensive survey of the existing building fabric and proposed new ways of incorporating this into the creation of a genius loci.

There was a large degree of focus on Basra and the region surrounding it in southern Iraq in this period due to mass internal migration and the finding of commercial quantities of oil. The geographical proximity of Basra, Margil and Ashar to one another without distinct links caused Lock to suggest on first look that Basra was a ‘scattered and fragmented community’. He said it was ‘physically and socially sub-divided into three widely separated townships, with Basrah as the head, Ashar the body and the port of Margil an important and active arm’. To a degree, the plans for Basra and Margil

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192 Ibid.
looked at how these were linked through transport, but also how the city could subsume these districts into one, coherent, urban whole.

3.3

Um Qasr’s development was of national importance owing to Iraq’s small coastline essentially meaning it was landlocked. The Shatt-al-Arab waterway, and its tributaries in Basra and Margil, are thusmajorly important to both how the places function, but also in the formation of identity and the nationalistic narrative created in this period. In terms of the water being crucial to the identity of these places, canals and tributaries prominently feature in Lock’s images depicting Basra’s intended appearance; subsequently, Lock’s photography and written descriptions regularly compare Basra to Venice, evoking strong imagery of a place with an established identity. In terms of utility, Lock placed great prominence on waterways within the Basra and Margil reports, stating that they have ‘great potential for commercial navigation’, which until that point remained ‘unexplored’ by planners. The article ‘Planning southern Iraq’ concluded on waterways to confirm that Lock’s ‘diagnosis’ was to improve their efficiency, as a functional element of the city; yet, he realised their nationalistic function in their importance to the creation of townscape, genius loci and identity.

3.4

Lock’s attention to the aesthetic of waterways falls in line with his conservative surgery ideals. The New Basrah Plan placed a degree of importance upon the existing fabric of the city, incorporating it into the city’s future. In doing so, Lock did extensive surveys of buildings, included within the plan; this is something he did for most projects. The surveying of the existing habitable fabric at Margil and Um Qasr was unnecessary due to its non-existence; where buildings did exist, they were of hasty, recent construction and on a small scale. His knowledge of the region through prior work and research was imperative to the production of plans that were conducive for the local populace. This attitude to constructing a place using the existing fabric is distinctly Geddesian, it also lend itself to the overbearingly modern approach Lock took to the making of place, underpinned by traditional intentions; these intentions further themselves through other considerations in the masterplan, including provision of healthcare, education and transport.

3.5

Education received a degree of emphasis in Iraqi commissioned planning reports prior to the 1958 Revolution. Historically consumed within a wider ‘civilising’ rhetoric of imperialism, the Iraqi government desired to modernise its people through the creation of education facilities noted through the prominence of school building during the 1950s. At this time, education was not compulsory, so the provision for schools, especially in places such as Um Qasr, was paramount for the children of the new population but also their parents, in the government’s push to combat illiteracy. Throughout the Gulf during the fifties the construction of many schools designed by Western architects became common due to the growing need to educate the population due to the Arab ‘al nahdha’; this thought is linked to ideas

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of modernity, manifesting itself within the construction of an internationally recognised pedagogical infrastructure. Lock noted in his report that the attitudes of people required change to facilitate the cultural alterations needed to ensure success. One of these cultural changes that would be difficult to overcome was that it was 'still prevalent for children, rather than their fathers, to be the family wage earners.' Consequently, only one fifth of the seventy percent of children that attended primary school continued full-time to the intermediate and secondary schools within the city.

In other areas of the country, the employment of architects to construct new school buildings was commonplace and additionally, other Gulf nations implemented school building programmes within the following decade. Specifically, Kuwait set the standard for constructing large quantities of educational buildings, discussed further through the Roth’s architecture, within the programme of school building in Kuwait in Chapter Three. However, as a result of the detailed survey Lock carried out prior to the creation of a plan, he suggested that there was no need to build primary schools from scratch, as the existing fabric in many buildings would suffice, emphasising conservative surgery’s ideas. Lock’s belief was that education was a basic consideration for ‘agricultural, industrial and technological progress in Iraq as well as for the fuller development of the country’s cultural life.’ Placed within the wider political and social context, Lock’s awareness and reasoning behind educational planning played an undeniable role within the overall ideology of nation and identity creation.

The Ubullah Neighbourhood plan
The report for Margil raised the requirement of housing, with Lock reciting its inception as an ‘embryo’ in the report. The report for Ubullah lucidly described how it will link the neighbourhood to Margil in the north, to Ashar and Basra through a network of roads and waterways to ‘revive trade in Basra’, which ‘hitherto’ began to shift towards Ashar (fig 3.14). Maps made of the area in this time show spaces between these areas as being barren without evidence for urbanisation; they are predominantly unmanaged waterways, tributaries of the Shatt-al-Arab river. Lock described the setting of the site as being ‘virtually desert of alluvial sub-soil and sand without trees’, characteristic of much of the geography of the surrounding region: Ubullah was to be largely made from nothing, with little built context in its immediate vicinity to base it on. Lock’s civic surgery methods would not work in this environment, so he had to take from traditional building methods in nearby towns to contextualise his plans. Prior to Lock’s plans, the Port Authority designed the only existing buildings in Ubullah, where they had constructed 200 houses. Lock’s proposals increased this substantially to house over 15,000 people in 3,000 dwellings using research methods which covered the geographic area in which Ubullah was located in.
Figure 3.14 Plan of Basra from 1948, showing Margil to the north and Ashar on the banks of the Shatt-al-Arab; the plans for Basra proposed the city’s urbanisation would absorb these centres into one place (British Library)
The residential roads within these neighbourhoods are so arranged that they discourage through traffic from taking short cuts through the middle of the neighbourhood, the roads being routed in a circuitous fashion in the best way to serve the houses themselves. Most of the roads are planned to run in a north-westerly direction, and by so doing will attract the cool, northerly shamal wind. The houses, too, are not strung out along these residential roads in military fashion, but are grouped in small squares and courtyards inter-connected by quite narrow streets (16' and sometimes 12'), so that a number of enclaves are formed, each different in design and character, and by their arrangement provide a social homogeneity that a long, straight, monotonous street is not able to give.\footnote{Lock, Ubullah Neighbourhood, p. 4.}

The proposed layout for the streets of Ubullah is a clear articulation in merging the use of cars with pedestrian life (fig 3.15). Unlike other planners at the time, such as MSM, Lock wanted to prioritise the pedestrian, designing what he referred to as a ‘human scale’, something which later appears in the works of Jacqueline Tyrwhitt and Constantinos Doxiadis.\footnote{Bell, G. & Tyrwhitt, J. (1972) Human Identity in the Urban Environment, (London: Penguin), pp. 220-225.} They defined the human scale at the Delos 6 symposium (1968), concluding that ‘one can see and recognise another person at 200 yards, and 2,000 yards seems to be the longest distance at which one can see a monument’, as a relatable definition of the human scale.\footnote{Ibid, p. 220.} The layout of streets in the Lock layout for Ubullah allowed for this, with a particular focus on how, and where landmarks are seen from, as well as considering the width of the streets affecting the enclosure of the urban environment.

The configuration of the housing scheme at Ubullah is stark in contrast to earlier Western designs in the Gulf for oil-worker housing. While Lock stated that it is to be a grid iron pattern, the above passage suggested this is not a simple, normal grid iron, recognisably used in Western cities; Lock utilised this layout, rather than something less functional, because the Port Authority had already used these principles in the earlier 200 houses they constructed near the site. The grid iron is also synonymous with ancient planning and is likely that Lock would have been aware of this, too. The centre of the plan for Ubullah incorporated an area around which the surrounding neighbourhood could gravitate, like Mohamed Makiya’s neighbourhood plans produced at a similar time. Lock’s plans included schools, a mosque, cultural and health centre, a market and a workshop area. Although it did not span the length of the area, this space is very much on the central axis of the neighbourhood, acting as a similar layout to a bazaar.
Figure 3.15 Map of the layout of Ubullah, labelled as ‘Housing at Shatt-Al-Turk, Margil’, 1956. The bottom right of the image shows that Lock had offices in London, Bedford, Amman and Basra (MLA 6.20)
Despite Lock’s traditionalist tendencies, the spatial configuration of the Ubullah neighbourhood drew from functionalist modernist theories of architecture and planning, drawing comparisons to later work by Roth in Kuwait and other international projects. Following on from the grid-iron layout Lock proposed, he also suggested that the location of shops, schools and community facilities be no more than a five-minute walk from houses.\footnote{Lock, Ubullah Neighbourhood, p. 4.}

A notable Western example of this type of thinking is Denys Lasdun’s modernist designs for the University of East Anglia (UEA) (1962-8) is also like this; the Ubullah neighbourhood function is almost campus-like acting as a satellite of Margil, like UEA is to Norwich. Lasdun designed student residences to be in the heart of campus, allowing a five-minute walk to lecture theatres and communal areas around campus.\footnote{Curtis, W. J. R. (1994) 
\textit{Denys Lasdun: Architecture, City, Landscape.} (London: Phaidon Press), p. 88.} Lasdun and Lock had similar educational backgrounds both attending the AA in the 1930s, mixing with similar people influenced by comparable theory; although the UEA campus’ construction was a decade after the Ubullah neighbourhood layout, this comparison succeeds because of their personal educational similarities and clear articulations of space.\footnote{McClelland, ‘Inventorying Armagh’, p. 3.}

The neighbourhood planning concept is important here, too, with such theories being prominent in international examples of modernist architecture and master-planning. Spatial distribution of buildings is important to this concept and varies from example-to-example and on various scales. On a smaller scale, like that of Ubullah, the layout and distribution of buildings in Tema designed by Lasdun with Fry and Drew (1952) provides a similar example of the neighbourhood planning concept in the Gold Coast (modern day Ghana) (fig 3.16; fig 3.17). Tema is a small harbour that formed part of a wider plan (the Volta River project) like Ubullah was within the construction of Basra as a port on the Shatt Al-Arab.\footnote{Provoost, M. ‘Tema: Maxwell Fry and Jane Drew’, \textit{Delft Architectural Studies on Housing}, (12:13) http://dash-journal.com/tema-manhean/} The houses here, like in Ubullah and the blocks built later in Kuwait, ‘were set around schools and recreation areas’ showing that there was consideration for the spatial layout in other hot climates, and that this body of thinking traversed global modernism and was not just a regional concept used in the Gulf.
Figure 3.16 The Tema master-plan layout by Fry, Drew and Lasdun in 1952 (RIBA Pix)

Figure 3.17 An example of the housing in Tema designed by Fry, Drew and Lasdun in 1952 (Notes from Tema, Ghana 2018, Transnational Architecture Group Blog: https://transnationalarchitecturegroup.wordpress.com/2018/01/19/notes-from-tema-ghana-2018/)
The spatial distribution of schools within the neighbourhood, like Roth’s planning for areas of Kuwait in the ‘60s and ‘70s, demonstrated a similarity between another functionalist European architect. Chapter Three deals with the specifics of pedagogical thought within the literature, but there are some basic similarities between Roth and Lock’s work which are worth discussing here. The principles of school distribution compared to the likes of Roth, who formed a career around this knowledge in Kuwait. He gleaned this information from pedagogical experts, such as Heinrich Pestalozzi (1746-1827), and the analysis of modern built schools around the world. Lock does not focus on schools in the same way as Roth did; given Roth’s status as school specialist in Kuwait, he spent far more time solving problems to do with this, whereas Lock only focused on the school buildings’ location. In the Basra report, Lock noted that school facilities were lacking, as many were built in existing houses. Lock also realised the distribution of these school-houses was over too wide an area, and could not accommodate children adequately due to the large sizes of school. Many children had to ‘travel considerable distances between homes and schools, often across busy main roads’, which he tried to remedy through better distribution of purpose-built schools.\(^\text{215}\)

Lock stipulated that each neighbourhood would house junior schools for younger children, while the four secondary schools he allowed for in Ubullah would be located where they ‘will serve the population of the town as a whole’ suggesting that these would be central to the township not tied to any particular neighbourhood.\(^\text{216}\) It may seem arbitrary to have this amount of schools per 15,000 people, but the requirements were laid down as a ‘rough guide’ from the Port Education Officer, who suggested that four primary schools and four secondary schools were required for a town with a population this size.\(^\text{217}\) This allows for parents to walk their younger children to school, while older, more independent children attending secondary school may get the bus. The distribution of schools is thus like those of other architects working in the region at varying times; there are pedagogical similarities between this and the wider Western world. Lock noted limitations in the existing conditions for education in Basra upon his arrival. While there was growing recognition for its requirement, many children did not have a full-time primary education due to it not being compulsory; the Iraq Development Board considered educational matters with speculation about a school building programme, that did not come to fruition curtailed by the 1958 revolution.

**Planting**

In Ubullah, Lock specified several architectural elements that ensured an appropriate climatic and cultural response in the building of new urban areas. He specified that courtyard housing is to generally feature landscaped elements. Lock was specific with his landscaping ideas, having visited the Wilson Mason and Partners’ designed town of Ahmadi to see what plants, shrubs and trees grew successfully there.\(^\text{218}\) A synthesis of Arab architectural form – the courtyards – and typical planting from the region ensured a culturally and climatically appropriate design for the new urban area. The designs of the houses, in synthesis with the landscaping,
were to create an aesthetic recognisable of the Gulf region. Lock was one of the first Western designers in the Gulf to employ the techniques using research on landscape features and architectural fabric of similar areas as a palette to work with. Whether or not other designers working in the Gulf in the ensuing decades knew of Lock’s work is another matter; however, he was original in his demonstration of a similar thought process to later planners such as Doxiadis whom he was in contact with when planning Basra.219

The concern for planting, townscape and beautification in the Western style was a hangover from the inter-war period; the maintenance of this planting was often lacklustre and derided.220 The international context of these changes developed from the growth of importance with relation to landscape architects and their profession. In 1947, prominent landscape architect, Russell Page, authored a report for the AIOC delineating what planting should take prominence in Abadan, Iran, focusing upon the creation of shade within the urban environment. Page wrote ‘in Abadan shade is a basic requirement which should govern all town, park and road planning and planting. Shade is as essential here as a roof on a house in colder climates’.221 It is also this priority to shade which governed the width of streets being between 12 feet and 16 feet wide; evidence of conscious planting and street design is also evident in Fry Drew and Partners’ plan for Gachsaran (fig 3.18). Their plan included extensive street planting, which is also a recommendation in the Page report, ensuring more shade and comfort for pedestrians. Lock’s report stated that open spaces in Ubullah will be ‘planted with trees which in their first years will be kept watered from these canals. The effect of this introduction of water together with the tree planting will be slightly to ameliorate the exigencies of the summer heat’.222

219 Lock, New Basrah Plan, p. 76.
222 Lock, Ubullah Neighbourhood, p. 6.
Architectural Forms

Minarets

4.10

Placing the mosque and minaret at the centre of the urban environment creates a landmark in the setting as well as a central meeting place within the neighbourhood. Use of Minarets at the centre of public spaces was common during this period; this configuration is familiar throughout history in regions around the world. Lock consistently placed the centre for people at the physical core of his developments; in the drawings of his schemes the minaret or mosque dome is the focus of the image; they also often feature in the background, like a spire in an A. W. N. Pugin, drawing, within a juxtaposition of contrasting old buildings and modern interventions (fig 3.19). Unlike Pugin, Lock’s focus on the minaret was not wholly religious, but more for the orientation within the place and he demonstrated that the centre of the area is a communal place for people to gather, acting as part function, part identity for the area (fig 3.20; fig 3.21). They also provide a strong focal point for his images; Lock often drew his perspectives from this central point fig 3.20. Shiber talks of the importance and principle role of minarets in the cityscape also suggesting their religious importance, in the *Kuwait Urbanization*, saying that:

...These are the tall, vertical graceful and skyward looking minarets reaching upward into the firmament as if to remind one that there is something else to this world other than buildings and cars. And as these minarets point to the sky to a religious and functional need, they provide the strongest architectural contra-composition that Kuwait possesses... whatever the architectural merits of the mosque itself may be in any particular case, the minaret is a witness reminding one that architecture and civic design are not dependant on fussy design, expensive materials and extravagance but, rather, on the interplay of space, form and direction.\(^223\)

Although it is far more exaggerated, Pugin’s spires in the frontispiece of Pugin’s *An Apology for the Revival of Christian Architecture in England* (1843) are reminiscent of the prominence placed upon minarets in Lock’s visualisations. They are also similar to the representations of Arab cities, like Cairo, which is colloquially termed the ‘city of a thousand minarets’ (https://amishcatholic.com/tag/pugin).
Mohammed Moathen, ‘Old Residential Quarter’, a painting of Kuwait showing the urban environment with low-rise dwellings enclosing a narrow street leading to the minaret of the local mosque (Shiber, G. (1964) The Kuwait Urbanization)

Figure 3.22 View of a street in Ahmadi showing the minaret prominently in the middle of the scene (c.1930s) (BP ARC 108105_008)
Arches (Muyabeb)

Lock’s proposed urban layout of Ubullah fused elements of tradition and modernity: this idea was at the core of the New Basrah Plan, the Ubullah Neighbourhood plan, and the theory of conservative surgery itself. Lock’s other reports look specifically at the Ottoman influence on Iraqi architecture, with images of mashrabiya and detailed woodwork on cantilevered bays hanging over the street. In Ubullah, he proposed that due to the narrow street widths it would be possible to have ‘arched streets’, which he said was ‘in the local tradition’. The aim of this, he said, was to ‘get as much shade as possible during the six hot months, and to break the cold winds during the winter’. Lock travelled in the locale a reasonable amount, as the idea for the arched streets originated from his visit to ‘Zobair’ (Al-Zubayr), a town in southern Iraq (Fig 3.23). In Al-Zubayr, the arched streets worked in tandem with their characteristics, such as exhibiting ‘bends, twists and narrowness’, for full environmental impact. The form of the archway is also apparent in Kuwait City, a place where Lock would have certainly spent time given the evidence of site visits to Ahmadi, the company town to the south of the city (Fig 3.25). This form generated from the shapes of houses and the requirements for cooler streets; instead of planting trees for shade, the natural form of the city was to enclose areas with streets of a width of anywhere between one and four metres. In addition to these environmental credentials, the archways contributed to the social function of the city in that they provided a shaded space in the summer months for people to meet as well as somewhere to shelter in the wind and rain of the winter. The use of such archways in the urban environment is not restricted to the Gulf, but is not a common feature of traditional townscapes. The archways in the street in Al-Zubayr are reminiscent of the Via delle Volte in Ferrara, northern Italy (Fig 3.24), an area which had proximity to trade routes heading east during this period also showing that this urban form is not limited only to the Gulf region.

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224 Lock, Ubullah Neighbourhood, p. 4.
225 Ibid.
226 Ibid.
228 Ibid.
229 Ibid, p. 29.
Another notable use of these archways in a modern idiom was by Fry Drew and Partners. Their modern parabolic constructions from local stone in Gachsaran showed that Lock’s idea was not redundant, but is more likely to prove that architects like Lock or Fry and Drew were presumably in contact when working in a region such as this, ignoring cartographical borders and building what they believed to be traditional, yet modern, design (fig 3.26; fig 3.27; fig 3.28; fig 3.29; fig 3.30; fig 3.31). While these forms were not entirely for aesthetic, there is an element of those built by Fry and Drew which suggests an engineered element to them; something a bit different from those of Lock’s, who would have intended them to be as economical as possible.\textsuperscript{230} Materially, the arches in Al Zubayr are constructed from \textit{al tub} evidenced by the textures on the elevation and the breaking off of material on the elevations around it. Fry Drew and Partners’ arch is built from stone and is far more representative of the surrounding mountainous landscape in which it is located. Both iterations are a response to the local environment through their climatic and social reasonings, but this is even more apparent in the materials they used.

\textbf{Figure 3.24} Via delle Volte in Ferrara, northern Italy, forming a similar effect with archways over the street level allowing for quick access between the floors above to neighbouring warehouses (Michelin Guide)

\textbf{Figure 3.25} George Rodger’s photograph of an old street in Kuwait, taken in 1952 the year of the publication of the MSM plan. (https://pro.magnumphotos.com/C.aspx?VP3=SearchResult&STID=235RYQZDV69B)
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Figure 3.26 The entrance to an parabolic arched street in Gachsaran, designed by Fry Drew and Partners (1959) (RIBA pix)

Figure 3.27 The entrance to an parabolic arched street in Gachsaran, designed by Fry Drew and Partners (1959) (http://picssr.com/tags/%D8%AF%D9%88%DA%AF%D8%B6%D8%A8%D8%AF%D9%86/interesting)

Figure 3.28 Fry Drew and Partners’ Arches under construction in Gachsaran showing their materiality in 1959 (RIBA Pix)
> Figure 3.30 A page from the collection of articles ‘In the Middle East’, with a focus on Fry and Drew’s housing at Gachsaran, with a focus on the configuration and forms of the houses they proposed (Architectural Design, March 1957: RIBA Library)

< Figure 3.31 Drawing of a drawing from the RIBA archive of the proposed parabolic and ‘Tudor’ archways in Gachsaran (author’s notebook, 2017)
4.13

**Honeycomb Walls**

Lock’s plans for Ubullah included a sheet (fig 3.35) showing housing elevations in streets with one perspective and an axonometric of a shopping centre within the centre of the neighbourhood. These drawings show Lock proposed ‘honeycomb walls’, forms synonymous with architects across the Middle East and the tropics in the twentieth century. These shapes changed from architect-to-architect and were usually made from concrete, their purpose was to act as a screen from the outside serving a functional, aesthetic, and cultural function. These screens, particularly covering private spaces, provided shade and enclosure, whilst simultaneously allowing for the movement of air through buildings or courtyards, which otherwise might act as a suntrap. Fry and Drew utilised these screens in their buildings in Africa and in Chandigarh; the concrete screen was a vehicle conveying design and artistry providing character (fig 3.32; fig 3.33). The visual identity is striking, and in one case, as with Fry and Drew’s secondary school in Opoku Ware School in Kamasi, Ghana, the image is used for the front cover of a recent book. The utilisation of concrete screens in their housing at Gachsaran is also prominent; it appears that while this technique is not synonymous with a region, it does work in a range of locations. Generally, it is a similar concept to the mashrabiya in that it allows air to permeate through the building and it provides privacy: these architects adapted this traditional idea into a modern functional, form.

![Figure 3.32](https://www.architectsjournal.co.uk/news/culture/the-pioneering-jane-drew/8659177.article)


232 Ibid.
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Shopping Centre Form

Situated between the large-scale forms of the mosques, and the small scale of housing, sits the civic centre which Lock designed reminiscent in its forms of the centres of Harlow or Stevenage constructed in Britain during this period. While it includes visual clues that it is not a ‘New Town’ through the inclusion of ‘Tudor’ arches, it includes more subtle hints that it is a centre designed for a Gulf nation. The axonometric showed minimal openings on the elevations of buildings with open roof terraces above, featuring slim walls (traditionally made from reeds) which allow air to permeate on to the terrace while still affording privacy (fig 3.34; fig 3.35). The civic centre is thus clearly mixed use, and not intended to be too large, especially given that Lock was trying to incorporate the neighbourhood within the sphere of Margil’s larger centre.\(^{233}\) The layout of the centre is similar to other concepts of Gulf architecture from the ensuing decades: there is a large roof without the terraces which covers retail space, with a flat roof and simple columns creating a loggia surrounding a planted square. Given Lock’s professional network of Tyrwhitt, Fry and Drew during this period, it is likely that this shaded loggia has precedents in Fry and Drew’s Sector-22 Chandigarh, with the Public Works Department there.\(^{234}\) Lock asserted that it would be of a similar material palette to the residential areas allowing for ‘colourwash’ and brickwork, used throughout, thus creating a visual language and identity for the neighbourhood.

\(^{233}\) Lock, Ubullah Neighbourhood, p. 1.

Figure 3.34 Lock’s axonometric of the shopping square for the Ubullah neighbourhood (1956) (MLA 6.20).
Figure 3.35 Plans for elevations of dwellings and the shopping centre (1956) (MLA 6.20).
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House Design in Ubullah

Lock finalised his plans for the Ubullah neighbourhood in August 1956. The plans he produced in this period differed in focus, but predominately catered for the requirements of the client, which regularly opposed Lock’s planning philosophies in some regard. 235 Architectural design formed a key element of this section; it was rare for Lock to include such a distinct architectural palette of options within a town plan, despite being an accomplished architect himself. 236 The housing options were similar to those of Fry Drew and Partners’ produced in the mid-1950s at Gachsaran (fig 3.30), with low-rise, single storey, plain elevations, timber window frames, and small windows generally masked by a basic wooden mashrabiya. The plan form provided evidence of cultural consideration with all housing options exhibiting enclosed courtyards to the rear of the house. In some examples many rooms open out on to the outside space enabling families to use the courtyard as a key area for moving around the house. House Type E (fig 3.38), for example, exemplifies this through gaining access to the bedrooms across the courtyard with the building detached from the main living area at the front. House Type E and House Type F are of significance in their spatial configuration, in that they were both centred on a pinwheel structure which CJW would also utilise in their Abadan work (fig 4.21). Fry and Drew’s designs for houses in Gachsaran differed in their spatial configuration in their focus on orthogonality. They utilised a similar aesthetic to Lock, but their plans varied in the layout with an emphasis on internal circulation rather than the courtyard being the focal point, as in Lock’s and CJW’s plans.

The plan for Ubullah included six house types ‘combining practicability with economy’, which Lock designed primarily for the local populace; for example, he stipulated that all ‘W.C.s are of the oriental type, and each W.C. has a tap for cleaning purposes’. 237 While this might appear to be a cursory addition, the inclusion of good sanitation within a building for those who were accustomed to living within a traditional sarifa was something new. 238 The most important feature in Lock’s designs is that he provided a roof terrace, primarily intended for sleeping on, something which was common across the Persian Gulf prior to modern architectural interventions in this period. 239 The exception to this is House Type C (fig 3.37), where he designed a pitched roof giving variety to the layout while also acting as an economic experiment to find out which method is cheaper. 240 Fry and Drew differ in their design approach in Iran, through mostly using mono-pitched roofs allowing more space within the courtyard-houses and streets that they designed. The mono-pitched roofs add further benefits including the addition of more light in otherwise darkly lit areas, and greater air circulation due to the placement of vents near the ceiling out of sight from the ground, despite this not being a common feature in the traditional design of the region. In his report for Margil, Lock suggested that vines ‘should be grown on the roof terraces’ to allow for greater shading in the day-time and privacy.

235 Ibid.
236 This evidence is found across the majority of his plans produced between 1940 and 1956 in varying countries. The Ubullah neighbourhood architectural drawings are unique in this respect but offer an insight into the thinking of Lock for the desired urban scale and enclosure of the neighbourhood.
237 Lock, Ubullah Neighbourhood, p. 23.
238 Ibid, p. 23.
239 Gardiner, Kuwait, pp. 13-59.
240 Lock, Ubullah Neighbourhood, p. 22.
at night from onlookers, like his designs for the shopping centre mentioned above.\textsuperscript{241} Roof terraces were a common feature across arid nations, thus ensuring a sense of traditional regionalism in small-scale buildings; the option of a roof terrace allowed people to alter and add to the building as they wished, a traditional element seldom seen in the modern functional architecture of the period.

Aesthetically, Lock’s housing design at Ubullah utilised the architectural language developed in the 1950s by other Western architects working in the Gulf region. Lock’s plan for Basra demonstrated astute planning and detail, exhibiting his knowledge of local culture learned throughout the late 1940s while working on several projects in Jordan and southern Iraq.\textsuperscript{242} Researching regional vernacular suggests that Lock’s designs and inclusion of roof terraces for sleeping demonstrate that his designs were in touch with the culture of those who would inhabit his buildings.\textsuperscript{243}

Like the shopping centre (para 4.14), materially the buildings were to be ‘faced with local brick’ with ‘a number of them… colour-washed in carefully selected colours to give a variety, freshness and life to the individual street composition.’\textsuperscript{244} He furthered this by saying that the washes shall be in light colours, enabling the reflection of heat from the walls.\textsuperscript{245} This materiality was not uncommon in Western designs for the region, with brickwork prominently used by Wilson Mason and Partners in the 1930s and 40s and later modernist buildings rendering in lime or colourwash, which also provides a useful contrast through their more classical approach against Lock’s more informal stance.\textsuperscript{246} The synthesis of Western influence and local vernacular upon Lock’s housing options for Ubullah is apparent and further adds to the convergence of regional tradition with the European modern architectural language forged in the Gulf.

\textsuperscript{241} Ibid.
\textsuperscript{242} Tosland, ‘Planning southern Iraq’, pp. 1-23.
\textsuperscript{243} Ibid.
\textsuperscript{244} Lock, \textit{Ubullah Neighbourhood}, p. 17.
\textsuperscript{245} Ibid.
Lock designed maisonettes which he believed ‘might be considered desirable’; he does not state why this housing typology might be aesthetically appealing to people but does include information on their building heights, which are to appear as though they are three-storeys. This is due to the incorporation of roof-top gardens and sleeping areas, unlike the houses arranged around a courtyard adding a half storey to the two below.  

Socially, the maisonettes which Lock believed ‘enhanced’ the civic design of the town cost more money to build. On two occasions he stipulated that they could ‘only be allocated to those with a higher income than the artisans and unskilled labourers’, recalling the hierarchical relationship in the AIOC. This relationship of the house, its form and location to the occupier and their income is also similar to the agenda set out by Lasdun with Fry and Drew in the flats he designed at Tema in Ghana, again showing that some ideas were more global rather than regional (fig 3.17). Because they are more expensive to build people would ‘naturally expect to pay a higher rent’, assuming ‘junior clerks’ or those in the ‘higher income group of workers’ would wish to live here. The scale of these larger units was to be relatively small in comparison to the other housing options provided. The overall scheme for housing Lock provided was small in scale and focused wholly on the working classes of Basra, how they live and what configuration they would benefit from. Unlike the New Basrah Plan, Lock could not enact civic surgery with the existing building fabric, but his anthropological research suggested that he adeptly created a place suitable for the region and its inhabitants.

247 Lock, Ubullah Neighbourhood, p. 5.
248 Ibid.
250 Lock, Ubullah Neighbourhood, p. 5.
Figure 3.36 Lock’s Ubullah housing plans (1956). Note the courtyard and rooms surrounding open central areas (MLA 6.20)
Figure 3.37 Lock’s Ubullah housing plans (1956). Note the courtyard and rooms surrounding open central areas (MLA 6.20)
Figure 3.38 Lock’s Ubullah housing plans (1956), note the courtyard and rooms surrounding open central areas, in particular the similar form of the cluster and pinwheel plan as featured in works of a similar era by CJW (Chapter Two) (MLA 6.20)
Figure 3.39 Ubullah today in a satellite image. There is a clear ‘centre’ with waterways marking the edges of blocks within the neighbourhood. Lock’s layouts are clearly not used, but the formation of the houses, certainly on the north side, echoes those of CJWs’ clusters described in chapter two, suggesting some form of planning took place here following the 1958 Revolution. (Google Maps, 2019; author’s own annotation)

Figure 3.40 The surviving layout of Fry Drew and Partners’ work at Gachsaran showing the clear linear layout, with a defined centre of green space (Google Maps).
Conclusion

The work of Lock in southern Iraq concerns itself with this in terms of the spaces he looked to create, as well as the economical aesthetics he procured creating buildings that exemplified the meeting point of tradition and modernity. The scale of Lock’s work was small; the planning of Ubdullah involved linking it to the other parts of the city, such as Ashar and Margil. It differed from other plans by Lock in southern Iraq due to its sociological focus and production of architectural drawings which fixated on creating functional, culturally sympathetic spaces. In contrast to previous works by Western architects in the Gulf, Lock’s work took from the region socially in terms of the layouts of dwellings and their urban surroundings: this is apparent through the construction of roof terraces for sleeping and the prominence of communal buildings in the urban core. Lock’s work falls into the era of nation-building within Iraq, at a time when it was primarily British clients instructing architects to work in the country; the work Lock produced was a departure from the glamorous works of architects like Le Corbusier, Gropius and Lloyd Wright in Baghdad during this immediate post-war period. His work also contextualises much work elsewhere in this period, such as Fry and Drew’s neighbourhood planning concept in Sector-22, Chandigarh and that set out by the same architects with Lasdun in Terna, modern day Ghana. Like his work in England, Lock’s work looked to rebuild where necessary and utilise what the people wanted, exemplified in his pattern-book housing designs for Ubdullah and their spatial syntax. There is a clear case of cultural exchange in the work of Lock in this region, utilising his Geddesian philosophies to inform the local area he worked in, ideas of European modernism and taking from regional built traditions. The buildings Lock produced were an attempt at designing for the locality, rather than implementing a Western, aesthetic as shown by other architects and planners in this period, epitomised by MSM in Kuwait and Baghdad.251

Figure 3.41 The Grand Mosque of Abilla, in the location Lock specified for a mosque in his neighbourhood plan for Ubullah. Built in the decades following the Iraqi Revolution, the mosque exhibits an intensely regional and Islamic design with tile work, arches and central dome (Google Maps, October 2018)
2: Candilis-Josic-Woods’ Abadan Housing
Introduction

Renowned architects, urbanists and theorists, Candilis-Josic-Woods (CJW) worked in the mid-twentieth century (1955-68) on a wide-range of European and global projects. One of their first projects as a trio was oil-worker housing in Abadan and Kharg Island (Khuzestan) (1956), which remains unbuilt; however, the ideas and concepts that underpinned it would influence much of their later work. In an architectural context, the project increased the concentration of a regional style synonymous to the Gulf through using a synthesis of modernist theory, informed by previous experiments in Africa and local climatic elements. CJW completed oil-company housing studies in southern Iran, altering the typology of company town housing in the twentieth century, due to their critical approaches drawn from the works of Le Corbusier, Écochard, discussions amongst CIAM and future members of Team X. As with the work of Lock, there was a varying focus of scales, with the ‘webs’ and ‘stems’ they produced marking a larger change in scale, whilst still focusing on the ‘cellule’ (cells) that formed these units. Candilis and Woods worked in Morocco prior to Iran, working closely with Moroccan architects who engaged them with knowledge on hot climates and cultural factors which led them to employ the notion of ‘housing for the greatest number’ (habitat du plus grand nombre). The plans drawn up for the NIOC largely resembled Candilis and Woods’ Moroccan projects, where they had worked with Michel Écochard, raising questions about authenticity and superficialities within their architecture.

Their housing scheme for the NIOC in Abadan was another form of a neighbourhood plan, with a clear centre delineated by a landmark feature – in this case a minaret and mosque – and a surrounding civic area, with public square and plaza. The housing spanned out from this and is atomised into small elements which when put together, build a much

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252 Georges Candilis was born in Baku, but had Greek-French nationality; Shadrach Woods was a New Yorker; and Alexis Josic was an anti-Tito Serbian who resided in Paris.


254 Avermaete, T. Karakayali, S. von Osten, M. (eds.) (2009) Colonial Modern: Aesthetics of the Past Revolutions for the Future, (Berlin: Black Dog publishing) Summarises the definition for housing for the greatest number, a concept utilised throughout the fifties by CJW, starting in Morocco. ‘Housing for the Greatest Number’ refers to the poor, the working class, people in shantytowns and rural people. The differentiation of cheap residential districts for Europeans, Muslims and Jews would become the very basis of thinking on habitat until independence. ‘How did the Moroccan teams connected with Écochard end up proposing the objective of building “a habitat for the greatest number”? The ground was in fact prepared by the idea of a specific, local “adapted habitat” which had been discussed for over 30 years in Morocco by the teams of planners and architects, as well as geographers, ethnologists and art historians associated with Lyautey and his successors… habitat must take into account the reality of a country which is being urbanised and industrialised by the Moroccan people, and they were aware of the need to work for the social good in a country aspiring to independence.’
larger, wider, whole urban centre. As CJW put it, the cell, is the room or the house, and this is joined by other cells which make up the clusters. Joining these clusters together makes stems and webs and thus completes the built elements of the urban environment. The designs of houses centred around the private family, with big walls for privacy but also for shading outside areas. The overall aesthetic was utilitarian drawing from their other work in north Africa with Écochard. This type of modern, functional architecture within a master-planned neighbourhood forms part of the wider, international context, and built further on Lock’s work, analysed in the previous chapter, through understanding a similar, underexamined, traditional, locally informed, international-led architectural scheme.

The ousting of the British run Anglo-Iranian Oil Company (AIOC) in 1951 resulted in the nationalisation of the company causing a growth in autonomous and nationalistic thought within the company. The event shaped how and why they became involved in the region at the time they did, but also dictated the form and function of the buildings to a large extent. While there were other catalysts, such as their previous works in hot regions, what they learned from similar cultures aided the form of these buildings. Their work in Africa gave them the experience to design such dwellings in Iran, and coupled with a new nationalistic outlook, this helped form a new architecture for oil-towns in the Gulf.

CJW’s work in the 1950s drew heavily from CIAM’s meetings and conversations with future members of Team X. Candilis had worked on the Unité d’Habitation in Marseilles, one of the most influential examples of social housing in twentieth century architecture, setting the tone for his career (fig 4.1; fig 4.2; fig 4.3). As a group, their ideology sought inspiration from the holistic ideal that aspects of the built environment incorporate different ‘fields of knowledge’, such as, geography, sociology, economics and architecture.\footnote{Avermaete, T. Ockman, J. and Available, N. (2005) Another modern: The post-war architecture and urbanism of CJW, (Rotterdam: NAI), p. 66.} CJW’s theoretical work with ATBAT is of vital importance due to their production of ‘inspired, innovative’ densely populated housing for Moroccan people.\footnote{Al-Ragam, A. (2017) ‘Negotiating the politics of exclusion: George Candilis, Housing and the Kuwaiti Welfare State’, International Journal of Urban and Regional Research, (41.2), p. 237.} ATBAT was a group originally formed to carry out the design and construction of the Marseille Unité d’Habitation (1945-52) with ATBAT-Afrique being the African arm of this collection of architects founded by Le Corbusier in 1947. In this same vein, their Moroccan work with Écochard influenced the regionally inspired style which they designed in, instigating various frictions between architects across the continent causing unsavoury accusations of plagiarism.
Figure 4.1 The plans of the interiors of the Unité d’Habitation (1952), showing the breakdown of the various scales. This is atomised into cells, clusters, stems and webs of CJW’s Abadan scheme but instead of primarily being low-rise, Le Corbusier built upwards. The same notions of habitat are at the core of both schemes, showing the Western implemented ideas being asserted in Iran. (https://en.wikiarquitectura.com/building/unite-dhabitation-of-marseille/)

Figure 4.2 The section of the Unité d’Habitation by Le Corbusier (1952) shows the combining of the cells together to make a high-density tall building (https://www.pinterest.co.uk/pin/331014641352096423/?lp=true)
CJW’s critical response to architecture in the Gulf was a retort to the European style architecture of company towns in the region. These had drawn from Garden City ideals and colonial architecture by people such as Sir Edwin Lutyens and latterly Wilson Mason and Partners (fig 4.5).257 This is specifically noted in the layout of towns such as Ahmadi (fig 4.4), covered extensively in Reem Allissa’s work, who explains these foundations and builds upon Crinson’s earlier work where he dealt with Wilson Mason’s building in Abadan.258 From their previous works in Morocco, the architects understood that most of the housing built for oil companies in previous decades focused entirely on Europeans and their style of living. CJW researched spatial arrangements of settlements in hot climates and noted traditional Arab urban forms, specifically looking at the urban fabric that made up the town and city.

Nationalisation of the NIOC was a catalyst for a social awakening of architects working in company towns. CJW’s critical response came from wider influences, such as Western architectural theory coupled with their own experiences as architects in the countries discussed above. The critical response utilising Western discourse is key, as the architecture is progressive in its style utilising little decoration, yet contradictorily, following traditional plans and circulations specifically for Arab and Persian workers’ families proceeding significant events which caused the make-up and function of the company to alter drastically. Their work falls into the wider remit of modern architects and planners attempting to construct a regional style influenced by tradition in a post-colonial environment, furthering the aesthetic and development of a typology specific to the region.

258 Alissa, Building for Oil.
Figure 4.4 Wilson Mason’s plans for Ahmadi (1947) segregated the workers’ housing from the industrial areas of the town adhering to Ebenezer Howard’s ‘Garden Cities of To-Morrow’ mantras, which they would have been exposed to when working for Lutyens in New Delhi. (BP Archives ARC 68422)
By beginning with an explanation of the architectural and historical context to the proposals, a clearer analysis of details in the plans, drawings and elevations will be obtained, showing how CJW’s critical response to architecture is a retort to previous European architecture in the region. It is important to understand CJW’s relevant projects that informed their designs for housing in Iran, this chapter will mostly focus on Moroccan projects and the work with ATBAT Afrique, when articulating the cultural and climatic elements of their designs but will also look to later works like the Freie Universität Berlin (1963) which articulate the ideas from this period with far greater clarity. Because of the lack of built context in company towns prior to the oil companies, understanding traditional architecture and urbanism in the region is important, due to this being a supporting factor in the final designs for CJW’s housing in Iran showing the crossovers between tradition and modernity.

Figure 4.5 Ebenezer Howard’s influential diagram of the Garden City, encouraging the segregation of industry from residential areas (1902). (https://scodpub.wordpress.com/2011/03/01/garden-cities-by-ebenezer-howard/)
2.0 Candilis-Josic-Woods’ Careers

Candilis, Josic and Woods all had well-recognised careers in their own rights, but it is the immediate context to their work in Iran that is of primary importance to the arguments of this chapter. When they were employed by ATBAT Afrique, Candilis and Woods worked to solve problems relating to the rapidly urbanising population of Morocco. 259 Primarily, the focus of these solutions was to produce new social housing stock to accommodate those either moving from rural areas to the city, or for growing families. 260 Both Candilis and Woods held senior roles in the ATBAT office at Casablanca, Candilis assuming directorship in 1950 and Woods joining ‘months later’ as ‘daily leader of the office’. 261 The following years formulated climatic and cultural research for their housing in Iran; the company town setting in which they were designing had little previous cultural precedents to work with, forcing them to use their knowledge of social housing in similar areas in which they worked previously. Candilis imitated designs by Écochard, which would provide sounding boards for projects in Iran designed for oil company workers. 262

2.1 There are numerous design and spatial similarities between Candilis and Woods’ work in Morocco with CJW’s proposals in Iran. By analysing the plans and elevations of their Casablanca work in projects such as Carrières Centrales (1952), it becomes clear how their research and cultural resonance manifested itself within their architecture. The notion of habitat was heavily debated throughout the fifties at the CIAM conferences, in the ATBAT offices and within Candilis’ publications. Avermaete utilised Candilis’ writings within his book Another Modern: The post-war architecture of Candilis-Josic-Woods (2005) to assert the debates around the definition of habitat. He says:

*The concept that epitomises most clearly the ATBAT approach to dwelling is habitat du plus grand nombre or in short habitat. Candilis wrote...: ‘Habitat for the Greatest Number’, a notion without scale, implies an original way of thinking. The statistics are replaced by the facts.* 263

Underpinning Candilis and Woods’ work in Morocco, and subsequently CJW’s in Iran, was this notion of the creation of habitat, advancing on the previously established Athens Charter (CIAM 4, 1933). Le Corbusier introduced the idea, or ‘vague concept’, of habitat at CIAM VII (1949) in Bergamo which caused debates and framed the future works of Candilis in particular. 264 Coupled with this, was the idea of *Habitat pour le plus grand nombre*, a notion surrounding cities and densely populating areas retained throughout CJW’s work. This idea was initially presented at CIAM 9 (1953) in Aix-en-Provence by the GAMMA group, consisting of Victor Bodiansky, Candilis, Écochard, Henri Piot and Woods, its form manifested itself within the Iran housing scheme. 265

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259 Ibid. p. 236; & Avermaete, Ockman, & Available, Another Modern, p. 139.
260 Ibid. p. 139.
261 Ibid. p. 134.
263 Ibid. p. 139.
264 Avermaete, Ockman, & Available, Another Modern, p. 139.
Figure 4.6
Northumberland Terrace in the Byker Estate, by Ralph Erskine looked to adopt notions of habitat within its architecture (1969-1982). (https://municipaldreams.wordpress.com/2013/03/19/the-byker-estate-newcastle/)
Debates surrounding ‘habitat’ persisted, with discussions about the creation of a ‘Habitat Charter’ intending to replace CIAM’s Athens Charter never coming to fruition. The Habitat Charter, supported vehemently by the younger members of CIAM such as Candilis and Bodiansky, was born out of the desire for CIAM to recognise that the post-war urban landscape had changed beyond recognition from the period when the group was founded in June 1928. Eric Mumford’s work on the CIAM discourse summarised the difference between dwelling and habitat as such: ‘The majority of the world’s population could ‘dwell’. Habitat… ‘should be a permanent contract between society and the individual, with reciprocal rights and obligations.’

The notion of habitat was focused on more greatly after the formation of Team X. Schemes in Europe to engage with in this era included the Smithsons’ unrealised plans for the Golden Lane estate in London (fig 4.7), and inspiration for Ralph Erskine’s later Byker Estate in Newcastle-upon-Tyne (fig 4.6), which like CJW’s Abadan work, forged a habitat.

Candilis and Woods’ Casablanca work informed their beliefs for the foundation of Team X and its ideologies alongside European examples of dense housing in places such as the Unité d’Habitation. The similarities between the Casablanca and Iranian housing schemes imply that the creation of ‘habitat’ in Iran must have also influenced Team X’s ideologies. Écochard continued to influence their work through the founding of the CIAM Morocco group.

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2.4
(CIAM Maroc), in turn becoming ATBAT Afrique and latterly the GAMMA group; CIAM recognised all three. Aziza Chaouni, in a paper presented in 2008 titled Deopoliticizing Group GAMMA, pointed out that Écochard introduced a work methodology deeply rooted in the local specificities of Morocco, resting on the concepts of social and physical characteristics of the local context informing design. Ultimately, Candilis and Woods took inspiration from Écochard and his advocacation of tradition melding with modernity.

Candilis conducted in-depth site analysis in Morocco, desiring to rebuild the bidonvilles, or squatter settlements, by providing a new ‘gridded structure of streets, utility lines and one-storey courtyard houses’. Much of what he learnt in the sub-Saharan Africa in the ‘Kasbahs’ was utilised in Iran with buildings of more than four-storeys. These low and high-rise dwellings (cité horizontale and cité verticale) were arranged within wide open spaces, allowing for public activity and market stalls to proliferate. Candilis paid attention to the Carrières Centrales (fig 4.8; fig 4.9) in Casablanca, analysing intended occupants’ origins from the Atlas Mountains, where villages are ‘composed of high, earth-built dwellings’. However, Chaouni suggested that Candilis’ vertical designs, as photogenic as they were, were entirely superficial, as the Kasbahs he drew inspiration from actually existed in sub-Saharan Africa, not in the Atlas Mountains where 70% of the future occupants would be from. Much of Écochard’s research in this period focused around the patio and courtyard as a reference point to retain ‘cultural appropriateness’, something which became crucial for Candilis in his adaption of stacking the courtyard, to create a vertical Kasbah.

The Smithsons argued that the work by ATBAT in Morocco, focusing entirely on the contributions of Bodiansky, Candilis and Woods, were that their buildings:

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\text{manage to be African, and yet not be simply an academic restatement of traditional African forms, and they do not try to ignore the existence of the dynamic technology and aesthetic of European architecture of the immediate past, especially Le Corbusier in the 1920s. Yet they do not copy that either. A genuine new image has been created but it exists in isolation and the architects are being given no further opportunities to extend the pattern.}\]

Al-Ragam pointed out that Candilis’ work in Kuwait – similar in format to the Carrières Centrales (fig 4.10; fig 4.11) – was in fact an evolution of his urban philosophies, which she argued as being a different reading of the partnership as ‘one body’, as asserted by Avermaete suggesting the research and backing of the designs came from other sources.

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272 The transliteration system is used except for the names of individuals where an official spelling exists or of the word is Latinised, like ‘bazaar’.
275 Ibid. p. 67.
276 Ibid. p. 67.
278 Al Ragam, ‘Negotiation the politics of exclusion’, p. 236.
^ Figure 4.8 Cité Verticale, Carrières Centrales, 1953. The balconies with high walls enabling an outdoor lifestyle while retaining the privacy so central to Islamic life, supposedly drawing from the courtyard house traditional to north Africa and the Middle East. Also note the similarities to the vernacular architecture Candilis took inspiration on in the Kasbahs ('Colonial Modern: Aesthetics of the Past Rebellions of the Future', in Third World Modernism, p. 25.)

> Figure 4.9 Cité Verticale, Carrières Centrales sketch from author’s notebook, when trying to understand the forms of the building (author’s notebook, 2016)
^ Figure 4.10 Plan for the Cite Horizontale, Carrières Centrales showing the rigid, interlocking nature of the cells making the cluster and webs, 1953 (https://www.pinterest.co.uk/pin/103790147221098446/?lp=true)

> Figure 4.11 Similarities and differences between Carrières Centrales and CJW’s work in Abadan are shown here, with a clear centre and sprawling low-rise housing moving into the distance. The photograph is likely to have been taken by Michel Échochard. in c.1953 (Wikipedia)
The Taj Theatre in Abadan by Wilson Mason, the design showing the strong European connection to architectural tradition there with few hints towards the location in the Gulf (Building Journal, 1949)

The plan form of the Taj theatre in Abadan, following a similar layout to the typical Western theatre at the time (Building Journal, 1949)

The sections and elevations of the Taj theatre in Abadan shown in the Building Journal from 1949 (Building Journal, 1949)
Chaouni argued that Candilis, with the support of Moroccan architect Elie Azagury, ‘pleaded’ for dense vertical housing for Muslims ‘who, according to him, simply wanted ‘low-rent public housing like everyone else’, in opposition to Écochard’s low-rise, one storey units. Chaouni suggested that his recommendations for these were purely aesthetic, and that they were successful in gaining him plaudits following their presentation at CIAM 9, despite the lack of support from the GAMMA members. Following this, there was a notable uprising of interest from architectural magazines in Morocco and the Smithsons even suggested that the work at Carrières Centrales (fig 4.10) was the best work since the Unité d’Habitation. The Carrières Centrales continued this utopian vision and extended the ideas of habitat from the CIAM conferences. Unlike neighbourhood plans by Lasdun, Fry and Drew, or those by Lock in Iraq, the neighbourhood was less high-density, with taller buildings (fig 4.5) central to the plan. There were also the low-rise neighbourhoods, built on a more orthogonal layout than CJW’s in Abadan in the way the housing moved away from the centre of the complex (fig 4.8; fig 4.9; fig 4.10; fig 4.11).

Abadan

Wilson Mason and Partners had largely planned and designed much of the housing and leisure buildings in Abadan, such as cinemas (fig 4.12; fig 4.13; fig 4.14), within the town providing the architectural context. The AIOC dictated to Wilson Mason their preference for European-styled housing for their European workers, rather than allowing the architects to provide new research into climatic and sociological conditions that would have made for a more regional architecture. For example, the building of Braim (fig 4.15) and Bawarda, areas of Abadan, was specifically for higher-management within the company. The racially demarcated hierarchy of the AIOC encouraged a racial and xenophobic element to the designs of these houses. Bawarda, being newly designed and intended for a specific class of European, exhibited certain styles and sizes of houses usually set within their own large plots of land utilised for cultivating plants and trees that would grow in arid conditions. The architecture produced in this period represented the desires of the company, causing disruption in Iran during the early 1950s and forcing architects to become critical of imperially influenced work within the region.

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279 Chaouni. ‘Depoliticizing Group GAMMA’. p. 64.
280 Ibid. p. 69.
281 BP Archives, documents relating to housing within the company.
These houses included traditional features likely drawn from Arab or Ottoman architectural examples, such as brick archways into a wide loggia providing a shaded space in front of the garden, or in the design of courtyard dwellings intended for the servants of lower-ranked, European, company workers who lived in blocks of flats. The circulation of the Western styled houses is typical of European dwellings. Spaces within the earlier houses corresponded to various aspects of living, something which Drew’s article in *Architectural Design* in 1957 discussed and CJW’s plans sought to alleviate.\textsuperscript{283} They primarily split the house into a living area and a core service area utilising outside space where possible, even when building upwards, with external patio areas dominating the exteriors (fig 4.16).

Figure 4.16 Wilson Mason and Partners' floor plan for a block of flats in Abadan showing the segregated nature of the building with the servants' courtyard far away from the living area, 1935 (BP Archives: ARC 67525)
Figure 4.17 An example the AIOC provided of the ‘hovels’ Iranian people lived in, near an oilfield near Masjed-i-Soleyman; clearly, these are typically constructed dwellings made from al-tub and easily found materials. They have thick walls to retain heat during the cold nights, and small window openings to ensure privacy and that direct sunlight does not get into the interiors: these ad hoc developments are similar in form and construction to the bidonvilles Candilis and Woods observed in north Africa at this time. (BP ARC 68184 Anglo-Iranian Oil Company, (1952) AIOC Workers’ Terms Bettered Iran’s Labour Law. (London: AIOC))

Figure 4.18 This is what the AIOC believed was a positive act, in the construction of temporary dwellings for Persian oil-workers so they did not have to live in ‘hovels’. (BP ARC 68184 Anglo-Iranian Oil Company, (1952) AIOC Workers’ Terms Bettered Iran’s Labour Law. (London: AIOC))
Geopolitics: AIOC Nationalisation

3.3 The work of ATBAT, GAMMA and CIAM Maroc contradicted the conservative views of the French colonial administration ‘which ignored native problematic’.\(^{284}\) Similarly in Iran with the AIOC, Candilis built something he believed was native to either the desert or the way people lived.\(^{285}\) Prior to their arrival, various sources suggest that housing for Iranian staff, specifically in places run by the AIOC, did not meet humane requirements.\(^{286}\) In the context of CJW’s arrival, these events and surrounding architectural context ensured that there was a social problem for the architects to solve.

Discrimination towards Iranian staff within the company, from a housing perspective, was the physical manifestation of the attitude of the AIOC towards its workers. An Israeli employee of the AIOC explained that between 1944 and the events of 1951, many Iranians lived outside under trees for the ‘seven hottest months of the year, in the cooler months, they moved into big halls built by the company’, demonstrating the AIOC’s awareness that there was a housing issue among the Iranian staff, but not adequately solving it.\(^{287}\) The company architect, James Mollison Wilson, suggested that the ‘disparity in housing’ between British and Iranian employees served as a ‘real barrier’ between the two nationalities.\(^{288}\) Rasmus Christian Elling cited that the Iranian workers lived in unplanned ‘shantytown’ housing around the periphery of the European workers’ planned areas.\(^{289}\) In 1947, the AIOC consulted Page on the townscape of Abadan, which invariably concentrated on areas where Europeans dwelled; his work focused specifically on beautifying the areas but in an ecologically efficient way.\(^{290}\) Sources suggest that the company were aware of the divide between the treatment of its employees based on nationality and did little to assuage the situation.\(^{291}\) Dissent had previously been prominent among Iranian oil workers; knowledge of unhappiness within the AIOC and its workers was known by senior staff and attempts to remedy it were met with disdain and strikes.\(^{292}\)

3.5 Iranians viewed the AIOC as a company disguising colonisation, which were resistant to change and unwilling to improve Iranian concessions. Resentment grew throughout Iran because of its archaic ideals and maltreatment of Iranian workers. In 1952, a document was published by the AIOC entitled ‘AIOC Workers’ Terms Bettered Iran’s Labor Law’; the opening paragraph reads:

\textit{Allegations have been hurled at Anglo-Iranian Oil Co. Ltd. Charging imperialistic exploitation of the Persian worker – that little had been done to improve the lot of local labor, reputedly badly underpaid, inadequately fed, and poorly housed.}\(^{293}\)

\(^{285}\) Ibid.
\(^{287}\) Ibid. p. 86.
\(^{288}\) Ibid. p. 87.
\(^{289}\) Elling, ‘War of clubs: Struggle for space in Abadan and the 1946 Oil Strike’, p. 189.
\(^{290}\) BP ARC 44400, Page, R. \textit{Notes on the Planning and Planting of Open Spaces in Abadan} (Report)
\(^{291}\) BP ARC 68184 Cheng, B. (1951) \textit{The Anglo Iranian Dispute}, (London: Under the auspices of The London Institute of World Affairs)
\(^{292}\) Elling, ‘War of clubs: Struggle for space in Abadan and the 1946 Oil Strike’, pp. 189-211.
\(^{293}\) BP ARC 68184 Anglo-Iranian Oil Company, (1952) AIOC Workers’ Terms Bettered Iran’s Labour Law. (London: AIOC)
The article used two images to contrast how well they thought they housed workers, showing the ‘hovels’ of Masjid-i-Soleyman that Iranians lived in contrasted to the temporary modern housing development the AIOC built ‘before being ousted’. Gradually, politicians including Muhammad Musaddiq, a lawyer who led the National Front coalition, grew in prominence, increasing political pressure on the AIOC through a nationalistic style of politics which asserted that Iran did not need the oil industry and would be content with an economic setback from the AIOC’s ostracization. Abdelrehim argued that the AIOC exploited Iran because vast wealth creation occurred at one end of the socio-economic spectrum contrasted with mass-poverty at the other. He said that ‘this may explain how rich and powerful countries have monopolistic power… and how they exploit wealth and poor countries through economic and political methods, resulting in unfairness in income distribution, discrimination and political repression’ (fig 4.17; fig 4.18). Musaddiq sought to rectify this through ending Iran’s subjection to foreign powers, criticising the AIOC in particular for not ‘contributing to the Iranian economy ‘as might be inferred from the fact that Iranian oil workers lived in hovels.’ The drive to end the oppression of the AIOC by political forces such as Musaddiq occurred throughout the unrest of the 1950s with change, particularly in housing, manifesting itself in new architecture that offered a critique to the previous imperialistic European style buildings constructed by Wilson Mason and Partners, who had acted on the design brief from the AIOC. 

Figure 4.19 Elevations of houses for Kharg Island and Abadan, 1956 (Shadrach Woods Archive: Box 05 Folder 03B; and author’s own drawing based on the above)
Candilis-Josic-Woods’ Housing Scheme in Iran

In defence of CJW’s practice of recycling of ideas from Morocco, Shiber argued that:

Although such Arab cities as Tangiers and Kuwait or Hofuf and Rabat are thousands of kilometres apart, yet a definite similarity, resemblance and continuity of urban form and architecture unites and relates Arab cities, stamping them as distinctly Arab… the general urban and architectural ‘idioms’ are the same.\(^{298}\)

Referencing the formation of Kuwait, Shiber showed that the principles remain the same for CJW’s housing scheme in Iran, with regards to the formation of the Arab city and the similarities between the cultural and climatic aspects in which they designed for in Morocco and then in Iran. There is no reason to suggest that the prominent global planning ideologies at play within the project for housing in Abadan, Iran, are out of place within this project. Without correspondence and written reports backing up the drawings and models for CJW’s work, inferring information from other sources and projects is necessary to gain adequate understanding (fig 4.19).

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\(^{298}\) Shiber, *Kuwait Urbanization*, p. 15.
The case study cities chosen for this thesis all exhibited comparable features at one time or another; this is due to similarities in the geography, climate, culture and topographies. CJW, Lock's work in Ubullah and Fry Drew and Partners' work in Gachsaran, are examples of regionally designed (traditionally influenced), urban environments created from a tabula rasa (barring previously designed European work, or bidonville type settlements); when DA planned Baghdad, they researched typologies from the city and its environs. When Kuwait City was the subject of MSM's utilitarian plan they had existing fabric to work with, despite the plan's destruction of this tangible link to the past. CJW's urbanism in Iran was undoubtedly borne out of their works in north Africa as well as European theories and ideologies which emanated from groups such as Team X and CIAM. The most important theories being those concerning themselves with the 'stem' and 'web' or 'mat-building', all of which are popular terminologies within both primary and secondary literature. With CJW's work in Iran defined by this low-rise, high-density building concept, which was then utilised in other schemes in the Gulf, such as the Smithson's proposals for Kuwaiti government buildings as part of the Colin Buchanan plan in 1971, also dubbed mat-buildings (fig 4.20).

Candilis-Josic-Woods' Housing Scheme: Elevations and Scales

As established, CJW's oil worker housing was informed by traditional forms and spatial syntaxes, found within Arab and north African styles of housing. The catalyst for the production of such plans in Iran was the nationalistic undercurrents that forced the deposition of the colonial AIOC. The Iranian work produced by CJW was a departure from their north African work by responding to this geopolitical context, rather than focusing on advancing European architectural theory as they had done in Casablanca. The housing study departed somewhat from other ideologies of the time relating to the early iterations of 'mat-building' philosophies circulated by architects such as Écochard, despite CJW going on to produce one of the most celebrated examples in the Freie Universität Berlin. While they did build low-rise housing, they also built upwards with the proposals for flats with several storeys, like the Carrières Centrales and the Cité Verticalè in Morocco, with balconies, high-walls and flexible spaces designed for ease of alteration as families grow and their needs change.

CJW's architectural focus in this period was more on the function of the dwelling through spatial configuration, but the final aesthetic and overall appearance is typical of other European modernists designing in the tropics or Middle East at this time. The facades of the housing, from the limited images available in the Shadrach Woods Archive, follow a similar rationale to those designed by Lock, Fry Drew and Partners and Roth through using little motif or ornamentation, and focusing upon keeping light out of central areas of the dwelling (fig 4.22). As such, there are few large openings on the outside, ensuring privacy. The housing's scale, as visible from the street, is clear through the elevational drawings with the inclusion of trees and people, highlighting that these are single storey dwellings typical of the scale of traditional organic development in the Gulf.
Urbanism: Webs and Stems

To understand the primarily visual aspect of CJW’s work in Iran, an assessment of their writings and other architectural projects is paramount. The aim was to create a habitat challenging the Athens Charter’s primary notions. Key words commonly used in these brief captions are: ‘stem’, ‘web’, ‘cluster’ and ‘cell’, each with its own definition and constructed architectural theory, mostly debated among CIAM and Team X members from the mid-twentieth century, meaning the definition of them is consistently imprecise; subsequently, the words grew in popularity throughout the discourse over the ensuing decades. Synthesised as one, these scales create something similar to the later concept of mat-building, which did not relate to a specific building type but rather to a design scale ‘somewhere between architecture and urbanism’.

Webs

Woods said that the ‘web is a polycentric environmental system in that many individual actions focus attention on peripheral locations’ providing a new avenue of spatial configuration for the members of the future Team X to discuss in their breakaway meetings held at CIAM conferences. Woods explained the organisation of interconnected places that invited a range of activities, which in turn he believed, was constructed through the ‘web’. Avermaete suggested that CJW’s concept of the web was an investigation into the possibility of designing a system that allows for relating different practices and programmes into a continuous patch of urban tissue. The key issues promoted by Woods with regards to the ‘web’ concerned the improvement of flexibility within its core design allowing for ‘mobility for the rapid growing society’ and rethinking the idea of centrality to a city through the notion of zoning and using more of the periphery. Regarding flexibility, Woods stated that ‘the plan of a housing scheme may be based, for example, on a pattern of movement valid to-day. In 10 years, the pattern of movement will almost certainly change. The plan will then tend to re-establish a new validity for the new pattern. This possibility must be conserved. The door to the future must be left open.’ Physically, the idea of the web comes from the French sociologist Paul-Henry Chombart de Lauwe’s work through analysis of European cities and asserting that the urban fabric was complex and diverse. Overall, Avermaete asserted that the web organised an area through the creation of a network of circulation and support systems that would unify diverse activities, thus providing flexibility and planning for a range of functions over time, ‘assuring its own longevity.’

Webs appeared to work on various scales, with the micro-scale informing the macro and the wider forms of the web and stem theories discussed by

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300 Ibid, p. 271.
301 Ibid, p. 36.
304 Ibid, p. 36.
306 Avermaete, ‘Stem and Web’, p. 266.
Figure 4.21 The pinwheel shape of the cluster of four separate dwellings (1956), similar in form to Lock’s house Type E and House Type F for the Ubullah plan (fig 3.38) (Author’s drawing, based on Shadrach Woods Archive: Box 5 Folder 3A)
CJW throughout their work. This example of utilising the Moroccan schemes as inspiration further added to their research regarding mat-buildings as shown in the Iranian housing study. There are various similarities between this and the Smithsons’ notions of the house as a ‘microcosm’ of the city in terms of its spatial organisations and patterns of movement. At the smallest scale, each unit interlocked with the next through a courtyard based around a servicing core that created a pinwheel shape (fig 4.21). The cells interlocked together to create a cluster surrounding a central courtyard. Each separate cluster of houses created a landscaped block which when read as the whole development shows the various types of webs and stems created within the project.

Physically, the web appeared within the housing studies for the NIOC as a rethinking of the ‘Arab city’ and utilising the physical concepts of low-rise ‘mat-buildings’ that dominated much of the Team X discourse (fig 4.22). The macro webs CJW created for the NIOC directly related to the micro level pinwheel shaped floor-plans. Unlike future mat-buildings, such as the Freie Universität Berlin, the scale of these webs was much smaller and focused on clustering groups into one around one large central courtyard. Segregating, or zoning, each web into clusters of ten cells allowed for forty units to live around one central area, all with access to their own private space within the house, but also with the public space central to the web and vital pathways to link each cluster.

With relation to urbanism, the Arab city, and its typical styles and typologies, the housing study for the NIOC differed in that it is orthogonal, opposing the ad hoc fashion and nature of the urban grain depicted in towns and cities in the northern Gulf region. Stephen Gardiner, the British architect who once worked in Wells Coates’ office, articulated the traditional urban and dwelling form of building concisely in his book *Kuwait: The Making of a City* (1983) by saying:

> The setting for the old way of life was typical of the region: narrow streets, with courtyards and houses closely woven together. The houses looked in on themselves onto the courtyards at their centres, not outwards, fronting onto the street like in the West. Both forms arise from climatic influences.

In great similarity to European towns and the centrality of churches, the mosque, as a landmark, is the centre of the town and is thus visible from all around (fig 4.22). Similarly, in the housing scheme which CJW proposed for Abadan, the taller buildings are central to the plan with a mosque placed in view of the wider development with the shadow of the minaret casted towards the west (fig 4.23). This shows the adherence of Islamic culture considered within the urban design, thus making it culturally appropriate and acting as a culturally critical response. In contrast to earlier European designs, Wilson Mason and Partners zoned Abadan and created familiar streetscapes, like those created in the Garden Cities or cities planted by the British Empire, rather than creating a focal point of the wider

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308 Al-Ragam, ‘Critical nostalgia’, p. 11.
310 Shiber, *Kuwait Urbanization*, p. 16.
Figure 4.22 Candilis-Josic-Woods’ housing scheme plan model for Abadan with housing surrounding the outside forming the Webs and Stems with the Mosque and its Minaret prominently at the centre of the model, 1956 (Shadrach Woods Archive: Box 05 Folder 03A)

Figure 4.23 A section of the cluster plan from Candilis-Josic-Woods’s Abadan plan which shows the minaret at the centre of the image, 1956 (Shadrach Woods Archive: Box 05 Folder 05)
Theoretically, Woods believed that the cell, cluster, stem and web all proceed from a ‘core’. The core, Woods stated, is expressed as a fixed point within the general scheme, in this case the minaret is in the physical centre of the development. Within each streetscape, there was no definable centre whether it be topographically or defined through the construction of tall buildings, making their designs unsympathetic to the surrounding region.

Shiber’s work suggested that the ‘general urban and architectural ‘idioms’ are the same’ with regards to Arab typologies across the Middle East and north Africa; it is possible to argue that in fact there are few detractions in a regional sense owing to much of the research for the web model coming from previous housing schemes in north Africa. Curtis contrasted Shiber’s earlier opinion of the homogeneous nature of Arab architecture as being a positive thing, by saying that ideologies such as these contravened the notion of identity, which they viewed as being at stake as ‘pan-Islamic sentiments could be manipulated to imply a community of culture between Morocco and Manila.’

Allied with the concept of the ‘web’, is the ‘stem’, which Dina Krunic described as a ‘device that structured dwellings and produced architectural form, as well as spacing urban development’. Acting as a generator in the broad concept of habitat, the stem is considered as a link between additive cells providing an environment for which individual cells may function. In an article by Woods called ‘Stem’ published in Architectural Design in 1960, he articulated his theory that the stem ‘resembles a capillary distribution system’, which Krunic concluded is an ‘attempt to capture formal characteristics of a street for a new concept of urban design’ allowing ‘change and growth’. Avermaete has suggested that the web was ‘thought to be a more homogenous system than the stem, permitting limitless development of an area and organising it by a network of circulation and support systems that would unify diverse activities.’ The thinking behind the stem branched from the critical response to Le Corbusier’s attack on the street, who viewed it as being ‘no more than a trench, a deep cleft, a narrow passage.’ The articulation of the ‘stem’ as a concept began after CJW’s work in Iran, although the articulation of space has parallels with these associated theories. This was always the case with their buildings due to the working relationships with Écochard, as well as the younger architects in CIAM. The uniqueness of the project for the time goes someway in suggesting the overall importance of these thoughts and proposals as being greatly significant within the canon of Western architectural thought.

CJW’s proposals for the NIOC in 1956 formed a physical manifestation of their burgeoning ideologies regarding urbanism and housing demonstrated through concepts such as the ‘stem’ and the ‘web’. Within the one

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313 Curtis, Modern Architecture Since 1900, p. 585.
316 Ibid. p. 161.
317 Avermaete, ‘Stem and Web’, p. 266.
development previously assessed, shown in figure 4.22, there is a clear amalgamation of these concepts within one project. Basing the stem around the notion of a re-thinking of the street, it becomes a linear development of the ideas surrounding clusters and webs; but instead of allowing for continuous circulation, it promoted a more ‘private’ way of living rather than the web, or what was to become the Mat’s, more public elements of living. Both the building of the ‘web’ and the ‘stem’ rely on a modular system of construction and a rethinking of the traditional Gulf dwelling, and subsequently Arab urbanism, becoming more Euclidean through designing using modernist theory and geometric principles.

This same concept, which the Iran proposals exemplify, became utilised within CJW’s Freie Universität Berlin in 1963 (fig 4.24), the Smithsons’ Mat-Building unrealised proposals for the Kuwait government in 1968 and Le Corbusier’s unbuilt proposals for the Venice Hospital in 1965. The proposals are an early conception of mat-building and while the articulation of the theory occurred later within the architectural press through publications such as ‘How to recognise and read a Mat-Building’ (1974) by Alison Smithson, the thinking and design was completed in the mid-1950s with
competing concepts of ‘web’ and ‘stem’ within the same proposals. The concept is dependent on the successful physical integration of singular modules, or units, which enable flexibility in their designs and can be added to or taken away with significant ease. In the case of later buildings, this was the case certainly with the expansion of the Freie Universität Berlin with new buildings by Foster and Partners inserted between the original CJW buildings (fig 4.25), making use of the interior spaces they designed.

The inclusion of early thoughts on mat-buildings demonstrated that the NIOC proposals sought to produce a regional style of architecture that functioned climatically and culturally from both a north African and European ideological context. The urbanism strategy employed sought to rethink the layout of the Arab city in a recognisable yet more orthogonal way, ensuring maximum flexibility within buildings. Unlike earlier oil-town building, landscaping appeared to be better considered with the inclusion of green-spaces and trees surrounding housing (and within the private courtyards), thus demonstrating consideration for the environment and shade requirements, something which Page had advocated in 1947 for the townscape of designated European areas in Abadan.

Iran Housing: Plans and Circulation (Clusters and Cells)

The wider layout of the plan is dependent on the micro-scale of the house due to the configuration and of each cell enabling elements to fit together. The basic plan form of the house benefitted the families from Arab countries and Persia due to the provision of outside space and the division of interior space. On this micro-scale, CJW utilised cells to create clusters in both the horizontal and vertical developments proposed in Iran. Kevin Lynch used the word ‘cluster’ significantly in his article ‘The Form of Cities’ in which he stated that city possessed size, density, grain, outline and pattern, shaped by the people who live and use it every day. Similar to the development of mat-building, the notions of cluster and cell utilised within the Iran housing project pre-empted much of the discourse surrounding housing

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320 Page, Notes on the planning and planting of open spaces in Abadan.
Figure 4.26 A four room junior staff house for the oil company SEFRI at Kharg Island, showing the low-rise form with the elevation at the bottom and how each cell interconnects, 1956 (Shadrach Woods Archive: Box 05 Folder 06)
and layouts within the following decades with these terms remaining fluid throughout.\(^{322}\) On the micro-scale, obvious cultural elements become apparent and it is through drawings and limited captions with images placed within the wider context of CJW’s career that the cell informs the cluster which in turn creates the web or the stem in which the cell and subsequent cluster are located within. The synthesis of these four forms created habitat.

CJW’s oil-worker housing study was founded on a development based on a ‘cluster’ housing model.\(^{323}\) The cluster was another element of housing design that became synonymous with CJW. There are clear references to the cluster within their captions on photographs of their working models and drawings. The Iran project was an early use of the term ‘cluster’ and contradicted some of the previous work completed on CJW. Krunic’s article focused on the Freie Universität Berlin (1963), within which it is claimed that they developed both cells and clusters within their drawings and diagrams for housing in Aulnay Sous Bois, France (1960) and in a competition for semi-urban housing in Algeria (1960).\(^{324}\) Importantly she adds, albeit in the endnotes of the article, that ‘there is no writing that synthesises cells and cluster as clear concepts by Woods himself; they are treated as intermediate concepts that led to the development of web’, though his architectural work is a clear enough articulation of these concepts.\(^{325}\)

While it is possible to argue that this is the case for published written word, the articulation of concepts for cluster and cell within the proposals for Iranian housing in both Abadan and on Kharg Island are inherently obvious which he also made clear in Team X meetings.\(^{326}\) The study of each individual element always related to other parts, thus ensuring their body of work as a synthesis of these concepts. Walls define the spaces within the cells, the space within is open in its interpretation for how it is utilised and for its own circulation (fig 4.26). The division of space within the cell is crucial to its functionality and cultural appropriateness. There is little difference between the layouts of the low-rise cell alongside the stacked version as well as seen in their high-rise apartments. Provision of outside space is generous, with almost half of the cell constructed as a courtyard.

The servicing core protruding from the courtyard enabled the cell to interlock with other cells creating a cluster. This synthesis of cell and cluster is important due to cultural considerations not provided for Persian and Arab workers by previous Western architects. The use of the cell and cluster as a Western imported ideology for use within the culture and climate of the Gulf provided both a testing ground for architectural treatises from Europe in the creation of new cities, but also a watershed moment in the creation of a regional architecture for the Gulf intended for migrating families from non-Western nations. Alison Smithson summarised the need for a ‘functional’ architecture in discussing the ‘cluster city’ by stating that the ‘word functional does not merely mean mechanical, as it did thirty years ago. Our functionalism means accepting the realities of the situation, with all their contradictions and confusions, and trying

\(^{323}\) Box 05_Folder 03A, Shadrach Woods Archive: image caption on reverse of photograph of the model utilised as the housing study.
\(^{325}\) Ibid.
to do something with them.\textsuperscript{327} It is these ‘contradictions and confusions’ wherein several issues lie, generally discussed through the concept of regionalism and latterly critical regionalism in the writings of Liane Lefaivre and Alexander Tzonis.\textsuperscript{328} An issue at large is the notion of providing a regional style of architecture, through the lens of Western architectural theory rather than allowing the buildings to appear ad hoc and in the urban grain and format that they had allowed for in previous centuries.

\textit{Function}

CJW placed prime importance on social and climatic issues within their diagrams for housing studies in Abadan and Kharg Island. The diagrams show the various phases of the day and night intended usage for the spaces, as informed by the living patterns of those in the Gulf, or more likely, from north Africa due to the similarity in the provision of maximising outdoor space (fig 4.27). The diagram depicts each family member and their daily occupation, in French, it stated:

\begin{quote}
\textit{La coupe montre:}
- \textit{Le jour: l’Homme va a son travail}
- \textit{La femme travaille a la maison}
- \textit{Les enfants jouent dans le patio, bien surveilles.}

\textit{La nuit: repos en famille sommeil}
\end{quote}

The cut shows:
- The day: the man goes to his work
- The woman works at home
- Infants play in the patio, well watched
  At night: the rest of the family sleep\textsuperscript{329}

\textsuperscript{328} Lefaivre and Tzonis have formed an extensive literature discussing regionalism and Critical Regionalism since their inception of it in 1981 in ‘The Grid and the Pathway’.
\textsuperscript{329} Candilis, G. Diagram for Living Units. (Shadrach Woods Archive: Columbia University) Box 05 Folder 03B.
The space, its function, what times of day elements are used, are all delineated through the graphic and description. In 1947, Page observed the way in which Persians lived their lives by stating that ‘much of life is lived out of doors provided that complete privacy is obtainable. The typical Persian compound is an all-purpose open-air room’, perhaps hinting at disdain with the architecture of preceding decades in the Gulf.330 When analysing historic Kuwaiti dwellings, Gardiner said that the ‘traditional Arab house was inward looking and private, expanding around the courtyard for air and shade.’331 He added that the arrangement of a house in ancient Mesopotamia four or five thousand years ago was a direct expression of the best way to live in a hot climate.332 He added that there were no embellishments, buildings were functional and a ‘bare shelter’ for life.333 CJW opted to provide something like what Page had mentioned, whilst providing additional amenities through the central servicing core, the consideration of the formation of the space and the exterior urbanism aspects to the housing. Through this, CJW inadvertently designed traditional Mesopotamian homes for modern Iranians to live in, adhering to established Western thought.

There were numerous methods in which CJW fused the cells together to create clusters. Unlike later European clusters, such as Denys Lasdun’s flats in Bethnal Green, Keeling House (1960), (fig 4.28), the clusters CJW designed were entirely private for the intended occupiers. Despite the servicing core appearing to be an interrelated space in many places. The benefits the clusters brought to the Gulf style of living was that the architects provided spaces in a dense building project incorporating ‘Housing for the Greatest Number’, the concept earlier used in Morocco by Écochard. Clusters formed an integral part of the web and the stem, and while they exist in different forms elsewhere in the world, by CJW or the other members of Team X, these are specifically for the NIOC and its Arab and Persian workers.
Figure 4.29 The diagram shows Candilis-Josic-Woods’ diagrammatic thinking regarding the patio flats in Iran with cultural and climatic indicators throughout, 1956 (Shadrach Woods Archive: Box 05 Folder 04)

Figure 4.30 Candilis-Josic-Woods’ facades for the patio flats in Iran (designed by Candilis), related to the above diagram, 1956 (Shadrach Woods Archive: Box 05 Folder 04)
There are stark similarities between the taller buildings CJW proposed in Iran, their previous works in Morocco in collaboration with Bodiansky and European housing projects such as Lasdun’s Bethnal Green ‘cluster’ housing, a near contemporary to both the Moroccan and Iranian projects following its completion in 1958. The Carrières Centrales’ Cité Verticale is a clear reflection of the CIAM discourse and the new ideas within architecture with a focus on regionalism. The Iranian flats are a clear iteration of the utilisation of clusters within a high-rise building for dwelling in (fig 4.29). Previously utilised building techniques, such as the use of high-walls and patios stacked in irregular formation allow for maximum daylight into the flats while still retaining the necessary shaded areas for families (fig 4.30). The high-walls and covered spaces ensure that climatically and culturally the flats are liveable for the intended company worker occupiers and their families.

One of the few similarities between CJW’s dwellings for the NIOC and those of the company’s previous iteration (the AIOC) are the climatic qualities asserted in the facades and elevations. Buildings built in the 1930s by Wilson Mason and Partners in restrained neoclassical style, featured small amounts of ornament in places; they adhered to climatic rules using small external openings and the creation of shaded areas (fig 4.31). CJW’s approach differed greatly to this, prefabrication of units off site was likely; using similar systems used later by Roth and Utzon, who used these techniques for greater efficiency in the construction process. Thus, this allowed for greater speed in the realisation of oil-company housing programmes in Iran. CJW used glass on interior facing walls, usually towards a courtyard, recessed under a canopy to help keep away from direct sunlight. Drew referred to this as an ‘ingenious rationalisation’ of the traditional Arab house’, in which she added that it ‘produces the same visual excitement and effect of intricacy’ in its designs. These similar principles are used in other regional examples from the period; a different form of climatic design is evident in K. Hassan Fahmi Al-Madfai’s oil-company housing for the Dora Oil Refinery in 1953, which have pitched roofs and wind-catchers to circulate air.

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334 Unknown. (1958) ‘Cluster blocks at Usk Street, Bethnal Green, London’, *Architectural Design*, (2)
335 Drew, ‘Housing in Iran’, p. 84.
336 Ibid.
Figure 4.31 Riverside Guesthouse by Wilson Mason and Partners in Abadan, built in the c.1930s showing the restrained neoclassical style they procured here. (BP Archives ARC 184665)
Landscaping

Most models and drawings of the proposals by CJW feature landscaping, a key element in the relation of tradition to modernity. Spatially, the landscaping elements of the housing are significant within the formation of a regional space as an indirect response to the geopolitical events that occurred to create the NIOC. Persia’s traditions with landscaping are ancient and well-known, with its influences appearing across the world but most prominently in southern Europe in examples such as the Alhambra or Real Alcázar. In more recent times, Persia and Iran continued this strong tradition in gardening with prominent designed landscapes such as Fin Garden, Chehel-Stoon Garden and Ferdowsi Park in Tehran (fig 4.32). Writing in the introduction to Contemporary Urban Landscapes of the Middle East (2016), Mohammad Gharipour argued that much of the landscaping in the twentieth century within Iran completed by Western architects adhered to ideologies found within the Garden City movement. Streetscapes planned within the movement often included tree-lined avenues and an emphasis on green-spaces surrounding houses and can be read as being a city full of gardens or seeing the city as a garden. The latter appealed to modern architects through the design of the spaces between buildings. A European example, clearly influencing CJW, are the Ville Radieuse proposals by Le Corbusier which used the landscape as an amorphous space around the building. In the case of buildings such as the Villa Savoye, the designed, ‘functional’ garden is placed on the roof away from the gaze of people, a similar concept to the enclosed, private, courtyard space of CJW’s housing studies for southern Iran and a direct response to the cultures of those who will use it, moving the landscaping away from the public realm and city life (fig 4.33). The CJW patio flats extend Le Corbusier’s influence further, through utilising the shape of a box as the form of the block. Where Le Corbusier hollowed out elements to create room like gardens on the roof terrace in private houses, CJW did this for every flat creating a private interior space, but paradoxically outdoors.
The models of the housing study for Abadan and the NIOC show trees and green-spaces placed between buildings on areas intended for leisure, like Ebenezer Howard’s Garden Cities model (fig 4.5). Drawings for houses usually include a tree in the courtyard garden placed in a corner away from the centre, but this is specifically utilised for shading. The importance of shading the enclosed, private, spaces of housing for Persians and Arabs is highlighted in Page’s report *Open Spaces in Abadan* with specific recommendations for trees, shrubs and plants that are ecologically specific to the area.344 While the landscaping aspect appears in some respects as imported from Western ideologies, the central spaces to houses are regional in their influence and mark a change from the landscape considerations of previous Western architects, such as Wilson Mason, who had worked in the region prior to the nationalisation of oil.

Landscaping around buildings echoed Western architectural thought of the time, allowing for a continuous fluid space, while interior courtyard gardens allow for a private, organised, shaded area for family life.345 The origins of the spatial configuration of cells and clusters is a matter of debate, architectural theory of the mid-twentieth century depended upon collaboration, and while their proposals in southern Iran might be reminiscent of Écochard’s work in Morocco, the spaces they proposed contributed to the creation of a concentrated regional spatial design and forged a theoretical grounding for the rest of their careers. The amalgamation of cells, clusters, stems and webs created a habitat, proving the continual rethinking of housing and documents, such as the Athens Charter but also a clear link to European modernist theory. It is true to say, that without the geopolitical events surrounding the nationalisation of the AIOC to become the NIOC, housing provision for Persian and Arabs would have remained the same, and the requirements of this type of dwelling was imperative.

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345 Ibid, p. 3.
Figure 4.32 Ferdowsi Park, Tehran showing the use of topography to create areas of privacy in the landscape, which goes against the rigid formulaic layouts of the chahar bagh usually associated with Persian gardens, c. 1990s (https://www.akdn.org/architecture/project/bagh-e-ferdowsi)
Figure 4.33 The Villa Savoye (1929) roof garden, exemplifying the private rooftop garden, albeit not within an urban setting (https://www.pinterest.co.uk/pin/448178600403499051/?ip=true)
Conclusion

CJW's work in Abadan is the result of complex geopolitical events and relations associated with oil production and its nationalisation in Iran. What was primarily a British company developing Iran's natural resources for their own benefit, became Iranian; resulting from this, Iranian workers, once treated as second class citizens in their own country, now received more rights and a focus upon their treatment by the company (NIOC). Because of these events, there was an architectural change in style and space creation. Previously in Abadan, architects such as Wilson Mason built houses in the restrained classical styles with villas set in their own landscapes of plush lawns and trees. The changes to the ideology of housing here is significant. Arguably, the philosophy and research originated from elsewhere – specifically, from the work of Écochard in north Africa – which in turn created the spatial forms of the Iranian housing scheme. The scale of the housing varied from the concentration on singular cells which when put together, form a dwelling, slotting together to make a cluster of dwellings, which in turn created 'stems' and 'webs' forging the urban realm. As a regionalist approach to architecture, again, it is flawed due to the combination of Western ideologies with the perception of what Eastern dwellers would want. This thinking draws back to criticism of Edward Said's *Orientalism* specifically in the work of Sadik Jalal Al-'Azm in his essay 'Orientalism and Orientalism in Reverse' which criticises those who have became enamoured with Islam in the wake of the Iranian Revolution; specifically, this concerns itself with the way Europeans produced ‘traditional’ buildings, in CJW’s case through spatial syntax, but as this thesis will go on to show, other architects did this through ornamentation too misrepresenting the realities of other cultures in favour of ‘Occidental self affirmation’. CJW produced an European-Eastern-Arab hybrid creating an architectural aesthetic which did not conform to a specific nation’s identity, rather a region. The designs allowed for organicism in its design, giving occupiers agency to alter rooms, which shows that the relationship between these two is not mutually exclusive; it also did this through forming a flexible constructional system which could be added to as and when was required; this flexibility was referred to by Drew as being ‘additive’.

346 Al-'Azm 'Orientalism and Orientalism in Reverse', pp. 217-239.
347 Drew, ‘Housing in Iran’, p. 84.
3: Alfred Roth’s Kuwait Projects
Chapter 3

Introduction
Alfred Roth (1903-1998) was a Swiss architect, educator and writer whose work in Kuwait spanned two decades. Roth first came to Kuwait in October 1965, by invitation from the Director of the Planning Board of the Ministry of Public Works to prepare a critical report on the educational and architectural design of existing schools in the country. His first completed building in the petrol state was the Girls Intermediate School (ages 11-14) at Rumaitya in 1971, which formed a prototype for other schools in the country, encouraging effective functional design. His Kuwait work evolved over this time, becoming more refined, but its core methods and philosophies remained markedly similar, as he was influenced by functional Corbusian methods and mid-twentieth-century CIAM architectural discourse. This chapter sheds new light on the historiographically underappreciated career of Roth, who was a collaborator of Le Corbusier, Marcel Breuer and Alvar Aalto while providing a biographical account of his professional life. Roth studied at Eidgenössische Technische Hochschule (ETH) Zurich, graduating in 1926. At ETH, he was taught by Karl Moser who had links throughout Europe with the most notable modernists, including Le Corbusier, to whom he would later recommend Roth.

Roth’s work in Kuwait exemplified this European training. The schools programme, through which the buildings mentioned above fall into, were notably modernist in their appearance while accommodating various cultural and climatic conditions. This programme is important within the national context, given the associations with ambition for the future. His schools were not as ornamental as Fry and Drew’s in the tropics and did not feature the extensive detailed screens in examples like Opoku Ware’s in Ghana but were more austere in their style. They were functional, and to be so, Roth formed a spatial syntax relevant to the region through a focus on the courtyard and the scale of his buildings, which fit in to the urban fabric of the formally zoned segments of Kuwait City. This syntax translated across typologies, noted in his designs for a country house and the Paralysis Institute, which both remain unrealised. The low-rise buildings spread around courtyards recalled the Candilis-Josic-Woods (CJW) schemes analysed in the previous chapter but refashioned into a new built typology, which reflected the wider more global influences on architecture in this period. The schools allowed for larger spaces to be expressed through assembly halls or wider spans required for classrooms, contrasted to the smaller spaces of the housing assessed in earlier chapters. This increased scale, and the requirement for all children to attend, ensured a suitability.

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349 Roth, A. (Letter) Roth to Hama Al-Ghanim, (December 1975) (gta Archive: ETH Zurich – box number: 131-0164)
to be central to newly planned neighbourhoods alongside mosques, souks and other public spaces.

1.3

Roth’s primary focus when designing in Kuwait was the climate, contrasting other architects who were more culturally attentive. His buildings bear similarities to the tradition of Western architects building in the Gulf in the 1950s, beginning with the orthogonal shapes of CJW in Khuzestan, differing socially from Fry Drew and Partners’ and Lock’s work in the region. There are clear comparisons to Lock’s work in planning elements, specifically, spatial distribution of schools and architectural configuration, despite clear ideological differences. Roth’s work should be placed within the Western modernist discourse from the mid-twentieth century; his architecture transcended borders through the various similarities in style to other Western designed architecture, construction methods and procurement. His work covered various typologies, yet, on various scales from individual schools to the production of a prolific school-building programme for the Kuwaiti state. He attempted to ignore notions of nationalism and nation-building, utilising globalised methods and aesthetic in his buildings, though the school building represented nationalistic ambition; ultimately, his architecture stemmed from the synthesis of biographical elements and Kuwait’s geography and politics.

1.4

Roth’s oeuvre spans several typologies; part of this chapter deals with the schools he designed in Kuwait, an unbuilt Paralysis Institute for children and an unrealised country house for a prominent politician. Each of these typologies had similar spatial configurations, construction methods and an overall common aesthetic drawn from comparable influences. Roth proclaimed to have created new typologies, yet the genealogy of these designs is easily traceable, forming a lineage derivative of other Western architects working in hot climates. Several historians consider Roth’s Kuwaiti work on a superficial level; its placement in a spatial, and wider political context, is unaccounted for within the literature. One of the primary issues Roth sought to remedy was the functionality of buildings within the hot climate, advancing the work of the more critical architects and planners such as Drew, Lock or CJW whose earlier projects began to build an architecture for a region opposing, and contradictorily promoting the narrative of politically nationalist sentiments.

1.5

Roth’s devotion to functionalism is clear within his writings, whereby he asserted the notion that ‘basic principles of planning’ were established in the 1930s, and not earlier, neglecting the influential works of Geddes.351 He also forgot other planners of bygone centuries including Frederick Law Olmstead, Christopher Wren and George-Eugène Haussmann to name a few; Roth had overlooked whole periods of ancient history where towns and cities were obviously planned using ‘basic principles’, living up to cliché modernist anti-historicist stereotypes. His writings suggested that his primary influences are from rational, functional and utilitarian artists and architects such as Le Corbusier, Mies van der Rohe and Piet Mondrian; these conflicted, in part, with advocacies of tradition through subtle elements of his architectural work, with nods to Lloyd Wright and the humanism of Aalto.352 While his work was functional, it did not necessarily comply with traditional motif that had developed in the Gulf in previous centuries (often

351 Roth, Alfred Roth, p. 235.
influenced by the Ottoman Empire), while his spatial configurations do show reverence to the intangible ways people use space, he said:

One very serious problem is the spread of commercialised planning and building to the developing countries, many of which are embarking upon large-scale planning and building programmes. Disregard of the local human, cultural, social and climatic conditions can bring disaster to these countries, as became clear to me during my investigations into conditions in various Arab lands.353

Roth is generalising here, specifically when he mentions Arab lands, but does hint to the ‘human’ element, a definitive - possibly subconscious - reference to Aalto.

During the 1960s, Kuwait consolidated its new-found wealth on the world stage through advancing on Minoprio Spencely and Macfarlane’s (MSM) utilitarian plan and the iterations of modern architecture constructed in the 1950s through the publication of various planning and architectural reports. Although the USA and Soviet Union continued to produce more barrels of oil per day (bpd) than most of the OPEC nations, Kuwait could now afford to advance these previous planning efforts.354 These endeavours to update Kuwait’s modernisation included the work of Saba George Shiber, who oversaw various committees of European architects supervising Colin Buchanan and Partners’ 1971 plan. Roth viewed altering these problems as his mission in the designing of buildings in Kuwait.

A reading of Roth’s correspondences and reports aids an understanding of his motives behind his design methodology. Due to the fervour in which Roth implemented this form of modernist regionalism, one might consider his work to be typical of the ‘condescending highly sophisticated designer’.355 Coupled with the typical modernist architect’s attitudes towards a rejection of history – he did not ‘regard history as a possible signpost for the new direction’ - Roth created buildings both European in style but also in theory.356 He ensured they performed climatically, while not necessarily actively considering the culture of the people who use them, just the conditions within which they lived. Roth’s astute planning mind, and attempts to integrate new architecture within the city, almost render his style of modernism as acceptable; correspondences suggest he desired to work in a hot location as an experimental playground, contrasting other Western architects’ design research methods, which look at more anthropological - but traditional - factors, such as those by Lock shown in the first chapter.

356 Roth, Alfred Roth, p. 24.
Roth’s Kuwaiti work fits into the context of the production of regional space between 1954 and 1982 in the Gulf. It also provides a segue to the second part of the thesis where Gulf architecture and design becomes decidedly more concentrated in its portrayal of the region through the mimicry of objects, materials and spaces. The scale of his work increased in importance from the previous chapters through providing a prototype system for school construction in Kuwait. The geopolitical context is of importance to understanding why Roth aimed to design prefabricated, yet high quality, schools in newly independent Kuwait.

His work and public criticism of existing buildings through governmental reports played a role in altering the way Western architects designed architecture in the Gulf, or at least was symptomatic of the changes that occurred in this period. Through studying the limited literature that focuses on Roth, assessing various pieces of criticism on his career and his own publications Werk, which he edited from 1943 to 1956, a clearer picture of his career is obtained. Moreover, by analysing archival material from the gta Archiv at ETH Zurich, including governmental reports and his criticism of the process of school building in Kuwait, Roth’s obsessively functional approach to architecture becomes apparent. The background to this is Roth’s advanced knowledge of Western school building on which he wrote two books, running into several editions each, the most important of which was New School Building; this added to knowledge gained through the construction of various schools in Europe. The many pedagogical buildings in the European context constructed in the post-war period provide an analytical baseline for standards and Roth’s knowledge of school building.


Alfred Roth: Key Works and Collaborators

To understand Roth’s Kuwaiti work, one must first analyse the context of his career. His links with Moser are an important place to begin, who was a formidable figure in European architecture, widely considered the father of Swiss modernism as well as being the first president of CIAM. Roth said of Moser’s significance as ‘Karl Moser was to Switzerland what H. P. Berlage was to Holland, Otto Wagner to Austria and Peter Behrens to Germany, namely the founder of modern Swiss architecture and the teacher of the generation of architects that achieved the final breakthrough the new ideas in the spirit of their founder’ (fig 5.1; fig 5.2). His links to Le Corbusier are just as important, and when working in his Paris Atelier Roth designed a bed, often confused for the work of the master (fig 5.3). In addition to this he designed several key buildings, including two houses within the Weissenhof estate in Stuttgart and the League of Nations Palace project, located in Geneva (fig 5.4), but it is the bed which exemplified his rational beginnings.

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360 Roth, Alfred Roth, p. 12.
Outside architecture, he was an enthusiastic painter inspired by the De Stijl movement, particularly the works of Mondrian; Roth highlighted that 'the most elementary means of artistic expression' inspired him. The use of 'area, line and colour' used in his paintings inspired his logical building forms and appearance throughout his career (fig 5.5). Roth was by no means the only modernist inspired by Mondrian; admirers who owned paintings by the artist included: J.J.P Oud, Philip Johnson, Martin, Charles Karsten, Theo K. van Lohuizen, Cornelis van Eesteren, Mart Stam, Pierre Chareau, Werner Moser and Benjamin Merkelbach. The most obvious link between Roth and the forms Mondrian produced is through the formation of facades by Le Corbusier; Roth’s extensive correspondence with Mondrian, and ties with Le Corbusier, suggest these two influenced Roth’s work the most. The following passage is from an article Roth wrote on aesthetics, attempted to justify why he did not focus on ornament or motif:

In architecture, the relationships and interactions between the elements are known as proportions. The creation of the markedly geometrical, ornamentation-free picture of modern architecture

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demands the greatest care and attention to the proportions on both two- and three-dimensional levels. The most direct, and perhaps the most expressive, solution to the problem of architectural proportions is doubtless the supreme human aesthetic sensibility of the great artist (e.g. L. Mies van der Rohe, P. Mondrian).  

This is further exemplified in Leon Batista Alberti’s dictum Roth recited in *Alfred Roth: Architect of Continuity*, where he stated that ‘Beauty is the result of objective deliberation and reflection, not subjective fantasies and moods’. Roth interpreted this as implying that motif is linked to subjectivity; this becomes apparent through the Kuwait buildings that this chapter analyses.

**Figure 5.4** Weissenhof Estate building by Le Corbusier, 1927 (Tumblr)

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Figure 5.5 Alfred Roth, *Conquête de l’Espace* (1973) (artnet.com/artists/alfred-roth/)
Roth’s work on schools in Kuwait is seminal, in both the history of the country and within studying the typology. Outside pedagogical design, there are three historiographically overlooked projects that are essential to understanding his Kuwaiti work; these works also place him within the circles of important European modernists. Between 1966 and 1971, in collaboration with Aalto, Roth designed the Sabbagh Centre in Beirut, this was at the same time he was working in Kuwait. This is a large-scale fifteen-storey building commissioned by the ‘Banque Sabbag S.A.L’ (fig 5.6; fig 5.7). He notably overlooked Aalto when attributing the Beirut project to himself in a letter to the Gulf Engineering Office when trying to gain work in 1975. Despite this, Roth thought highly of Aalto and admired the ‘great diversity of the spatial concepts of the different buildings…’ he also stated that ‘Aalto’s work is also based on an awareness of the human, psychological, social and cultural aspects’, elements he tried to weave into his own work. Aalto was the subject of several articles penned by Roth and was a constant focus in his work. The building included commercial and professional spaces as well as provision of an air raid shelter, necessary due to the turbulent political situation in Lebanon at the time. The construction of the building recognised how the area is prone to earthquakes through the inclusion of reinforced concrete facades. Coupled with this, the materials used in public areas reflect the surroundings, especially the use of local limestone; local materiality is something Roth would later ignore in his Kuwaiti work, maybe demonstrating this was an addition encouraged by Aalto.

This had been the second time Roth and Aalto had worked together following the construction of the Schönbühl Shopping Centre in Lucerne, Switzerland, finalised in 1970. The architects did not collaborate in the same way as they had on the Sabbagh Centre due to the split roles in the project: Roth focused on the shopping centre and Aalto on the fifteen-storey residential building, which was ‘entrusted’ to him at the suggestion of Roth. He said the following about the project: ‘Schönbühl’ Shopping Centre is the first of its kind in Switzerland, and the utilisation of the large roof area for parking space for about 180 is also an innovation on an international level’, original for the time, the ramp was a major design piece of the building constructed of steel and concrete in a smooth curve (fig 5.8). The role Roth played in this project appeared to support to the notion that he was as astute a planner as he was an architect, concerning himself with spatial relationships of buildings, spaces between them, and how people use the building with a focus on utilities and their function.

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368 Roth, A. (Letter) Roth to Hama Al-Ghanim, (December 1975) (gta Archive: ETH Zurich – box number: 131-0164)
369 Roth, Alfred Roth, p. 260.
372 Ibid, p. 162.
374 Roth, Alfred Roth, p. 152.
375 Ibid.
CHAPTER 3: ALFRED ROTH

< Figure 5.6 The Sabbagh Centre, Beirut. An early model of the proposals for the site, c.1966 (Roula El Khoury Fayad, [Aalto in Beirut] 'Contribution, Collaboration and Continuity: The Case of Sabbagh Center')

Figure 5.7 Alfred Roth’s drawing of the interior of the Sabbagh center in Beirut, c.1966 (gta Archiv, ETH Zurich: box no. 131-0162)
Both buildings contrast with the general aesthetic achieved in Roth’s austere, utilitarian Kuwaiti work, still managing to attain the high-level of design representative of the region’s location. Roth’s work on the Doldertal Apartments in Zurich, in collaboration with his cousin, Emil Roth, included similar design features to the other buildings he designed; the projects drew light in through large external windows that span the length of each elevation, an item which does not feature in his Kuwaiti work (fig 5.9). The similarities between the forms of this, and the buildings of the Weissenhof Estate in Stuttgart, are obvious. A geometrical grid aligns the windows and balconies, allowing the onlooker to read the rhythmical external elevations closely aligned with classical proportions, which is at odds with the designs of the ‘lively, diversified’ impression the Sabbagh Centre has through its ‘narrow windows of unequal height.’

The rectangular forms of the latter building and its proportions all situated on piloti draw from the Corbusian tradition (fig 5.11), which is also translated into his later Kuwaiti work. Additionally, this influence undoubtedly comes from the client, Siegfried Giedion, whose knowledge and theories underpinned modernist architecture. The three apartment blocks respond to their immediate location through ‘the organisation of the structural elements and the external formal design [determining] the oblique placement of the buildings’ (fig 5.10).
The Doldertal Apartment complex designed by Alfred and Emil Roth with Marcel Breuer, 1935-6 (Roth, A. Roth: Architect of Continuity)

Site plan and positioning of the Doldertal Apartments by Roth in collaboration with Marcel Breuer, 1935-6 (Roth, A. Roth: Architect of Continuity)
Figure 5.11 The proportions of the Villa Savoye (1929), with their ribbon windows, are translatable into Roth’s other work, including the Doldertal Apartment complex (ArchDaily)
Kuwait Context

Given Roth’s prominence within Kuwait, it is necessary to place his work within the Kuwaiti geopolitical situation of the 1960s to understand the forces behind its inception and design. Where other architects, such as Utzon, proffered a position on contemporary political situations (p. 272, paragraph 3.4), Roth stayed quiet. This link is most prominent in the British withdrawal from Kuwait and subsequent Kuwaiti independence in 1961. Behind this was the catalyst of modernity falling in line with the introduction of Kuwait’s National Assembly: a democratically elected body to represent the people of Kuwait. As a direct result of Kuwaiti independence, the newfound prominence of bodies such as the Ministry of Public Works contributed to the increase of architectural scale during the period, and inadvertently caused traditional Arab ornament to proliferate in large projects.

Urban Context, 1960s

Kuwait’s initial foray into constructing for modernity occurred in the 1950s with the advent of the MSM plan (fig 5.12). The Second World War curtailed oil production and due to inexperience of this sort of financial and natural wealth, Kuwaiti Emir, Ahmad Al-Jaber Al-Sabah, was tentative in introducing ‘modernisation’. In 1950 his son, Abdullah Al-Salah Mubarak Al-Sabah, ascended to the premiership with an aim to create a ‘golden age’ for Kuwait following previous conservatism, with the vision to develop a new urban environment through planning and architecture.\(^{379}\) The following decades witnessed Kuwait become a ‘veritable who’s who’ of global architecture, featuring outstanding pieces of overlooked modern architecture as well as myriad of glib, ill-conceived projects hampered by poor intentions and lack of thought, which Roth picked up on in his assessment of Kuwait’s schools.\(^{380}\) Roth’s work differed from this by paying attention to the requirements of a rapidly growing population through developing a prefabricated system for quick construction. The scale of individual schemes which he worked on was smaller than the majority of ‘star’ architect led projects from this time, but the scale of importance within constructing a modern, ambitious nation was high.


Roth acted as a consultant for the UN to provide an assessment to Kuwait and its government for new school buildings, with knowledge supported through his earlier European work. Between Roth’s initial visit and the oil embargo of 1973, Kuwait went through a second upheaval of development following an assessment that the hastily completed first wave of urbanisation in the 1950s did not work. Further consultants and Western planners were required by the Kuwaiti government in the 1960s because of this ‘meteoric rush’ to modernise the city ‘without first establishing a sound planning administration’. The establishment of the National Assembly in 1961 encouraged this second wave. Further context to this is also provided by Shiber’s extensive report on the condition of Kuwait in 1964, which he dedicated to Sheikh Abdullah El-Salem Al-Sabah whom he called ‘a wise master-builder’. Roth primarily worked in this period when Kuwait and the surrounding Arab nations were considerably wealthier than in the first phase of development and could afford a large-scale school programme.

In 1968, Franco Albini, Leslie Martin and Omar Azzam were appointed to create a ‘new urban form’ for Kuwait, encouraging an influx of Western based architects such as the Pietilä’s, Candilis, the Smithsons and BBPR who all began designing schemes for the state. The majority of the proposed projects followed an original form of building, utilising a new architectural language that differed greatly from Roth’s, yet he still managed to obtain commissions for work into the 1970s, possibly due to the pre-fabricated construction methods he developed. Analysis of projects by the previously mentioned architects would work using critical regionalism’s approach; making enquiries about their histories, geography, cultures and geopolitical events would be necessary for a more thorough analysis. BBPR, for example, had designed in this critical regional manner for decades, following the example of the Torre Velasca in Milan in 1958 (fig 5.13) which utilised a visual motif from the architectural language of castles in the north of Italy on a high-rise residential scheme in Milan’s city centre. The Pietilä’s also designed in what could be termed the critically regional style, particularly with their project of the Sief Palace in Kuwait, described at length by Botz-Bornstein in ‘The Pietilä Kuwait Buildings Revisited’ published in Modern Architecture Kuwait, 1949-1989. Importantly, the Sief Palace formed part of a wider enclave of modern, Islamic, architecture with buildings like the intensely ornamental but distinctly modern Kuwait State Mosque (Masjid Al Kabir) by Mohamed Makiya constructed between c.1977-1980 (fig 5.14). Roth’s work did not corroborate with the growth of these regional styles due to his use of European modernism while applying them to the region’s climate; the emphasis on this regionality came as a result from his own research, but also the requirements stipulated by the Ministry of Public Works.

382 Al-Nakib, Kuwait Transformed, p. 105.
383 Ibid.
384 Ibid.
385 Shiber, Kuwait Urbanization, p. 423.
Contrasted to these projects of the 1960s, the Smithsons, BBPR and the Pietiläds utilised the same principles set down in this period either adding their own Arab inspired embellishments to their schemes for civic or public buildings, usually taking ideas from large public spaces such as bazaars or traditional town layouts to inform their designs. Al Ragam quoted numerous newspapers from the early 1950s which called for a similar approach to be taken by architects and planners alike; commonplace at this time, was a theme of arguments between what makes ‘Kuwaitiness’ and the extent to which traditions be used in the construction of ‘a new life’. Furthermore, a paper from a conference in 1983 organised by Pakistani architect, Yasmeen Lari, suggested this crossover is only necessary because ‘at one time or another they have all been colonised’; the author, Mohamed Talhah Idrus, goes on to say, ‘this results in foreign ideas and practices being slowly and effectively injected into Muslim societies.’

Roth's Work in Kuwait

Roth's Critical Stance on Existing School Buildings

Given this context, and the requirement of the Schools Programme with its associations with Kuwaiti ambition, it was necessary for Roth to assess the existing situation of school architecture in the nation. Roth's critical report (1965) findings were damming, condemning every school he visited for showing a 'complete negligence of the extreme local climatic and physical conditions' and describing a 'desert-like physical environment without any vegetation', which he sought to alter.\(^{390}\) He criticised the schools in several respects including general layout, classrooms and equipment as well as large sheets of glazing which Roth found to be 'unsufficiently sun-protected' [sic].\(^{391}\) While Roth's suggestions and criticism for the schools in Kuwait was valid, he perhaps did not take into account the whole situation for his own work. Roth produced several key designs for schools in Kuwait across the following decades, staying true to his initial critical thoughts.

Due to the lack of co-education, Roth did not have to design for the segregation of the genders, as this occurred with the requirement of separate schools for genders. In other examples of education building in the Gulf, some schools and universities included both sexes; incorporating segregation into the design, they featured sheltered walkways and shielded areas designed to keep male eyes away from female areas, as was the case.


\(^{391}\) Ibid.
with the Sultan Qaboos University (1979) in Oman (fig 5.15). Thus, this did not give Roth a chance to design with the limitations that segregation in a conservative society presented.

Roth’s designs catered for traditional Gulf living, even if unintentionally, but this is drawn more from the fact he was a functionalist architect and to him, the building must work in the climate. Despite this rigidity in Roth’s architecture, he admired certain qualities of Aalto’s work which appear to be more traditional, after all, Roth recognised Aalto as the ‘spokesman of a modernism rooted in regional identity’.

In a lecture he gave in 1981 on Aalto, he opened with:

> Perhaps the most immediately impressive quality of Alvar Aalto’s work is the great diversity of the spatial concepts of the different buildings, even among those with similar space programmes. This diversity is not, however, founded on mere formal variations or free fantasies, for it is always based on the inherent living nature and requirements of the assignment… Aalto’s work is also based on an alert awareness of the human, psychological, social and cultural aspects of the problem with regard to the individual, the group and the community.

Roth’s reports are frank, cynical, and in some cases, angry, with the ways in which some Western modern architects designed in Kuwait. He saved his most scathing analysis in his 1965 report for the Austrian architect, Rambald von Steinbüchel-Rheinwall (fig 5.16). The majority of his criticism related to: the excessive use of land; a waste of inner-space causing ‘uneconomic planning’; the neglect of climatic conditions through the widespread layout; and ‘enormous glass area’ of the majority of rooms and finally calls the architectural design ‘superficial’ and one of ‘fancifulness.’

What von Steinbüchel-Rheinwall did allow for was a more expressive type of form which represented the larger open spaces, such as assembly areas, which articulated the function of the space within through the building’s appearance. When Roth talks of ‘gaudiness’, he drew reference to the swimming pool buildings and assembly hall, both included in Nelson Garrido’s recently published images of Kuwait (fig 5.16).

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In answer to his criticism of von Steinbüchel-Rheinwall’s school (fig 5.17), Roth designed functional schools for the Gulf climate, subconsciously bearing similarities with the rich architectural history of the area. Using his prototypes, he oversaw the construction of many prefabricated schools for a wide range of student ages. Despite their apparent differences, Roth conversed and met Shiber on several occasions and quoted from his 1964 study *The Kuwait Urbanization*:

> contrasting with the simple, humble, dignified, beautiful and organic architecture that is the heritage of Old Kuwait is the complicated, gaudy, undisciplined, ill-mannered and inorganic architecture that has, in ‘one fell swoop’, replaced or bulldozed away the tranquil and indigenous architecture deriving from the Kuwaiti habitat.\(^{397}\)

Owing to his concern with building schools for the climate, he immediately proposed a remedy within the introduction to this report, stating that:

> Taking into consideration the various criticisms I added to my report a sketch for a large school to express my idea of how the local climatic and physical conditions should be expressed in the basic design of a school and thereby leading to a completely new type of building. Its main characteristics include a closed courtyard with green and water surrounded by the two storey classroom blocks, all rooms opening into this courtyard, a careful sun-protection of all windows and passage ways and dominantly closed outer elevations. This type of school building may

Figure 5.16 Nelson Garrido’s photo of the school in Kuwait City by Rambald von Steinbrüchel-Rheinwall (c.1962-6) which featured in Modern Architecture Kuwait (1949-1990) (Dezeen)

Figure 5.17 Rambald von Steinbrüchel-Rheinwall’s secondary school for girls (c. 1962-6). This shows the assembly hall that Roth is so scathing about (gta Archiv, ETH Zurich: box no. 131-0764-F-2)
be called 'introverted' which distinguishes it definitely from the extraverted type in countries with temperate climate. At this point I like to mention that this new type of a school is similar to the century old type of the oriental house with its patio with water and green being dominantly closed to the outer world.398

The physically introverted nature of Roth's schools and buildings in Kuwait is paramount to the climatic solutions Roth sought to solve. As already established, courtyard buildings of the Middle East serve both cultural and climatic design solutions (fig 5.18). In his report, Roth linked the design of ‘oriental houses’ to his Kuwaiti school projects, which may have a similar climate in various other places further east but are nevertheless an alien civilisation, proving his minimal cultural knowledge of the history of building in the area.399 This is further exemplified within the section he included on the ‘climatic conditions which influence the spatial organisation’ in his report describing the genealogy of architecture from the ‘primitive hut to the palace’ as being readably specific to the ‘climatic conditions of the respective zone in which they are built.’400 An undisclosed budget attracted Roth, as he felt the government would listen to his thoughts regarding the ‘needs and problems’ of educational building in Kuwait, given their ability to provide funding for their new schools programme.401

Roth’s use of the word ‘oriental’ requires attention, here. Affiliated to ignorance and associated with Western discourse, the word ‘oriental’ evokes a mixture of emotions but left no doubt that Roth had little cultural understanding with regards to his building schemes. In Said’s Orientalism, the author raised the question of a politician from Tyneside to Arthur Balfour where he asked ‘what right have you to take up these airs of superiority with regard to people whom you choose to call Oriental?’402 In the context of self-governance, Said explains that this term ‘oriental’ was ‘designated as Asia or the East, geographically, morally, culturally’ and is easily understood for Westerners, or Europeans; like Balfour and the colonialists, Roth – and most other architects used in this thesis – consistently refer to the orient as an undefined geographic mass outside of Europe, using common tropes to justify forms and aesthetics procured in their architecture.403 Altering self-governance to self-building, it appears Roth has an attitude of superiority to the Kuwaiti authorities; after all, Kuwait is not oriental, in as much as somewhere like Egypt also is not, despite the term inferring a large geographical area to the east of Britain. They are separate places, with individual characteristics that call for different attitudes towards the design of buildings. Due to the small circulation of the report, it is unlikely he intended to provoke but with regards to his own work, he should have been more geographically specific. With this, there is a risk of overcorrecting, and looking merely at individuals giving them too much agency; there

400 Ibid, pp. 18-20.
402 Said, Orientalism, p. 31.
403 Ibid, p. 32.
Figure 5.18 Plan form of Rumaithya secondary school (1969) showing the introverted classrooms located around courtyards (gta Archiv, ETH Zurich: box no. 131-0162)
CHAPTER 3: ALFRED ROTH

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is a middle ground of collective identity in which the Western architect – particularly Roth – struggled to find in the twentieth century when working in places like Kuwait; the philosopher Graham Harman, suggested that this thinking strays too close to Margaret Thatcher’s rhetoric of ‘there is no such thing as society’. 404

4.7

Roth’s construction, or built quality, is prevalent through the three specific considerations of building schools for the climate, outlined below. He disseminated three focal points of his research into existing schools in Kuwait as the elements which he deemed most important. These were:

- Educational Requirements
- Climatic conditions which influence the spatial organisation
- Modern technology 405

There is no mention of the word ‘culture’, or derivations of it; where Western architects in the Gulf focused on cultural factors, their designs were generally encouraged organicism allowing people to make changes to their environment over time, advocating flexibility. Roth established his interest in school typologies in several ways through looking at the above themes and providing some analysis, utilising it as a structural framework for his assessment of Kuwaiti schools. In the Kuwait report he repeatedly referenced Swiss educational theorist Heinrich Pestalozzi (1746-1827). Pestalozzi’s influences upon Roth were profound; he quoted several valid principles within New School Building suggesting that education at school is the ‘continuation of parental education at home’; the classroom and school ‘shall afford the same sense of natural security and intimacy with which the child is familiar at home’; and the whole of the ‘wider natural or man-made environment, both of the school and the home, forms a vital part of the child’s education’. 406

With regards to educational facilities, Roth paid attention to the equipment within a classroom through an informal inventory of what is, and what is not, inside the room. ‘Tackboards’ are one such piece of equipment, which are often out of reach of the children due to the classroom being on an ‘adult scale’ within the buildings he looked at. 407 In this sense, Roth was a pragmatist. His functional architecture was just that, which is why not considering the cultures of the people who inhabit the spaces he designed was an oversight on his part.

4.8

Roth spoke excitedly of the opportunity to work in a hot climate applying the principles of school building discussed by Pestalozzi and furthered by himself:

I was honoured by this invitation and accepted it with great pleasure, as it gave me the long-awaited opportunity to study the specific problems of school buildings in a hot climate and in a country where... the needs and problems of education and school building receive the full interest and generous financial support of the Government and the City authorities. 408

405 Roth, The School Buildings of Kuwait, p. 9.
406 Roth, New School Building, p. 12.
As already suggested, the freedom to apply his brand of European functionalism to a new environmental context in Kuwait enthused Roth. His criticism of schools in Kuwait ranged from the spatial layout of buildings, to the placement of glazing and fenestration, as well as an issue whereby teachers closed curtains because of the harsh sunlight prompting the use of artificial lights (fig 5.19). Similarly to schools built in the United Kingdom at the time, the Smithson’s Hunstanton School has regularly received criticism for its over-use of glazing on its exterior. The adoration for glazing from architects in this period is trans-national and not entirely functional, as Roth recognised particularly in his criticism of Kuwaiti schools by Western architects.

Construction Methods and Materials in Alfred Roth’s Kuwait Work

Being from a European modernist background, the materials and construction methods Roth considered equated to a homogenised palette reliant on importation. He created a diagram explaining the prefabricated elements of his school building prototype design within a set of drawings called ‘A New Type of School’. The majority of prefabricated sections within the building are unsurprising: columns, beams, floor slabs, cornicing, window frames and stair treads, all intended for on-site construction. Prefabricated items aided the pace of building for the growing population, allowing children to gain an education in a well-designed, comfortable building; which was imperative for Kuwait’s desired improvements to educational facilities at this time and aligned with the ambitions shown by the state (fig 5.20).

Roth included prefabricated ‘deep concrete louvres’ for the protection of classrooms from sun and glare. Additionally, according to a drawing from 1971 for the prototype of typical Kuwaiti schools, these louvres would include asbestos elements for fire proofing. The inclusion of louvres ensured that during most of the year, the sun does not penetrate the building nor does it heat the external walls making interiors become too hot; it was also intended that the light coloured materials of the prefabricated concrete would reflect this light and heat. When the weather does allow it, cross-ventilation of air through the open louvres demonstrated the design’s climatic viability. This aspect of the prefabricated schools replaced traditional methods of shading and cross-ventilation, most notably the mashrabiya. Other Western architects utilised similar techniques for cross-ventilation in the Gulf, but these did not feature the same intricate details of the traditional designs of centuries gone by, nor did they include the same craftsmanship of contemporary buildings such as Henning Larsen’s Danish Assembly in Riyadh, finished in 1998 (fig 5.22). Other architects used ‘bādgīrha’, or windcatchers, to trap breezes and bring them into the internal spaces below. These were often constructed on rooftops allowing for external walls to be completely solid; the best modern example of this in the Gulf is in Kamal El-Kafrawi’s design for the University of Qatar (1983) in association with Arup Associates (fig 5.21).

412 Ibid.
^ Figure 5.19 Entrance to the school at Rumaithya (1969) showing the minimal glazing and use of shade where possible (gta Archiv, ETH Zurich: box no. 131-0162)
Aesthetically, these materials and construction techniques openly encouraged a lack of Arab aesthetic through increasing globally available construction methods and materials. While the spatial configuration, discussed in the next section, represented Arab elements of buildings the aesthetic is more akin to European or Western styles of modernism that proliferated in this period across the world. Typologically speaking, schools in Western nations bore a similar resemblance to Roth’s Kuwaiti schools. The un-rendered blockwork and precast concrete slabs at Belair Primary School in Texas (1955) constituted a similar façade treatment to his Kuwait schools. Here, the use of vertical concrete louvres aide the shading and air circulation that Roth was so concerned with which were also precast off site (fig 5.23). An example of similar construction is a primary school in Tel Aviv by Zarhy Rechter designed in 1962 (fig 5.24; fig 5.25); the overall aesthetic is similar, with exposed concrete beams protruding from under the eaves of the roofs. The materials on show included precast concrete and exposed brickwork, as with the prototypes in Kuwait. Here, due to the hot climate, much of the space around the classrooms is open, including the main hall which is in a courtyard, like the intended use of Roth’s Kuwaiti school designs. Other similar examples include the overall aesthetic of Letzi Secondary School in Zurich by Ernst Gisel, designed between 1955 and 1957, which revealed the precast concrete slab on the exterior through un-rendered brickwork with small windows punctuating the elevations, much like Roth’s Rumaithya Intermediate and Secondary Schools. The undeniable likeness between the materials and construction techniques influenced Roth; he was thus a pragmatist and economical architect who provided a utilitarian service.

414 Ibid, p. 163.
415 Evidence from this is gleaned from the correspondences of Roth with his contacts at the Kuwaiti government, including people such as Khalid Al-Essa, who held prominent roles in the Ministry of Public Works and Mr. Faisal Sultan, the Director of the Kuwaiti Engineer’s Office, both of whom he worked with extensively.
**Spatial Configuration of Alfred Roth’s Kuwaiti Buildings**

Courtyards typify buildings from the Roman Empire to Hutongs in Beijing; they are neither representative of one region, nor are they indicative of a specific culture. The creation of single-storey courtyard homes across the Gulf by Western architects is the most obvious way in which this influence was physically manifested, while attempting to reflect the traditional vernacular from bygone centuries. Traditional Gulf buildings exhibited two courtyards allowing for a split of genders; where this is not possible – usually due to economic reasons, as shown by Lock in the first chapter – buildings, particularly in residential areas, would have one courtyard which allowed for families to have an out of doors existence. The first Western built buildings of the twentieth century in the region focused primarily on Western workers’ needs. Roth’s Kuwaiti buildings, from his school prototypes to the paralysis institute, were all introverted and circulated around a courtyard with shaded terraces. Clients did not employ Roth for aesthetic reasons, it was more for its functionality and efficient constructional aspects, aiding rapid development.

**Country House (unbuilt, 1976)**

Roth designed an unbuilt country house in 1976 which focused on the creation of shaded areas, imperative for the comfort of the clients’ family (fig 5.27; fig 5.28). The contextual, climatic knowledge Roth gained through designing schools and planning neighbourhoods throughout the 1960s and 70s in Kuwait informed the utilisation of similar forms and spatial configurations which spanned typologies. The country house floor plan demonstrated this, where Roth utilised extensive planting around the building; he designed an inwards-looking floor plan with a central courtyard and numerous terraces around the edge to provide shade for the family, to allow them to live predominantly outside. Unlike his schools, Roth provided glazing on some exterior walls, carefully placed on the northern elevation and staggered it allowing for privacy and little direct sunlight to penetrate through to the interiors. Roth designed a large overhanging roof around the courtyard creating shade on all aspects of the walkway but allowing the dining room and reception room to have minimal walls in place encouraging cross-ventilation within the building. This was like some of the case study houses in California of the 1950s (fig 5.26), or even the iconic images of John Lautner’s Sheats-Goldstein House (1963). While many of these features Roth designed are exclusive to this private dwelling, the spatial configuration around the outside space remained imperative to the construction and function of the house.

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417 Roth, *Alfred Roth*, p. 222.
Figure 5.21 Kamal El-Kafrawi’s design for the University of Qatar (1983) in association with Arup Associates showing the wind catchers on top of each cell of the university, incorporating climatic necessity into its overall aesthetic (Mitchell, K. (2015) ‘Design for the Future’, Architectural Design, p. 40.)

Figure 5.22 Henning Larsen’s designed mashrabiya at the Danish Embassy building (1982-7) (https://henninglarsen.com/en/projects/0000-0399/0144-mofa/).
Figure 5.23 Interior of the classroom Roth designed for Rumaithya school in Kuwait, c.1969 (gta Archiv, ETH-Zurich: box no. 131-0162)

^ Figure 5.24 A primary school in Tel Aviv designed by Zarhy Rechter in 1962. The exposed concrete beams under the ceilings and eaves are reminiscent of the exterior treatments of the Rumaithya school Roth designed in Kuwait (Roth, A. New School Building)

^ Figure 5.25 The overall form of this primary school in Tel Aviv bears similarities to those designed by Roth in Kuwait in the period following this completion. The ‘Open Main Hall’ bears similarities to the courtyard designs in the Kuwait schools (Roth, A. New School Building)
Schools and Kindergartens (prototypes)

A similar configuration appeared in the schools Roth designed throughout the 1960s and 70s in Kuwait. He produced many unique designs, such as the girls’ school at Rumaithya (1971), but also compiled prototype designs for the Kuwaiti government to construct upon requirement. All his Kuwaiti schools followed a taxonomy of principles: construction around a central courtyard, large overhanging roofs providing shade outside of the classroom and reducing glare in the classroom, minimal external glazing, and the prefabrication (a flexible aspect of Roth’s designs, either the prototypes could be constructed on or off site dependent on the client’s wishes) of units off site characterised its construction methods (fig 5.29).

This differed to his earlier belligerence in June 1975, when he was adamant that proposals up to that date in Kuwait required ‘prefabrication’, underlined in a letter to Prince Khaled Ben Fahd Ben Khaled for added emphasis.

In this letter, he also underlined ‘climatic conditions’ which emphasised how ‘special’ and ‘local’ these are (fig 5.30; fig 5.31). He dictated that the most characteristic element of these designs are the courtyards ‘dominantly closed towards the out-side’ an ‘architectural conception which corresponded to the century old type of the oriental house with its patio planted with trees and flowers’, a comparison he also made in his report School Building Kuwait, quoted earlier. Like CJW and the Casablanca work which informed their Abadan scheme, this points to Roth’s research not adequately researching its locality. Furthermore, the cultural insensitivity extends to the ‘oriental’ type, again, where Roth generalised a large geographic area, with little attempt to define it. Typologically speaking, the research into schools is thorough, demonstrated through his understanding of pedagogy for differing ages of children. For example, the kindergartens he designed resembled the most flexible spaces, allowing for a variety of activities from organised tasks to independent play, something which he observed in New School Building.

In a separate letter to Ismat Rowaihy, an ETH Zurich graduate from 1970 and architect working in Riyadh, Roth tried to gain more work in the desert. To promote his services and relevant work experience, Roth mentioned that he has ‘been in charge since 1965’ of school building in Kuwait whereby ‘quite a number have been built by the Ministry of Public Works and the Ministry of Education.’ Most significantly, Roth claimed that he ‘developed a completely new type of school’ for ‘hot desert countries such as Kuwait or Saudi Arabia with a patio courtyard to which all rooms are orientated while they are very closed towards the outside.’ He backed this up in his book about himself where he stated ‘this school for girls is the first example of a school with an inner courtyard to which all the classrooms

418 Drawings of the school schemes, specifically Rumaithya girls school (gta Archive: ETH Zurich, box 131-0162)
419 Ibid.
421 Ibid.
422 Roth, New School Building, p. 44.
423 Roth, A (Letter) Roth to Ismat Rowaihy (1975) (gta Archive: ETH Zurich – box number: 131-0164)
424 Ibid.
425 Ibid.
Figure 5.26 Case Study House #22 in West Hollywood (Stahl House, by Pierre Koenig, 1960) showing the large over hanging roof around a central communal area. Although the cultures are different, the spatial form is similar through the creation of shade and identifying a centre to the house. http://blog.lumens.com/the-story-of-the-case-study-houses/

Figure 5.27 Roth’s designs for an unrealised country house in Kuwait by the coast, 1976 (By author: based on gta Archiv, ETH Zurich: box no. 131-0164)

Figure 5.28 Interpretation of what the country house’s form might have looked like; completed when trying to understand the form of the country house (Author’s own notebook, 2017)
are orientated and which is largely closed to the outside’. This depiction of his schools is similar to other schools he described, but he only ever seemed to mention the orientation or layouts of his buildings, failing to allude to design or motif. Additionally, his claim regarding the creation of a ‘completely new type of school for hot desert climates’ is false, given that Westerners had imported modernism to desert and tropical climates decades earlier. Furthermore, typologies that championed cross-ventilation of air, a similar spatial layout around courtyards, and the construction of large shaded areas by Westerners had proliferated in countries of similar climates to Kuwait in the 1950s and ‘60s. The most relevant comparison here is Fry and Drew’s schools in Ghana, including the Wesley Girls’ School in Cape Coast, or Gropius’ design of ‘a series of courtyards’ for Impington College (fig 5.32), which is in a suburb of the climatically cooler city of Cambridge, but provided a similar building typology and morphology precedent for Roth’s later pedagogical buildings in Kuwait.

^ Figure 5.29 The plan form for the Kindergarten Roth designed showing the classrooms as separate blocks, or cells, around the open courtyard with the office building at its top, 1972 (gta Archiv, ETH Zurich: box no. 131-0162)

426 Roth, Alfred Roth, p. 196.
427 Iain Jackson and Jessica Holland suggested that Impington College’s designed was by Fry following Gropius’ departure for the United States and the project requiring an extensive redesign. (Jackson & Holland, The Architecture of Edwin Maxwell Fry and Jane Drew, p. 63.)
In August and September 1977, Roth’s team developed a prototype for the Kindergarten designed for construction across Kuwait. Roth repeatedly asserted the government focus on ‘space organisation’ which he promoted as being ‘extremely functional and practical’ owing to its concentration on a smaller footprint while including the same number of amenities.\textsuperscript{428} Roth encompassed provision of smaller classroom units than he had provided previously but allowed for further shaded space on the immediate exterior of the classroom. For ‘uplighting’ and ventilation, he designed sky lights in each room constructed at an angle to ensure that little direct sunlight could penetrate the classroom. His concluding thoughts in his two-page report stated that ‘since the general lay-out of this new design of a Kindergarten is a very concentrated one, the costs of construction will logically be very economic ones’, meaning the circulation and layout of the building not only function as intended for the climate but is also cost effective.\textsuperscript{429} Although the construction of buildings such as the Kindergarten prototype were hasty - completed in merely two-months - the layout of the school was evidently forged through adequate research of the daily rituals of students studying in hot climates, even if the culture was different.\textsuperscript{430}


\textsuperscript{429} Ibid.

\textsuperscript{430} Lefaivre, & Tzonis, Critical Regionalism, p.10.
Figure 5.31 The exterior of the school showing minimal openings and the low-rise nature. Importantly, note the minarets in the background providing the verticality of the surrounding neighbourhood, of relevance to sections in chapters on Lock and CJW (gta Archiv, ETH Zurich: box no. 131-0164)
Figure 5.32 Impington Village College (1939) plan by Gropius showing the classrooms of the central area opening into an introverted space, similar to the plan forms of Roth’s Kuwaiti schools (http://75pieces.org.uk/piece/43)
The Paralysis Institute: Institute for Paralysed Children in Kuwait (1969)

The layout of the Paralysis Institute was ‘developed in collaboration’ with representatives from the Ministry of Health, rather than those who usually worked for the Ministry of Public Works on other projects (fig 5.33). The scheme, completed in 1969, drew further comparisons with the Smithsons’ proposals for a mat-building concept in Kuwait City and the Freie Universität Berlin, by CJO, than it does of Roth’s other works. Similar to the Smithsons’ proposals for mat-buildings in Kuwait, this scheme did not gain approval from Ahmed Duaij, Director General of the Planning Board who did not provide reasons for the negative decision or point towards another favoured scheme.

The institute’s design is clearly divided into two halves, with a central axis splitting the site allowing for gender distribution; this is plainly annotated by Roth. From a functional perspective, the building serves two purposes: like Roth’s other works, the climatic element was paramount but, in this case, its function was intended as an effective place of palliative care for children dealing with paralysis.

Roth looked to employ the same prefabrication system he suggested for the schools he designed in the same year in Kuwait, owing to their similar sizes, proportions and configuration. Roth segregated the building according to various functions: school, students’ living, administration, therapy unit, common rooms, kitchen, convalescence wards and teachers’ accommodation. Within the school section, the construction of classrooms around a central courtyard allowed for access through the south of the building from the children’s dormitories. The courtyard brought in light to the buildings and allowed for cross-ventilation of air on hot days, despite the provision of air conditioning, which could not be solely relied upon.

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431 Roth, Architect of Continuity, p. 214.
Regarding healthcare, the building’s layout allowed nurses proximity to the children’s’ dormitories. Instead of opening these spaces into central courtyards, the corridors were enclosed with small glazed openings into interior courtyards bordered with air-conditioning ducts and staircases on the interior walls. Furthermore, the dormitories were within proximity to the classrooms where the children would spend the day. The teachers’ accommodation was placed on the periphery of the building, allowing for healthcare professionals to be closer to the students and their classrooms. The administration block was to be at the centre of the plan, spatially dividing both genders in the middle of the plan.434 Convalescence wards were located on the periphery of the site, presumably because the recuperation process would not allow for the children to receive their education while they recovered. Importantly, Roth designed the Paralysis Institute when working with Aalto on the Sabbagh Centre. Aalto’s influence here is stark, particularly in the segregation of functions in the Paimio Sanatorium (1933) compared to the Paralysis Institute (fig 5.34; fig 5.35), although the former delineates these far more legibly within its floor plans and three decisive wings orientated around sunlight and the human experience.435 Functionalist connotations and climatic considerations played a role in determining the forms of both buildings, undoubtedly through the various conversations the architects inevitably shared.

Despite the shelving of the Paralysis Institute’s design, it remained an important scheme. While it did not gain approval from people such as Ahmed Duaij who had championed his previous work, the plan shows Roth’s adeptness at designing for new typologies, although the Institute still had its issues. The proposals appear unresolved with a confusing circulation pattern and no external drawings to show what the appearance of the building would be; although this was predictable given the similarities between his other schemes in Kuwait, and shows that aesthetics was not necessarily a priority for Roth. The organisation bares enough differences to avoid derivation from his other works, and possibly shows that the scheme was scrapped before Roth could finalise it.

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434 Roth, A, Plans for the Paralysis Institute, Kuwait. (gta Archive: ETH Zurich – box number: 131-0166)
435 Tyrell, Aalto, Utzon, Fehn, p. 64.
Figure 5.34 Paimio Sanitorium, by Aalto. Shows the configuration and linkage of space, 1930-3 (https://paimiosanatorium.wordpress.com/2016/02/10/alvar-aalto-floor-plans-and-drawings/)

Figure 5.35 Paimio Sanatorium exterior, shown within the landscaped area and long balconies, 1930-3 https://www.alvaraalto.fi/en/architecture/paimio-sanatorium/
**Spatial Distribution of Schools**

The spatial distribution of Roth’s schools within communities which they served was as important as each individual school’s spatial configuration. Although he did not draw up neighbourhood plans, the relationship between the buildings here draws references to his earlier Doldertal Apartments (fig 5.10) and the master-planning of Lock and CJW. Roth’s plans for the distribution of schools at As-Sabahiya City, Kuwait (fig 5.38), indicated evidence of this, delineating evidence like the spreading of schools in various blocks in Kuwait City. Satellite image analysis of Kuwait illustrates the close distance of schools undeniably designed by Roth within similar proximity and spatial relations to the wider block; archival evidence shows that this spatial layout and theory is still in use today. The division of Kuwait City into blocks was determined in the utilitarian 1952 plan by MSM for Kuwait (fig 5.36). From the city centre, where few people would reside, residential neighbourhoods would radiate outwards with straight highways linking each neighbourhood together, prioritising use of the car. The blocks created formed Kuwait’s suburbs, and each block incorporated a microcosm of the city (fig 5.37); requiring schools, healthcare and shops for its residents all within walkable, or a short drive distance from houses. Roth’s plans for the As-Sabahiya city in Kuwait demonstrate significant similarities to the plan and current satellite images of the Rumaithya block in Kuwait City. The Ministry of Works are likely to have planned Rumaithya under the principles of the 1952 plan, using Shiber to produce its layout in the early 1960s. Its layout is like Lock’s Ubullah neighbourhood, with blocks surrounding a central axis, and bears similarities to Roth’s own work for the configuration of As-Sabhiya in Kuwait.

![Figure 5.36](image-url) **Figure 5.36** Shiber’s Rumaithya plan showing the blue boxes on the central axis and within the neighbourhoods for schools to be built, 1964 (Shiber, *Kuwait Urbanization*)
The As-Sabahiya plan (fig 5.38) exhibited notions of planning a neighbourhood that Roth laid out in *Alfred Roth: Architect of Continuity*. The township was to act as a satellite town for Kuwait City, intending to house 22,000 people which, like Kuwait City, received significant planning input by Colin Buchanan and Partners.\(^{436}\) A central slaloming axis split the middle of the town, on a cruciform-shaped-plan, with parks, sports fields, secondary and intermediate schools, and a community centre located in the centre. In As-Sabahiya, Roth’s work was related to the dispersal of the schools on Buchanan’s physical plan, in which he manifested ideologies set out in *New School Building* where he theorises about school distribution in regular neighbourhoods. Roth inferred that schools intended for younger children should be more central to the specified neighbourhood. Larger schools for older children were central to the town, or block, and accessed by buses and cars.\(^{437}\) Pressure from Kuwaiti authorities and Colin Buchanan and Partners coerced Roth to revise the original numbers of kindergartens and primary schools to meet their targets.\(^{438}\) In turn, this meant that schools for young children were smaller in size but there was the construction of a greater number of schools; secondary schools for older pupils were larger in size and with less schools built overall.

\(^{436}\) Roth, *Alfred Roth*, p. 215.


\(^{438}\) Roth, A. (Letter) Roth to Khalid Essa Al-Saleh, February 1970 (gta Archive: ETH Zurich – box number: 131-0162)
Figure 5.38 As-Sabahiya City plan showing the distribution of schools in an area similar to the size of four blocks in Kuwait City (gta Archiv, ETH Zurich: box no. 131-0167)
Table 1: Schools planned for in As-Sabahiya by Roth and their distribution

<table>
<thead>
<tr>
<th>Type of School (Age)</th>
<th>Number of schools allowed for</th>
<th>Average distance from home to school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten (0-4)</td>
<td>10 (revised to 4)</td>
<td>300m</td>
</tr>
<tr>
<td>Primary School (4-11)</td>
<td>8 (revised to 6)</td>
<td>500m</td>
</tr>
<tr>
<td>Intermediate School (11-14)</td>
<td>4</td>
<td>1000m</td>
</tr>
<tr>
<td>Secondary School (14-18)</td>
<td>2</td>
<td>1200m</td>
</tr>
</tbody>
</table>

Rumaithya district in Kuwait City exhibited similar features to As-Sabahiya with prototype schools produced by Roth distributed around a central axis of the area near to other civic amenities (fig 5.39). Twelve blocks of similar sizes with a central road, Nasser Al-Mubarak Street, divided the district. A beach community borders this area split from the district by the main coastal highway to the east of the area, although there is little evidence to suggest the beach is used for leisure purposes. The spreading of other amenities, such as community centres or mosques, is not as clear as the Buchanan planned town of As-Sabahiya, or as the depictions of townscape within Lock’s work, Shiber’s images or CJW’s models that clearly placed the tallest elements at the centre of an area. The distribution of schools here is also narrower than As-Sabahiya, without placing the kindergartens or primary schools within the wider blocks closer to residential homes. The depth of analysis in As-Sabahiya stretched to reflecting the average walking distance for students, ensuring this to the minimum considering the climate that the students must walk in; this concurred with Roth’s aims with other schools in Europe, where it is notably cooler, suggesting certain elements of spatial distribution are universal rather than a requirement for the local.
CHAPTER 3: ALFRED ROTH

5.0 Conclusion

Roth was a European, functional, utilitarian architect whose buildings lacked ornamentation and motif in his commitment to European modernist theory. The climate influenced the forms of his buildings, from which he boldly claimed to have made a new type of school; it appeared that he believed this to be the increasingly prosaic amalgam of Western style modernism meeting the climatic requirements of a desert state. This chapter proposes a hypothesis that inflated claims by the architect at times, his architecture is functional with specific areas well researched. The scale of his buildings was small, but in relation to the wider state-building narratives of this era, he produced an important contribution to the creation of modern-day Kuwait. The schools he constructed were part of a wider programme of state building and nationhood, themes which were common throughout Gulf building projects of this period. The schools were part of wider neighbourhood plans, through-which with mosques, souks and public spaces, would form part of the centre of these new areas.

5.2

His architecture was rooted within the European zeitgeist, as evidenced through his connections with Aalto and the subsequent plans Roth produced for the Paralysis Institute. The perceived lack of cultural understanding both manifested within his climatically focused architecture and his writings to other architects and from the articles which he published. He regularly referred to areas outside of Europe as broad derivates of ‘oriental’. Since Kuwaiti independence and British withdrawal from the Gulf, clients in nations such as Kuwait had more autonomy in their briefs, asking for an architecture that adapted to the surroundings, which is what Roth adhered to if not ornamentally. Through taking from the climatic elements that influenced his buildings’ forms, Roth built structures that represented both the desire of the ambitious nation but were also functional within the climatic setting. Using courtyards and small amounts of glazing, Roth designed structures that were at the confluence of tradition and modernity, despite his European modernistic tendencies.

439 Roth, A. Letter (04.12.1975): Roth to Hamad Al-Ghanim ‘From Spring 1975 up to-day we designed new types of schools and also hospitals…'; this is also reiterated in a letter from Roth to Khalid Essa-Saleh (09.05.1972) where he states ‘I was extremely pleased with the building (Rumaithya Girls Secondary School), which indeed represents a new solution of schools in hot climates. Mr Sami Mishri told me that the MPW (Ministry of Public Works) will build at least 6 other schools of the same type, two or more are already in construction.’ (gta Archive: ETH Zurich, box 131-0162)
4: Doxiadis Associates’ Riyadh Plan
Introduction

There is a complexity of clashing cultures that affect the art of the developing world – cultures that are old and new, craft and technology, of the inside and from the outside, evolutionary and revolutionary, traditional and modern, esoteric and popular – the clashing of diverse technologies, divergent tastes, and contradictory values and aspirations that are characteristic of the developing world – all correspond in many ways to the violent juxtapositions and oppositions that compose the diverse and volatile culture of the West.440

I can find no better way to describe our cities than as an urban nightmare. If we want to speak about architecture we cannot think merely of buildings isolated in the countryside; such buildings are seldom erected nowadays, but even when they do occur they are gradually taken over by expanding cities. In any case, to think of isolated buildings is really to evade the main question related to architecture, for architecture does in fact lead towards the formation of cities.441

The publication of Doxiadis Associates’ (DA) plan for Riyadh (1972) was at a key moment in the history of the Gulf’s built environment; rather than applying European architectural and planning principles, DA sought to implement styles and aesthetics drawn from the surrounding areas. Increasing Saudi Arabian autonomy manifested itself through architecture and planning allowed a concentration on aesthetic rather than just the function of buildings. Constantinos Doxiadis’ (1913-1975) theories regularly focused on the spatial-economic possibilities of cities and how they related to the wider region, with the aim of large societal transformation beyond the city encompassed in these prospects.442 Biographical elements of the architect or planner in question are vital; in Doxiadis’ case, previous work

^ Figure 6.1 (top left) A building by Geoffrey Bawa at the University of Ruhuna based around courtyards and making shade where possible (1980-88) (ArchNet)

^ Figure 6.2 (top right) An example of Hassan Fathy’s work in Egypt where he utilised local materials and traditional forms to build functional, low-cost housing, New Baris Craft village (Archidatum.com)

< Figure 6.3 A Minette De Silva designed house in Kandy from 1951 (suravi.fr)

< Figure 6.4 Yasmeen Lari’s low-cost housing, Anguri Bagh, in Lahore using local materials and forms which encourage privacy, in the regional style, 1984 (ArchNet)
completed by himself and the company signalled that their ideologies and theories differed greatly from the accepted mantras of post-war European planning, with an emphasis upon reconstruction and utilising existing fabric. At the time of planning Riyadh, DA employed a permanent staff of over 500 qualified professionals, handling projects varying in size from the design of individual buildings to complete development studies of nations. By 1968, in their seventeen-year existence, DA had worked in 35 different countries, confirming their global outlook as a planning consultancy without ‘imperialist agendas.’ This chapter will utilise numerous key secondary sources that look at several other DA plans, Doxiadis’ career narrative, and specifically the Riyadh master plan. This chapter builds on Deborah Middleton’s work through applying understandings of regional theory, architectural concepts and geopolitical events to the Riyadh plan.

Riyadh’s selection as a case study and Doxiadis’ work here is vital to the thesis as it exemplified the production of ornamentation and motif within a citywide master-plan. Much of the work this chapter deals with contrasted to other plans in the region, such as MSM’s work in Kuwait, but provides comparisons to the studies of existing fabric in the works of Mohamed Makiya or Max Lock. DA’s work focused on the built environment’s aesthetic and placed importance upon bestowing design guidance in their report, with a sympathy towards the historical. Through focusing upon the urban grain and the spaces between buildings, they also deemed the traditional architecture of the country significant in the visual development of contemporary and future building through considerations of townscape, substantiating wider trends within modernism and its use within the region. Overall, they encouraged the use of traditional building styles – not techniques – within new building projects in Riyadh, as shown in project notes, preliminary reports, research and the final report (the Report, unless otherwise stated) produced in 1972 for the Saudi Arabian government. Thus, the intensity of Arab motif and ornamentation increased under the plan as it suggested another major move towards the total rejection of European styles of modernism in the Gulf, despite DA’s own associations with unapologetically European influenced planning and architecture in cities such as Baghdad, with rigid geometric street layouts (fig 6.5; fig 6.6).

The relationship of global architectural development to Doxiadis’ work was influential. Hassan Fathy had joined the Ekistics group in 1957 when Doxiadis was working on housing plans for Baghdad. Fathy was further relevant to Doxiadis’ plan through the designing of a house in Riyadh in 1967. Doxiadis was interested in the work of Fathy, whose architecture dealt with modern idioms of traditional design and construction methods, inspired by peasant architecture in his native Egypt (fig 6.2). Curtis’ Modern Architecture since 1900 or Frampton’s Modern Architecture: A Critical History covered the growth of interest in modern buildings in countries considered ‘third world’ by once ‘under-appreciated’ architects such as Balkrishna Doshi (recently the recipient of the 2018 Pritzker

\[443\] Doxiadis Associates, (1972) General Description of Consultant’s Firm, (DOX: 23313)


\[445\] Ekistics is the holistic science of human settlements, at varying scales of planning from the dwelling to city, to regional; it encompasses a broad range of schools of thought, not limited to geography, ecology, psychology, anthropology, culture, politics and aesthetics. Ibid, p. 13.

CHAPTER 4: DOXIADIS ASSOCIATES

Figure 6.5 Satellite image of Doxiadis’ planned area of Baghdad known as Sadr City; the wider structure is on a grid iron pattern, with each cluster, or sector, planned geometrically (Google Maps, 2019)

Figure 6.6 Close up of Sadr City’s ‘sectors’ showing their geometrical layouts (Google Maps, 2019)

Figure 6.7 The Architecture without Architects exhibition at MoMA, 1964 (Pinterest)

Figure 6.8 Marrakech from above, showing the typically tight grain of the city and the central, private courtyard spaces within each dwelling, from Architecture without Architects, 1964 (https://www.brainpickings.org/2012/01/23/architecture-without-architects-bernard-rudofsky/)
Figure 6.9 Example from *Architecture without Architects* showing an example of buildings associated with fishing at Hastings in East Sussex, 1964 (Pinterest)

Figure 6.10 The monastery of Simon Petra, Mount Athos in *Architecture without Architects*, 1964 (Pinterest)

Figure 6.11 *Architecture without Architects*, showing bâdgirhā, or wind catchers, in 1938 and their forms within the townscape (Pinterest)
Prize), Geoffrey Bawa (fig 6.1) (whose work is now more celebrated than ever before), Yasmeen Lari (fig 6.3) (the Pakistani modern architect) and Minnette De Silva (fig 6.4) (prominent Sri Lankan architect and member of CIAM). Landscape architects such as Roberto Burle Marx emphasised locality even more, prompting historians such as Richard William to suggest that this form of regionalism is a ‘modern architecture sensitive to place and context, tough, pragmatic and local’. Although their work is of little physical relevance to the production of Doxiadis’ Riyadh master-plan, it is this background that serves as the global context for the implementation of ideologies like his own.

Edward Said’s *Orientalism* (1978) represented autonomous thought and identity of Arabic speaking nations. Because of postcolonial development, architecture was beginning to move away from the European modernist trend into a new era defined by aesthetic rather than functionalism. The journals *DA Bulletin* and *Ekistics Journal* Doxiadis edited at DA are also of vital importance, as other studies have shown. As a case study and chapter in this thesis, DAs’ work in Riyadh lies at the caesura of modernism’s rejection and the beginning of postmodernism’s aesthetic driven style of expressionism, which utilised an amalgamation of tradition and modernity for inspiration. The promotion of Arab motifs and tradition in town planning was used in opposition to previously implemented utilitarian plans. The term ‘organic’ is regularly used throughout Doxiadis’ writings, through his belief that cities develop and change over time like an organism. A catalyst for academic thought on non-Western architecture occurred through MOMA’s exhibition and accompanying catalogue of *Architecture Without Architects* (1964) by Bernard Rudofsky; Western architects continued to work in their respective styles in regions such as the Gulf but this caused the gradual postcolonial awakening of Western designers (fig 6.7; fig 6.8; fig 6.9; fig 6.10; fig 6.11). *Architecture Without Architects* served as a reminder that traditional vernacular buildings are ‘beautiful’, too, contributing to the global scene of architecture and its rejection of modernism.

Robert Venturi’s immortalised quote, ‘less is a bore’, is reflected itself the development of the built environment of the Gulf during this period. The context in which this was said in discussing analogies between Japanese pavilions and houses, forced simplicity and Philip Johnson’s ‘oversimplification’ of the Wiley House (fig 6.12), is echoed in similar mantras exhibited by Roth in the previous chapter. Others, such as Frampton, Tzonis and Lefaivre might argue that architecture built after Doxiadis’ plan might be termed critical regionalism and that DA’s plan is symptomatic of this regionally informed trend. DA put forward an idea of an aesthetic regionalism through the utilisation of modern building materials and techniques. They did this through typological and morphological research of Riyadh’s built environment, dissecting buildings of varying shapes and forms, from palaces to ad hoc constructed shacks, and published this in their final report. Doxiadis characterised cities as ‘urban nightmares’ in relation to their organic growth and the development of his

451 Ibid.
His theories aimed to encompass both the planned and organic, to make sense of the entropic surroundings he encountered.

DA’s work looked extensively at the surrounding environment in Riyadh, with the Report basing its subjective findings upon a favourability shown towards traditional architecture; there was mostly interest in local, traditional architecture rather than the newer, contemporary buildings constructed from a range of materials without an urban plan. Doxiadis wrote and published prolifically throughout his career. In terms of scale, the plan is a marked increase on those by Lock at the beginning of the period of assessment and is considerably more intense than the previous three case studies with regards to the encouragement of motif and ornamentation.

An aim of this chapter is to provide specific context giving both biographical information on what formed Doxiadis’ planning ideologies, what these were and how they influenced the Riyadh plan. The geographical, cultural and built context of Riyadh, contributes to the analysis of the 1972 Riyadh master plan. Detailed analysis of the plan will focus on the architecture and design of the city and the elements that Doxiadis believed would make the city into a modernised place. DA’s work was at the confluence of modernism and regional typological development that proliferated in the Gulf in the years following his plan, through understanding the Gulf and global architectural context this chapter creates a new understanding of DA’s work. Architecturally, the plan appeared to utilise methods that differed from European post-war planning. DA’s plan represented the changing political and economic pressures of the world, while taking into account altering architectural and planning thinking.
Doxiadis Context: Biographical and Ideological

Biographical

Upon Doxiadis’ premature death in 1975 at the age of 62, the New York Times journalist Wolfgang Saxon stated that he was a ‘visionary planner’ whose “concepts touched the lives of millions of people around the world”.\(^453\) Middleton’s dissertation on the Riyadh master plan covered Doxiadis’ biographical context. He had a Western education, studying at the Athens Technical University (1935), following that he received a degree from the Charlottenburg University in Berlin in 1936.\(^454\) After this, he worked in the Greek Ministry of Public Works from 1940 to 1945 as the head of Regional and Town Planning.\(^455\) From there, he became Director General of the Ministry of Housing (1945-8).\(^456\) His work continued in public service with the Minister-Coordinator of the Greek recovery programme and ‘the top post’ of Undersecretary of the Ministry of Coordination (1948-51).\(^457\) Doxiadis’ work as a planner in this era focused upon the building of cities following damage caused by the Second World War.\(^458\) Doxiadis’ ideology can be analysed against other planners of this era, but his work and philosophy fall mostly in line with the work of the organicist, Lock, whose work in Middlesbrough and Hull utilised community led planning.

Ideological Development

For planners working in Europe during the post-war period, the reconstruction methods of cities defined careers. In Greece’s case, the US instigated Marshall Plan enabled the rapid advance of development and post-war reconstruction providing a large budget and blank canvas for planners. Lefteris Theodosis’ work covered Doxiadis’ relationship with the Ford Foundation, one of the wealthiest American philanthropic institutions, which funded much of Doxiadis’ research and educational activities.\(^459\) Theodosis argued that some see this relationship with American money as the catalyst for the promotion of American driven modernisation and values.\(^460\) During the post-war period, Doxiadis developed his theory of ‘Ekistics for Human Settlements’. The terminology used in this theory is vital to the overall significance of his work; the language he used when articulating planning and architecture stemmed from conferences and correspondence with other architects and planners across Europe. Neologisms, such as ‘dynapolis’, ‘ecumenopolis’ and ‘ekistics’ rivalled those developed in the CIAM meetings or in the splinter group Team X.\(^461\) Important similarities can be made between architects such as Candilis-Josic-Woods (CJW) or the Smithsons who stemmed from these other groups and looked to create revolutionary architecture.

The Delos Symposium, founded by DA, included influential members such as Jacqueline Tyrwhitt; together, they created theories, language and portmanteaus informing global city development in the twentieth

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\(^{454}\) Middleton, Growth and Expansion in Post-War urban Design Strategies, p. 3.

\(^{455}\) Ibid.

\(^{456}\) Ibid

\(^{457}\) Ibid.

\(^{458}\) Ibid.


\(^{460}\) Ibid.

\(^{461}\) Portmanteau of ecumene – the total inhabited area of the world – with polis.
^ Figure 6.13 Islamabad (1960) by DA, showing the rigid lines but with more formal considerations for the topography and existing environment contrasted against the strict geometric patterns of DA’s work in Baghdad, with an axial route drawn from the Beaux Arts (Karim, F. “Sculpted Landscape: the unbuilt Public Square of Islamabad”)

^ Figure 6.14 Constantinos Doxiadis explaining the plan for Islamabad, c.1960 (https://www.thefridaytimes.com/the-architect-of-islamabad-1960/)
century. Ellen Shoshkes’ research highlighted the importance of Tyrwhitt’s work, noting that she was a disciple of Geddes, a translator and editor of Giedion and collaborator of Doxiadis; emphasising the importance of her relationship with Doxiadis at the centre of modernist theory. Lock referred to Tyrwhitt as a ‘catalyst’ rather than a practitioner, highlighting her career as ‘collaborative’ and acting as a ‘touchstone’ for the era. The shared work of Tyrwhitt with Lock and Doxiadis served as an important link between the two major planners and their links with Geddesian philosophy at the roots of major international plans throughout the twentieth century.

His work as a ‘key participant’ in international reconstruction commissions and a major role in the 1947 UN Conference on Housing, Planning and Reconstruction led to global recognition and the formation of DA as an international strategic planning consultancy with offices in twelve countries. Middleton asserted that at the core of his work was the argument against the ‘utopia creation’ emerging in the post-war period. This possibly stemmed from the collaboration with Tyrwhitt; Shoshkes stated that:

> Arguably, Tyrwhitt’s genius was in her ability to extend the influence of foundational anarchist Utopian planning ideals in the further development of post-war modernism by recognising patterns that connect their multifarious expression across time zones and cultures, and bringing them together into a single thread of ‘ekistical thinking’ – aligned with an emergent ‘postmodern globalism.’

Here, Shoshkes neatly summarised the themes that run through Doxiadis’ planning, which also align with Tyrwhitt’s. Knowing the clear links between Tyrwhitt and Lock, she is an important cog in the spreading of organic planning ideals, which arose from her education and inevitably conversations and work with former colleagues. Shoshkes combines these ideas of a post-war modernism and anthropological patterns which transcend time zones and cultures’ with Doxiadis’ ‘ekistical’ thinking, demonstrating that this amalgam of knowledge has her at the centre.

DA’s major works included plans for Washington D.C, Islamabad, Baghdad (fig 6.5; fig 6.6; fig 13; fig 6.14), Kharthoum, and extension schemes for Stockholm, Detroit and sixty-five villages in Libya. Doxiadis ‘stressed’ the need for a new approach to city design accommodating ‘long-term planning needs, functional organisation and dynamic expression of a city’.

464 Middleton, Growth and Expansion in Post-War urban Design Strategies, p. 5.
466 Middleton provides this list in Growth and Expansion in Post-War urban Design Strategies, p. 5, but their work exceeds this by some way with many more projects either shelved, partially completed or fully finished throughout the world.
467 Middleton, Growth and Expansion in Post-War urban Design Strategies, p. 43.
notion of expanding cities along an axis ‘controlled by zoning and the sitting of public buildings, road systems and green areas’ (fig 6.17). Expanding the city along an axis would thus create a linear city, inspired by concepts such as Arturo Soria y Mata’s 1882 Ciudad Lineal (fig 6.16), near Madrid, and Tony Garnier’s City Industrielle (fig 6.15) from 1901. The creation of the linear city from nothing has similarities and spatial juxtapositions with the garden city and the notion of building in concentric circles allowing for the zoning of specific areas (CJW chapter, para. 1.5). The latter being far more popular in the literature gained more contemporary support.

^ Figure 6.15 Tony Garnier’s Ciudad Industrielle showing the axis through the city traversing the city to the horizon, 1917 (Pinterest)

469 Ibid.
Figure 6.16 Arturo Soria y Mata’s Ciudad Lineal plan, near Madrid, forming some of the historical context and precedent for some of Doxiadis’ thinking, 1895-1910 (https://en.wikipedia.org/wiki/Linear_city)

Figure 6.17 The master plan for Baghdad by Doxiadis showing the expansion outwards away from the historic centre with geometric blocks, or sectors, organising the space, 1955-8 (Pyla, P. ‘Back to the future: Doxiadis’ plan for Baghdad’).
CHAPTER 4: DOXIADIS ASSOCIATES

3.0 Riyadh Context

3.1 At the inception of the plan in 1968, a population estimate of the city was 300,000 people, having grown from 25,000 in the previous decade. Unlike places such as Ahmadi, the planning of Riyadh meant DA had to work with existing fabric and urban patterns. Riyadh took its name from the Arabic, *ar-Riyath*, meaning ‘the gardens or orchards’, owing to its position at the confluence of the Wadi Hanifa (fig 6.18; fig 6.19) and the Wadi Batha which gives rise to fertile lands. DA decided against the erasing of Riyadh’s old city. Riyadh required detailed analysis into its population and urban development for the creation of a successful plan; this was due to hasty unregulated urbanisation throughout the 1950s and 1960s. In their initial findings, DA found that the:

*History of the people of Saudi Arabia, the nomad pattern of the past, the rich oil based economy of the present and the gradual wider commercial exchanges, the religious life and the movement of pilgrims have all characteristically influenced the growth of Riyadh, which is now developing still further as the centre and symbol for the national administrative and cultural life of the country.*

The surrounding Wadis influenced the overall orientation of Riyadh in relation to cultivable areas and water availability; this shaped the direction of the modern city to which Doxiadis would plan. The Report pointed out that optimum orientation, with respect to climate, plus the topography of the area, forced a predominant direction of development from south-east to north-west. Doxiadis’ preference for planning linearly placed importance on this type of analysis; observing where the topography and man-made features of the city influenced previous development.

During this period, Saudi Arabian politics had an appearance of stability, according to the Report. Regional pressures remained from neighbouring countries Iran, Iraq, Syria and the UAE, while the Saudi government were willing to exert their own pressure overseas. DA viewed the British as provoking some sort of volatility within the area through withdrawal rather than viewing them as peacekeepers of the region. Most importantly, this section of the Report deals with the fact that:

471 Guise, A. (1988) *Riyadh*, (London: Stacey International), p. 8. There is little evidence this translation is true, but the notion that Riyadh exists here because of the confluence of the two Wadis makes sense given the arid nature of Saudi Arabia and the fertility in the soils in this location.
Figure 6.18 Riyadh today, with the Wadi Hanifa marked in green on the western side of the city (Google Maps, 2019)

Figure 6.19 Aerial photograph of the Wadi Hanifa wetlands from the Aga Khan Trust, showing the natural looking landscape as a piece of design, 2001-present (Aga Khan Trust)
Saudi Arabia will have to come to terms, both inside its borders and beyond, with the increasing demands of the poor to share in the dramatically evident wealth of the region and with the tribal alignments which grid the area and are often expressed in territorial claims.\textsuperscript{476}

The Report deals with migration in detail, with further focus on population growth and the growing desire of the ‘poor’ wishing to share in the new wealth of the region. This becomes apparent with the detail of DA’s Master Plan and analysis of traditional and post-war types of housing for the poor.

When DA started to plan Riyadh, Saudi Arabia was defined by nomadic tribes and caravans moving around its arid, desolate, provinces. The task for DA was to plan for the changing city both in terms of its size and growth. It also had to factor in design elements of this; asking, and answering, how people lived and how they desired to.\textsuperscript{477} Physical change in Riyadh worked in parallel with intangible change; social alterations in society meant new ways of living infiltrated the city making it more open than it had been previously, contradicting its introverted architectural and urban forms. The Report dealt with these pressures: their plan would allow Riyadh to change physically and socially at a flexible rate rather than enforcing the change, as had been the case by other Western actors in the Gulf during the twentieth century. As it urbanised, and the country opened itself up to global trade, conflicting thoughts on modernisation and Western ideals entered the city and its development. None of this was new when DA planned Riyadh, but omitting normal elements of Western town plans, such as the extent of open public space, was necessary because of conservative social norms, as well as other competing factors such as the climate which affected the patterns of everyday life.

\textsuperscript{476} Ibid. Details of this are vague; it is a report of the current political conditions in Saudi Arabia by a Doxiadis employee, it is unclear who it is written for or addressed to. Doxiadis Associates. (1970) Five Year Development Plan, 1970-75 For the Municipalities of the Kingdom of Saudi Arabia. (DOX-SAU-A12)

\textsuperscript{477} Naturally, how people desired to live varied greatly; the anxieties of the conservative society through a period of change is encapsulated in Munif, Cities of Salt.
4.0 The Plan for Riyadh

4.1 Architectural Typologies

DA’s work in Baghdad in 1955 suggested that their work would ‘overcome the functionalist, universalist, and ultimately Eurocentric and homogenising preoccupations of other modernist interventions by embarking on exhaustive surveys and research programmes that would identify each locale’s specific needs and potentials.’ In this case, DA’s work carried on in an anti-colonial vein into the late 1960s including the ideologies that underpinned their Riyadh plan. Middleton argued that the ‘absence of detailed urban research for the post-war period motivated Doxiadis to undertake an intensive study of urban problems associated with rapid and dynamic urban growth and change.’ The experience gained from this proffered itself when producing a plan for Riyadh. Much like contemporary architects that worked on a regional scale, such as Fathy or Lari, Doxiadis looked at previous construction methods and offered alternative solutions to housing the poor. It is clear from Fathy’s style that there is a distinct crossover in the research techniques used by Doxiadis and the appearance they championed for new buildings in the city. The overall aim of the Doxiadis plan was to respect the social traditions of daily life in Saudi Arabia, whether the practice agreed with them or not, while accepting there was a large-scale urban transformation taking place due to the population growth, internal, and macro immigration (fig 6.20; fig 6.21).

481 Doxiadis Associates, Final Master Plan (Draft), p. 17.
Building Styles of Riyadh

Several historical books deal with the traditional architectural development of Riyadh; however, DA undertook a comprehensive analysis of the buildings of the Najd during the writing of the Riyadh master plan. This source of information, coupled with the journals of Wilfred Thesiger, Anthony Guise’s account of the development of Riyadh and alternatively Pascal Menoret’s Joyriding in Riyadh (2014), provided an insight into the urbanisation of Riyadh during the twentieth century bookending Doxiadis’ plan. In DA’s master plan for Riyadh, they cited three core factors at the centre of the development of traditional architecture: climate, sociological and technical.

4.3

Traditional buildings are not necessarily all about the style and aesthetic of the structure but are more about the creation of a ‘solid’ and a ‘void’, which in turn corresponded to wider streetscapes and the urban layout (fig 6.22).

Secondly, and aesthetically, the buildings complied to a style specific to each geographical area of Saudi Arabia, but also conformed with similar themes within the wider region. The traditional buildings of Riyadh, overall, correspond to its specific geographical location. The ‘monumental’ and historical buildings at the centre of the city ‘constitute an important element that should be considered in the future development… of the area’. The use of ‘mud-block’ (al-tub) is commonplace across the Gulf region, but particularly in Riyadh, where Mohammed Abdullah Eben Saleh attributed its importance to its use in the building of defences around the city by King Abdulaziz, who conquered the city in 1902. Furthermore, it is materials such as these that Doxiadis thought made iconic local architecture, but failed to analyse it within the Report, suggesting at times that this aesthetic can be made through other means.

> Figure 6.22 The Report suggests that these are ‘Attractive blocks of old houses. The urban grain of this area is typical of old Riyadh with the geometric, orthogonal spatial arrangement of the blocks being reflected in the proposed plans (DOX-SAU-A5-723310)

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484 Ibid, p. 268.

Like the wider region, architecture developed through ad hoc spatial practices ensuring each building followed set principles evolved over the previous centuries. Doxiadis’ core basics of building for climate are a concise version of those outlined by Fry and Drew in their 1947 primer *Village Housing in the Tropics: With Special Reference to West Africa* (fig 6.23) and the follow up publication *Village Housing, Fry, Drew, Knight, Creamer: Architecture* (1978); critics of the work state that the books are ‘distinctly colonial’ and that the intended audiences are ambiguous.486 The outcome of the work by Doxiadis was markedly like the other cities and countries within the Gulf, utilising what they thought distilled the aesthetic of the Najd; use of features such the mashrabiya, large feature-less facades, small window openings on the first floor and above and crenulations all had various purposes or referred to certain parts of the Arabian culture. The spatial planning of neighbourhoods affects the climatic success of buildings through ensuring elevations have small amounts of exposure to direct sunlight and ‘hot winds’.487 Furthermore, the Report suggested that houses be built to aid the protection of ‘indirect heat’, which is the warmth released into the house stored in the walls. Doxiadis also stated that a vital characteristic to avoid the overheating is the use of thick walls and insulation, utilising materials of low heat conductivity. The Report also suggested that the ‘external windows’ on houses are shut during the daytime, ‘thus keeping the hot wind or air outside the house.’488

488 Ibid.
As with previous housing designs analysed throughout this thesis, the societal and religious elements greatly affect the purpose of the house. There are two predominant factors in the social formation of the building. The Report stated: ‘the traditional way of living is expressed in the form and shape of the basic theme building. The rooms open to the courtyard expressing the concentration of family life onto this inner focal open space’ (fig 6.24).

The formation of the urban environment reflected the designs of housing even further; Doxiadis stated that ‘the severity of the form of the street and the lack of too many widenings and squares, demonstrates the formality and severity of neighbourhood life, which is a characteristic of Arabic social patterns.’

In the historiography on the morphology of cities such as Riyadh, there is an acceptance that the designs of buildings and their circulation spaces were ‘two complementary features of the townscape.’ The ‘lack of widenings’, according to Mohammed Salah, were developed out of ‘strict defensive’ and ‘Islamic principles’, forcing a dense morphology with minimal access from the outside. The Report concurred with all previous Western thought on life in the Gulf, in that it is intensely private without much focus on an active street-life.

[Figure 6.24: Spatial layout of a typical lower income courtyard dwelling featuring few openings into the space, screens from the interiors and solar shading above through panels and the growing of a tree (DOX-SA-A5-7: 23310)]

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489 Ibid, p. 296.
490 Ibid.
492 Ibid.
Technology, building methods and materials informed Doxiadis’ suggestions for a more traditional design aesthetic in Riyadh. The Report stated: ‘materials and construction methods generally reflect the above considerations and offer themselves to the moulding of urban spaces and architectural forms’, furthering the point that it is the physical building, and its aesthetic that play the role of showing the building’s function sociologically, as well as dictating the rhythm of the surrounding urban environment. To gain the vital insulation required to ensure the building is climatically viable, the construction of buildings was usually from *al-tub*, providing a traditional aesthetic to buildings. The traditional use of solid sun-dried bricks, and palm trunks for the structure, meant dwellings had a limited size; the introduction of reinforced concrete not only sped the building process up but allowed for the construction of wider spans and larger spaces allowing for greater variance in architectural expression.

The Report stated that ‘the possibilities offered by reinforced concrete would not have much to add to the social life of the city or to the way of resolving the problems posed by the climate’. In turn this may have encouraged the proliferation of inauthentic designs on large projects such as HOK’s King Saud University, rendered with brown concrete rather than the more traditional *al-tub* (fig 6.25). With regards to the globalisation of methods of construction, Saleh stated that ‘Islamic building forms are a true expression of the materials at hand, environmental conditions and social demands’. Previously, people could only build with materials found nearby; new developments were likely to be constructed from contemporary materials obtainable from Western building merchants. Prior to Doxiadis’ intervention, materials for most lower income dwellings were unauthorised and often constructed by recent migrants from rural areas and desert oases. Previously, the form and scale of the old city and areas of lower income dwellers developed horizontally rather than vertically, whereas the introduction of cheap and strong materials meant builders could build upwards, altering the morphology of the city through using less ground space.

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495 Doxiadis Associates, *Final Master Plan (Draft)*, p. 298.

496 Ibid.


498 Ibid; although Salah stated that people utilised what was nearby in Saudi Arabia, cities that bordered the Gulf regularly traded with countries further afield by water. In the case of Kuwait, it was common to trade water and bamboo for the nation’s pearls.

As shown above, the Report encouraged design to focus upon the aesthetic of historic Riyadh and the surrounding geographic area, despite the growing availability of common, mass-produced materials sourced from abroad. On a smaller, poorer scale, perhaps the only ‘authentic’ architecture constructed in Riyadh resulting from the Doxiadis plan was those buildings not designed by architects, but by the people simply for the necessity of having a roof over their heads. In his book, *Architecture for the Poor* (1969), Fathy provided reasoning for what he saw as squalid conditions in which ‘lower-income’ families might live in. Fathy’s work developed Arab architecture alongside the principles of modernism, making popular the forms of architecture DA’s plan espoused through appearance. Like other modernists, he worked on varying scales from the formation of the house and the room, to considering the spatial relationships of his buildings to other structures, up to master-plan level considering the relationship of these blocks to the urban fabric (fig 6.26; fig 6.27; fig 6.28). The juxtaposition of the urban environment to the rural is interesting here, he talked about the peasants of Egypt and the driving forces behind their housing issues, he stated that:

*The peasants were too sunk in their misery to initiate a change. They needed decent houses, but houses are expensive. In large towns capitalists are attracted by the returns from investment in housing, and public bodies – ministries, town councils, etc. – frequently provide extensive accommodation for the citizens, but neither capitalists nor the state seem willing to undertake the provision of peasant houses, which return no rent to the capitalists and too little glory to the politicians; both parties wash their hands of the matter and the peasants continue to live in squalor.*

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500 Fathy, *Architecture for the Poor*, p. 3.
Fathy’s work sought to alleviate these social ills, through producing architecture that represented both tradition and modernity, and this is noted through the plans to vary scales and differing from the usual tabula rasa type planning of other modernists. Like Lock’s anthropological research in Basra, Doxiadis focused much attention upon the sarifas of Baghdad, encouraging him to look at the ‘dwellings and shacks’ of Riyadh, ‘as this was where the majority of people’ resided. In the creation of the Report, arguments between the planners and the authorities over who should fund housing proliferated, with Doxiadis’ team deciding that the state should construct the lower-middle income housing, where the government wanted private; citing Fathy’s reasoning, stated above, he went on to say that ‘the respective burden on the national economy would be unnecessarily great.’ Fathy points out that the peasants of Egypt could ‘hardly afford reeds to thatch their huts’ asking ‘how could they ever afford to buy steel bars, timber, or concrete for good houses? How could they pay

Figure 6.27 The change of scale, to a more urban level at the Korangi Housing Project in Pakistan (1959), which was a settlement with the mosque and public buildings at the centre and the minaret acting as a landmark within the townscape (Damluji, S. S.; Berini, V. Hassan Fathy: Earth and Utopia (London: Laurence King))

Figure 6.28 Plan for the village of Gourna, showing a regulated grain based upon urban forms that already existed in the Gulf, rather than the rigid orthogonal layouts of mat-buildings assessed in earlier chapters (Damluji, S. S.; Berini, V. Hassan Fathy: Earth and Utopia (London: Laurence King))
builders to put the houses up? The lower classes of Riyadh were in a distinctly similar situation, with ‘18% of the present housing stock found to be inadequate’ by Doxiadis’ standards. The location of the temporary dwellings for migrants were built usually away from the city centre, on plots without definition, streets deprived of structure, public spaces not yet built and without provision of adequate sanitation.

The Report stated ‘authorities are duly concentrating their attention on these areas so that they may incorporate their population within the employment and social structure of the city and eliminate the physical ills, which these blighted areas cause’, much like the focuses of Lock’s plans in the north of England, Africa and Iraq. Although he was talking about the rural peasantry in Egypt, Fathy’s observations largely remain similar to the ad hoc, temporary building that people constructed on the periphery of Riyadh as demonstrated through Doxiadis’ written and pictorial observations. Fathy’s observations are not romantic, more a realistic analysis of a rural peasant setting from someone with his sort of urban background, Fathy wrote:

I was so disgusted at the sight and smell of the narrow streets, deep in mud and every kind of filth, where all the garbage from the kitchens – dirty water, fish scales, rotting vegetables, and offal-was regularly thrown, and so depressed at the appearance of the squalid little shops, fronts open to the smell and the flies in the street, displaying their few wretched wares to the poverty-stricken passer-by, that I could not bear to pass through the town.

A meeting of DA with the Mayor of Riyadh focused on the creation of slums in the city and how to eradicate the problem. In the minutes from the meeting, the Mayor referred to what Doxiadis denoted to as ‘shacks’ redefining them as ‘cottages’, a key difference in how people viewed these unlawful buildings; the Mayor added a degree of politeness with his term, while Doxiadis’ view is far less subtle in their degradation of this living scenario.

**Housing in Riyadh**

Housing formed a large section of the master plan for Riyadh; the Report’s structure assessed existing housing stock to inform the volume of building the city required and its design. The Report’s structure, if hierarchical, places prominence on the rarest types of housing from palaces at the beginning down to the dwellings for lower income families without defining what these earnings are or the specified house types, locations or sizes are. Doxiadis derided houses built after 1945 in Riyadh, due to their forms and

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503 Fathy, *Architecture for the Poor*, p. 3.
505 Doxiadis, *Final Master Plan (Draft)*, p. 300.
506 Ibid.
507 Fathy, *Architecture for the Poor*, p. 3.
construction methods. Where the Report proffered an opinion on taste, it usually condemned these new styles in which Saudis built which drew heavily on European modernist principles. Contrasted to earlier projects, Doxiadis had openly encouraged innovative construction methods in the West Baghdad Plan of 1957, with the materiality bearing similarities to Doxiadis’ compatriots in Dimitri Pikionis’ pathways at the Acropolis in Athens, made famous through the literature of critical regionalism (fig 6.29; fig 6.30; fig 6.31; fig 6.32). Further similarities are drawn with the neighbourhood concepts within Mohamed Makiya’s work in Baghdad and the measured work in producing work based on detailed architectural studies of the city (fig 6.33; fig 6.34). Since Shiber’s 1964 assessment of Kuwaiti urbanisation, there had been a growth in interest surrounding the ‘Islamification’ of architecture that responded to problems arising from rapid population growth; in 1983, Lari summarised this as a ‘flourishing of Muslim culture and the ‘unique challenge’ of architects, Western and Islamic, building within such places. In the draft report for the master plan for Riyadh, Doxiadis highlighted there are ‘many house types’ found among the 51,000 dwellings estimated as existing within the area of Riyadh. Between the various typologies existing at the time were houses ‘built in the traditional style’ and some that reflected the ‘present needs of its inhabitants’ (fig 6.35).

The Report noted that the income of the given family had more of an influence over the size of a house than the amount of people living in it.

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Figure 6.29 Example of a realised Doxiadis scheme of housing, showing ‘Gossip Square’ in West Baghdad (c.1958), which utilised earthly materials such as stone and bricks, while introverting the spaces to look inwards (modernbaghdad.tumblr.com)

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509 Doxiadis Associates, Final Master Plan (Draft).
510 Ibid, p. 299.
514 Ibid.
Figure 6.30 Gossip Square materiality in West Baghdad (1958), showing the ‘traditional’ aesthetic, but modern, forms DA looked to promote in Riyadh through the plan there (Pyla, P. Gossip on the Doxiadis ‘Gossip Square’: Unpacking the Histories of an unglamorous public space, EAHN).

Figure 6.31 Helene Binet’s photograph of the pathway to the Acropolis in Athens, constructed in the 1950s – the stones were salvaged from local buildings and placed in a seemingly ad hoc, yet carefully considered manner (Architectural Review, November 2019).
Figure 6.32  A development in Riyadh showing dwellings on a ‘pedestrian’ street in a traditional style, constructed from imported materials (DOXSAU-A2: 23305)

Figure 6.33  Mohamed Makiya’s students at the new School of Architecture at Baghdad University surveyed Baghdad’s architectural fabric (1969), much like Doxiadis’ team did with the Najd (ArchNet: taken from the Mohamed Makiya Archive, MIT)
Mohamed Makiya’s students at the new School of Architecture at Baghdad University surveyed Baghdad’s architectural fabric (1969), much like Doxiadis’ team did with the Najd (ArchNet: from the Mohamed Makiya Archive, MIT).

DA’s report included examples of low income areas which they considered blighted and sought to alter with their plan. (DOX-SAU-A2: 23305)
Dwellings: Palaces to Sarifas

The Report conducted little analysis into Riyadh’s palaces where either aristocracy or high-income earners lived, but the traditional appearance of some of these buildings led to DA suggesting their forms for use in modern housing for those on lower incomes. The first sentence of the analysis merely stated that they ‘usually stood as fortified building’; the location of Riyadh on various trade routes across the Gulf region and for Muslims on the Hajj pilgrimage encouraged suspicion of foreigners necessitating a defensive aesthetic to the built environment.515 The introversion of the urban form is an established fact, the built form ‘acting as an adaptation to the harsh climate as well as a reflection of the social pattern of close-knit family and clan life’ and the architecture and landscape design of the palaces of Riyadh reflected this, too.516 These buildings, the Report noted, were based around a central courtyard had no gardens around them.517 In terms of the creation of a regional architecture noting the forms of buildings of the aristocracy and higher-classes served to inspire those on lower incomes what they wanted from their own architecture. Courtyards and gardens of the palaces are likely to be located within the high walls of a compound. The main features include enclosed geometrical division internally and the use of water and tall trees to enclose the spaces, as noted in either Moorish, Persian or Mughal gardens (fig 6.36; fig 6.37).518

Figure 6.36 Bagh e Babur in Kabul, showing a central axial water feature with a geometric spatial syntax taking from its lead in a Mughal garden, dating from the sixteenth century and conserved in the 1972 by Maria Parpagliolo (Wikipedia)

515 Ibid.
517 Doxiadis Associates, Final Master Plan (Draft), p. 299.
Dwellings built in the era following the Second World War were generally ‘free-standing’ within a garden compound, like the villas Western architects constructed elsewhere in the Gulf. According to Middleton, the majority of these post-war villas were located in the Al-Malaz area of the city, where urban infrastructure was good and leisure activities for residents prominent. The segregation of areas such as these was commonplace throughout the planning of cities and neighbourhoods in the Gulf in the post-oil era; the Report does not highlight this but through structuring it in a way that gives wealthier houses more prominence, DA inadvertently ordered it geographically. The construction of these houses and their materials drew the attention of the report writers, describing them as being ‘pretentious’ and ‘less impressive’ than the traditional architecture of Riyadh. There was a focus on the materials and systems used, and the collaborations of different contractors; rather than whether the buildings would function socially or climatically. Doxiadis’ change in attitude from the earlier plan in Baghdad shows the interest in the creation of place in Riyadh and the reluctance to leave the traditional style of the city behind.

Houses occupied by people earning ‘medium incomes’ fall into several broad styles categorised by the Report. While occupiers’ intended incomes are not specified, Middleton suggested that the trades of middle-income earners would have been civil servants, shop-keepers and tradesmen, thus covering a broad range of occupations. The master plan adds a typology in the form of the ‘apartment dwelling’ in the existing forms of housing in Riyadh (fig 6.38; fig 6.39; fig 6.40), on top the traditional mud house and the new, post-war, house constructed of cement blocks. Here, the report is specific about the spatial layout and size of the mud-brick dwelling, which not only is the traditional architecture of the area but continued to be built in the post-war period. This differed from the fashions of the higher income dwellings, whereby occupants opted for modern materials easily

519 Alissa, Building for Oil, p. 43.
520 Middleton, Growth and Expansion in Post-War urban Design Strategies, p. 80.
523 Doxiadis Associates, Final Master Plan (Draft), p. 298.
CHAPTER 4: DOXIADIS ASSOCIATES

Figure 6.38 An early apartment building constructed in Riyadh, dating from 1959 (http://www.csbe.org/riyadh-architecture-in-one-hundred-years-1)

Figure 6.39 Zahra al-Riyadh apartment building (c. 1968) (http://www.csbe.org/riyadh-architecture-in-one-hundred-years-1)

Figure 6.40 The descriptions in DA’s report hold more valuable information than the images; these four depict broadly some of the examples of dwellings included in the analysis of Riyadh. (Doxiadis Associates, (1971) Final Master Plan (Draft), (DOXSAU- A2: 23305)
obtained from abroad. The layout of the mud brick dwellings does not vary dependent on the income of the family, but the scale does. Where the higher income family might have four or five bedrooms with ‘auxiliary rooms’ for staff, the middle-income family might typically be smaller but the spatial configuration be similar with rooms opening out on to an internal courtyard, few openings on the exterior with general protection and isolation from the urban exterior.

House type and materials differed greatly between higher and lower income dwellings, with middle-income housing considerably blurring the typologies. In newer sections of the city, Doxiadis remarked, ‘mud houses continue to be constructed by some middle-income families’, hinting at concerns ad hoc development generated in the creation of unauthorised ‘shacks’, issues associated with the lower income dwellers. Where this differed and lines between tradition and modernity obfuscate, is with the creation of apartment blocks; they were often built in a Western style with external openings and a lack of central point for circulation, as the traditional courtyard might provide. The Report defined the apartment block as being a ‘residential building containing three or more apartments’, signalling a condescending need to define what might appear an obvious term for potentially unaware clients. Instead of the low-rise, maximum two storey-dwellings that predominated in the traditional city, the apartment block rose higher, sometimes reaching six to eight storeys, although they usually refrained from building that high. Spatially, while they look outwards, people cannot see in from the ground level and the interiors of the ‘secondary spaces’ are lit and ventilated from respective internal light wells. Doxiadis had similar ideas for the middle-classes in Baghdad, whereby the middle-income earners there would act as an intermediary between the lower and higher-income earners to minimise ‘direct contact between opposite sides of the economic spectrum’ (fig 6.41).

Middle-income dwellings were a hybrid; they were often self-built homes constructed to their personal, albeit limited, specification utilising materials more akin to the lower-income earners, yet, these could be in forms resembling the higher-income dwellings. While building from mud was commonplace, cement blocks covered with a reinforced concrete roof, or, as the master plan puts it, ‘more seldom with the traditional type of roof with rafters and mud’, also showed the variety of construction methods used in both higher and lower-income buildings.

524 Ibid.
525 Ibid.
526 Ibid, p. 298.
528 Ibid.
530 Doxiadis Associates, Final Master Plan (Draft), p. 300.
Spatially, Doxiadis’ recommendations were distinctly Western in principle, stymieing impromptu development due to the difficult terrain around the city for construction. Doxiadis highlighted two key conditions that the city should bear in mind when looking at the future development of areas in Riyadh:

\[ A: \text{The municipal area should be sufficient to accommodate the population of the city at a reasonable density.} \]

\[ B: \text{It should not extend further than necessary leaving empty gaps, as the total cost of development of the city should be related to the number of inhabitants and should not exceed the financial possibilities of the authorities.}\]

Furthermore, unauthorised developments, as had been taking place, were highly dangerous given the unsuitability of the ground for building on around the periphery of Riyadh. Despite the construction of middle to upper-class neighbourhoods at Al-Malaz (fig 6.42), Doxiadis suggested in papers that land ‘not far from the existing city of Riyadh’ to both the north-north-east and west-south-west leads into ‘soft sands’ unsuitable for development.\(^{532}\) Where development was to be allowed, it should take the


\(^{532}\) Ibid.
form of ‘plot’ development, whereby land is distributed into rectangular plots of a minimum frontage of 120m, a minimum depth of 160m and the boundaries with ‘clear rectangles’ with the building in the plot only allowed to take up 10% of this space.\textsuperscript{533} Maximum building heights were only to be of two floors, or eight metres in height (fig 6.43).\textsuperscript{534} This clear new step in the spatial development of housing in Riyadh was intended to assert basic rules, yet enforced a form of homogeneity.

\textsuperscript{533} Ibid.

\textsuperscript{534} Ibid.
Doxiadis Associates’ Suggestion

The importation of principles from DA’s Baghdad work to the Riyadh plan abetted the proliferation of a regional type of architecture. It was also during this period that, according to Middleton’s thesis, there were ‘emerging tensions’ in the correspondence between Doxiadis and Saudi officials.\footnote{Middleton, \textit{Growth and Expansion in Post-War urban Design Strategies}, p. 124.} This mostly related to the lack of reference to landscaping, green spaces and parks within a report DA produced regarding the beautification of the city, which Doxiadis claimed were a way of diverting money away from more necessary projects.\footnote{Doxiadis Associates, (1972) \textit{Arriyadh Community Layouts Supplemental Report} (DOX-SSAU-A-35-7)} Parallels between this and Page’s report for Abadan focused on greening the town but did not recommend the creation of expansive green spaces due to environmental difficulties (fig 6.44).\footnote{Page, \textit{Notes on the Planning and Planting of Open Spaces in Abadan}.} Where Page differed from Doxiadis is in the intensity of his research. For example, he investigated the salinity of the soils, the precipitation of the area and the likelihood of being able to grow and maintain planting schemes or green spaces in Abadan.\footnote{Ibid.} Doxiadis’ recommendations appear to be made from a lack of research into scientific factors and are more largely based on the assumption that, because of the conservative nature of Saudi society, these spaces might not be used despite the governing bodies asking for them. The consultants did claim to have ‘excellent relations’ with the Saudi Arabian government, having dealt with the Deputy Minister of Interior for Municipal Affairs, Prince Abdullah Sudairy and the Lord Mayor of Riyadh, Sheikh Abdul Aziz al Thanayin.\footnote{Taitsis, (1970) \textit{Saudi Arabia}, (R-SAU-A 26).} A Doxiadis paper from the time claims both these two had direct access to the King, which might suggest the problems surrounding the landscaping were not considered to be of importance by the Saudi state.\footnote{Ibid, p. 3; Details of this are vague: it is a report of the current political conditions in Saudi Arabia by a Doxiadis employee, it is unclear who it is written for or addressed to.}
The Doxiadis master plan appreciated the requirements for people to comfortably reside in the urban environment. In a section relating to the ‘Criteria for the Selection of Projects’ the writers placed importance on sewerage systems in areas that are growing quickly, but did not have it; it is said that:

The only question which can be asked about such a project is whether it should be built next year or the year after, or in 1980, etc. The need is there, it will be there, and there is no other way of meeting it except by building a proper sewage disposal and sewage treatment system.\(^{541}\)

DA’s report suggested that there was disagreement with their priorities in the creation of a city. An example of this was the construction of walls around a cemetery which residents viewed as being important socially and ‘spiritually’; therefore it was for the authorities to decide what to build first.\(^{542}\)

From the ‘enlightened’ Western planner’s perspective, he may see that the wall around a cemetery is not as important as good sanitation, but through the perspective of a planner working in a postcolonial environment, it was important these decisions had elements of public participation.

**Doxiadis’ architectural development control**

The consultants specifically left guidance of aesthetic and form of buildings to the Saudi government, providing a decision framework on construction guidelines. However, the Report laid down some basic rules that do not focus on the taste of the building’s design, through dictating how negative development might financially affect its surroundings. It suggested that buildings ‘which adversely affect’ the ‘development and value’ of other property ‘shall not be permitted to continue indefinitely’.\(^{543}\) It then provided ten regulations for the guidance of which buildings, would conform or not.\(^{544}\) None of them refer directly to aesthetics, scale or form, and they did not implement a specific agenda onto the Saudi city; rather they ensured that development is fair on landowners. The report implied through its discussion of buildings that do not comply with regulations that it was referring to structures that already existed, but were either dangerous to their surroundings through poor, unregulated construction, or were aesthetically detrimental to their surroundings.

Throughout the reports and correspondence from this period, there are inconsistencies regarding architectural taste and aesthetics. Primarily, the consultants attempted to take a neutral position in relation to this whilst promoting the traditional architecture that existed in Riyadh and bemoaning the ad-hoc, bricolage of developments from the post-war period through their analysis of the existing conditions of Riyadh; all whilst trying to fit the existing architectural appearance to a new modern urban form, through dismantling the grain and widening roads (fig 6.45).

\(^{541}\) Doxiadis Associates, Five Year Development Plan, 1970-75 For the Municipalities of the Kingdom of Saudi Arabia.

\(^{542}\) Ibid, p. 75.


\(^{544}\) Ibid.
Figure 6.45 Evidence of widening of streets and making them more accessible for cars, instead of the once narrow winding streets which were only suitable for pedestrians (DOX-SAU-A5-7 23310)
Civic Spaces: leisure and culture informing the built environment

The sociological condition Doxiadis’ team found in Riyadh differed greatly from the areas they reconstructed during the post-war period in Greece. Religious precepts dominated daily life, restricting the lives of residents, although the reports from 1968 that assessed the sociological condition noted that people were gaining freedom. An internal report by L. Athanassiou concluded that there was more interest in sports than there previously had been, which led encouragement for a National Stadium, with its subsequent commission going to Kenzo Tange. This overall restrictive nature of the Saudi governing bodies onto its people also meant there was little freedom of the press, the publication of one daily newspaper, with a low circulation of 7,000 demonstrated this. The small circulation was due to low literacy levels within Saudi Arabia, but not having an alternative news source came from a controlling government. Doxiadis’ team grappled with the ideas of ethics and morality within their plans and its ideology, allowing for their suggestions to be based around the existing social structure, rather than intervening to attempt to force social change. DA duly noted that society was changing and that their plans had to be dynamic to cope, not only with the growth of the city, but the potential changes in how it was used by its residents.

The traditional spaces that made up and defined the appearance and townscape of Riyadh directly contradicted those of the modern open park, leisure ground or sports’ field. The city’s constricted streets, with narrow openings and tightly enclosed spaces, did not allow for the green space required for sports; additionally, and most importantly, the strict religious restrictions played a role in the quashing of games though restrictions on playing times and by whom, according to Doxiadis’ correspondences. Middleton’s thesis largely agreed with the notion that there was a ‘glaring omission’ on the focus of development in the formation of identity and social and public spaces within the city (fig 6.46). With the loss of large parts of this vital character to make room for the motor car, the creation of open spaces for leisure did not contradict the aesthetic of the new city. Overall, in the 1960s, the amount of sporting activity in the capital was relatively small, but due to the youthfulness of the population this grew exponentially during the latter half of the decade, however, the supporting evidence for this is mostly empirical, using the number of sports fields that existed at that moment. The change in fashion towards an interest in outdoor space and land to use for leisure coincided with the introduction of education and schooling. The idea of increasing sports’ facilities was not DA’s; rather, it belonged to the Deputy Minister for Planning Sheikh Abdulla Sudairy and his colleague Saud Lingawt who ‘stressed’ the need to provide ‘adequate recreational and green areas for Riyadh, which are becoming all the more necessary day by day.’

546 Doxiadis Associates; Athanassiou, L. Alien Socio-cultural characteristics of life in Riyadh, p. 106.
546 Ibid.
547 Ibid.
549 Ibid, p. 110.
Given that Riyadh was the nation’s capital, it is surprising that it did not have a national sports’ centre or stadium. A racecourse was also constructed in Al-Malaz, which became popular, notwithstanding horse racing’s links to gambling, illegal under Sharia Law. The role of social conditions made this an unnecessary indulgence in the period prior to Doxiadis’ plan; little sport was played and certainly not to a standard that required stadia. According to documents from 1969, the high cost of land meant difficulties in gaining the first choice of site for the sports complex. Tangē’s representative, Kazuyuki Matsushita, who is known for the International Fountain built for the Seattle World Fair in 1961, alongside other members of the government, sought new locations. They concluded the stadium should be near the University campus on the west side of Riyadh, opposing the Mayor’s desires to locate it nearer the city centre. Little is known about the design of the stadium or its spatial arrangement; it did not make the drawing board due to the cancellation of the plans by Tangē. The choice of one of the world’s leading architects to design a major sporting complex for something that would have been a new cultural phenomenon, is telling of the changes in Saudi culture during this period (fig 6.46).

Figure 6.46 An area to the south-east of the city centre where 21 cricket pitches are laid out for leisure; while this is not part of Doxiadis’ plan it does show that in the years since the plan sociological changes have occurred. It is interesting that these areas for leisure are clumped together in one space. Each pitch appears to have a defined square and astro-turf wicket, but is not within walking distance from residential areas and is not easily viewed from the public realm showing that there is still grievances with making amateur sport public like it might be in Western nations (Google Maps, 2019: annotations by author)

Public Space

Academic interest in the public spaces of Arab countries within the years following the Arab Spring (2010-2011) has broadened considerably. Public spaces, such as Tahrir Square in Cairo, became the meeting point for many dissenting acts and displays of public feeling towards governing bodies. How people use public spaces differs, but the designs of them often allow for great flexibility and degrees of organicism; owners of land, or the government, may sometimes obstruct this through strict control of how people should behave in such spaces. How and where open public spaces were located within the city was down to the plan’s suggestions. The differences between the urban fabric of Cairo to Riyadh is vast, and this is chiefly by virtue of conflicting ideas rooted in conservativism within the predominating sect of Islam within each city, thus highlighting a local difference among a regional style of urban layout.

At the centre of Riyadh is Dira Square (fig 6.47), a space in which some of Saudi Arabia’s most notorious government directed acts take place causing concern across the Western world through organisations such as Amnesty International. The degree of focus on Dira Square within the Report is important for several reasons: regarding city creation or improvement; the neutral role Doxiadis desired in Riyadh’s development; and the creation of the space following the Report’s conclusions. Developing Dira Square as a focal point of the city, and along style guidelines developed in the Report, showed a distinct link between the creation of the city and the redundant report. The emphasis Doxiadis placed upon organicism elsewhere in the city acts as a direct contrast to the importance placed upon the function of this space within Riyadh. The laying out of the square, and its importance within the plan is clear from the report due to its central location in the city and the surrounding of key cultural buildings such as the Al-Rajhi Grand Mosque, designed by Rasem Badran (fig 6.47; fig 6.48; fig 6.49). There are many physical similarities to those of northern Europe; but it is here that cultural similarities between the West and Saudi Arabia end. Its design largely incorporated the observations and design principles set down in DA’s report (1972).

Dira Square is not a big space and is bound by the mosque, forming a focal point of the surrounding area. It was of core importance to the spatial configuration of planned towns in the region. Much like the rest of the city, there are unambiguous contrasts with the spatial language of Dira Square with European and other Islamic countries alike. Despite DA's report being shelved, the establishment of the Arriyadh Development Authority (ADA) in 1974 meant that an existing baseline for spaces such as Dira Square was already in place. Although the Square was laid out in the 1980s, it took its design principles and observations of public spaces from the city, remaining true to spatial principles established by Doxiadis and in the traditional city (fig 6.51). The Report stated 'the difference in the interplay of solid and void, between Arabic and Mediterranean traditional urban patterns, is that the private spaces (the courtyard) in the latter, one is located next to public open space (the street)', of which there is little difference between that observation and the design of the mosque and buildings that front onto the square. Elsewhere in the Gulf, Western architects adhered to these planning principles; Lock's housing in Ubullah created physical voids in his dwellings at street-level with few openings in the facades, Fry Drew and Partners' housing in Gachsaran was the same and Roth's schools in Kuwait looked inwards with very few openings on the exterior to the outside world. Thus, the urban spaces in the Gulf, particularly those designed by Western architects, often adhered to the spatial principles of the given city; this was the same with urban spaces DA designated in Riyadh even where they were designed by others.

An obvious Western and ‘modern’ comparison between the use of solid and void, in the Aristotelian sense, would be the Economist Plaza in London by the Smithsons (fig 6.50), described by Reyner Banham as being ‘regressively picturesque’.\textsuperscript{557} On the topic of void, Aristotle said ‘for those who say that there is such a thing as void think of it as a kind of place, a kind of vessel, which may be either full or empty depending on whether or not it contains the body it is capable of receiving’, which is a useful definition when considering the similarities between types of modern public spaces in different parts of the world.\textsuperscript{558} The Economist plaza acts as a space of transition, and in typical Western fashion, has interior spaces looking out into it; it also integrates with the wider built environment.\textsuperscript{559} Dira Square is not a square in the Western European sense that one would stop, meet for a coffee and have a chat. The voids in the building, with very few openings on to the public space not only represent the city’s historic architecture but also provide socio-cultural continuity within the built form. The visual variety of the square falls in line with Doxiadis’ observations of public space in Riyadh, with ‘vertical volumes and planes perpendicular to the movement of the street’ thus defining the open spaces (fig 6.51; fig 6.52), but this is also down to the careful and considered designs of the buildings by Badran around the space.\textsuperscript{560} Furthermore, because of the density of buildings within the city, the squares and streets appear as ‘holes in solid masses’, creating an environment of spatial juxtapositions.\textsuperscript{561}


\textsuperscript{558} Waterfield, Physics, p. 91


\textsuperscript{560} Ibid.

\textsuperscript{561} Ibid.
Figure 6.50 The Economist plaza by the Smithsons, abutted by classical loggias in a contemporary enclosed space noting the use of solid and void, 1964 (Alison and Peter Smithson, *The Space in Between*)
Figure 6.51 A proposed layout of the city by Doxiadis with residential areas segregated from the main public urban areas, with the mosque as a predominant focus – the roads focus and gravitate towards this centre as well as bypass leading to other urban areas. The Housing on the left-hand side of the image is reminiscent of schemes Doxiadis procured in Baghdad and the minaret and dome of the mosque at the centre of the image draws parallels between DA’s work to Lock’s, CJW’s and to an extent Roth’s, who all focus parts of their projects around a landmark, such as a minaret. (DOXSAU-A5-7: 23310)

Figure 6.52 DA’s urban form thinking, showing the traditional layout of the city and focus on the minaret within the street formation within a scattered grain (DOXSAU-A5-7: 23310)
4.28

**Spatial Planning: Public and Private Urban Patterns**

A key product of DA’s research into the existing urban grain and settlement patterns in Riyadh are the diagrams produced within the master plan which depicted several key elements of how the Arab city appears to have developed ad hoc (fig 6.52), although its formation usually gravitated towards either a main road or small public square.\(^{562}\) The use of the word ‘cluster’ in this section is key. Delos Symposium members used the term frequently. In this case, the Report provided a quantifiable definition for the clusters discussed extensively:

\begin{quote}
In the residential areas a rather clear community structure is apparent. The module is the small neighbourhood or residential cluster, identified by a small central mosque and consisting of a number of houses corresponding to a population of between 1,000 to 1,500 inhabitants (200-250 families). A number of such smaller units form a neighbourhood, identified by a larger mosque and local market and defined by the surrounding major roads.\(^{563}\)
\end{quote}

4.29

This definition implied a larger scale cluster than CJW intended; given the order of size from the ‘cell’ up to the ‘webs’ and ‘stems’ that made up the urban environment in their designs, Doxiadis’ definition inferred the scale of the web or stem section of urban fabric, more in line with the thinking of Fathy’s understanding of scales (fig 6.26; fig 6.27; fig 6.28). The bewildering and conflicting meanings behind the scales of modernist terminology leads to some confusion in the designs of some architects. It is certainly difficult to not criticise the firm for using terminology synonymous with the European modernist zeitgeist, although through quantifying philosophical terms the words can be transcribed into pragmatic spatial terms.\(^{564}\)

4.30

It would make sense if the term cluster adhered to CJW’s definition meaning constituent parts of a development, but not the urban whole nor the cells which make it up. If architects abided by one definition for commonplace words associated with the modern movement, analysis of urban fabric would be easier and understanding design trends would become clearer. Semantically, the architect’s lexicon was as much a testing ground as the Gulf projects themselves, leading to confusion and diverging definitions. Understanding the existing cities of the Gulf region on a micro-scale allowed Western architects to design urban spaces that suited its inhabitants, local climate and topography all at once, rather than indolently adhering to an appearance the Western architect may deem ‘Arab’ or ‘Oriental’. That is not to say the Report lends itself to low standards, but it is clear many Western architects might interpret his words in this way, or may have constructed buildings in the region in this manner: for example, the designs of Lock’s buildings fit with Doxiadis’ observations.

\(^{562}\) Doxiadis Associates, *Final Master Plan (Draft)*, p. 284.

\(^{563}\) Ibid, p. 284.

The Report’s Outcome

Doxiadis was clear in encouraging a move back towards the Najd’s ‘traditional’ aesthetic. Venturi alluded to this type of thinking as a trend within his foreword to Concepts and Influences: Towards a Regionalized International Architecture by Chadirji (fig 6.53):

Concepts involving a relativity of taste and a diversity of taste cultures have promoted ethnic diversity in our lifestyles and eclecticism in our architecture – an eclecticism manifest in regional and indigenous expressionism and in the stylistic sentimentalism that is a part of post-modernism. In the culture and architecture of the developing world similar diversities exist; along with historic revivals and survivals in architecture goes a kind of technological expressionism signifying ironically that modern technology is as highly valued as ancient tradition.565

Doxiadis’ plan demonstrated this category of designers using the past as an element in the make-up of the future city. His planning ideologies and theories demonstrated that he had been this way inclined for some time; primary influencers such as Tyrwhitt and Geddes undoubtedly shaped his and DA’s output. Through his education and post-war upbringing in a country decimated by the Second World War, Doxiadis’ ideologies related to humans and the place within which they reside through intensive research of the existing city and its urban fabric, prompting comparisons to earlier works in the Gulf by Lock and Fry, Drew and Partners.

The city’s organisation was not conducive to the imprint of a modern European layout, and discouraged a utilitarian plan. The selection of specific areas in the plan were for infrastructural and environmental factors. For example, the Western area of the city was more agricultural due to its proximity to the Wadi Hanifa, but the ground was easier to build on. Planning based on a simple geographically based linear-grid, was also significant to the development. The city’s new layout was not favourable to the proliferation of a functional and regional style of architecture. Density of building, the scale of dwellings and construction techniques followed suit. As a result, traditional style buildings, constructed from inauthentic materials and in differing forms to those of the past, are commonplace in the city as a result of the suggestions in this plan which were symptomatic of the trends of the time.

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The Report is not overly clear when discussing features of architectural design. There are moments where it suggested that ad hoc construction, or the mixture of materials in some post-war developments were an eyesore, but it does not state that these should be avoided. The Saudi government could have used the Kuwaiti welfare state model to yield generous advantages for its citizens but it chose not to. The creation of the Arriyadh Development Authority in 1974 took influence from the aesthetic cues published by DA two years’ earlier. These influences are noted within the major projects of the second half of the 1970s and throughout the ‘80s; projects include the King Saud University (fig 6.54), the Diplomatic Quarter (and its varying embassies by a range of global architects) (fig 6.55), the Wadi Hanifa landscaping (fig 6.56), the Al-Rajhi Grand Mosque and the King Fahd International stadium (fig 6.57), to name a few, were designed with the region in mind, but with modernity as a driver. Perhaps superficially, these projects communicated Saudi Arabia’s desire to grow on the world scale, rather than the creation of large housing schemes like those in Kuwait with utopian visions. Furthermore, DA’s egalitarian research scope catered for all members of society, with degrees of focus on the poorest members to royalty and their palaces. In doing so, DA’s plan noted varying social changes and predicted these alterations in society adequately enough. Doxiadis’ research into the Najd and surrounding area would be the lasting change for the built environment in Riyadh, despite the plan’s shelving due to its failed population growth predictions.

The appearance of future projects following the Report’s publication, and research conducted into traditional architecture of the area, were part of a trend in which Western architects designed in a local, yet contemporary idiom in the region. Furthermore, archival material suggests that the Western architects working in the Gulf communicated with one another about procurement and design theories, outside of organisations such as Delos, CIAM and Team X. Those designing in Riyadh in the years following the Report’s publication would have known about DA’s research into traditional architecture. Following this lead, some architects struggled to find authenticity, while others designed buildings using global influences. Someone like Fathy exemplified through his architecture in this period what many Western architects attempt to articulate but without extensive understanding of hot climates and Arabian culture.

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567 Specifically, Utzon to Paul Rudolph when discussing fee payments from the Kuwaiti government (Aalborg City Archives)
Figure 6.54 Details of the King Saud University by HOK (Architectural Record, 1986)

Figure 6.55 A road within the diplomatic quarter, constructed in the 1986 by Ali Shuabi architects (ArchNet)
Figure 6.56 The Wadi Hanifa wetlands are commonly used by Riyadh’s citizens as somewhere to relax outside of the city; the materials and planting is faithful ecologically and culturally through the creation of a mixture of private and open spaces. (ArchNet)

Figure 6.57 King Fahd International stadium (Ian Fraser, John Roberts and Partners, 1987) made to echo tent like structures of the desert but also reminiscent of lightweight structures stadium structures such as the Munich Olympiastadion by Frei Otto (http://ganeshmystadiumpostcards.blogspot.com/2011/09/ksa-king-fahd-international-stadium.html)
5.0 Conclusion

Doxiadis’ plan was not realised. Riyadh was to modernise through the work of other planners and would continue to employ Western architects, evolving the character of the city using both modern and traditional means. The involvement of Western architects in a city with a conflicting identity surely should be fine; while many of them produced buildings that had echoes of their own environment, they often respected the built form of the surroundings in Riyadh, utilising motifs or meaning from places rooted in Arabian culture. DA’s plan was large in scale, but still not big enough, and reflected the trend of encouraging the use of ornamentation and motif within the design of buildings in the Gulf.

5.2

While this might appear glib, Riyadh is a city built on the perceived effects of globalisation. Geographically, it is located on major trade routes across the desert providing a large stopping place for caravans; in the twentieth century this expanded to the rest of the world through its oil exports and long-distance flights laying over in the region. Consequently, it is a city of a temporal identity at the hands of those who move through it, synonymous with the transient nature of the desert recalling the themes previously discussed in Cities of Salt. When DA planned the city, they were working with a place traversing rapid population growth from an outpost in the desert to a globally important city. The authorities’ desire to modernise led to compromises. The research of the built environment suggested a duality of place between buildings and their surroundings; Doxiadis’ plan suggested that these two are not mutually exclusive and that designs can be transferable into new construction, even if the urban layout differs largely. Resulting from this well-known plan were attempts at buildings termed critically regional, although their narratives are far more complex than this approach gives credit for. DA’s work, it appeared, focused upon the region through an encouragement of motif and ornamentation at a time when other people, such as Saba George Shiber, also encouraged architects to use the already existent palette of forms available in the region.568

5.3

DA’s work sat at the forefront of a new era for Riyadh and the Gulf’s built environment. The resulting need to construct buildings for the city continued, and areas in which to do so were again up for question, as a result of DA’s incorrect population forecasts. DA’s 1972 plan for Riyadh was an example of contemporary planning thinking through its encouragement of regional architecture in its style guidance. Contextually, this concurred with the wider global picture of the time, with post-modernism growing in the West as an answer to hegemonic modernism, and regional architects growing in popularity throughout the world. On a local scale, the aesthetic of the city was altering; spaces were opening out and people becoming less private. Hybridity between Western and Saudi culture was becoming more prominent; the plan produced by Doxiadis reflected this and the architecture that proliferated in its wake.

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568 Shiber, The Kuwait Urbanization, p. 5.
5: Jørn Utzon’s Kuwait National Assembly
Chapter 5

1.0

1.1

Introduction

In a letter to Jørn Utzon in October 1972, the revered architect Paul Rudolph declared ‘thumbs down on what is called monumental architecture,’ prophetically announcing that ‘the wheel goes round and there will be another day’. This congratulatory letter was sent to Utzon upon him winning the international competition to design the Kuwait National Assembly (KNA) which would house Kuwait’s national legislature. Narratives concerning local, regional and global politics converge further in the formation of the built environment through the work of Western star architects in this period; often their designs did not adhere to the surroundings, but was a clear implementation of Western architectural ideology onto a place. The KNA demonstrated that architecture in the Gulf could be territorialised; its influences derived from world history and yet it was rooted to its location between the Gulf and the city in a consciously-planned political hinterland. As the final case study, it shows that the intensification of Arab architecture reached its zenith by this point as part of a series of buildings and large-scale complexes constructed in the Gulf. More pertinently, it shows this one case study as the embodiment of Western designed architecture in the Gulf through its influences, design process, relationship to geopolitics and orthogonal spatial configuration.

1.2

The KNA fits with the global context of nations designing large-scale governmental buildings, meant to be representative of their country, contextualising the wider global pictures of architecture’s relationship with nationalism and tradition. The KNA formed part of a wider enclave of nationalistic building in the historical centre of the city near to the Gulf, with banks, museums, embassies and souks lining the sea-front (fig 7.1). Utzon’s building was also representative of Denmark and his own career, complicating the narrative while furthering the cultural exchange through construction, drawing on expressive sweeping features and the manipulation of natural light through materials, plan and architectural forms. The structure was based around the plan of the souk and the public squares, such as those in Isfahan in Iran and had tenuous links to the orthogonal geometry of Romano-Berber towns in north Africa. The three-dimensional forms of the structures around the building take from the typical arches found across the Gulf or in Arab-styled architecture, with the swooping roof over the public space at the front meant to be like the forms of the traditional Kuwaiti dhow. There was a large open, transparent, element to the building, adumbrative of Kuwait’s democratic nature, with features such as the public gallery (fig 7.3; fig 7.4) and the squares intended for speeches (fig 7.2). The building exemplifies the mixing of ideas through forms and aesthetic, combining tradition and modernity through the architect and the site.

569 Rudolph, P. [Letter] (1972) Paul Rudolph to Jørn Utzon. (Aalborg City Archives)

^Figure 7.1 Annotated map of the centre of Kuwait City with key seafront locations shown including the Kuwait National Assembly (map by author using imagery from 2019)
Utzon’s architectural influences were pan-global, traversed history and varied in typology. His work drew on a synthesis of buildings he visited from culturally diverse places, such as China, Morocco and Iran; on a humbler level, they also include the industrial dockyards in his home town of Aalborg, Denmark, key to his inspiration for the KNA. Thanks to the accessibility of air travel and its general convenience, twentieth-century architects could expand the geographical area of their ‘grand tours’; instead of taking in Palladio’s villas in northern Italy, architects, including Utzon, travelled further afield to places such as Mexico or north Africa and so bore witness to the building of civilisations alien to those from northern or western Europe. In addition to his travels, Utzon read about contemporary architecture, like most other architects, in journals and magazines influencing his work through this medium.\(^{571}\) Asgaard-Anderson highlighted that he mentioned three architects in his writings: Ralph Erskine, Louis Kahn (fig 7.6) and Richard Neutra (fig 7.5); but it is in other architects that a clear influence can be observed, as demonstrated by his writings and correspondences with architects based in the West, including Paul Rudolph, Leslie Martin and Frank Lloyd Wright.\(^{572}\) Biographically, it is important to note Utzon’s artistic background and the friendships he had with Asger Jorn, growing up surrounded by teachers and prominent Danish artists such as Poul Schröder and Carl Kylberg.\(^{573}\)

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\(^{572}\) Ibid. This is also covered in a talk Asgaard-Anderson did for the architectural interest group DOCOMOMO on the 18th September 2018; Analysis of letters from Utzon to various recipients; coincidentally, Frank Lloyd Wright launched a scathing attack on Utzon and his proposals for Sydney Opera House calling him a ‘sensationalist’ and designing architecture which was not ‘natural’ or rooted to its place. (Utzon Archive: [https://utzon-archives.aau.dk/documents/Articles/](https://utzon-archives.aau.dk/documents/Articles/))

The Sydney Opera House is Utzon’s most identifiable work and acts as a defining symbol for both Sydney and Australia. The curves, forms and proportions are unmistakably Utzon’s design, this vision was combined with the engineering of Ove Arup (fig 7.7). Across his works in other settings, these features forged an uncompromised global aesthetic rooted in its locality. Because of the global nature of Utzon’s work and the recognisable uniformity from projects in Tehran, to Sydney and back to Copenhagen, it might be difficult to argue that the KNA is a building constructed specifically using exclusively influences from the Gulf; the synthesising of global and local elements created a regional building. Combining both Utzon’s biographical elements and his knowledge of the Middle East from his travels, he developed ideas of what he thought were commonly found forms in Kuwait.

Figure 7.6 Louis Kahn’s Jatiya Sangsad Bhaban, in Dhaka, Bangladesh (1961-1982) is an important case study, completed at the same time as the KNA and for a newly formed nation, it was to represent similar modern ideals to Utzon’s project in Kuwait (https://www.cosmicinspirocloud.com/post/147609720153/louis-kahn-government-sector-sher-e-bangla)

*Figure 7.7* Sydney Opera House diagram, 1959-73 (https://dictionaryofsydney.org/entry/utzons_opera_house)
Because of the Gulf’s transient nature, architecture does not represent a nation or state but goes slightly beyond this, demonstrating its image as being archetypal of something beyond borders. The function of the sedentary Gulf city was different to that of the traditional nomadic methods of surviving. There was now a requirement for buildings of typologies which reflected the ideologies of the new nations, giving rise to building opportunities for complexes like the KNA. Paradoxically, Utzon’s buildings might appear to be of a globalised aesthetic or conversely rooted to the local, but the KNA complex is a summation of the works Western architects completed in the decades before it and their contradictions.

In October 1972, Kuwait’s government signed a deal with the Kuwait Oil Company (KOC), giving sixty per cent ownership to the state; the further forty per cent was nationalised the following year causing an economic boom during this period and allowing Kuwait to build major state driven projects throughout the 1970s. Elsewhere in the region other nations were doing similar things. For example, HOK designed the King Saud University campus in Riyadh finalised in 1986 and at the time of building it was the most expensive building project in the world. Secondly, the shutdown of the Kuwaiti government (1976-81) nearly put a stop to the construction of Utzon’s designs: the expense of its construction and the design of various spaces, including the public entrance, caused controversy among politicians in the newly formed National Assembly. The architectural competition for the KNA occurred at a time when Kuwait’s government looked to build on a scale of national importance, with works by: the Pietilä’s at the Sief Palace (1973-83) (fig 7.8; fig 7.9; fig 7.10); Kuwait Water Towers (1971-6), by Sune Lindström and Malene Bjorn (fig 7.11); and the Kuwait National Museum by Michel Écochard (1977-1983) (fig 7.12).
An aim of this chapter is to examine Utzon’s biography showing influences on his architecture, assessing how they manifested themselves in the KNA. A key influence here is the Danish psyche and how it worked with the Middle Eastern examples of architecture and urbanism. Understanding Utzon’s research for the Assembly building is of vital importance to placing the KNA within a wider global architectural context. This includes determining Nordic influences that have direct links to the design of the building: for example, the Aalto expert Juhani Pallasmaa, suggested that Utzon’s time spent with the Finnish architect had an immeasurable effect on his career. 578 Using this information, the chapter specifically analyses the design of the building, picking out elements drawn from the previous context. As will be shown, the plan form exemplified the additive nature of Utzon’s architectural ideology as well as conforming to typical regional forms, showing his use of light and how he was informed by various different historic urban strategies.

< Figure 7.11 Lindström and Bjørn’s Kuwait Water Towers, part of the visual identity forged in the 1970s by Western architects for Kuwait, built in 1979 as part of the Kuwait Water Towers system (Wikipedia).

^ Figure 7.12 Section of Écochard’s designs for the Kuwait National Museum, showing the slatted roof of the courtyard intended to echo the temporary, light-weight structures that cover souks (1960-1983) (ArchNet)
CHAPTER 5: JØRN UTZON

2.0 The Architect: Jørn Utzon

The existing literature is speculative about the influences on the architecture of the KNA; the following section makes it clear that the Assembly complex’s influences were a synthesis of geopolitics, Utzon’s own life experiences and a mixture of ancient and modern architecture. An analysis of context and biographical notes, using the plethora of material on him and his life, will show that the Assembly is not in the shape of a tent as Al-Omair suggests, but is more likely to be the dhow: the historic symbol of Kuwait and its maritime trade (fig 7.13).\(^{579}\) Shiber wrote of the importance of dhows to Kuwait, elevating it as a form, tangible object and image to which Kuwaitis could relate:

> For years, as the sun set in the horizon and painted on the Kuwaiti Bay a billion different tabloids, the dhows the Kuwaitis built with patience, masterliness and dexterity seemed to etch against the horizon indelible imprints – hauntingly beautiful silhouettes – that will be the lasting impression of an image inextricably knitted with the Kuwait urbanisation.\(^{580}\)

2.1 The use of the dhow as an image that inspired Utzon comes from a combination of his fascination with and links to Aalborg’s nautical industry and the form of boats, which was also an important image in Kuwaiti identity. While the works of Asgaard-Anderson, Weston and Tyrell depict much of his biography, this thesis requires a selection of anecdotes and information from these to support its overall argument. Utzon’s œuvre comprises numerous key buildings, including Bagsværd Church (fig 7.27; fig 7.34), the Melli Bank (fig 7.32) and courtyard housing projects in Denmark which all include the various elements represented in the KNA complex.

2.2 Ideology

Throughout his career Utzon developed a specific ideology relating to the design process and the aesthetic of his buildings. He usually falls into the category of the ‘modernist’ architect, yet, to an extent, his work transcended labels asserting some confusions within the critical regionalism’s literature. While there are clear links between Utzon and inexorably modern architects including Mies van der Rohe, he also appropriated vernaculars including Kasbahs and hill towns in Morocco, as well as the ancient mosques of Isfahan in various projects. Additionally, there was a clear inspiration, whether it was conscious or subconscious, to the Danish psyche.\(^{581}\) The use of light in many of his buildings bears resemblance to that of Grundtvig’s Church in Copenhagen designed by Peder Vilhelm Jensen-Klint, built between 1927-1940 (fig 7.38), or artistic works by Vilhelm Hammershøi (fig 7.29) and Peter Ilsted (fig 7.30; fig 7.31). Most of his projects exhibit four main elements; these are: platforms, nature, location and what he termed as ‘additive architecture’. In each of his projects some, or all of these features are the predominating factors to their designs and some are drawn from the above influences.

580 Shiber, Kuwait Urbanization, p. XII.
581 Conscious decisions were made throughout the Kuwait National Assembly project which link it to Denmark’s design identity; for example, Jan Utzon suggested the Ministry of Public Works use the designer C. F. Petersen for door handles in the complex, made in Copenhagen. Utzon, Jan. [Letter] (27.11.1981) Jan Utzon to Ministry of Public Works, (Aalborg City Archives)
Platforms, for example, came out of Utzon’s interest in constructing an architectural landscape. Pallasmaa stated that platforms and terraces act ‘as mediating elements between the building and the larger environment.’ Conversely, his buildings are often part of a wider landscape and seascape; early projects such as the Svaneké water tower (1949) exemplify this (fig 7.17; fig 7.18; fig 7.19). Arguably, larger urban projects such as the Sydney Opera House and the KNA have a similar distinct relationship to the topographically flat bodies of water they are situated by, forming part of their surroundings. Utzon’s houses built in Mallorca - Can Lis and Can Feliz (fig 7.14; fig 7.15; fig 7.16) - utilised platforms and terraces throughout, and the Sydney Opera House used them through the interplay of varying levels inside and outside in the plazas which surround it. Utzon transferred the idea of the terrace, primarily to encourage an out of doors living, to his designs for housing projects at Kingo and Fredensborg which took influence from the courtyard layouts he saw in Morocco and the Middle East. Likewise, the notion that these buildings formed a wider part of the landscape is important, demonstrated either through how they meld into the topography, as with Kingo (fig 7.53) and Fredensborg, or how they open out towards the sea, as with the Assembly.

Figure 7.14 Can Lis, Mallorca (1971) section through the rock showing the relationship of the building to the ground and its tectonics (https://dibujoarquitectonicos.tailandes.files.wordpress.com/2012/02/utzon-2-a.jpg)

> Figure 7.15 Utzon’s home in Mallorca, Can Lis (1971) where he utilised his theories on plateaus within the surrounding landscape (https://www.iconichouses.org/houses/can-lis)

Figure 7.16 Section of can Feliz, showing the consideration for topography and thinking through the plateaus of the low-rise dwelling drawing from the tiered Aztec terraces he would have seen in Mexico (1994) (Utzon Archivie Online)
< Figure 7.17 Svanke Water Tower (1949) by Utzon (https://www.tripadvisor.co.uk/ShowUserReviews-g189515-d8541460-r391914603-Svaneke_vandtaarn-Svaneke_Bornholm.html)

^ Figure 7.18 Plans for the Svanke water tower by Utzon (1949) (http://www.svanekesvenner.dk/Utzons%20vandtaarn/Svaneke%20Venner%20Utzon.html)

^ Figure 7.19 Section of the Svanke Water Tower by Utzon (1949) (http://www.svanekesvenner.dk/Utzons%20vandtaarn/Svaneke%20Venner%20Utzon.html)
Additive Architecture

Utzon wrote in Logbook V that,

A consistent utilisation of industrially produced building components can only be achieved if these components can be added to the buildings without having to be cut of adapted in any way.

Such a pure addition principle results in a new architectural form, a new architectural expression with the same attributes and the same effects as are obtained, e.g., from adding more trees to a forest, more deer to a herd, more stones to a beach, more wagons to a marshalling yard – or more morsels to the Danish Frokost Board; it all depends on how many different components are added in this game. Like a glove fits the hand, this game matches the demands of our age for some freedom in the design of buildings and a strong desire for getting away from the box-type house where the box has a given size and is subdivided by partitions in the traditional way.583

^ Figure 7.20 The windows of the KNA are meant to resemble the pine needles, linking Utzon’s architecture to nature (c.1982) (Utzon Archive Online)

^ Figure 7.21 The forms of the Sydney Opera House’s roof also bear similarities to the needle analogy, looking like the structure of a leaf (Utzon Archive Online)

Additive architecture, as an idea, took from a conversation at the time of the Sydney Opera House’s construction, but the principles behind it of flexibility and natural growth (fig 7.20; fig 7.21) are reminiscent of Roth or CJWs’ projects in the Gulf in earlier decades. In relation to CJW’s own work, Jane Drew said of their work that ‘the particular virtue of all these types is their additive quality’, showing that the term had been in use before Utzon coined it (fig 7.22). It is also likely that he was aware of the theory behind mat-buildings and other examples of architecture that provided flexibility for the future usage of the building. There is a specific diagram by Candilis for the SEFRI housing in Iran from 1956 which directly, and explicitly, related to Utzon’s additive architecture theory:

Logement d’une grande famille La souplesse du plan permet d’apter les memes principles a des logements de deux a cinq pieces.

(Accommodation of a large family. The flexibility of the plan allows to apply the same principles to two as to five rooms.)

However, it is more likely that Utzon would have understood the principles of Aalto’s ‘flexible standardisation’, which also has similarities to additive architecture’s principles, rather than CJW’s Abadan work (fig 7.22). The theory was an amalgam of varying influences of both classical and modern architectural spatial configuration. There are clear linguistic comparisons to that of the biological and the works of Geddes’ theories on the city. The theory is transferable from different types and scales of projects: unrealised examples by Utzon include the Farum town centre (1966) (fig 7.23) and Jeddah Stadium (1967) (fig 7.24) which involved large pieces of infrastructural planning. Utzon used additive architecture principles for singular houses as well as directly in the KNA where they are evident in the plan form. He also utilised it on much smaller scales for his furniture systems ‘Utsep’ and ‘A New Angle’ (fig 7.25), contributing to the overall ideology on different scales.
> Figure 7.23 Farum unrealised town centre plan (1966) by Utzon for a competition, exemplifying the Additive principles he worked on – there are also clear similarities to the stems that Woods talked about within his own architecture. (Utzon Archive Online)

< Figure 7.24 Drawing for the Jeddah Stadium competition, by Utzon (unrealised, 1967) which shows the additive nature of the complex and its surroundings, with the servicing buildings away from the main stadium. (Utzon Archives Online)
Asgaard-Anderson suggested that ‘His [Utzon’s] studies of the spatialities of forests, the trunks of trees, and the structures of leaves inspired several projects.’ This came from the idea that plants adapt to places, when applied to buildings, developments should be able to ‘fit and grow into a site.’ The examples Asgaard-Anderson used to illustrate this point are those of the Paustian House, which Utzon compared to groups of trees. His ‘Utok’ chair was inspired by the form of a leaf (fig 7.25); his buildings and furniture designs did not directly imitate nature, but it was the spatial elements as well as the detailing that Utzon examined. The notion of nature is also apparent in the KNA complex in its varying forms, such as those of the columns in the public area at the front which bow outwards; the language Utzon used shows that nature influenced the ‘additive’ element, allowing buildings to ‘fit and grow’ into the site, or providing the option to do so. Additive architecture attempted to make buildings ‘on the basis of growth of patterns in nature’ for the goal of flexibility and function. Many of Utzon’s projects resemble metaphors of nature, a relevant example being the KNA’s glazing bars imitated the form of the ‘outermost twigs on a pine tree branch with their obliquely fixed needles’.

> Figure 7.25 Utzon’s form finding process for the Utzon chair, deriving its shape from a leaf (c.1966)(Utzon Archives Online)

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589 Ibid.
590 Ibid.
591 Ibid, p. 38.
Elements of additive architecture have roots in the twelfth-century Chinese construction manual, *Yingzao Fashi* (1103 AD), deriving from the ‘enlightened Sung dynasty’. The term itself is directly translatable as ‘State Building Standards’ and is the oldest extant Chinese technical manual of building. Steen Eiler Rasmussen, the author of *Experiencing Architecture* (1959), profoundly informed much of Utzon’s early architectural thinking and is credited for introducing him to *Yingzao Fashi*. Utzon’s understanding of the manual is evident in his photos of the forms of Chinese roofs from his travels and how this directly relates to many of his projects (fig 7.26; fig 7.27; fig 7.28). Frampton asserted that, because Utzon referenced them in...
his essay ‘Platforms and Plateaus’, it is specifically the ‘pagoda’ roof which, as well as platforms, inspired his overall view of architecture. His physical designs, on the other hand, clearly have subtle links to regular dwellings such as the Hutongs in Beijing.\textsuperscript{597}

Consequently, Utzon became fascinated with the ‘systemisation of components’, reflected within the writings of the manual but also evident when studying his design process.\textsuperscript{598} Similarly to this, Roth’s obsession with the construction of prefabricated units to build his schools has been based upon similar principles to Utzon’s additive architecture, though it is unlikely that Utzon would have studied Roth’s prefabricated schools in Kuwait. Overall, additive architecture principles are prominent throughout Utzon’s work, but they are not original. They derive from many influences, including the Romans, Greeks, north African towns, Middle Eastern towns and ancient societies in China, as demonstrated later in this chapter.\textsuperscript{599} Coupled with this, the studying and utilisation of key principles by other architects of the twentieth century played a significant role in the modularisation methods of constructing buildings to encourage flexibility. Additive architecture, by its very nature, is thus a global synthesis of influences from ancient and classical civilisation, and the atomisation of cities and buildings in twentieth century architectural theory; subsequently, Utzon felt these methods were the most convenient method of building.


\textsuperscript{598} Ibid, p. 7

\textsuperscript{599} Established later in this chapter.
Utzon's Influences

A synthesis of art and architecture had an influence on Utzon's formative years. Understanding this mixture is crucial to an intellectual appreciation of his work. The thought of becoming an artist dominated Utzon's early life; the accepted narrative is that following a conversation with his uncle, an artist and sculptor, he decided that architecture was a better career path to follow as it had more opportunities for work.\(^{600}\) Although this was not straightforward, Asgaard-Anderson wrote that Utzon's schoolboy nickname of 'Utz-dremmer' was due to his 'penchant for daydreaming' in class and that his academic ability was limited.\(^{601}\) Artistically, Schrøder and Kylberg became known to Utzon; their landscapes and use of light was influential on his development.\(^{602}\) Schrøder's work is slightly less well known, but websites chronicling Utzon's life and influence cover frescoes Schröder adorned in his home and studio which later became his drawing studio.\(^{603}\)

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\(^{603}\) It is testament to Utzon's popularity among laypeople and architects alike that websites such as these exist: [http://www.utzonphotos.com/guide-to-utzon/projects/poul-schroder/](http://www.utzonphotos.com/guide-to-utzon/projects/poul-schroder/) - it documents Schröder's work as well as much of Utzon's other works and pieces of primary material.
^ Figure 7.30 Interior with Girl Reading, Peter Ilsted (1908), an architectural study of an interior showing simple forms and a restrained palette, noting how light falls within the space (https://artschaft.wordpress.com/2018/11/20/peter-ilsted-interior-with-girl-reading-1908/)

^ Figure 7.31 Young Girl Preparing Chantarelles, Peter Ilsted (1892). The interplay of light and simple forms is restrained but comes through in Danish architecture, specifically in Utzon’s work (Wikipedia)

^ Figure 7.32 Melli Bank, Tehran, Jørn Utzon (Byggekunst, Journal, 1966)

> Figure 7.33 Sketch from author’s notebook from an understanding of how Henning Larsen used light and enclosure within his buildings in Riyadh (Author’s own notebook, 2017)
The works of established Nordic artists such as Edvard Munch, Ilsted (fig 7.30; fig 7.31) and Hammershøi (fig 7.29) formed a significant part of Utzon’s psyche. Hammershøi’s posthumous fame was minimal until retrospective exhibitions during the 1950s re-established public attention, but those with an interest in Danish art, like Utzon, undoubtedly knew of his work as he was still well-known during his career.604 There is a clear likeness between the use of light, dark and shadow - an artistic technique known as chiaroscuro - in paintings by Hammershøi, prompting comparisons to Utzon’s architecture; ‘Piano and Woman in Black’, ‘Sunlight on the floor’ (fig 7.29) or ‘Interior with Young Man Reading’ might exemplify the contrasts of light and dark that many identify with ‘Danishness’. Subsequently, the interplay of light in Utzon’s buildings, such as the Melli Bank (fig 7.32), Bagsværd Church (fig 7.34; fig 7.36; fig 7.37) or the Ahm House (fig 7.35) in Harpenden, but especially in the KNA, is visibly obvious. Thus, Utzon’s Danish roots inevitably influenced his architecture geographically regardless of the site, its location and associations with other factors.

In addition to architects of global fame, there were designers with whom Utzon collaborated closely in his formative years. Utzon worked with the functionalist architect, Hakon Ahlberg, known for authoring a monograph on Gunnar Asplund. Asgaard-Anderson suggested that Utzon identified with Asplund and Aalto as being significant figures early in his career; it might be true to suggest that it was Ahlberg’s passion for Asplund’s works that inspired Utzon’s interest in his work. Utzon’s curiosity in the architects and artists of Scandinavia resulted in a similar – but more concentrated – architectural education to that of Lock, who travelled extensively throughout the region to form his own influences in the 1930s. Lock, too, visited buildings by Asplund witnessing early iterations of Scandinavian modernism. Buildings such as Grundtvig’s Church (fig 7.38) in Copenhagen contributed to the image of ‘Danishness’ into his psyche, similar to the effect of the paintings by the Nordic artists discussed above. The scale and over powering use of a small colour palette display neutrality and a humbleness associated with Scandinavian culture, exemplified by phenomena such as Janteloven.

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605 Asgaard-Anderson, Jørn Utzon, p. 102.
607 Janteloven is a code of conduct commonplace in Nordic countries damning those who try not to comply or having too much ambition as unbecoming.
Figures 7.36 and 7.37 This pair of images show the similarities between Utzon’s single-point perspectives at the conceptual stage for both the KNA and Bagsværd Church. The latter, he compared to the clouds rolling in from the sea over a wedding on the beach when he was in Hawaii, 1968 (Weston, Utzon)
Figure 7.38 Grundtvig’s Church, Copenhagen by architect Peder Vilhelm Jensen-Klint (1913-40) (photo by author, 2018)
Kuwaiti Context, 1968-1982

This section looks at important events in the lead up to the KNA design competition and throughout the construction process, to give contextualised links between the design and geopolitics. Alongside these events, this section charts large-scale projects constructed during this time of development in the name of ‘nation building’. As part of the Ottoman Empire, Kuwait formed a part of the southern vilayet of Basra in what is now Iraq. Sir Anthony Parsons, a British diplomat in the Middle East, suggested ‘Woodrow Wilson had disappeared by then [1921], and there wasn’t much rubbish about self-determination. We, the British, cobbled Iraq together. It was always an artificial state, it had nothing to do with the people who lived there’.

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Geopolitics

3.2

The National Assembly (Majlis al-Umma) formed, headed by the Emir with a cabinet (mostly made up of members from the ruling Al-Sabah family) and an elected assembly. The Assembly was thus limited from the outset and fell foul to dissolution as and when the Emir seemed fit; this occurred from 1976-1981, causing Utzon difficulties with the construction of the building the Assembly would be housed in. The National Assembly allowed the Kuwaiti people to participate in their politics and governance with far more freedom than the neighbouring states. Primarily, some historians have suggested this caused Kuwaitis to view themselves as ‘Kuwaiti’ rather than as ‘Arabs’; they suggest this was crucial in the subsequent invasion of Kuwait by Saddam’s forces in 1990, but this distinction was more relevant in the production of architecture and of aesthetics in this period.

3.3

Britain’s position in the Gulf rested on a series of agreements dating back to 1820, originally to deter piracy. The historian Simon Smith stated that ‘by signing the Perpetual Maritime Truce of 1853, the Shaikhdoms of Abu Dhabi, Sharjah, Dubai, Ajman, Ras al Khaimah, and Umm al Qaiwain became known as the Trucial States, a name which they retained until British withdrawal in 1971’, ensuring Britain as a major stakeholder and influencer in Gulf affairs for over a century before its withdrawal. The selection of Utzon and his competition-winning design occurred in December 1972; the contract regarding Utzon’s fees followed in January 1973. The question of oil surrounded Britain’s withdrawal from Kuwait; British politicians were worried that Kuwait would lose its independence should the British military abandon the area. The Lord Privy Seal, Edward Heath, and The Prime Minister, Harold Macmillan, asserted that following this withdrawal any new agreement must ‘recognise our right to intervene if Kuwait’s independence were threatened’, with the Emir of Kuwait ‘making clear’ that he ‘would not accept the right of uninvited intervention’. This indicated the determination of the Kuwait state to remain independent, distancing itself from the hand of its former coloniser and the perceived voracity of British politicians regarding Kuwaiti oil.

610 Ibid, p. 73.
614 Utzon, J. [Letter]: (16th January 1973) Utzon to Adnan N. Ghanous (The Architects Collaborative International) (Aalborg City Archives); Various letters state that Utzon is in the final two schemes to be selected for the KNA, against another scheme from Iraq. Rifat Chadirji applied to design the KNA too, so it must be his the government were also enamoured with. (April 1972) Rifat Chadirji and Professor Ihsan Sherzad of Iraq produced the other scheme the competition judges liked. Relations with Iraq at this time were good from a Kuwaiti perspective, despite Iraqi interest in annexing Kuwait. The designs by Chadirji would have very much fallen in line with the Iraqi model for Iraqi Modernism further exacerbating a regional style beyond borders; politically, Iraq was aligned with Russia in the Cold War and Kuwait during this time was flirting with Soviet influence with regards to buying weapons. (Smith, Britain’s Revival and Fall in the Gulf, p. 134.); Utzon, Jørn Utzon: Logbook, IV. p. 4.
615 Ibid. These very agreements were common in the Middle East and North Africa during this period; the governments that survived the Arab uprising in 2011 often view Britain with more suspicion today due to the lack of willingness to intervene in these events despite treatises such as these with Kuwait.
3.4 With regards to the war and the KNA project, Utzon offered his unequivocal support for the Arab world and a 'satisfied' outcome for them following the ‘terrible war', in a letter to the Kuwaiti Ministry of Public Works.\textsuperscript{616} The decrease of American oil production, which was at its peak in 1970 at 9.6 million bpd falling to 8.1 million bpd by 1976, meant that the Soviet Union overtook the US as largest producer of oil in the world in 1974.\textsuperscript{617} Helen Thompson has explained the overall influence of OPEC on the Middle East and global oil production as this:

\textit{In 1971 the Arab states secured for themselves two accords whereby the international oil companies agreed a price increase and were forced under threat of embargo to accept a 55% tax regime on profits. With declining US production, rising demand, and the devaluation of the dollar also pushing prices upwards, OPEC’s growing clout ensured that the oil market was much more vulnerable to events in the Middle East than it had hitherto been.}\textsuperscript{618}

During the 1970s there was an undoubted spike in building activities in Kuwait, all for national activities. These included: the national bank; the construction of several key water towers; and the Sief Palace. The governments of the Gulf nations still felt the need to employ Western architects for large-scale projects such as these, despite competitive applications from Kuwaiti and Iraqi architects for the KNA.

3.5 Architecture

This section charts the Western architects selected to design buildings in this period providing the architectural context to Utzon’s designs and the Kuwaiti state’s international outlook, while still attempting to provide a local, albeit regional, design language. Of importance is the fact that the inception of many large-scale buildings in this period were by architects and engineers from the Gulf, including the Kuwait Engineering Group, KEO and Sabah Abi-Hanna.

3.6 The search to create a ‘new identity’ for Kuwait, as Muhannad Al Baqshi put it, began in 1968 with a competition for several ‘daring’ projects for Kuwait.\textsuperscript{619} A committee, headed by Leslie Martin, who also oversaw the selection and approval of Utzon for the Assembly project, led a team consisting of Colin Buchanan, Azzam and Albini.\textsuperscript{620} Following the publication of \textit{Studies for a National Physical Plan for the State of Kuwait and Master Plan for the Urban Areas, 1968-1971}, Buchanan relinquished his role in a committee to select architects for major projects in Kuwait.\textsuperscript{621} Stephen Gardiner wrote one of


\textsuperscript{617} Thompson, \textit{Oil and the Western Economic Crisis}, p. 94.

\textsuperscript{618} Ibid, p. 95.

\textsuperscript{619} Al-Baqshi, \textit{The Social Production of Space}, pp. 129-130.

\textsuperscript{620} Unknown, [Letter] (26th June 1971) The Planning Board Director to Jørn Utzon (Aalborg City Archives) By the time this letter was sent to Utzon Buchanan was no longer a member of the planning committee despite his earlier role in re-planning Kuwait City in the late 1960s.

\textsuperscript{621} Ibid.
the most thorough accounts of the process of choosing architects in this period and the selection of schemes put forward, remaining unrivalled in terms of quality and contemporary understanding.622 Fabbri, Saragoça and Camacho’s Modern Architecture Kuwait, 1949-1989 adds to this by logging Kuwait’s significant modern buildings, with critical essays in volume two complementing the first volume’s gazetteer of modern buildings.623 These works chronologically exemplify the paradigm of development in scale and intensification without stating it.

**Western Architecture in Kuwait**

In the 1970s there was a concentration on the construction of suqs to serve the new residential areas of Kuwait; the forms of the traditional suq was an influence on the forms and spatial circulations of the KNA, and thus the building of these new structures by Western architects in Kuwait would serve as a sounding board for Utzon’s inspiration. In 1973, BBPR made a preliminary design for the Suk Al-Kuwait which SOM and SSH both completed; Arup oversaw its rebuilding following a structural collapse that occurred soon after its public opening.624 The building has large facades with minimal openings on the lower levels and internally shaded courtyards on the upper levels. SOM also designed the Suq Al-Kabeer (fig 7.41), which aesthetically is like the Suq Al-Kuwait and Suq al-Manakh (fig 7.42) with comparable concrete screens shielding the interior spaces that flank the ramp on the car park entrance. In 1976, the commission for the Mideast Market building went to Marcel Breuer – although its construction did not go ahead, the appointment of one of the world’s most renowned architects affirmed Kuwait’s architectural trajectory. The design was, to an extent, like the previous two in that like most traditional suqs (fig 7.43) it was inward looking providing a shaded meeting place in the interior, but it differed largely in its scale.625 Evidently, it was smaller than the other two suqs; the main market space allowed for a double height atrium, with ‘fluid corridors’ on a geometric layout allowing ‘maximum visibility’ of produce and vendor to customer, thus enabling a similar engagement as would have been recognisable to the pre-oil populace. The space is top lit from windows above beams, a likeness to Utzon’s Bagsværd Church and the Melli Bank. When looking at the KNA, the use of height in spaces and geometric layouts formed a major part of the thinking; Breuer’s scheme bore similarity to Utzon’s articulation of spaces through the primary consideration of light. Utzon’s protestations that the idea of the Arab bazaar is the primary influence on the KNA seems a superficial attempt at providing metaphor to a building which speaks more about biographical elements of Utzon than it does Kuwait.

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622 Gardiner, Kuwait.
623 Fabbri, Saragoça, Camacho, Modern Architecture Kuwait, 1949-1989 (vol. 1).
624 Ibid, p. 220.
625 Ibid, pp. 254-5.
Figure 7.41 Suq Al-Kabeer, by SOM (1973) showing the importance placed on the car in accessing the suq. Photo by Nelson Garrido. (Dezeen)

Figure 7.42 Suq al-Manakh (1973-5) designed by TAC with PACE, photo by Nelson Garrido (Dezeen)

Figure 7.43 Suq Al-Hamidiyeh, Damascus showing piercing shafts of light through the ceiling in an older suq, routed within the fabric of the city, more typical of the type of suq that was replaced by Suq Al-Kabeer in Kuwait. The holes in the roof came from gunfire during the mandate period, when Syrian rebels shot at French-Senegalese troops from the roof of the suq. The roof has since been replaced. (Wikipedia)
3.8

These were several other major regionally inspired buildings constructed or
designed and unrealised from the 1970s by European designers working in
Kuwait. BBPR, the Polish office INCO, and Denys Lasdun (fig. 7.44; fig. 7.45)
all submitted proposals to the Ministry of Public Works for the unbuilt Kuwait
National Theatre. Its location is important to the wider context, given that the
land set aside for its construction was in the city centre close to where the
KNA, Sief Palace and National Museum are all located.\(^626\) Unsurprisingly,
Lasdun’s proposals were typical of his style with overly pronounced lift-shafts,
contrasting verticals and horizontals with an emphasis on perpendicular
lines. It was not dissimilar to the dominant forms of his National Theatre
(1976) or of the IBM building (1979), both in London.\(^627\)

626 Ibid, p. 266.
Other key projects by Western architects included the Al-Sawaber Housing Complex by Arthur Erickson Associates (fig 7.46), constructed between 1977 and 1989; the utopian vision of this, along with illusory renderings and exploded axonometric drawings, contributed to this new autonomous age Kuwait had entered. The Sief Palace was designed by the Pietiläs (1973-1983), who had also worked on an earlier urban study of Kuwait under the Buchanan plan (1968-1971). I. M. Pei designed a project called the Hilton Area Apartments (1977-9), which was initially started by Candilis (fig 7.48); the designs were centred around an octagonal grid, similar to CJW’s grids used in Abadan for oil worker housing in the 1950s, but stacked upon each other. The balconies face outwards, but allow for maximum privacy, utilising the same concepts as ATBAT, Écochard, Candilis and Woods’ work in Casablanca.

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Basil Spence designed the Kuwait Law Courts (1976-1983) in a ‘regional’ appearance (fig 7.49), exhibiting large-scale mashrabiya on the external elevations making a dynamic, yet traditionally Arab design. Spence also used a significant amount of Islamic styled motifs, not drawing on any specific geographical area, but referencing Islamic design from seemingly the world over; this increased use of motif recalls Shiber’s wish, mentioned in the introduction to this thesis, to see an increase of ornament in new architecture in the Gulf.629 A useful contrast to Spence’s intense use of the Arab motif, is the Al-Sabah house designed by Fathy (1978-84) (fig 7.47) which is typical of his work through the use of domes, vaults, brick walls, small openings and the detailed woodwork of the mashrabiya; internally, each space is centred around three courtyards that intersect through loggia-type areas in the middle. This is an example of a building that is not major or integral to the identity or function of the state, as Spence’s law courts were (fig 7.49), but is more representative of the place to which it is located through its materiality. Building designs by Lasdun, for example, did not appear root themselves in Kuwait, while others by Spence went seemingly too far in the application of generic motif.

^ Figure 7.48 Hilton Area Apartments by I. M. Pei, started by Candilis (1977-9) the photographer is Nelson Garrido whose work is published throughout Fabbri, Saragoça and Camacho's books (Pinterest)

^ Figure 7.49 Spread of images from Modern Architecture Kuwait of Basil Spence's Kuwait Law Courts - these began as abstract grid and developed into a 'display of familiar elements of Islamic geometry and decoration', 1980 (Image: Fabbri, Saragoça, Camacho, Modern Architecture Kuwait, 1949-1989; quote: Stanek, L. (2015) 'Mobilities of Architecture in the Global Cold War: From Socialist Poland to Kuwait and Back, International Journal of Islamic Architecture, (4:2) pp.365-398.)
The Kuwait National Assembly Project

The Ministry of Public Works had a mixture of local and global practices to choose from when assessing the competition entries. Architects that submitted designs included: Doshi; IQC, an Iraqi practice; Kuwaiti Group; Ramsi Omar, the Egyptian architect; Spence and Bonnington, from England; and Utzon’s team.\(^630\) The short timescale in which Utzon, Jan Utzon (his son) and Oktay Nayman had to prepare the competition entry was a source of frustration, yet they believed they would win from the outset.\(^631\) The other projects submitted were all interesting, contextual examples of architecture. Utzon won first prize possibly due to personal preference of selectors; Martin, Utzon’s good friend and collaborator on the Sydney Opera House project, was chairman of the committee in charge of searching for an architect for the job of designing the KNA. It appeared from correspondence, their families were close and often visited one another.\(^632\) It remained that there was a professional distance; for example, Utzon did not update Martin on the news that he had signed the contract to design the complex until several months afterwards.\(^633\)

Disregarding this, there was utmost confidence in Utzon respecting the quality of his designs throughout the project, despite it being fraught with logistical difficulties from inception to completion. Issues included several complications arising with payments due to volatility of the Kuwaiti Dinar. In addition, Utzon’s health was not perfect during this period and, although unrelated, there was dissatisfaction from members of parliament with

\(^{630}\) Unknown, (date unknown) Report on the Designs Submitted for the National Assembly Buildings, (Aalborg City Archives)

\(^{631}\) Nayman, O. [Letter] (06.10.1971) Oktay Nayman to Jan Utzon (Aalborg City Archives) the letter illustrates the self-belief emanating from Nayman to Jan Utzon that they would win the project, stating ‘under normal circumstances’, relating to the time constraints, ‘we could have won this competition like picking up a lollypop.’

\(^{632}\) Utzon, J. [Letters] Correspondence between Utzon and Martin between 1969 and 1973 (Aalborg City Archives).

\(^{633}\) Utzon, J. [Letter] (03.09.1973) Jørn Utzon to Leslie Martin (Aalborg City Archives) The letter was sent in September when Utzon signed the contract in July.
elements of the design. These problems are often contextualised in the form of the architecture and its alterations across the period from 1971 to 1982. These disagreements often concluded in Utzon having to explain elements of his design to laypeople, making understanding of the building process from archival materials easier than it might be otherwise.

**Plan**

In plan form, the additive principle drives the complex’s spatial configuration (fig 7.51; fig 7.52). Utzon outlined his additive process at the beginning of the project with coherent sketches drawn for the draughtsman Nayman, who formulated the original scheme. Although the additive principles do not stem from the bazaar, the inspiration of this traditional layout allowed for the addition of modules either side of a central thoroughfare: the modularisation, again, draws similarities between the atomisation of architectural units by CJW in Abadan. Affinities with his own work are also apparent, the layouts of the Kingo and Fredensborg housing (fig 7.53) exhibit similarities with the KNA, Utzon translated the additive elements of architecture from these housing projects across typologies, cultures and languages into the KNA, creating a hybrid of local, regional and global design at the confluence of tradition and modernity.

**Figure 7.51** These diagrams are included with further notes and drawings which stipulate that the model, made by Jan Utzon, is to ‘express an additive element’ (Aalborg City Archive)

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634 Various trips were either postponed, or Jan Utzon went in his place. [Letters] (Aalborg City Archives)
635 Utzon, Jørn Utzon: Logbook, IV, p. 82.
636 Avermaete, Ockman, & Available, Another modern, p. 66.
Figure 7.52 Plan form of the KNA showing the orthogonal layout and the different functions of each area, dedicated to different commercial uses within the Assembly (Aalborg City Archives: image taken from Utzon Archives)

Figure 7.53 Kingo Housing (1958) layout showing how each module relates to others forming a web of housing and exemplifying the additive principle, although he did not use the term in association with this project (http://hicarquitectura.com/2017/01/jorn-utzon-kingo-houses/)
> Figure 7.54 The elements, or modules, that make up the overall Kuwait National Assembly plan, 1972 (Aalborg City Archives)

v Figure 7.55 The plan of the KNA from above in model form (Aalborg City Archive)
Additive Architecture in the KNA

Pallasmaa summarised additive architecture as being ‘structural and thematic systems with rich variations, fusing a tectonic approach with contextually varying cellular, additive processes echoing biological principles.’\(^{637}\) Below, the diagram (fig 7.54) shows nine modules that formed the complex of buildings. Each component has its own function, whether it be the Assembly Hall, the two-storey office space with courtyards in the centre, or the piece of public space in the covered square with the architecture articulated through the model shown in fig 7.55. These modules, as Utzon referred to them, are the primary element of the KNA and form the fundamentals as a ‘web’ surrounding the central street which scythes through the middle of the complex. The notion that this comes from the bazaar is weak and to use Frampton’s term, exemplified ‘nostalgic historicism’.\(^{638}\) In the Kuwaiti context, this is a pertinent phrase; what Utzon tried to evoke through the metaphor of the Arab-style bazaar was physically feigned, but called for a representation of familiar spatial configurations of old Kuwait, that were destroyed through the caustic, utilitarian, plans of the 1950s.

Richard Weston regarded the link to Islamic architecture as paramount within the layout of the Assembly complex.\(^{639}\) He asserted that Islamic towns were ‘started by building an enclosing wall, and then gradually infilling’, which the diagrams above demonstrate (fig 7.51). Protective walls are not of a specific culture, but more to do with humanity and its requirement for security. Rob Aben and Saskia de Wit used poetry to highlight how these spaces are synonymous with Islamic gardens in ancient lands such as Babylon and Mesopotamia. They evoke Gerrit Komrij’s words:

There is no freedom in the desert.
Though there are no fences and posts.
It is better – if you wish to be free –
To elegantly wander through a labyrinth.\(^{640}\)

The proposed infilling of the site allowed greater flexibility, but meant that there was only a finite amount of space for construction of new modules. Throughout the building, Utzon also used enclosure on varying scales, from courtyard gardens in the middle of modules up to the perimeter wall and fencing, the specification of which was a regular topic of later correspondence between the Ministry of Public Works and his office.\(^{641}\) Utzon’s design did not create a labyrinth; it is a Euclidian mass of orthogonal modules and walkways linking departments to one another, serviced by the central spine of a street where each space is defined by its walls. These spaces allow for glimpses towards the Gulf, a reminder of Kuwait’s traditional, historical and contemporary communication apparatus with the rest of the world.

\(^{637}\) Pallasmaa, ‘Foreword’, Aalto, Utzon, Fehn, p. xix.
\(^{639}\) Weston, Utzon, p. 303.
\(^{640}\) Aben, & de Wit, The Enclosed Garden, p. 16.
\(^{641}\) Letters between Jan Utzon and Ministry of Public Works, 1977-1982. (Aalborg City Archives)
The Street

Those who have written on Utzon and the KNA complex generally attribute its axial alignment to the layouts of Middle Eastern, European and Far Eastern towns and cities, and while this is a characteristic of many of them, the genesis of this specific layout is much older than historians of Utzon’s work perhaps give credit. The central street forms this alignment. Classical styles founded by the Romans and Greeks informed many towns and cities across the world by using a central axis. The Romano-Berber ruins in Timgad, Algeria, (fig 7.56; fig 7.57) demonstrate the layout of the KNA in a clear form (fig 7.58), despite its centuries earlier construction. Its form and proportions are remarkably similar, with an axial thoroughfare and modules of housing and buildings breaking off to form a symmetrical grid layout. The layout of Timgad also includes an amphitheatre, the shape, location and hierarchical placement of which, within the spatial configuration, is another similarity to Utzon’s KNA complex layout. Yet Utzon’s central street holds a purpose related to constructing a building suited to the twentieth century. In a letter to the Ministry of Public Works in 1976, he stated that ‘all installations (transformer station, electrical, mechanical and sanitary installations) are built up as a backbone following the direction of the Central Street and positioned under the whole length of this.’

Creation of a Middle Eastern narrative around the spatial configuration sold the building as something rooted in its surroundings, although it served a pragmatic purpose.

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In his essay titled ‘Additive Architecture’, Utzon brazenly claimed the founding of a ‘new architectural form, a new architectural expression’. Through analysis of various historical sites and his immediate modernist ancestors, it is apparent that either Utzon was oblivious to architecture history – both ancient and contemporary – or he ensued a fictitious narrative about the sources of his inspiration to support the expressionist design, successfully marketing his designs to the Kuwaiti governance. In terms of its function, the central street provided access to governmental departments situated around the area. Fundamentally, the street was an axis of the complex much like the central streets of many Arabian, Roman, Greek, European and Chinese towns and cities which are organised similarly. The spatial composition of which is exemplified in the remains of Roman towns and cities such as Pompeii or Lucca, and whose modular or ‘additive’ appearance resembled the outline of the KNA complex, if not as literally orthogonal as Timgad or the KNA complex itself. In addition to these various similarities, there is compelling evidence to suggest the inception of the complex’s layout came from the far east, with the plan of the KNA bearing similarities to the axial arrangement of the imperial city of Peking (fig 7.59). This is commonplace across architecture in general, with architects envisioning buildings for which they have admiration and wanting to redesign elements into their own picturesque compositions. This has occurred often throughout architectural periods, for example in Frederick Gibberd’s Regent’s Park mosque (fig 7.60), or the literal influence of Buckminster Fuller on Norman Foster.

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Figure 7.59 The axial arrangement of the Imperial City of Peking, alongside a plan of the Kuwait National Assembly (Chiu, 'China Receives Utzon')

Figure 7.60 Frederick Gibberd’s Regent’s Park Mosque (1969) in London; Gibberd later finished second in the competition to design Kuwait State Mosque, eventually designed by Mohamed Makiya (1977-81) (http://www.gibberd.com/projects/london-central-mosque)
The notion of cells, clusters, stems and webs is entirely like the ‘additive’ nature of Utzon’s work in Denmark with housing translated directly into the configuration of the KNA, the development of Utzon’s architecture is evident. The discussion surrounding the development of the web is more nuanced than that of additive architecture which in comparison feels more limited in its scope. Webs and stems are associated with ‘urban tissue’ rather than standalone pieces of architecture, which is what Utzon referred to in additive architecture, although in their layouts there is a stark similarity proportionally. Kelly Carlson-Reddig, in support of critical regionalism, claimed that ‘substance and image are recognised as a deep quality in architecture – neither superficial or exchangeable as a wrapper of symbolic information, but integral to the body of the building, and by potential extension, to its site, its purpose, its materiality’, thus pardoning Utzon’s pseudo-allegorical metaphors because they conform to the function of the building.

Functionally, the KNA did not conform to the flexible mantra of additive architecture. In 1976, the Kuwait Ministry of Works requested Utzon to reduce the size of the overall scheme, which caused great difficulty, despite the claims of flexibility established within the additive nature of the design (fig 7.61). In the discussion regarding which modules to move, reinstate or construct, the reasons for selection to alter included disturbance and disruption of the work elsewhere in the building meaning that the entrance would become a construction area. Utzon also discussed the altering of locations for several modules which would be acceptable because of the space the congress hall, its ancillary rooms, offices and committee rooms require. The altered scheme reduced the amount of modules by eight from the original, with the caveat that they could change again. Utzon wrote that ‘we have found the proportions cannot deviate too much from the original programme.’ However, additive architecture did not work due to poor planning and the enclosed limits put in place during the early phases of construction. Following the building’s completion, it did not work logistically when assessing how much space each department required given the limitations caused by the size of the modules. The employment of additive architecture was thus a superficial aside in an otherwise complex architectural project.


649 Curiously, Utzon claims there was a break of four years from 1975 to 1979 on the project and thence being asked to redesign the project at the end of this period. Archival evidence severely suggests otherwise with continual work, thinking and correspondences being made during this period. Why this suggestion is included in a book authored by himself with clear evidence to the contrary is not comprehensible. Utzon, Jørn Utzon: Logbook, IV, p. 234.

650 There is a reference in the Logbook relating to an essay titled ‘NO BUILDING RUBBLE’ which might refer to Utzon’s notion of making the building site difficult to work on. This was mostly to do with the waste generated from building rather than the mess. Utzon, Jørn Utzon: Logbook, IV, p. 150.


Figure 7.61 The notes show the thought process of Utzon regarding additive architecture and his desperation for Nayman to note these things through boxing his name and two exclamation marks after his name (Aalborg City Archives)
4.10

Given that the intention of the modules was to house the functions of the KNA, including office and meeting spaces, meaning these were the composite elements that made up the complex. The cells, acted as a block in the city, or a house in the street; this is where people work, interact and spend most of their time in the building. From a regional aspect, the modules echo the courtyard housing typology. Tyrell established that Utzon’s visits to the hill villages in the Atlas Mountains of Morocco inevitably had a profound impact upon his design conscience; Tyrell argued that these villages were further immortalised through the Architecture without Architects exhibition and publication. Moreover, he suggested that the forms of the courtyards are arranged parallel to the scale of the urban area in which they are situated, down to the domestic spaces people inhabit. The reasoning behind the scale of this change was the climatic, social, cultural and spiritual influences that ‘in combination provided anonymous, meagre yet poetic responses to that particularity of place.’ The modules thus had their own individuality and made the KNA into a ‘place’ defined by the region, through the palette of spatial configuration methods exposed to Utzon throughout his life.

4.11

Furthermore, the division of each module into various sections with inward facing offices fronting a central courtyard space allowed for the interiors to be naturally lit. Significant to the overall layout and regional connotations, the courtyard space was also necessary for the building to function climatically, directing direct sunlight away from the interiors. Channelling of the right amount of light into a space, and the methods to achieve this, led to the creation of a functional interior. In addition to the manipulation of light, Utzon allowed for the two-storey central courtyards that formed the core of each module to have dense planting from the basement, which would rise past the ground floor and first floors of the building. The compactly planted courtyard gardens served two roles. The first was to diffuse the strong sunlight entering the building using the vegetation. Utzon described the reasoning:

An analysis of the strong sunlight in Kuwait has been the base of the development of this arrangement. Normally, the glare from a window, big or small, in Kuwait is so strong, that it is incompatible with the light of the interior whether this is daylight or artificial light, and the proposed method of filtering daylight through garden courtyards creates offices where it is possible to work in daylight, at the same time avoiding a too great difference between the exterior and the interior light of a room. The structural system further allows for sun and glare protection devices.

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654 Utzon, Jørn Utzon: Logbook, IV, p. 244; Tyrell, Aalto, Utzon, Fehn, p. 105.
655 Ibid.
The second role was a nod to the Persian *Chahar Bagh* (meaning four gardens) which had specific rules for their planting and layout, transferable to different garden types (fig 7.62). While the gardens in the KNA are not an exact replica of the typical Persian garden, they bear similarities, revealing enclosed spaces, made up from perpendicular lines and geometric patterns ensuring a recognisably regional space. The choice of plants and research regarding this solution and strength of sunlight took place at the University of Hawaii, which Utzon explicitly claimed (incorrectly) was on the same latitude as Kuwait. Their introversion into courtyard spaces with dense planting also allowed for privacy within the courtyard space, ensuring that overlooking from one office to another was not possible. The designs of these smaller, more personal spaces, ensured that regionality was palpable throughout the building. These spaces appear reimagined, suitable for anywhere in the Gulf, exemplified by privacy and the courtyard garden layout which Utzon described, rather generally, as a ‘major element of Arabian architecture’.

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660 Utzon, J. [Report] (May, 1972) *Kuwait National Assembly Alterations*, (Aalborg City Archives); nb. Kuwait’s latitude is 29.3° N and Hawaii’s is 19.9°

661 Ibid.

The most important module on the plan is that of the Assembly chamber, where Kuwait’s democratically elected government sit to debate and make national decisions. The design of this specific space was what people would see on their televisions, or in newspapers, identifying it as their democratic space. The bowl-shaped seating ensured all members and public galleries had an equal view and sound of the space where speakers, or the Emir, would literally take ‘centre stage’ in the hall addressing both the elected and the electorate. The ancient Greek pnyx, dating from around the fifth century BC, exemplified this very notion, allowing people to hear and see the speakers, equally and without hindrance. Similar ideas are translate across modern typologies. A notable example is Hans Scharoun’s design for the democratic Berliner Philharmonie which introduced the idea of egalitarianism to an entertainment space through its ‘vineyard’ plan, ensuring each seat has the same quality of sound and sight (fig 7.63). Blundell-Jones compared the Philharmonie to the shape of a group formed around street musicians in Hungary (fig 7.64), allowing every person a clear view with perfect sound; Utzon adopted similar principles from these entertainment buildings, to the Assembly hall design. For Kuwait, a young nation striving for its own form of modernity with a welfare state and state sponsored building programmes, the appearance – or even aesthetic – of democracy was drastically important; representing this in a form and space allowed for these ideas to infiltrate into the public and the world.

Allowing the public to enter the space and witness parliamentary proceedings actively demonstrated these democratic beliefs. The design process for this established its importance in the eyes of the Kuwait Ministry of Public Works and associated departments. In April 1972, while the competition was still ongoing, Utzon was up against the Iraqi architecture group IQC as the final two architects vying for the contract. A letter from Ahmed Duaij, the head of the Planning Board, to Utzon, stipulated that:

The accommodation for the public in the Assembly Chamber seems to be small. Accommodation for 1000 people was required. This could be reduced but could your scheme accommodate 500 people comfortably? Could these people have their separate entrance and access? Could the sight lines be improved so that each separate group can see the whole assembly of members and so that the view is not limited by the flanking supports? (fig 7.65; fig 7.66)

Several elements of this letter point to the importance of democracy. The first is that Duaij expressed the requirement of the Utzon scheme to increase the public gallery’s capacity to 500 people, still undercutting the previous stipulation of a 1,000 seat public space; it appeared the mantra was that the more people admitted to the hall, the more democratic the building. The second is the idea that everyone in the public gallery should have a full, clear, view. This is similar to ideas expressed in buildings such as the Philharmonie or Martin’s Royal Festival Hall, but also the ancient Greek debating spaces such as the pnyx where the emphasis was on allowing people to speak in turn. However, there is a limit to how democratic a design could be if access to the public galleries was separate from those of the members. This might be a harsh judgment, given the security concerns highlighted by Utzon in other letters.

4.14

> Figure 7.66 Part of the layout of the chamber with annotations: 150 seats for members of the National Assembly in the centre, the removal of some staircases and the materiality of the walls (fair faced brickwork) all one drawing (Aalborg City Archives)

v Figure 7.67 The ribbed canopy of the roof over-hanging the public square on the west elevation (Utzon Archive Online)


One issue that requires highlighting is the contradiction between these spaces and the introduction of democracy to Kuwaiti society. Despite the appearance of Kuwaiti liberality towards the rest of the world, the voting statistics, questionable formation of the Assembly, and those elevated to powerful committees implied contrary evidence. A confidential dispatch from February 1971 to the British Foreign Office detailed the democratic scene in Kuwait, providing the contextual background to the construction of the Assembly:

On 23rd January 1971, some 40,000 Kuwaiti males out of a total population of 750,000 were eligible to go to the polls to elect their third National Assembly. Election fever is hard to whip up in a country where only 5 per cent or so of the population can vote… The Government, wishing above all else to avoid accusations of meddling in the electors’ choice put out no propaganda at all… but the bulk of the population seemed to consider the whole affair no business of theirs. Electioneering in Kuwait takes place not on the hustings but in the diwaniyas, the men’s evening salons, and is a private, not public, affair… it seems possible that less than 60 per cent of the tiny electorate actually cast their vote.668

The government had concerns for the appearance of their elections, not wanting them to seem rigged. The low voter eligibility is most likely down to the definitions of a Kuwaiti citizen, given that there was mass immigration for the decades prior to this, owing to the requirements for general labour in the construction of a modern nation of international importance (fig 7.68; fig 7.69; fig 7.70; fig 7.71; fig 7.72). The democratic spaces of the diwaniya continued the custom of pre-oil Kuwait in the spatial configuration of dwellings, demonstrating that perhaps tradition still presided over modernity with regards to these changes.669 Overall, the desire to appear democratic is entwined with visions of modernity.

The Covered Square

The most obvious example of showing the democratic values of Kuwait externally was through the covered square which leads to the central street and axis of the complex (fig 7.73). In terms of its regional, but international, appearance and function as a space for public gatherings, correlations derive from Isfahan and its central square, with a similar outward looking nature and proportions found in Asplund’s Woodland Cemetery Crematorium (fig 7.76).670 Weston described Isfahan’s Talar (fig 7.74) as an ‘open portal’ which acted as the ‘interface between the royal precinct and the rest of the city.’671 From the Talar, the Shah would be able to view entertainment, such as polo games or horse races, as well as meet his people and foreign ambassadors. This is how Utzon envisaged the

669 Lewcock and Freeth, Traditional Architecture in Kuwait and the Northern Gulf, p. 2.
670 Weston, Utzon, p. 304.
671 Ibid.
function of the covered square.\textsuperscript{672} Utzon’s own photographs of Isfahan’s central square show this direct relationship in its function and provide a comparison to George Rodger’s photo of Kuwaitis awaiting an audience with Sheikh Abdullah Al Salem Al Sabah in 1952 (fig 7.72). They also demonstrate similarities between the forms and proportions of the exterior of the KNA through archways and the long elevations of only two-storey height. To show the importance of the Talar in Isfahan, its construction is higher than the other elements that enclose the square. Utzon used the same technique with the covered square and its swooping roof situated higher than the surrounding modules that make up the administration and auditing spaces. Utzon’s use of the Iranian architecture of Isfahan further reinforces the argument that the KNA’s architecture is a mix of the region and Utzon’s own background, rather than being specific to Kuwait.

\textbf{v Figure 7.68} Utzon’s sketch for the covered square (Aalborg City Archives)

\textbf{Figure 7.69} Utzon’s covered square at the KNA following completion, 1982 (Aalborg City Archives)
< Figure 7.70 These sketches show part of the process of trying to understand the plan and physical form of the KNA through sketching out the basic forms that contribute to the appearance, with a focus upon the ribbed vaulting on the underside of the canopy (author’s notebook, 2018)

\^ Figure 7.71 Jan Utzon’s model for the KNA showing the covered square, featuring the ‘talar’ in the centre for the Emir to address his people (Aalborg City Archives)

\^ Figure 7.72 George Rodger’s photo (1952) of Kuwaitis awaiting an audience with Sheikh Abdullah Al-Salem Al-Sabah – the arched structure in the centre is similar to the talar from which the Emir was intended to talk from the KNA’s covered square (Magnum Photos).

\v Figure 7.73 Kuwait National Assembly, west-east elevation, showing the spatial configuration and the low-rise profile of the building, complementing the typical form of the Arab city (Aalborg City Archive)
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Figure 7.74 Isfahan square showing the proportions and architectural design features prominent in Utzon’s Kuwait National Assembly (Utzon Archives Online).

Figure 7.75 A still from Utzon’s own film of the Kuwait National Assembly shortly after construction showing the height difference of the covered square alongside the modules defined by their exterior archways (Utzon Archives Online).

Figure 7.76 Gunnar Asplund and Sigurd Lewerentz’s Woodland Cemetery Crematorium, 1917-20 (http://blog.sevenponds.com/wp-content/uploads/2012/04/Woodland-Crematorium-Portico-.html).
Pallasmaa wrote to Utzon just two months before the latter’s death, saying of his architecture, ‘your images traverse space and time, unite traditions of distant cultures and merge natural phenomena with geometry, and history with Utopia.’\(^{673}\) The KNA complex exemplifies these terms. One does traverse through the space, and the geometry of the columns that rise vertically with their curving edges allow for light to filter around softly, for example. On this matter, Utzon wrote in 2007 that shaping these columns like an anchor was purposeful (fig 7.78). ‘People [who, he explained, are small in comparison to the column] passing huge columns experience the light coming in from above curling round the columns and giving rise to an internal sense of space of niches.’\(^{674}\) Utzon also wrote:

\[
\text{And the round rube arose because we must have lateral rigidity... And as they have a hollow external surface where you can see the column shape of the anchor and a solid round cylindrical surface that gets thinner the higher it goes... At the same time we also get a typical interior surface, an interior positive rounding of all the elements so that you stand in a room very elegantly admiring light through the openings while on the outside you then have the opposite, also providing light and shade.}^{675}\]

Utzon’s control when diffusing light in central spaces, either by using iron mashrabiya over window openings or reducing glare through dense planting in courtyard spaces, ensured that the harsh Kuwaiti sunlight did not penetrate directly into the building. The Danish architect Henning Larsen (fig 7.33) also used this technique on several buildings in Riyadh including the Ministry for Foreign Affairs and the Danish Embassy, but utilised timber to promote an idea of ‘Danishness’ through it.\(^{676}\) Moreover, the use of timber was likely intended to be reminiscent of Ottoman mashrabiya in towns stretching from Basra to Istanbul.\(^{677}\)

The raising of concerns regarding weakness of sunlight, or the lack of natural lighting, by members caused Utzon some difficulty with regards to the design of the Assembly Hall.\(^{678}\) His retort suggested that he did not mind the proposal of placing windows on the north-east wall of the Assembly Hall. The building did not include them for security reasons and also because ‘the strong light from the windows contrasts too much with the dark surrounding walls... an unpleasant gaze may be felt.’\(^{679}\) In the

\(^{673}\) Pallasmaa, ‘Foreword’ Aalto, Utzon, Fehn, p. xviii.

\(^{674}\) Utzon, Jørn Utzon: Logbook, IV, p. 124.

\(^{675}\) Ibid, p. 263.


\(^{677}\) Ibid.

\(^{678}\) Unknown, [Letter] (03.01.1982) Major Projects Department (chief engineer) to Utzon (Aalborg City Archives)

spaces that connect modules, levels, halls and public spaces, Utzon again introduced diffused light through the angles created from: curves of columns; covered various walkways with shaded canopies or mellowed direct sunlight onto walls, reflected into spaces below. In his designs for the mosque, these techniques of lighting spaces formed the structure of the space with, in the words of the architect, ‘a system of arches placed diagonally on top of each other, creating, towards the top – a narrowing cassette-like system, which will filtrate the light entering through small openings provided with coloured glass.’

As Pallasmaa pointed out in his introduction to Tyrell’s work, the northern origins and characteristics of the architects affected them more than those from further south. The extremes of light, from darkness in winter to bright summer days, meant that Utzon had a grounding in understanding the reflections, illumination, contrasts and the materiality that created an atmosphere. Understanding the building dynamically, through the interplay and management of light, Utzon constructed a building rooted in tradition, both in terms of its atmosphere but also culturally, through its division of spaces (fig 7.43).

Figures < 7.77 and ^ 7.78 Examples of top lighting and wind catchers (bādgirhā), the systems of indirect sunlight, cooling and the effect it has on the spaces. The bādgir are characteristic of Gulf architecture, with evidence of them used in varying traditional cities, such as Al Zubayr in southern Iraq (Utzon, Logbook IV: Kuwait National Assembly; and Aalborg City Archives)

Figure 7.79 Finished interior of the KNA looking towards the Gulf, under the ribbed concrete forms that appear to billow, like the sail of a Dhow. (Aalborg City Archives)
Figure 7.80 Image showing ‘bâdgîr’ on the roof level of traditional buildings in al Zubayr, designed to catch the wind and bring breezes down to a lower level. (Alqtrani, F. S. A. (2015) ‘The Old City of Zubair, Bulletin of Geography’, p. 29)
Conclusion

Metaphorically, Utzon drew from the wider region to inform his designs. The opening paragraph of his report submitted to the Kuwaiti authorities for the competition only specified Arab or Arabian architecture rather than making it explicit to the local, exemplifying the point that the building is not individual to Kuwait. Utzon's work in Kuwait is thus full of contradictions, yet one has to recognise that from the competition to its completion, he had sold the design based on the likelihood it could become a recognisable image associated with the nation. The opening paragraph reads:

For many years the author of this project has believed that traditional Arabian architecture will have an enormous influence on the future architectural development of the world and it is, therefore, a natural thing that this concept of Kuwait National Assembly Complex has been based on some of the major elements of traditional Arabian architecture such as the covered street – the bazaar street, the interior courtyards, the succession of structural arches.682

Utzon's words here are representative of Kuwait's wider ambitions to be at the forefront of architectural global innovation. Although buildings such as the KNA might be an icon for that specific nation, they are based upon much wider architectural influences and thought, specifically denoting here 'Arabian', rather than a more specific reference to Kuwait. Although Utzon's interests and inspirations were worldwide, his intention was for the design to be regional, not local or global. Utzon was a member of the second generation twentieth century modernists, constructing from ideals of taste and aesthetic, mixed with picturesque versions of places he had seen or heard about; his complex, while beautiful to the Western eye (albeit subjectively), was constructed because of the new position of Kuwait and the Gulf in the world's economy resulting from significant geopolitical events. As such, Utzon caricatures the problems perceived with stereotypical Western architects working in the Gulf during this period.

Conclusion
Architectural development, as proliferated by Max Lock, Candilis-Josic-Woods (CjW), Alfred Roth, Doxiadis Associates (DA) and Jørn Utzon, in the Persian Gulf between 1954 and 1982 was the result of tradition and modernity coinciding with other geopolitical pressures and cultural influences. The architects assessed generally had historicist tendencies - some stronger than others - but all were protagonists who played a role in the creation of new types of architecture as a sub-section of modernism. The period evaluated considers work produced during a timeframe where considerable architectural patronage was attributed to the rulers of nations and high-powered politicians. The conceptual links between case studies, cities and nations analysed in this thesis are intangible, due to architecture being as much an intellectual movement, with a range of influences from the artistic to geopolitical playing out within the built environment. It is clear from these case studies that ideas of tradition contradicted by concepts of modernity was central to the formation and development of architecture in this period by Western designers, perhaps hindering cultural development within the ambitious and powerful nations assessed.

Other factors allowed this paradigm to prosper through varying local, regional and global scale political events acting as a catalyst for change in the built environment. By the 1980s, the Gulf had become a microcosm for European architectural theory and practice; geopolitics, economics and the changing attitudes of clients dictated architects through their requirement of quick construction often on a large-scale. As time progressed, the rejection of European modernism grew in the Gulf and numerous problems presented themselves – often aesthetic and theoretical. In some cases, architecture became focused on tradition, ornament and aesthetic causing much disagreement between sources in contemporary journals and within the literature surrounding Gulf architecture. Use of ornament and Arab expression in architecture is a result of Western architect’s misunderstanding ornament and turning it into an overused and limited palette of materials, forms and objects within buildings.

Using European modernism as a vehicle, some architects tried to create a global, hegemonic design language; the use of case studies in this thesis and their intertwining of local and global architectural context challenges the idea of architectural hegemony. Despite this, there was a reaction in the Gulf against the fear of European aesthetic predominance. Where designs utilised traditional ornament and were still modern and functional, they benefitted from advancing technology for constructions on scales not seen before in the region, shown by cases like the King Saud University (fig 8.1), or large infrastructural projects realised throughout this period. Ultimately, as with examples like Basil Spence’s Kuwait Law Courts, the design language utilised was often a glib, historicist return to ornament and misunderstood tradition resulting in a convergence of national borders, leaving the Gulf in this period as a confusing muddle of architectural experiments by Western...
practices that comprised the cities and nations in the area. The reasons for different aesthetics and architectural design usually sided with the client, often someone to do with the state, whose growing importance, wealth and autonomy meant state-sponsored building was to reflect the nation, its power and its values; this was related to issues surrounding patronage and politics, concerned with how development was viewed both within the location it was built, and perceived in the West through the pages of glossy magazines and the wider media. As such, a contrived version of regional architecture proliferated in this period, as Botz-Bornstein has described in his analysis of the Sief Palace (fig 8.2) for example, where his analysis is framed within literature surrounding critical regionalism. This elaborate interpretation of regionalism is in direct contrast to other forms of regionally inspired architecture founded in the twentieth century, where ornament was used more superficially, contradicting genuine vernacular architectures or theoretically informed buildings.

Figure 8.1 Part of HOK’s King Saud University, faced in concrete, with some elements made to look like traditional mud construction. At the time of construction, it was the most expensive building project undertaken in the world (ARAMCO World)

As stated in the methodology, much of this PhD is based upon the ideas and intentions of architects working in the Gulf during this period, rather than the analysis of the tangible buildings that exist today. The concepts formed during this period put the Gulf at the forefront of architectural development in the world, with a unique atmosphere and unprecedented mixture of variables. When a period of change is thrust upon a traditional society there are people who would prefer historic references, specifically in the built environment; there are also those who vilify this approach, its lack of authenticity (despite its attempts to nullify this) and creativity. Outside the Gulf, a major example of this was the treatment of BBPR, the architects of the Torre Velasca in Milan, through the feedback they received from their colleagues at Team X. The tower took from the forms of northern Italian castles but was too obvious a reference for the group of modern architects who heaped scorn upon the practice. Architecture in the Gulf at this time, as asserted by Tanis Hinchcliffe, was not intended to catch up with Western modernism but was an attempt to trailblaze the way for architectural development – the success of this is purely subjective, and not for this thesis to take a stance. Lawrence Vale suggested a similar idea, by proposing that the creation of the new city of Islamabad (designed by DA, like Chandigarh, ‘showcased the wish of new nation-states to appear as modern and globally competitive’, in a similar vein to city building in Kuwait or Riyadh shown in this thesis). But the ideas behind projects such as the Torre Velasca had no place in the creation of Gulf cities in the eyes of some, despite many projects falling foul of the same regionalised idiomatic fallibilities. The mix of both unashamedly European modernism, hybrids of modern expression with tradition and unfiltered traditional architecture make for an interesting mix of building styles and an environment unique to the Gulf landscape. This is shown by buildings across the Gulf at the time by Western architects, which include the passé regional ornament shown at Dhahran airport by Minoru Yamasaki (fig 8.3), or the Central Bank of Kuwait by Arne Jacobsen (fig 8.4), as well as elements of buildings by Lock, CJW, Roth and Utzon.

The post-war period was characterised by a metaphorical shrinking of the world, allowing for quicker travel and easier communications, expressing itself in new building types and forms within the Gulf. Never had architectural teams been so diverse, and with that diversity came a wealth of backgrounds and stances able to manifest itself within the built environment. Architects began to travel more for research, indulging in architecture-tourism on a global scale – as opposed to the more traditional tours of Italy and Greece undertaken in the eighteenth century - while the ability to debate architecture in different parts of the world, with people from diverse backgrounds and personal contexts, became easier. While Utzon travelled from Denmark to north Africa, was inspired by Chinese building and visited ancient Aztec architecture, the idea of the traditional Grand Tour now meant heading to distant places, to influence new forms and expressions not seen before.

The influences upon the architects assessed in this thesis are manifold, and it is perhaps better to discuss the reasons for the architecture produced in this period as assemblages – as defined by Deleuze and Guattari - although this is a notion for further study. This further study could also build upon contemporary ideas set out by Manuel DeLanda in his work *Assemblage Theory* (2016), which brought together the different ideas Deleuze and Guattari discussed as a ‘dozen definitions’, which DeLanda attempted to make sense of. The procurement of architecture altered in this period, creating an unwitting dependence on changes in geopolitical events and shifts in international economics. These all had varying influence in
the amount of power Gulf rulers could wield, and what they intended their buildings to say. There is a regular assumption, in the literature that building was representative of the nation and its ideals, as with the development of state-run programmes of school and hospital building in Kuwait.\textsuperscript{687} But the expression of form was another matter, often articulated through clichéd ornament in schemes by Western architects – exemplified by features such as arches in housing developments in the 1950s – or contrasted by functional and meaningful expressions of space, as devised by Utzon.

Despite the concerns of critics, form and space produced in this period in the Gulf was not homogenous. In defiance of this, the rhetoric from critically regional theorists would suggest this was not the case, mostly because they posited themselves as a conservative movement, concerned with, as Murray Fraser put it, ‘backward looking romanticism’.\textsuperscript{688} Lefaivre and Tzonis said that ‘As globalisation increasingly enters every facet of our lives, its homogenising effects on architecture, urban spaces and the landscape have compelled architects to embrace the principles of critical regionalism, an alternative theory that respects local culture, geography and climate’, which does not apply to many Gulf buildings by Westerners in this period, due to the wide variety of influences, materials and forms constructed.\textsuperscript{689} There is a vast array of form, scale and ornament depicted within the structures this thesis alone looks at, and intertwined with these are

\textsuperscript{687} Paragraph 5.1 in the Research Context exemplifies this, specifically with Norman Foster’s quote regarding the expression of values.

\textsuperscript{688} Fraser, ‘Scale of Globalisation’, p. 380.

\textsuperscript{689} Ibid.
many others that reinforce the narrative that the Gulf states at this time were competing to be at the forefront of architectural modernity and whatever this entailed. An important example of this would be the Al Sawaber housing estate in Kuwait by the Canadian architect Arthur Erickson, which through its futuristic, illusory axonometric drawings and renderings created a ziggurat style housing block in Kuwait City (fig 7.46; fig 8.5); there are comparisons to be made with this and the Byker Wall in Newcastle by Erskine or the social housing estates in Camden which configured low-rise and high-density housing (fig 8.6), based on the elements of its form and its social credentials.

Arguments for and against homogeneity in architecture transcend styles, and was a term often misused in the mud-slinging that became the ‘style wars’ of the 1980s between the high-tech architects and the post-modernists; in Western discourse, this argument has reared again specifically in the United Kingdom, with the government creation of the ‘Building Better Building Beautiful commission’ in 2018. As established, modern Gulf buildings were far from homogenous and varied in style, form, scale and material; likewise, the neoclassical buildings of Europe also have significant variants. The Western produced architecture in the Gulf, however, has many more influences than just the ancient civilisations, which adds further variety to the end result of its architecture. This manifests itself in DA’s work in Riyadh where instead of using a neoclassical language, a taxonomy of features – like those included in various architectural treatises like Palladio’s Quattro Libri dell’Architettura – making up the traditional buildings of the Najd they recommended a catalogue of features drawn from this environment for designers to create superficial, like-for-like Arab ornament in new building.
Figure 8.6 Alexandra Road Estate, designed by Neave Brown of Camden Council (1968) (Historic England Twitter)
CONCLUSION
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In terms of form, Roth’s school designs did not echo traditional Gulf ornament, but the configuration of the courtyard did, which was an element he had frequently used in other countries across the world and was clearly a climatic requirement in his view, not something ornamental. The Kuwaiti state chose Roth for his reputation for constructing quick, efficient buildings but also for his specialism in the design of schools. Kuwait required functional, prefabricated buildings for fast erection to ensure all children could benefit from state schooling. This very notion, that Kuwait could afford such technology, with materials brought in from elsewhere, and schools designed by an expensive team of consultants from Europe, shows that there is an assemblage of events and a fluidity of ideas that led to the manifestation of the school’s programme not seen before. At this time, Kuwait embarked upon further state building projects with the creation of modern souks, with Western architects including Marcel Breuer working on such projects; Breuer himself rejected the traditional elements of this typology in some sense, and allowed for the introduction of car parking, thus forging a new hybrid style shopping mall, although this was a necessity in car dominated Kuwait City. Through these examples of souk and school construction, it became clear that Kuwait’s state building plans centred on getting the buildings constructed, and not worrying about their overall aesthetic which when built were mostly derived from European theory but with some spatial forms influenced by the climate and the local culture.

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The work Western architects produced in company towns, such as Ahmadi and Abadan, was impacted by similar pressures, taking from an array of influences and thoughts to shape master planning and architectural forms. This presented new social issues, with the changing make-up of employees in the oil companies following nationalisation and the decline of the British Empire. In addition to this, colonialism’s influence over the oil companies and their housing was on a large scale, breaking these ties with architectural solutions aimed to solve endemic social problems previously ignored by British imperial powers. Within this wider company town spirit, Fry and Drew’s work in Iran alongside Lock’s in Iraq was particularly strong in its attempt to draw from the cultural and climatic requirements in building, with unprecedented sociological research undertaken; that is not to say that they did not stray into cliché, with the use of parabolic arches to mark entrances to streets in Gachsaran for example. However, without the events that led to the nationalisation of British owned oil companies in Iran this opportunity would not have presented itself to Western architects, such as Fry and Drew, who took from their own experiences in the master planning of Chandigarh in their work of planning towns in Iran. Again, the work in the company towns shows an inordinate amount of research and cross-cultural connections which could not have been done without the early effects of globalisation. This essentially led to new ideas, creating a unique housing solution, a product of anti-imperialist sentiments, protests and strikes that led to its construction in towns such as Abadan, Basra and Gachsaran.
The notion of the company town, its creation from a tabular rasa and the rhetoric surrounding placemaking, ties in with contemporary philosophical thought as well as the ideas asserted by architects at the time. Also associated with this is the use of ornament, and the misconception surrounding decoration in the creation of place, shown by writers such as Zara Freeth and Saba George Shiber. Towards the end of the twentieth century, ornament became more popular among architects and clients, but it was also in this period that the creation of spaces, particularly by Danish and Nordic architects in the Gulf, really proliferated. Here, examples such as the Embassy of Denmark in Riyadh by Henning Larsen (1984) alongside Utzon’s KNA are clearly comparable in their creation of spaces and experiences that built on both the locale and contemporary design. There also hints of this in HOK’s King Saud University (fig 8.8), although the exterior’s concrete cladding made to look like mud is both kitsch and banal. However, top-lit spaces, large double or triple-height corridors and atria also recall the more ecclesiastical architecture of Peder Vilhelm Jensen-Klint in Denmark (fig 8.9), Sigurd Lewerentz’s work (fig 8.7) or Alvar Aalto’s buildings in Finland rooted within their own northern European environments.

Figures 8.7, 8.8, 8.9: Sigurd Lewerentz’s St Mark’s church, Bjorkhagen (1960) (flickr); HOK’s King Saud University (Aga Khan Trust); Peder Vilhelm Jensen Klint’s Grundtvig’s Church (Author, 2018).
Ultimately, this notion of building, reflecting the architect’s background as well as its locale, created a hybrid of spaces that could be characterised by thinking by Michel Foucault through the idea of heterotopia, mentioned in the Preface to *Order of Things* (1966), and developed through the work of other academics.\(^{691}\) The idea of heterotopia, although ‘notoriously ill-defined’, is often related to spaces that serve two functions and are neither one nor the other, such as Dira Square as discussed in the fourth chapter which is both for the public and executions.\(^{692}\) But this is not necessarily the case with all buildings or spaces that show influences of one culture while attempting to show another; arguably, this is the result of globalisation and the shrinking of the world to allow people, cultures and ideas to collide to create new knowledge that ends up defining an epoch, also in line with the thinking of Foucault.

The idea that each epoch creates its own knowledge, rendering previous ones obsolete, is an argument those who practised modernism, such as CJW and Roth, applied to their works subconsciously. Forms within their architecture almost rejected ornament outright. Yet, through creating culturally sensitive buildings and places, they sought to understand how people survive in hot climates through analysing cultures and applying European principles of architecture. Roth was even more fervent about a tabular rasa, as noted throughout the third chapter through an analysis of his schools and the theories behind his architecture. The notion of historicism, as put forward by thinkers like Karl Popper, and formalised in relation to architecture by Adolf Loos, suggest that ornamentation is a bad thing attempting to judge aesthetics through ethical rationale. Loos does this in both an essay titled ‘Ornament and Crime’, but also in the book of the same name, his magnum opus, which comprised several essays berating what he saw as needless and unethical ornament.\(^{693}\) In it, he described how craftsmen create ornament, spending more hours working the material than they would if there was no decoration, and yet the ornamental piece can lose value far quicker, suggesting that the amount of work and skill going into an object is less valued than it would be otherwise: he applied this to architecture, using various other humorous metaphors to explain his point.\(^{694}\) It is significant, epoch defining thought like this, that these European architects allowed to influence themselves when working in alien places.

These ideas formed the basis for much of the modernists, such as Roth, who had also taken influence from artists such as Mondrian (fig 8.10) and Le Corbusier’s inter-war work, as well as his professional connections to Giedion and Karl Moser. Contradictorily, Roth’s work based on his personal influences, forming prefabricated prototypes for Kuwaiti schools to be erected quickly and designing these to function in the climate, also showed this mix of influences on his architecture in accordance with the ideas of Foucault and the notion of a heterotopia. Although Roth practised in the post-war period, his architecture was outdated in the global context and

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within the Gulf as CIAM and Team X attempted to re-establish the basis for an urban identity. Despite his prosaic architecture, the thought behind his schools still chimed with the ideas set out in this thesis that Western thought and theory combined with a new unique set of variables to create a new sect of modernism. As an antidote to these very notions of sterile modernity as proposed by Roth, ideas put forward by Peter Smithson – and utilised by Charles Jencks – asserted that people would rather be ‘someone living somewhere than no one living nowhere’. Smithson said this with regards to the creation of place, which latterly planners such as DA, read superficially as utilising ornament. Further arguments for Arab ornamentation in the built environment proliferated, particularly by Saba George Shiber, and Western architects working in the Gulf, manifested architectural identity further with the move towards ornament in the 1960s; this supports ideas elevated in this period of more expressive forms and cultural sensitivity through design. Smithson’s idea of ‘someone living somewhere’ is a useful critique on the creation of places, and this is more compatible with the ideas of the master-planned city and town, which as this thesis shows, were compatible across borders throughout the Gulf.

Figure 8.10 Piet Mondrian, Composition II in Red, Blue, and Yellow (1930). Mondrian’s work was influential on many modern architects – the most obvious being Gerrit Rietveld – but this modular laying out of a canvas clearly manifested itself within Roth’s architecture. (https://en.wikipedia.org/wiki/Piet_Mondrian)

695 Jencks, Modern Movements in Architecture, p. 303.
696 Ibid.
Master-planning played an underexamined role within the creation of architectural form and aesthetic, but held an important role in both Lock and Doxiadis’ respective plans in the region. Spatially, they defined what is and what is not what they thought was good design, both in architectural and urban senses. Their reports analysed spaces between buildings and the grain of existing cities in the region, answering morphological questions about the Gulf’s urbanism and urbanisation. They both utilised this research to encourage a historicist approach to urban design, particularly in DA’s encouragement of ornamentation in Riyadh and Roth’s analysis of historic towns in the area, forming a contradiction between the austere aesthetic he proposed but the historicist tendencies in the planning of culturally sensitive urban spaces. While their work did not necessarily influence the taste of clients, other architects or local people, their ideas are more emblematic of the periods within which they worked; understanding why they chose to design this way is necessary, and crucially linked to geopolitics and the changing world order in the post-war period.

Contrasting their work with other post-war plans elsewhere in the world, it is possible to identify crossovers and juxtapositions with the architectural and urban language that was disseminated. Lucio Costa and Oscar Niemeyer’s work in Brasilia manifested a distinctive aesthetic in their major buildings created for Brazil (fig 8.11). Unlike the historicist nature of the Lock and Doxiadis plan, Costa and Niemeyer’s work was more similar to that of Minoprio, Spencely and Macfarlane (MSM) in Kuwait in 1952, where priority was given to moving around the city in cars through overlaying a clean imprint for the city ex nihilo. Architecturally, in Chandigarh, the overarching aesthetic of new buildings and urban spaces is similar to this notion, although certain structures are more derivative of the forms that Le Corbusier utilised in the post-war period, recalling the ‘expressionist’ shapes of Ronchamp (1955) (fig 8.12) or the interiors of La Tourette (1956); James Stirling suggested that Le Corbusier’s Maisons Jaoul in Paris (1951) (fig 8.13) were a ‘move away from the belief that modern architecture had to assert itself as smooth, machine-wrought, planar surfaces set within an articulated structural frame’.

Fry and Drew’s houses and villas in Chandigarh are more representative of the European modernism of the inter-war period in their forms (fig 8.14). A further juxtaposition of Lock’s work to these other major global masterplans is that his Basra plan was shelved, not because of the 1958 Revolution as alluded to in Tanis Hinchcliffe’s essay on ‘British Architects in the Persian Gulf’, but because his plan did not do enough to link Basra with Baghdad and the other areas of Iraq that formed the three separate vilayets. It is clear that the people planning the Gulf’s urban change wanted it to become an interlinked and connected place within the rest of the world at this time, with its attitudes towards urbanism and architecture generally rejecting historicist approaches until the 1970s, when nations began to embrace them wholesale in the name of nation building.

697 Frampton, Modern Architecture, p. 230.
CONCLUSION

**Figure 8.11** National Congress of Brazil, in Brasilia designed by Oscar Niemeyer (1960) (ArchDaily)

**Figure 8.12** Ronchamp Chapel designed by Le Corbusier (1955) exemplifying the monumentalisation of the vernacular (ArchDaily)
Figure 8.13 Interior of a unit within the Maisons Jaoul by Le Corbusier in 1954-6 (https://en.wikiarquitectura.com/building/maisons-jaoul/)

Figure 8.14 Maxwell Fry and Jane Drew’s designed villas for Chandigarh in the early 1950s (https://archipelvzw.be/en/agenda/458/maxwell-fry-jane-drew-in-chandigarh)
In Jørn Utzon’s work at the KNA, the building’s forms represented the position of the Gulf during the 1970s and early 1980s, with its expression of the Kuwaiti dhow and intricate, fine grain plan that displayed the orthogonal layout of a traditional Gulf town. It dared to do it through forms associated with historicism, while being typical of Utzon’s architecture and its influences. It adhered to his Additive Architecture theory and peddled the similar modern ideas of flexibility other architects utilised, such as CJW in Iran; yet it clearly drew from the plans of Gulf urban centres, taking Isfahan for example, and individual buildings typologies, including souks. Northern European architects working in the Gulf during this period numbered many, and most of them were producing forms of Scandi-Arabism, fitting in with an overall architectural aesthetic procured in countries like Denmark but responding to the traditions of the conservative societies in which their buildings were located. Yet, these buildings, such as the Danish Embassy in Riyadh (fig 8.16), used contemporary materials and reflected the new, modern forms required for a functioning embassy building. Furthermore, the building’s location within the new Diplomatic Quarter of Riyadh (fig 8.15) was at the centre of a major piece of planning intended to highlight the range of architecture and design within the country, acting as a considerable motif for power.

Figure 8.15 Diplomatic Quarter in Riyadh, planned by Albert Speer (1978), showing the network of villas and embassies within an extensively landscaped area close to the Wadi Hanifa (ARAMCO World)
Figures 8.16 and 8.17: Henning Larsen designed buildings; on the left the Danish Embassy in Riyadh (1998) and on the right is the Ministry of Foreign Affairs (1985) (https://henninglarsen.com/en/projects/0000-0399/0144-mofa/)
**Figure 8.18** Interior of Louis Kahn’s National Assembly building, Dhaka Bangladesh (1961-1982) (http://modernmag.com/louis-kahns-sublime-geometry-of-terror/)
Much like Louis Khan’s National Assembly for Bangladesh in Dhaka (fig 8.18), or more recent buildings for the devolved governments in the United Kingdom, the KNA represented independence, societal change, politics and power. All of them are different architecturally and represent both their epoch and the their respective architects. Earlier buildings, such as government buildings in Brasilia, are also representative of the creation of national identity, as is Chandigarh for the Eastern Punjab (fig 8.19); the latter was also representative of the ‘New India’, epitomising the idea of a modern industrial estate as the ‘utopian destiny which Nehru had envisaged for India in total opposition to Gandhi’. These displays of architectural expression by Westerners in the Gulf during this period formed a microcosm of the global architectural scene, within arguments for and against ornament – siding with those of modern and post-modern theories of the time.

Ornament and expressions of space work on varying scales, and it is the smaller, more local scale, which concerns the everyday use of buildings and the city’s residents. In Roth’s prefabricated schools for Kuwait, there is a case to argue that the schools are neither historicist, nor intended to form a piece of identity or nostalgia for the Kuwaiti population. They are utilitarian constructions, designed from the principles laid down by those from the inter-war CIAM congresses, but they are representative of Kuwait’s earlier planning solutions in that the nation needed schools constructed quickly to cope with a rapidly expanding population and the growing city. The forms, while like those found in the books Roth wrote on schools from around the world, were still not homogenous and represented their local context climatically, politically and economically as well-built structures. The schools played a role within the wider planning of areas, such as Rumaithya, and were seen as being central to communities as mosques were, both from the perspective of townscape and in the form of a meeting place.


700 One could argue that Roth’s schools in this period are historicist, as many of them were constructed during post-modernism’s rise following the rejection of inter-war modernism, which Roth’s forms and utilitarian style harked for.

701 Roth, New School Building.
The formation of company towns in Iran came from a similar context. It was not until the post-war period and the nationalisation of oil did the focus come to the creation of central areas with Stems and Webs projecting from the core of the urban area moving away from the previous blueprint adhered to by Wilson Mason and Partners, who had been influenced by Lutyens in New Delhi. Companies like the AIOC, NIOC and KOC all required quality housing for their employees, following the social unrest; this also coincided with unease at the colonial type rule, exemplified by the companies echoing former capitalist measures of colonialism through British-run businesses such as the East India Company, or the Hudson Bay Company.

Housing needed to adhere to the local population’s requirements having neglected them previously; spatially, this meant allowing for domestic privacy and flexibility in the urban layout to add buildings when necessary. Architecturally, schemes like CJW’s in Abadan was more representative of earlier work completed in northern Africa, stemming from conversations with architects at CIAM conferences, although ideas were still experimental in the 1950s and was intended to be progressive in the spaces they produced. Although CJW’s modern Iranian work is characterised through the company town, the phrase is often synonymous with Victorian benevolence evoking thoughts of places like Bourneville but also latterly the towns of the Garden City movement. In Iran and Kuwait particularly, these forms and ideals are played out with the major influences of the time. Ahmadi, for example, was designed by Wilson Mason and Partners in the 1940s, but its semi-circular, zoned appearance was imperative to its overall function as a socially-engineered, hierarchical society.\(^{702}\) CJW’s work was far more egalitarian, as was Fry and Drew’s in Gachsaran, although both fell foul in their provision of historicist clichés in the appearance of otherwise well designed environments.

Despite the bad reception some groups of modern architects gave forms of regionalism (like Team X mentioned above), the architectural discourse did not unite behind historicism as an affliction. Raglan Squire had said in his editorial for *Architectural Digest* (1957) that ‘serious architects seek to develop a regional style: perhaps within the next decade they will have found the way’, a reaction to what was viewed as a typical form of European modernism manifesting itself during the 1950s in the Middle East.\(^{703}\) It also epitomised European architectural discourse of the time among certain groups, building on Shiber’s writings and reflected in DA’s argument for traditional ornament, encouraging a look to traditionalism in their suggestions, potentially inspired by Le Corbusier’s ‘monumentalisation of the vernacular’, in the words of Frampton.\(^{704}\) Others have raised questions about the ethics of regionalism, suggesting that it is not sustainable for developing societies to import architects.\(^{705}\) Squire claimed that ‘there were 22,000 fully qualified architects in England, while in the Commonwealth countries the numbers could still be counted on the fingers of one hand’, prompting architects’ offices to be forced to train local staff when working in foreign places, as with Fry and Drew and Partners in Chandigarh, when


\(^{703}\) Squire, ‘In the Middle East’, pp. 73–108.


\(^{705}\) Hinchliffe, ‘British Architects in the Gulf’, pp. 23-34.
prompted by their clients.706 During this period, numerous renowned architects from the countries in question began their training in the development of what became categorised as 'regional architecture' by Western historians in the late twentieth century.707

While this thesis does not cover the wealth of Arab and Iranian architects working in this period in depth, those such as Rifat Chadirji (fig 8.20), Mohammed Makiya (fig 8.21), Heydar Ghiai and the Mandala Collaborative worked extensively in the ensuing period. Although their architectural careers were a by-product of this immediate post-colonial era, their contribution to modern architecture was invaluable and remains unappreciated in Western architectural circles. They were persuasive in the creation of a non-historicist, but locally produced style of architecture drawing from the spatial requirements of a conservative culture but is also inventive utilising new construction methods. Albeit a later example, the English architect Peter Barber created a home in Damman, Saudi Arabia in 1990 for a client who required an unusually liberal layout for a house in the inversion of gender roles within the spaces created (fig 8.22; fig 8.23); however, Jeremy Till pointed out in an essay on the project, it was too liberal for the Aga Khan Award judges, despite being nominated for a round of awards in 1995.708 Importantly, he created this from spending a year in Saudi Arabia observing architectural and building practices, a similar method to Lock’s work in Iraq and CJW’s north African research. The spatial layout – and thought behind it - shared appearances with Lock’s Ubullah housing scheme, while also providing a hybrid of traditional and modern features.

Schemes produced in the Gulf between 1954 and 1982 represent construction within countries intended to manifest newfound wealth and power through architecture to create identity and place. The nations within the bounds of the geography this thesis has studied all experienced similar phases, judged by comparable external pressures which in turn played out in the built environment, creating a cross-border architectural language influenced by European theory. As with Western building practice, there were historicist pressures to revert to tradition, but there was also a consistent belief spanning the period that buildings should be at the forefront of the development of architecture, whether this be through superficial means or other more high-brow and philosophical spatial relations. Europeans working in the Gulf were often under their own economic pressures within the post-war period, looking for work in times of uncertainty back at home. They were searching in places which had new wealth, building structures that represented cultural identity, economic and political power in attempts to reinforce a reinterpreted built national identity, but importantly, they designed to a brief from local clients.709 These pressures are also played out in global architecture, shown through various case studies such as the Dhaka National Assembly or the masterplans for Brasília and Chandigarh demonstrating these sets of conditions are not exclusively synonymous with the Gulf.

707 Frampton, Modern Architecture; Curtis, Modern Architecture since 1900, (London: Phaidon Press)
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Figure 8.20 Chadirji’s designs for the Administration offices, National Insurance Company (1966) in Mosul, recently destroyed at the hands of ISIS (Chadirji, R, Concepts and Influences: Towards a Regionalised International Architecture)

Figure 8.21 Rafidan Bank in Basra, designed by Mohamed Makiya (1970) (ArchNet)
Figure 8.22 Axonometric of Peter Barber’s Villa Anbar (1990) showing the roof terrace and private walls with few small openings punctuating the external wall (http://storiesofhouses.blogspot.com/2005/06/villa-anbar-in-damman-by-peter-barber.html).

Figure 8.23 Peter Barber’s Villa Anbar in Damman (1990), showing the external elevation and how it relates to the light and planting that surrounds it within the internal private spaces that are also outdoors (http://www.peterbarberarchitects.com/villa-anbar).
The post-war period witnessed the growth of phenomena such as globalisation with architecture acting as a physical embodiment of this; with no specific taxonomy of features, it is not entirely clear what globalised characteristics are. While building appearance is certainly not homogenous, architecture illustrated different influences in the fabric and forms of its construction. Because of new, quicker communications and greater ease in travelling around the world, ideas and inspirations for architects were larger in size and more visually engaging than ever. This coincided with more conversations, arguments and criticism within the Western world that would shape architectural tenets and stances for decades to come. Mixing these factors with new money, wealth and the desire for the world to be centred around Gulf society, architects found a new playground in this period where they could test out new ideas for construction or form while still adhering to the requirements of their clients and the people who would use their spaces. While this thesis posits that it is the main conflict between tradition and modernity that is responsible for the ideas behind architecture in this period, it is more likely that it is indeed an assemblage of different theories, forms and influences that caused architectural development in the Gulf.

Although expression and appearance in architecture had changed between 1954 and 1982, the pressures that influenced its form had not. In fact, it is fluidity that identifies the built environment in the Gulf still today, with ever more audacious constructions and ideas at the forefront of engineering and architecture. All one has to see are the tallest building in the world in the form of the Burj al-Khalifa, the ‘The World’ man-made archipelago or Bjarke Ingels’ proposed hyperloop system for the UAE across the pages of Dezeen or other international architecture blogs; in January 2020 Ingels himself was the centre of attention for his friendly relations with Brazil’s controversial president, Jair Bolsonaro, reigniting conversations about architecture’s fraught relationships with nationalism, state-building and its association with political regimes. Despite this, it is the same economic pressures and nationalistic connotations behind these extravagant creations that formed the architecture and cities assessed in this thesis between 1954-1982. The Gulf as a playground for Western architects experimenting with form and pushing engineering’s capabilities is a continuing trend, as such, the variety of ideas and influences must be understood as an assemblage of theories, manifesting themselves within the built environment.
Glossary
Al-Tub (noun); mud brick construction, assimilated into Spanish as adobe, keeping its meaning of mud brick. Western scholars generally refer to tub as being adobe.

Assemblage: Deleuze and Guatarri are known for discussing assemblages in *A Thousand Plateaus* (1972); Manuel DeLanda expanded upon their convoluted definition in his book *Assemblage Theory* (2016). The word is taken from the word *agencement*, a term that refers to the action of matching or fitting together a set of components (agencer).

Authenticity (noun); inherent, or natural; found, not created: a philosophical term which might relate to aesthetics, it is also relevant to geographic, cultural and historical accuracy: in this thesis’ case, with the construction and design of buildings. Its very nature is that it is a synthesis of elements, some of which are subjective, meaning that the determining of something’s authenticity is difficult.

Bâdgirhā (noun); bad ‘wind’ + gir ‘catcher’: believed to originate in ancient Persian architecture; they are a result of a low-rise, horizontal urban form from which air can stagnate, the badgir improves ventilation and air circulation within dwellings. Bâdgirhā is the plural in Farsi.

Cartographic Borders (noun); a nation’s boundary – geographic - as drawn on a map. A line, not necessarily physical or tangible, but one which exists on paper: it might define cultures, which people live where or be served for purely administrative purposes; might be marked physically by a wall or post. In other cases, a physical object might provide a natural border, which the cartographic border respects – this might include something like the Shatt-al-Arab river.

Cell (noun): also referred to as the French cellule within CJW’s works. The cell is the smallest component which fits together with other cells to make up larger modules.

Cluster (noun): ‘a group of things or people positioned closely together’; in the case of this thesis, the things are the cells, described above, which are not only close together, but often attached. Their attachment might be in a stacking form, as is the case with Lasdun’s Bethnal Green flats, or next to each other, as is the case with the low-rise housing of CJW in Abadan.

Critical Regionalism: an *a posteriori* architectural approach rooted in local traditions and style with the benefit of modern technologies. Generally quite reductive, it does not look at the forces which create it in any detail, and has many fallibilities and contradictions within its writing (such as being a Western theory used to analyse ‘third world’ buildings).

Dhow (noun): Traditional Kuwaiti boat primarily used for pearling; it is a
distinctive shape, once common within the harbours of the town. Its form and scale is often an image associated with the nostalgia for old Kuwait and has been used as a metaphor for modern architectural interventions in Kuwait.

**Diwaniya (noun):** reception hall, or gathering area where the man of the house would traditionally conduct business. This is a traditional space, normally associated with the courtyard layout of the house.

**Dynapolis:** one of Doxiadis’ neologisms relating to his theories. Parabolic, unidirectional growth which can expand space and time; this is opposed to the notion of the static city, and demonstrates his organicist roots.

**Ecumenopolis:** Portmanteau coined by Doxiadis from the Greek words ecumene, that is, the total inhabited area of the world, and polis, or city, in the broadest sense of the word. It means the coming city that will – together with the corresponding open land, which is indispensable for Anthropos – cover the entire earth as a continuous system forming a universal settlement. (Doxiadis.org glossary of terms)

**Ekistics:** from the Greek words oikos, and oiko, ‘settling down’, to mean the science of human settlements. It conceives of the human settlement as a living organism having its own laws and, through the study of the evolution of human settlements from their most primitive phase to megalopolis and Ecumenopolis, develops the interdisciplinary approach needed to solve its problems. (Doxiadis.org glossary of terms)

**Functionalism (noun):** in terms of this thesis, functional, or functionalists are usually associated with utilitarianism or against the organic development of architecture and the urban environment. Usually, their outlook is a mixture of the two notions, there is no binary outcome. Dictionary definition is: ‘the theory that the design of an object should be determined by its function rather than by aesthetic considerations, and that anything practically designed will be inherently beautiful’.

**Geopolitical:** politics relating to geographical factors; defining politics and geography is also important for the success of this, this thesis views politics and economics as being intertwined, as such viewing this.

**Globalisation (noun):** the worldwide movement toward economic, financial, trade and communications integration (businessdictionary.com); this affects the built environment through the watering down of regional cultures and increasing hegemony in terms of the design and culture of places.

**Habitat:** the environment in which the homes are located; CJW proposed to make the habitat through the amalgamation of Cells, which create clusters, which form Stems and Webs.

**Harim:** the diwanyah is reserved for business, while the harim is the area devoted to the residence of women.

**Homogenisation:** often associated as working in tandem with globalisation, homogeneity is the process of making things uniform or similar; this thesis shows that there are forces that attempt to create ‘regional’ aesthetic through architecture.
Insincere: in relation to glib, or inauthentic, much of the architecture produced in this period, by Western designers in the Gulf was insincere, or ‘not expressing genuine feelings’

Intensity: with regards to the increasing of Arab intensity in architecture, this means that buildings because more ‘intensely’ Arab through the deployment of motif and ornament associated with either the Islamic, Ottoman or specifically regional worlds within which the building is located.

Kasbah: type of medinah or fortress, numerous Modernist architects from the West found inspiration through visiting kasbahs in north Africa, most notably, this thesis asserts this is the case with Georges Candiulis, Shadrach Woods and Jørn Utzon.

Mashrabiya: a type of projecting oriel window associated with Arab architecture, but mostly comes in the form of a lattice screen; this is used in some form or another by all of the architects assessed in this thesis. Its principles are commonplace in techniques of allowing for air circulation, ventilation whilst giving privacy to the residents.

Modern: a concept arising from the enlightenment period, from the ‘Age of Reason’; in the case of this thesis, it relates directly to the culture and act of ‘modernisation’ through the ‘awakening’ of Arab nations, which is discussed in the works of Asseel Al-Ragam. It is also related to Modernism, the Western movement from which all the architects and planners in this thesis hail from; when discussing ‘modern’, or derivations of, it is in relation to the Modern architectural movement, unless otherwise stated and should not be confused with philosophical arguments.

Motif: a decorative image or design; in 1964 Saba George Shiber encouraged its increased usage in building in Kuwait. This is in direct relation to the growth of intensity of Arab architecture and is associated with visual aesthetic and identity.

Muyabeb: type of archway within narrow streets linking houses on opposite sides. Some architects, like Alfred Roth, specifically designed dwellings in these arches, while others such as Fry Drew and Partners included them as ornament within the urban landscape. Max Lock researched their appearance, and noted their existence in Al-Zubayr, while other people documented them in Kuwait.

Organic: this thesis goes beyond the superficial definitions related to organicism within architecture and urbanism that have proliferated in the twentieth and twenty-first centuries. Organicism is related to biology, and how cells grow and alter over time: this is also related to flexibility and functionalism. All the architects in this thesis show signs of using organicism within their designs to a degree. The most organic architects are those who are clearly inspired by the works of Patrick Geddes - a trained biologist - who believed the city to be an organism. This theory contradicts works by utilitarian planners such as Minoprio Spencely and Macfarlane, who proffered little in the way of flexibility in their plan for Kuwait; while Max Lock and Doxiadis Associates focussed on how the city might change in the future.

Ornamentation: in association with motif, usually to enhance the aesthetic of a building. See Venturi and Scott-Brown’s appendage of Ruskin’s adage
to 'it is all right to decorate construction but never to construct decoration'.

**Place:** using Aristotle’s definition surmised in the dictionary as a ‘particular position, point, or area in space; a location’; this definition of place ensures its point does not move, but its contents can: falling in line with definitions of organicism and Geddes’ ideas of the city as an organism, although he refutes Aristotle’s definition by adding ‘a city is more than a place in space, it is a drama in time’.

**Production:** a process of making, designing or forging a space; this thesis uses Lefebvre’s Marxist ideas minimally in regards to this, which other architectural historians might use more prominently. I have used the writings of Manuel DeLanda to underpin my understanding of production of space through understanding the development of architecture and aesthetic as being something related to physical objects and the events which cause them; this is also relative to Aristotle’s ideas of a ‘prime mover’.

**Scale:** a proportion between two sets of dimensions; the scale of projects increases in both importance and physical size throughout this thesis. The scale is relative to the events which take place which create the physical buildings and their aesthetics.

**Sedentary:** this thesis takes the idea of sedentary from Ibn Khaldun and is in direct relation to urbanisation and cultural production. Sedentary culture, is not opposed to the nomadic, in that it encourages movement and change, viewing cities as an eco-system in a similar fashion to Geddes.

**Stem:** the stem is part of the theory by Shadrach Woods related to ‘cells’, ‘webs’ and ‘clusters’; its definition is clearly articulated in his article ‘Stem’ as part of a wider collection on the works of ‘Team 10’ in a special edition of Architectural Design, published in 1960.

**Void:** articulated by Aristotle as an antonym for place, although this is rooted in the fact that a void remains a place. Aristotle defines it as being something which is full of nothing, to which he refutes his own claim as being contradictory as air is still something, and there must be air in the void. This definition is not of much use to this thesis, but its premise that there is nothing, is. By nothing, we might mean that there are few objects in the space, it might not be used, humans might avoid using it.

**Wadi:** a valley or ravine that is dry except for in rainy season; Riyadh’s existence is often attributed to the Wadi Hanifa running from north to south on the city’s western periphery.

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*Geddes, P. (1904) [paper] Civics, as applied sociology, at the Sociological Society; Charles Booth chair of the meeting, p. 4.*
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Opening Pages

OP. 1 Initial mind map from 2015, detailing the potential themes and case studies [Source: Author]

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Figure 1.3 Sketch for the Baghdad Gymnasium by Le Corbusier, intended to form a central role in the Baghdad Olympic bid for 1956, although it did not get built until c.1985 under Saddam Hussein’s regime [Source: ArchDaily]

Figure 1.4 Plan for Chandigarh set out by Le Corbusier, dividing the city into various sections [Source: Jackson, I (2013) ‘Maxwell Fry and Jane Drew’s early housing and neighbourhood planning in Sector-22, Chandigarh’, Planning Perspectives]

Figure 1.5 Section of the roof of the KNA by Jørn Utzon, which bore similar swooping shapes to his other work as well as the roof-shapes of Le Corbusier at both Chandigarh (fig 8.19) and Ronchamp (fig 8.12), all of which create a tactility to the architecture grounding it in its location [Source: Utzon Archives Online]

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Figure 1.7 Miastoprojekt’s work for housing in Baghdad, following the 1958 Revolution [Source: Stanek, L. ‘Miastoprojekt goes abroad: the transfer of architectural labour from socialist Poland to Iraq (1958-1989)’]

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Figure 6.34  Mohamed Makiya’s students at the new School of Architecture at Baghdad University surveyed Baghdad’s architectural fabric, much like Doxiadis’ team did with the Najd [Source: ArchNet: from the Mohamed Makiya Archive, MIT]

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Figure 6.44  DA favoured traditional buildings and aesthetics for the future of Riyadh, and even suggested the wholesale restoration of Diraiyah, to the west of Riyadh near the Wadi Hanifa Doxiadis Associates, (1971) Final Master Plan (Draft), [Source: DOXSAU- A2: 23305]

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Chapter 5

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Figure 7.53  Kingo Housing (1958) layout showing how each module relates to others forming a web of housing and exemplifying the additive principle, although he did not use the term in association with this project [Source: http://hicarquitectura.com/2017/01/jorn-utzon-kingo-houses/]
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Figure 7.58  Kuwait National Assembly plan [Source: ArchDaily]

Figure 7.59  The axial arrangement of the Imperial City of Peking, alongside a plan of the Kuwait National Assembly [Source: Chiu, 'China Receives Utzon']

Figure 7.60  Frederick Gibberd's Regent's Park Mosque (1969) in London [Source: http://www.gibberd.com/projects/london-central-mosque]

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Figure 7.67  The ribbed canopy of the roof over-hanging the public square on the west elevation [Source: Utzon Archive]

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Figure 7.76 Gunnar Asplund and Sigurd Lewerentz’s Woodland Cemetery Crematorium [Source: http://blog.sevenponds.com/wp-content/uploads/2012/04/Woodland-Crematorium-Portico-.html]

Figure 7.77 Examples of top lighting and wind catchers (badgir), the systems of indirect sunlight, cooling and the effect it has on the spaces. The Badgir are characteristic of Gulf architecture, with evidence of them used in varying traditional cities, such as Al Zubayr in southern Iraq [Source: Utzon, Logbook IV: Kuwait National Assembly]

Figure 7.78 Examples of top lighting and wind catchers (badgir), the systems of indirect sunlight, cooling and the effect it has on the spaces. The Badgir are characteristic of Gulf architecture, with evidence of them used in varying traditional cities, such as Al Zubayr in southern Iraq [Source: Aalborg City Archives]

Figure 7.79 Finished interior of the KNA looking towards the Gulf, under the ribbed concrete forms that appear to billow, like the sail of a Dhow. [Source: Aalborg City Archives]

Figure 7.80 Image showing ‘badgir’ on the roof level of traditional buildings in al Zubayr, designed to catch the wind and bring breezes down to a lower level [Source: Alqrani, F. S. A. (2015) ‘The Old City of Zubair, Bulletin of Geography’, p. 29]

Conclusion

Figure 8.1 Part of HOK’s King Saud University, faced in concrete, with some elements made to look like traditional mud construction. At the time of construction, it was the most expensive building project undertaken in the world [Source: ARAMCO World]
Figure 8.2  The Sief Palace by Riema and Ralli Pietilla (1973-1982) [Source: navi.finnisharchitecture.fi/sief-palace-area/]

Figure 8.3  Dhahran Airport by Minoru Yamasaki, with its use of Arab arches on the exterior elevation (1961) [Source: http://the-saudi.net/dia/dia.htm]

Figure 8.4  Central Bank of Kuwait by Arne Jacobsen, showing its large fortified entrance made from stone with a token golden dome near the main entry point (1966) [Source:https://www.reddit.com/r/Lost_Architecture/comments/6v27ux/central_bank_of_kuwait_designed_by_danish/]

Figure 8.5  Arthur Erickson’s Al Sawaber estate in Kuwait, built in 1981. [Source: https://www.wmf.org/al-sawaber-complex]

Figure 8.6  Alexandra Road Estate, designed by Neave Brown of Camden Council (1968) [Source: Historic England Twitter]

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Figure 8.8  Peder Vilhelm Jensen Klint’s Grundtvig’s Church [Source: Author, 2018]

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Figure 8.10  Piet Mondrian, Composition II in Red, Blue, and Yellow (1930). Mondrian’s work was influential on many modern architects – the most obvious being Gerrit Rietveld – but this modular laying out of a canvas clearly manifested itself within Roth’s architecture. [Source: https://en.wikipedia.org/wiki/Piet_Mondrian]

Figure 8.11  National Congress of Brazil, in Brasilia designed by Oscar Niemeyer (1960) [Source: ArchDaily]

Figure 8.12  Ronchamp Chapel designed by Le Corbusier (1955) exemplifying the monumentalisation of the vernacular [Source: ArchDaily]

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Figure 8.14  Maxwell Fry and Jane Drew’s designed villas for Chandigarh in the early 1950s [Source: https://archipelvzw.be/en/agenda/458/maxwell-fry-jane-drew-in-chandigarh]

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Figure 8.16  Henning Larsen designed Danish Embassy in Riyadh (1998) [Source: Henninglarsen.com]

Figure 8.17  Henning Larsen designed Ministry of Foreign Affairs in Riyadh (1985) [Source: Henninglarsen.com]

Figure 8.18  Interior of Louis Kahn’s National Assembly building, Dhaka Bangladesh (1982) [Source: http://modernmag.com/louis-kahns-sublime-geometry-of-terror/]

Figure 8.19  Le Corbusier’s Capital Complex (1958)
Figure 8.20  Chadirji’s designs for the Administration offices, National Insurance Company (1966) in Mosul, recently destroyed at the hands of ISIS [Source: Chadirji, R, Concepts and Influences: Towards a Regionalised International Architecture]

Figure 8.21  Rafidan Bank in Basra, designed by Mohamed Makiya (1970) [Source: ArchNet]

Figure 8.22  Axonometric of Peter Barber’s Villa Anbar (1990) showing the roof terrace and private walls with few small openings punctuating the external wall [Source: http://storiesofhouses.blogspot.com/2005/06/villa-anbar-in-dammam-by-peter-barber.html]

Figure 8.23  Peter Barber’s Villa Anbar in Damman (1990), showing the external elevation and how it relates to the light and planting that surrounds it within the internal private spaces that are also outdoors [Source: http://www.peterbarberarchitects.com/villa-anbar]
Bibliography

Archives Abbreviations

XX denotes no abbreviation used

BL        British Library
BP ARC    BP Archives, University of Warwick
DOX      Doxiadis Archive, Athens
MLA      Max Lock Archive, University of Westminster
RIBA    Royal Institute of British Architects Library
SOAS   School of Oriental and African Studies
XX        Aalborg City Archives: Utzon Archive
XX      gta Archiv ETH Zurich: Alfred Roth Archive
XX      National Archives at Kew
XX      Shadrach Woods Archive

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Doxiadis Associates, (1968) ‘Discussion with the Mayor of Riyadh: Slums Created in the City’. (DOX: 23307) (R-SAU-A20)


Doxiadis Associates, [Drawing] in *Riyadh Report, This is the projection of Riyadh in 1975 without a plan, it is far less organised and areas for certain functions are segregated from one another* (DOX: 23310) (DOX-SAU-A5-7)


[Photographs: 1960] Gachsaran new town for the Iranian Oil Exploration and Production Company, Iran, designed in 1959 by Fry Drew and Partners

[Photographs: 1959] Gachsaran new town for the Iranian oil exploration and production company, Iran, designed (1959) by Fry Drew & Partners

[Photographs: 1959] Gachsaran new town for the Iranian oil exploration and production company, Iran, designed (1959) by Fry Drew and Partners


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Lock, M. (1956) A visualisation of Basra city centre produced by Lock, showing the mosque and minaret at the centre of the image (MLA 3.24)


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Roth, A. Drawings of the school schemes, specifically Rumaithya girls school, (gta Archive: ETH Zurich, box 131-0162)

Roth, A. The plan form for the Kindergarten Roth designed showing the classrooms as separate blocks, or cells, around the open courtyard with the office building at its top, (gta Archiv, ETH Zurich: box no. 131-0162)


Roth, A. [Letter] (04.12.1975): Alfred Roth to Hamad Al-Ghanim ‘From Spring 1975 up to-day we designed new types of schools and also hospitals…’ (gta Archive: ETH Zurich, box 131-0162); this is also reiterated in a letter from Roth to Khalid Essa-Saleh (09.05.1972) where he states ‘I was extremely pleased with the building (Rumaithya Girls Secondary School), which indeed represents a new solution of schools in hot climates. Mr Sami Mishri told me that the MPW (Ministry of Public Works) will build at least 6 other schools of the same type, two or more are already in construction.’ (gta Archive: ETH Zurich, box 131-0162)

Roth, A. [Drawing] Interior perspective of an elementary school, showing the courtyard space with the minimal openings (gta Archiv, ETH Zurich: box no. 131-0164)

Roth, A. [Drawing] The exterior of the school showing minimal openings and the low-rise nature. Importantly, note the minarets in the background providing the verticality of the surrounding neighbourhood, of relevance to sections in chapters on Lock and CJW (gta Archiv, ETH Zurich: box no. 131-0164)


Roth, A. [Letter] Roth to Ismat Rowaihy (1975) (gta Archive: ETH Zurich –


Roth, A. [Drawing] Typical Elementary Classroom Block, Prefabricated Concrete Elements, (gta Archive: ETH Zurich – box number: 131-0165)

Roth, A. [Drawing] Plans for the Paralysis Institute, Kuwait. (gta Archive: ETH Zurich – box number: 131-0166)

Roth, A. [Drawing] As- Sabahiya City plan showing the distribution of schools in an area similar to the size of four blocks in Kuwait City (gta Archiv, ETH Zurich: box no. 131-0167)


Shadrach Woods Archive: Box 5 Folder 3A

Shadrach Woods Archive: Box 05 Folder 03B

Shadrach Woods Archive: Box 05 Folder 04

Shadrach Woods Archive: Box 05 Folder 05


Unknown, (1971) Considerations on Developments along Khuraiss and Hejaz Roads and the Cultural Recreation Area. (DOX-SAURD-1) (DOX Archive 23326)

Unknown, [Letter] (28th June 1971) The Planning Board Director to Jørn Utzon (Aalborg City Archives)


Unknown, [Letter] (03.01.1982) Major Projects Department (chief engineer) to Utzon (Aalborg City Archives)

Unknown, (1971) Considerations on Developments along Khuraiss and Hejaz Roads and the Cultural Recreation Area. (DOX Archive 23326) (DOX-SAURD-1)

Unknown, (1948) Plan of Basra showing Margil to the north and Ashar on the banks of the Shatt-al-Arab (British Library)
Unknown, (1933) Memorandum on Accommodation of Second and Third Class Employees in Abadan and M-i-S. (BP ARC 53924)

Unknown, [Photograph] View of a street in Ahmadi showing the minaret prominently in the middle of the scene (BP ARC 108105_008)

Unknown, [Photograph] Riverside Guesthouse by Wilson Mason and Partners in Abadan, built in the c.1930s showing the restrained neoclassical style they procured here (BP ARC 184665)


Utzon, J. [Draft Report] (1972) Kuwait National Assembly Complex, (Aalborg City Archives)


Utzon, J. [Letter]; (16th January 1973) Utzon to Adnan N. Ghantous (The Architects Collaborative International) (Aalborg City Archives)


Utzon, J. [Letter] (03.09.1973) Jørn Utzon to Leslie Martin (Aalborg City Archives)


Utzon, J. [Letter]; (16.01.1973) Utzon to Adnan N. Ghantous (The Architects Collaborative International) (Aalborg City Archives)

Utzon, J. [Letter] (03.09.1973) Jørn Utzon to Leslie Martin. (Aalborg City Archives)


Utzon, J. [Letter] (27.11.1981) Jan Utzon to Ministry of Public Works: Conscious decisions were made throughout the Kuwait National Assembly project which link it to Denmark’s design identity; for example, Jan Utzon suggested the Ministry of Public Works use the designer C. F. Petersen for door handles in the complex, made in Copenhagen. (Aalborg City Archives)

Kuwait Major Projects Department, [Letter] (03.01.1982) Major Projects Department (chief engineer) to Utzon. (Aalborg City Archives)


Wilson Mason and Partners, (1947) Wilson Mason’s plan for Ahmadi (BP ARC 68422)

Wilson Mason and Partners, [Photograph] Braim, in Abadan with villas intended for European dwellers (BP ARC 53874)

Wilson Mason and Partners [Drawing] Floor plan for a block of flats in Abadan showing the segregated nature of the building with the servants’ courtyard far away from the living area (BP ARC 67525)
Secondary Sources:


Crinson, M. (1997) ‘Abadan: planning and architecture under the Anglo-


Fraser, M. 'Scale of globalisation' in Fraser, M & Golzari, N. (eds.) (2013) *Architecture and Globalisation in the Persian Gulf Region*, (London: Ashgate)

Fraser, T. G. Mango, A. McNamara, R. (2011) *The Makers of the Modern Middle East*, (London: Haus)


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Smithson, A. Smithson, P. (2017) *The Space Between* (Cologne: Verlag der Buchhandlung Walther König)


Appendix 1: Literature Review of secondary material on the Architects featured in this thesis

Introduction
This literature review assesses the relevant works on the architects, nations and theories this thesis analyses. It will become clear that the literature is extensive in all these regards, but includes some omissions which, to an extent, this thesis aims to rectify. There has been a proliferation of interest in twentieth century architecture of the Middle East in recent years, demonstrated by key works such as Al-Nakib’s *Kuwait Transformed*, or the body of work produced by Al-Ragam concerning Kuwait’s urbanisation and modernisation. Of interest are other books in which authors like Akcan assess modernisation through the lens of translation and other post-colonial issues that arise. Critical regionalism is then be utilised throughout the thesis when assessing ‘regional’ architecture, and those buildings termed critically regional. The structure of this review will first ascend through the order of the chapters, giving a review on each protagonist.

Lock
Despite being one of the most important planners of the twentieth century there is little available literature on Lock’s career. Geddes inspired his progressive ideals, from which books by Welter are of importance. Geddes’ correspondence with planners like Mumford, of whom Lock was a contemporary, are also of significance. In recent years, the publication of several peer-reviewed articles and a conference paper of importance have shed new light on his career. A paper by Motouch and Tiratsoo, analysed the plan for Middlesbrough which analyses Lock’s career, biography and subsequent plan for the town. A peer-reviewed article by McClelland, analysed Lock’s diffusion of planning ideas in Northern Ireland in 1960, through the production of an inventory. Again, this considered the planning context of the time and Lock’s own biographical elements. Ola Uduku published an article titled ‘Networking and Strategic Deal-making in the Caribbean: Using archives to examine Lock’s 1950s planning adventures in the West Indies’, which evaluated Lock’s work in the tropics. Finally, the publication of an article by the author of this thesis on Lock’s three plans in southern Iraq in 2018 sheds new light into his planning processes outside Europe, demonstrating that his Geddesian influences vary in intensity from

4 Ibid.
plan-to-plan. This article forms the backbone for the first chapter, in the understanding of a plan for the neighbourhood of Ubullah, Margil, in Basra. Lock was an adept architect as well as planner, so an assessment of his regional, organicist theories placed through his architecture provides a clearer understanding of his career.

Candilis-Josic-Woods

‘In the Middle East’ provided a rare opportunity for an in-depth contemporary on the region in a Western publication. Although it focused mostly on Western architects working abroad, omitting a lot of important work by local practices, its commentary on CJWs’ work in Iran is of importance. The criticism in the edition is significant, owing to the project’s stance on housing oil workers in this period; additionally, the proposals are placed in the context of Fry Drew and Partners’ work on housing in southern Iran (1954-9) adding to the understanding of solving housing problems in this period. Furthermore, the aims of the special edition are to give a critical reception to buildings that are ‘subject to very similar climatic conditions, hot and dry, and the solutions tend in some way towards the Arab tradition. Serious architects seek to develop a regional style: perhaps within the next decade they will have found the way.’ This section will look at the page of analysis devoted to CJW’s Iran work in this special edition but will place their ‘regional’ designs in the company town context as a critical piece of architecture.

The French journal Architecture d’Aujourd’hui covered CJW’s Iran studies in some detail including elevations of their proposed houses; however, there is very little criticism or analysis of the buildings. Candilis published his ‘Service of Urbanism’ work in Architecture d’Aujourd’hui, which he claimed as his own despite it being a product of Michel Échochard; this caused a furore in the early 1950s and acted as a catalyst in the long-term split of Team X from CIAM.

‘Housing in Iran’, the article published by Drew in Architectural Design, mostly focused on company town housing in Southern Iran, and her own contribution to this landscape. It utilises CJWs’ proposals as a case study to support her own assertions that European housing in the region has focused mostly on Westerners using the dwellings, as opposed to Arabs or Persians. Similar to Échochard’s research in the Moroccan bidonvilles, Drew’s research, unlike Candilis’, utilised the vernacular that developed in the years prior to her arriving and after the finding of oil. She analysed buildings ‘constructed of mud with small windows’ and asserted that they were not sanitary enough for human habitation. The conducting of research for CJWs’ buildings in sub-Saharan Africa, rather than in the Arab towns around the Gulf, is an omission from this article. Other architects looked at the development of organic ‘shanty’ dwellings in the Gulf in the decades preceding their arrival, which CJW did not do. Arguably, this led to inauthentic designs for new company town housing by CJW.

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6 Tosland, Planning southern Iraq, pp. 1-23.
7 Squire, ‘In the Middle East’, p. 73.
9 Squire, ‘In the Middle East’ p. 72-104.
10 Drew, ‘Housing in Iran’, p. 84.
12 Drew, ‘Housing in Iran’, p. 81.
Sang-Hak Lee and Jiae Han attribute CJW’s Abadan housing, incorrectly, to a ‘semi-urban housing scheme’ in Algeria in 1960. They argued that their ‘urban complex’ projects are ‘distinguished’ from the projects of other groups in CIAM and Team X in the ‘aspect that the organising principles of urban space were applied to their projects to reflect the context’. The Abadan housing scheme, would have fit this argument and observation perfectly, but it was constructed earlier than they thought and took from schemes in Morocco, as opposed to Algeria. Although the chapter suggests the Abadan scheme was a derivative of previous work, it still reflected its context climatically and socially through its function and configuration.

Authenticity is a critical tool and a method of validating the successfulness or otherwise of a design or building; this thesis defines it as geographic, cultural and historic representation. For some, it is an important marker of judging architecture, although by its very nature it is subjective. In the Architects’ Journal (1991), Peter Blundell-Jones debated the meaning of authenticity through the social awareness of architecture, a post-modern lens, and a tectonic authenticity. In his first essay, he relates authenticity in architecture to music and musical instruments, shutting down the importance of authenticity by stating that ‘we can never be sure how the music sounded in its day, and even if we get the sound right, the context and the expectations of listeners have changed.’ In the fourth essay within the series, Blundell-Jones discusses ‘autistic’ architecture of the 1950s and ‘60s, stating that it ‘turns in upon itself and fails to communicate with the world beyond, producing a sense of alienation in those who try to relate to it’; in the case of the architecture viewed in this chapter, although there are problems with the conception of the housing, it does try to relate to its surroundings.

Roth
Considering the quality of Roth’s education and working partners, there is little published on his career. Despite much of his writing and projects only making it to one journal, Werk, his death made the obituary pages of several major English-speaking journals such as the Architects’ Journal, and the Independent. Roth published extensively throughout his career on his works, theories, and approaches to architecture, which complemented his teaching role at ETH. Publications included books on schools, and an autobiography of his own works called Alfred Roth: Architect of Continuity (1985) which reads as a gazetteer of projects he completed. It also printed some of his key writings on architects he collaborated with.

The architect and historian, Roberto Fabbri, provided an overview of spaces for education in Kuwait, which details much of Roth’s thinking and work here, within his chapter titled ‘Prototyping Spaces for Education: Pedagogy, School Planning, Standardisation, and Prefabrication in

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14 Ibid.
16 Ibid.
18 Roth, Alfred Roth: Architect of Continuity.
19 Ibid.
Kuwait’s Drive to Modernity’ in Essays, Arguments and Interviews on Modern Architecture Kuwait, the second volume in the series on Modern Architecture Kuwait. This chapter placed Roth’s work in the context of Kuwaiti modernisation through framing the building of educational buildings as an element of this process. Fabbri’s work provides an understanding of Roth, and subsequently the schools he built, within the growth of critical regionalism. Overall, Fabbri’s chapter on schools and his focus on Roth provides background knowledge for the rest of this chapter, setting the scene through biographical descriptions and placing the schools within the narrative of Kuwait’s development. Chapter four added to this literature through a thorough analysis of the spatial elements of Roth’s work placed among a comprehensive analysis of critical regionalist literature and using typologies Fabbri omits.

The second key mention of Roth’s work comes in Muhammad Al-Baqshi’s PhD thesis which focused on Kuwait’s spatial histories. He provided a six-page case-study of Roth’s schools in Kuwait, initiating a limited background on Roth and his links to CIAM and the journal, Werk. He discussed other works in Kuwait similar to Roth’s, including Tripe and Wakeham’s schools which the architect criticised negatively in reports, although analysis in Al-Baqshi’s thesis frames their work positively. Al-Baqshi concluded his small section on Roth by pointing out the shocked reaction to the lack of regional elements in Western designed schools in Kuwait. He does not consider the Kuwaiti political context in Roth’s schools’ designs, moreover, he assessed his career as a whole to contextualise his Kuwaiti work. The chapter on Roth seeks to expand upon both Fabbri et al and Al-Baqshi’s work, by utilising their combined research on Roth, and placing the archival work completed for this thesis within the wider regionalist context.

Doxiadis

There are few works that cover Doxiadis’ planning work, despite his notoriety within architectural and planning circles. This literature review explains where the Doxiadis chapter sheds light on the Riyadh plan and how it fits into the development of the region. There are two important theses this chapter draws upon contextualising both the Riyadh plan and his wider career. The first, is Deborah Middleton’s thesis Growth and Expansion in Post-War Urban Design Strategies: C. A. Doxiadis and the First Strategic Plan for Riyadh Saudi Arabia (1968-1972) which specifically looks at the Riyadh plan. Her focus is primarily on situating the application of urban design strategies, as applied in the master plan for Riyadh, within the wider post-war global planning context. This thesis’ approach to the Riyadh plan is to investigate how it was intended to influence the design of buildings in the city, and subsequently the wider region. It utilises similar material that supports a different argument on elements not considered in Middleton's work. Lefteris Theodosis’ thesis Victory over Chaos? Constantinos A. Doxiadis
and Ekistics 1945-1975 does not cover the Riyadh plan in extensive detail but does use it as a case study in the explanation of Ekistics. The structure of his thesis places importance on the narrative of his career, contextualising the Riyadh plan’s ideologies. Panayiota Pyla’s peer-reviewed journal article ‘Back to the Future: Doxiadis’s Plans for Baghdad’ examined Doxiadis’ Baghdad plan (1955-1958) looking specifically at how DA proposed the design of housing units and public squares, placing it in the ‘wider context of mid-twentieth-century debates on modernism, urbanism, regionalism and development.’ The assessment made throughout this article follows similar principles to the aims of the Doxiadis chapter in this thesis, utilising a different case study outside the geographical area of study; it furthered the understanding of Doxiadis’ career by placing his work within organicist contexts, and analysing the approach to regionalism DA’s report purveyed.

Utzon

This literature review considers three influential sources on Utzon, all of which, between themselves repeat similar information, cover the same buildings and express comparable narratives. Richard Weston’s Utzon, Michael Asgaard-Anderson’s Jørn Utzon: Drawings and Buildings and Roger Tyrell’s Aalto, Utzon, Fehn: Three Paradigms of Phenomenological Architecture all discuss, and have a clear focus on, elements of Utzon’s work. Furthermore, and of relevance to this chapter on the Assembly, Utzon published his fourth ‘Logbook’ on it, using a considerable amount of archival material, publishing drawings of the building and producing several essays by himself and colleagues regarding the design of the building. Additionally, Anais Al-Omaim produced a whole chapter in his thesis on the KNA in Nation Building in Kuwait, 1961-1990. This brief literature review will assess why each piece does not cover Utzon or the KNA in the way that this chapter does.

Weston’s book, Utzon, published in 2002 while the architect was still alive, broadly covered his projects in a chronological order. Weston’s work is largely a narrative of Utzon’s career with few critical aspects; what he produced is a document showing extensive archival drawings, which are of use in understanding Utzon’s design process. The detailed narrative of Utzon’s largest projects provided extensive context to most parts of the chapter on Utzon where archival material unearthed for this project is underwhelming, barring the visual element. Weston also showed adept knowledge of the various contexts Utzon designed in; specifically, this allowed him to provide detailed analysis of the form and function of Utzon’s buildings. Weston’s knowledge regarding the form of buildings extended only to the architectural, failing to look beyond to geopolitical events and not considering the immediate built context of the geographical region. He expanded his analysis to the locale and the more global architectural setting rather than explaining the regional aspects that forged the complex.

Asgaard-Anderson published a monograph on Utzon in 2014. Its structure largely differed from that of Weston’s in that it looks at the different fundamentals that make up his architecture. The content of the book

remains largely similar to Weston’s work, if a little less substantial, but it does provide a useful posthumous perspective of Utzon’s career, given that he worked until his death in 2008. Asgaard-Anderson critiques Utzon’s work through assessing the final built product and does not deliberate the surrounding relevant literature. Frampton included Utzon’s oeuvre in his own works with regards to the subject of critical regionalism. Asgaard-Anderson mentions Frampton’s works, but does not engage critically with his opinion. The author does not assess geopolitical events in his work, nor does he include architectural analysis of the Assembly. Overall, Asgaard-Anderson’s analysis resonated more with the methods and making of architecture, rather than the phenomenological aspects covered by other historians.

Tyrell’s Aalto, Utzon, Fehn: Three Paradigms of Phenomenological Architecture published in 2018, is one of the first in depth analyses of Utzon’s career within another subject’s context. The book uncovered relationships between the title’s three Nordic protagonists. Until this publication, writers, including Norberg-Schulz, wrote about Utzon’s work in the phenomenological context, but not against other Nordic architects, as Tyrell does. Much of the same biographical narrative from Weston and Asgaard-Anderson’s work feature in this recollection of Utzon’s career. While these are important, they bring the literature to a saturation point through addressing the same anecdotes. By placing the KNA within a regional context, the chapter on Utzon allows for a new look at the other forces which might alter the process of design. Chapter 5 seeks an understanding the development of architectural style in the Gulf through utilising Utzon’s KNA as a cornerstone of these shifts in taste, which is something this existing literature does not do.

Utzon published a range of ‘Logbooks’ covering his major works in his career, approaches to architecture and theories, including ones specifically on Additive Architecture (Logbook 5) and Bagsværd Church (Logbook 2). The Assembly Logbook is the fourth in this series and included swathes of archival material comprising drawings and selected correspondence. The Logbook is primarily a tool for architects looking to learn about the building of the KNA, from the ideas behind it, to its procurement and construction. Owing to Utzon’s self-authorship, the book does not engage with surrounding literature of the topics or critical frameworks one might apply to such a building; however, it does include a fact checking section on Weston’s book on Utzon written by Oktay Nayman. It comprised reflective pieces of writing by himself and colleagues which are relevant to the architecture of the building, yet, often factually inaccurate, as proven by archival material.

Al-Omaim’s PhD thesis assessed the KNA as a case study within the concept of nation building in Kuwait. This work bears similarities to Al-Nakib’s work Kuwait Transformed, also published in 2016, which focused more on the urban environment rather than specific architectural elements.

featured in Al-Omaim's account. To prove his thesis, he analysed The Kuwait National Museum; the KNA; Kuwait National Sports Centre; and the design of the ‘old town’, framed as looking to its future; chapter 5 utilised numerous case studies analysed in smaller sections. In Al-Omaim’s section on the KNA, he specifically analysed reasons for the design, asking how and why it looks the way it does. It does not assess its procurement and design in the context of geopolitics, nor does it evaluate its design as part of a region because the overall subject matter is of nation building. Al-Omaim’s work viewed the Assembly in its local context, whereas other authors view it within the context of Utzon's career, or within the narrative of globalisation.
