Contemporary Attitudes to Vernacular Elements in Kuwait's Domestic Architecture: A Mixed Method Study

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In the Name of God, The Most Gracious, The Most Merciful.

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Table of Contents

List of Figures and Tables

2 : Behind the Spectacle: The Story of Kuwait City

4 : Methodology and Methods

5 : Questionnaire

6 : Cognitive Maps

7 : Photo Elicitation

9 : Discussion of Findings

10 : Follow Up Study: The Courtyard Revisited

Abstract

This research is on contemporary attitudes, perceptions, and understandings of vernacular architecture in the context of environmental and cultural sustainability. It uses Kuwait's domestic architecture as a specific case study, in which it employs Kuwait's traditional vernacular architectural elements as a vehicle to further examine socio-cultural, economic, and political issues surrounding the move towards modernity and away from the vernacular and sustainability. The elements are not used to find ways to nostalgically recreate past architecture, instead learn from their principles to inform a more sustainable future.

In order to explore this, a mixed method approach has been employed for the study through two stages: the first, qualitatively driven, and the second, a quantitatively driven follow-up. The first stage used two workshops – the first homeowners and second designers, conducted as a platform to simultaneously use questionnaires, cognitive maps, photo elicitation, and group interviews. The second stage continued to use questionnaires and cognitive maps as it examined the findings of the first stage in more detail. More than one method has provided rich descriptive data, which enhanced understandings of Kuwait's complex social phenomena.

The findings highlighted how the effects of modernity changed people's understandings of their domestic built environments. Specifically how people dealt with and adapted with the collision between traditional concepts and modern practices. For example, how the courtyard has been replaced by the family living room. Moreover, diverse interpretations of the courtyard space revealed how many people perceived the courtyard as spaces in front, back, or around the house, which may suggest how their perceptions of the courtyard is closely linked to the characteristics of the modern villa. There is something about the courtyard that the participants found desirable, which saw it

emerging as a consistent theme throughout the methods and stages of the study. Yet the research was unable to narrow down this elusive quality, and perhaps may suggest it is the synthesis of many socio-cultural and environmental factors that makes this element attractive.

Other findings continue to reflect people's adaptation to their environment, only this time in response to government mismanagement of public housing welfare. Scarcity of residential land and high real-estate prices eventually led to Kuwait's current housing crisis. As a result, people needed more space and added apartments for their children in their houses to secure them future housing. This situation helped to inflame an already sensitive built environment and further reshaped the Kuwaiti house to heterogeneous box like structures.

This study captured a moment of Kuwait's contemporary architectural reality by studying people's understandings to traditional vernacular elements. In doing so it highlighted an unstable dichotomy between tradition and modernity. It also argues that without a fundamental change in government policy a more sustainable built environment may not be possible.

Chapter 1: Introduction

There are a few times in history when one is able to witness the great transformation of a city. A series of events fall perfectly together to change the future of a nation and alter people's lives forever. Imagine a small town flourishing as the nexus of trade between Asia and Europe, its harbour filled with *dhows* (a form of ship) and its markets bustling with activity. Mud brick courtyard houses cover the city, guided only by a maze of alleys, and minarets rise in the skyline, calling people to prayer. Sudden wealth causes the small town to explode into a thriving cosmopolitan metropolis, and master plans demolish the old to make way for new streets with construction projects taking over the city. A nation started its journey of transformation from a small advanced sheikdom to a sophisticated modern state. This is the story of Kuwait City.

Since the discovery of oil in 1938, Kuwait has been on the verge of a massive undertaking. It was only after the Second World War in 1946 exports started, and with it the urban development of new architectural buildings, roads, and accompanying infrastructure. People's lifestyles, once tough dependent on trade and pearl diving, were quickly transformed into luxury modern living with significant advancements in education, healthcare, technology, trade, industry, and commerce. Rapid growth transformed the city's built environments, changing people's perceptions of space and place. The swift emergence of a new Kuwait City forced Kuwaitis into a new lifestyle. This can clearly be seen in the Kuwaiti house, which changed from the courtyard house, sustainable, private and inward facing, into the modern villa, full of new technology outward facing the street. *Souqs* (traditional markets) are no longer the centre of shopping as contemporary shopping malls now dot the suburbs. Once an accessible and walkable town, Kuwait City now can only be travelled by car or public transit. The fast move towards modernization has forced Kuwait

and its people to face great challenges, but with the challenges have come great opportunities.

1.1 Background and Rationale for the Study

Throughout Kuwait's history people lived in harmony with nature and sustainability was a way of life. Kuwait's traditional vernacular architecture was shaped by culture, local traditions, and environmental conditions. However, after the oil boom in the 1950s this reality changed, transforming the built environment and with it people's way of life. The nation witnessed a change that forced a, "complete rupture with the past; every concept and every value has been reversed" (Fathy:1986:1). As the nation's financial capabilities increased so too did people's aspirations for a better future. Kuwaitis rushed "towards modernization without completely comprehending its drawbacks" (Mahgoub:2004:508) leaving the built environment less culturally and environmentally sustainable.

In fact, a recent 2012 study presented by the Conference of the Arab Forum for Environment and Development stated that Kuwait after Qatar had the largest ecological footprint in the world (AFED:2012). According to Kuwait's Ministry of Electricity and Water Kuwait ranks the first in the world in the consumption of water and electricity (AlWatan:2014). Every year there is an 8% increase in Kuwait's electric load compared to the 2% international average (Ibid:2014). There seems to be an increasing gap between people's past and present relationships towards the natural environment and a greater concern for the future. These numbers suggest a rising environmental problem facing Kuwait, however, to what extent does this translate to public concern? The transformation of Kuwait City has not only produced environmentally unsustainable built environments but also gave birth to architecture without local cultural identity and expression. As AlBahar described it as a "plethora of eclectic….a carnival show, an architectural history

showroom of copied styles and motifs" (AlBahar:1990:133). "The problem is not in individual buildings alone but is the product of the collective image created by the urbanscape" (Monsour:1980:12). Rapid development and modernization neglected local traditional architectural solutions to answer current challenges that face Kuwait's built environment. Instead it turned to technology to solve its problems, and as a result, usually created a cycle of unsustainable developments. This has created disconnects between Kuwait's past and present built environments and raises concerns for its future.

In Kuwait's past the traditional courtyard house and its elements have been examples of how architecture has been shaped by people's needs. The *Hosh* or Courtyard not only gave the household a private and social space but also provided them with a microclimate that protected from the harsh desert environment. The *Badgir* or wind catch channelled air from above to help cool the insides of the house, while *Teean* or mud bricks gave the structure amazing insulation qualities against the heat in summer and cold in winter. Together these and other traditional vernacular elements expressed in the house what has disappeared in Kuwait's contemporary houses - the essence of local architectural expression reflected through the mergence of cultural and environmental sustainability.

Recently there has been renewed interest and awareness of traditional forms in fields ranging from medicine to architecture. Many architects including Hassan Fathy and Charles Correa have advocated the use of traditional forms and building techniques as a means to revive people's faith in their own culture (Fathy:1986). In Kuwait, some architects have experimented with adding fragmented traditional elements in contemporary facades. However, these efforts failed to understand and utilize the functional and environmental values manifested in Kuwait's traditional vernacular architecture, and as a result, produced mediocre aesthetic renditions of the original.

On the other hand, some designers in the Gulf such as AlSallal et al (2012) have come up with proto-type sustainable houses using the latest technology but what good are they if people are not willing to live in them. This was previously highlighted by Hassan Fathy's New Gourna project (1948), which was a sustainable mud brick village originally designed to provide housing for some 9,000 people, however was abandoned and unfinished due to resistance from the population of Old Gourna. The local community did not welcome change in their housing that was forced upon them and eventually sabotaged the project (Steele:1997, Richards:2012). For that reason, research into people's attitudes and perceptions becomes of paramount importance to answer and understand this complex social phenomenon.

In Kuwait, there has been no research that explores people's understandings of traditional vernacular elements and their potential contemporary applications. Prior research has recognized the value behind the traditional vernacular and some even advocated its use but none explored how the traditional may have a role in a contemporary domestic context. Therefore, this study intends to use Kuwait's traditional vernacular elements as a means to examine and understand the larger phenomenon of modernity and how it affected people in relation to their domestic built environments. It does this by exploring people's understandings of tradition vs. modern and their attitudes towards and perceptions of traditional vernacular elements and their contemporary applications.

The elements are a manifestation of years of cultural and environmental sustainability, and therefore, by revisiting their principles one may find ways to inform direction for a new contemporary vernacular. The vision "is not to nostalgically or uncritically recover vernacular styles or languages, but to learn from the principles they presuppose in order to create built forms which are functionally, culturally and socially meaningful as well as environmentally efficient" (Quattrone:2006:231).

1.2 Research Questions and Objectives

The following research questions and objectives have been used as a guide throughout the study's theoretical, methodological, and practical stages.

Main Research Question

What is the potential to use traditional vernacular elements to inform a more sustainable approach for Kuwait's domestic architecture?

The technical aspects of this question has been explored by others, among them Fathy (1986) in Egypt, AlMumin (1995) in Kuwait, and recently AlSallal et al (2012) in the U.A.E. There is nothing to suggest that the associated technical challenges cannot be resolved. However, the success of these elements in domestic architecture depend largely on take-up and acceptance by homeowners and designers. Hence, the study will focus mostly on developing understanding of their related perceptions and attitudes. The sub-questions below follow this line of inquiry.

Sub-Research Questions

1. How has Kuwait's 'post-oil' transformation affected people's understandings of the Kuwaiti house?

2. What are people's attitudes towards and perceptions of traditional vernacular elements and their contemporary applications in Kuwait's domestic architecture?

3. What are the various factors that may facilitate designers, homeowners, and potential homeowners to use traditional vernacular elements in the contemporary Kuwaiti House?

4. What are the various factors that are barriers for designers, homeowners, and potential homeowners to use traditional vernacular elements in the contemporary Kuwaiti House?

Research Objectives

In order to answer these questions the research seeks:

1. To identify people's attitudes towards and perceptions of Kuwait's traditional domestic vernacular architecture and its constituent elements.

2. To identify the qualities and capacities of traditional vernacular elements that designers, homeowners, and potential homeowners might value and use in the contemporary Kuwaiti house.

3. To identify and understand people's aspirations for their own Kuwaiti house.

1.3 Study Working Definitions

The House

In this study the word 'house' refers to the physical building and its spaces (both interior and exterior) defined by the boundary of a plot of land. It intends to examine the evolution of the Kuwaiti house from the early courtyard houses to the modern villa. The empirical study will focus on people that usually design/commission and build their houses (middle and upper class) by exploring their attitudes towards and perceptions of the current and future Kuwaiti house.

Traditional Vernacular Elements

The word 'vernacular' in architecture refers to characteristics of local domestic buildings shaped by various social, cultural, and environmental factors (Oliver:2006). Some researchers argue that the word 'traditional' be used instead of 'vernacular' (Richards:2012). The word 'traditional' or 'tradition' refers to a form of cultural continuity, which reflects the beliefs, customs, and practices of a group of people over time. For this study the word 'traditional vernacular' will be used to differentiate it with recent trends towards a 'contemporary vernacular'. Finally, the word 'element' here refers to architectural features, principles, and or materials that made up the traditional Kuwaiti house.

The study will particularly focus on 8 traditional vernacular elements derived from the traditional Kuwaiti courtyard house: 1. *AlHosh* (Courtyard), 2. The *Liwan* (shaded space adjacent to the courtyard), 3. *Bagdir* (Wind Catch), 4. *Jelleb* (Well), 5. *Bircha* (Water collecting tank), 6. *Merzam* (Water gutter), 7. *AlBab* (Traditional Door), 8. *Teean* (Mud Brick or Adobe). This list of elements emerged from the exploratory study (AlHaroun:2014), and therefore, for this study they have been used as the basis to elicit people's understandings of their domestic built environments. These specific traditional vernacular elements have been the most identified by the prior study, which may suggest increased potential for their contemporary use. For more information on the exploratory study please refer to Appendix D. Arabic terminology for all of the elements have been used throughout the study except for the following; Courtyard for *AlHosh*, Door or Traditional Door for *AlBab*, and Mud brick or Adobe for *Teean*.

Sustainability

Sustainability is a broad term and has many interpretations and meanings for different people, however, most revolve around maintaining balance and harmony with the natural environment. This study intends to understand sustainability through not only the commonly represented three interrelated components - social, economic and environmental but also through culture as a primary vehicle to promote and understand sustainability. Culture may be understood as "a way of life" for a civilization, a "social production and transmission of identities, meanings, knowledge, beliefs, values, aspirations, memories, purposes, attitudes, and understanding" (Hawkes:2001:3). The present study acknowledges the value behind these social expressions manifested through Kuwait's traditional vernacular elements, and therefore, culture becomes essential for understanding sustainability.

1.4 Theoretical framework

The theoretical framework is essential in not only understanding the philosophical basis for the research but also in providing a link between the theoretical aspects and practical components of the study. In this proposal the research is driven to react to the many challenges of globalization and modernization in relation to the built environment, evident in Kuwait's urban landscape through the lack of a clear cultural identity and loss of sensitivity towards the natural environment. The phenomenon of unsustainable living is here framed as a direct side effect of modernization and globalization. In order to communicate this, a theoretical construct will be presented through the following progression; impact of globalization, transition to sustainability, a vision for a contemporary vernacular and precedents for using traditional vernacular elements in sustainable design.

The impact of globalization has significantly reshaped Kuwait's built environments. Globalization may be seen as the inherent thrust of modernity that works for a greater interconnectedness global-wide (Giddens:1991). It is not only an economic phenomenon, but has “profound cultural and spiritual significance” (Madison:1998:5). In Kuwait, it’s effects have been highlighted in almost every aspect of people’s lives. Master planning transformed Kuwait’s urban landscape and forced people to live in new residential districts with a different house type. Suddenly, without cultural reference, the modern villa emerged as a new house form. This created a clash of styles, which produced buildings that lack identity and sense of place (Mahgoub:2004).

In the last few decades sustainability has emerged to react to the world's environmental, social and economic problems. Within this understanding, an increasingly recognized direction in sustainable development is appreciating the value of culture in

architecture. Rapoport asserts that socio-cultural factors are considered primary in shaping house form, whereas climate, construction materials, methods, and technologies secondary (Rapoport:1969). Thorsby argues that linking cultural and ecological sustainability is essential to provide a framework for sustainable development (Thorbsy:2008). Culture is recognized by Hawkes as the "fourth pillar of sustainability" and it's a key component and drive to achieve a sustainable and healthy society (Hawkes:2001). Moreover, there are many architects that promoted sustainable architecture using culture such as Hassan Fathy (Fathy:1986) and Charles Correa (Correa:1991). Therefore, the present study intends to build on an architectural approach and design ethos embodied in the work of these architects by using culture (through Kuwait's traditional vernacular elements) as a vehicle to examine the wider effects of modernity and inform direction for a more sustainable approach to architecture.

1.5 Methodology

In response to the research question and objectives a variety of approaches were used on different aspects of the work. First, a comprehensive understanding of the history of Kuwait's built environments was necessary. By examining the phenomenon of the transformation of Kuwait City one is able to enhance one's insight into the evolution of the Kuwaiti house. Similarly, by examining the contemporary Kuwaiti house one is able to discover various dynamics and relationships involved that may give direction for future house design. This entails an historical analysis of Kuwait's built environments by comparing the traditional courtyard house with the modern villa. The literature review explored understandings of the various forces that contributed to the disappearance of traditional vernacular elements and presented successful precedents for their revival in a contemporary context as briefly described in the prior section.

The main empirical study has been divided into two stages. The first qualitative driven, which used workshops as the vehicle to collect data using the following mixed methods: questionnaires, cognitive maps, photo elicitation, and group interviews. The second was a quantitative driven follow-up study, which also used workshops to collect data from questionnaires and cognitive maps. The follow-up study aimed to check interpretations of the data and examine key themes/findings in more detail. The exact nature of this study has been informed by the findings of the initial workshops.

Creswell asserts that there are several factors that have contributed to mixed method research. He argues, "the complexity of our research problems calls for answers beyond simple numbers in a quantitative sense or words in a qualitative sense. A combination of both forms of data can provide the most complete analysis of problems"(Creswell:2006:13). Mason advocates a more qualitatively driven mixed method approach. She contends, "mixing methods can enhance and extend the logic of qualitative explanation"(Mason:2006:9). Therefore, by employing a variety of data collection techniques, this study intends to provide different layers of meaning. Similarly, by complementing, triangulating, and developing findings between the methods, the study intends to generate rich and descriptive understandings of the social world.

1.6 Thesis Structure

After outlining the nature of the study, this section will describe the structure of the thesis. Chapter 2 will present the context of the study by examining Kuwait, its emergence, geography, climate, and history of its built environment. It will give particular attention to the evolution of Kuwait's domestic built environment. After discussing the effects of Kuwait's transformation, Chapter 3 will present a literature review of how that translates into the wider regional and global discussions of the struggles to preserve tradition within

the move towards modernization in an increasingly globalized world. The literature will reference a growing consensus among designers and academics that advocate for a transition to sustainability. From that point the chapter will provide examples of contemporary vernaculars that link to and direct the current study.

Chapter 4 will introduce the study's methodology and methods and specifically the reasoning behind using a mixed methods approach. It will then discuss how interactive workshops have been employed to collect data from questionnaires, cognitive maps, photo elicitation, and group interviews. Chapters 5-8 will present each method in more detail. Each chapter will provide background and rationale for using the method, discuss the method's design, sampling, piloting, data analysis, findings and results, and finally present the method's key findings. Chapter 9 will discuss the overall findings of the workshop methods in relation to relevant literature. It will provide a detailed examination of emerging patterns, themes, and relationships between the findings of each method, which in turn will direct a follow-up study.

Chapter 10 will present the follow-up study, which further explores issues raised from the workshops in more detail. The chapter will provide background and rationale for the second stage of the study and specifically describe the methods used, discuss their design, sampling, piloting, data analysis, findings and results, and present their key findings. Finally, the study will conclude with chapter 11 that starts with a discussion offering a synopsis of the study and draws some conclusions. It will also discuss recommendations for future research and highlight the study's limitations. Most importantly the final chapter will include the study's contribution to knowledge as it relates to theoretical understandings from the literature and practical implications to inform and direct contemporary vernacular design.

Chapter 2: Background: Behind the Spectacle – The Story of Kuwait City

2.1 Introduction

This chapter will introduce the history of the evolution of Kuwait City built environments examining different forces at play in the constant form making and rebranding of its architecture. It is by studying architectural history and built environments one is able to, "value philosophically as well as in making us aware of the complexity and overlapping of things, it can also clarify those elements that are constant and those which change" (Rapoport:1969). It is the intention that the presentation of this background chapter and following literature review will provide the basic framework of understanding that illuminates the purpose for this study.

After a brief description of Kuwait's location, topography and climate the chapter is divided into three phases. The first section will present old Kuwait City - its birth until 1951. The second section will show the transformation of Kuwait City from 1951 until 1967, and finally the third section will discuss new Kuwait City from 1967 until today. The chapter will discuss Kuwait City's changing built environments giving particular attention to the Kuwaiti house. It will describe the different vernacular architectural elements that constituted the traditional Kuwaiti courtyard house, as well as examine the transformation of and socio-cultural changes that paved the way for the modern villa.

2.2 Background

2.2.1 Location and Topography

Figure 2.1: Map of the State of Kuwait. Source: University of Texas at Austin map collection.

The location of Kuwait and its City had and still plays a significant role in shaping its future. It was a meeting point for the civilizations of the old world bridging the trade from East to West. Kuwait lies at the northeast corner of the Arabian Peninsula, between latitudes 28°45' and 30°5' north of the Equator, and longitudes 46°30' and 48°30 east of the Greenwich meridian (MOI:1992). Its neighbours are Iraq to the north and Saudi Arabia to the south and west. In the east it borders the Arabian Gulf not too far from Iran. It

comprises an area of 17,820 sq. km, of which about 1000 sq. km represent the offshore islands (Ibid:1992).

The Bay of Kuwait is north of Kuwait City and is one of the country's primary natural assets before the discovery of oil. The Bay (originally a fossil river estuary) is perhaps the reason Kuwait City is situated where it is today. William Facey explains:

> Kuwait provides us with an extreme example of a settlement where natural resources play no part whatsoever in explaining its existence and prosperity before modern times. Instead, the explanation has to be sought entirely in its geopolitical position at the head of the Gulf… It had a fine natural harbor at a convenient point on the coast for the overland trade of northern Arabia to meet the trade of the Gulf and Indian Ocean (Facey:1998:6).

Michael Casey also describes the bay in his book *The History of Kuwait* as, "one of the finest natural harbors in the entire Arabian Gulf" (Casey:2007:3). It is clear that the Bay of Kuwait provided opportunity for Kuwait's harbour, as a result, having a great impact on the development of old Kuwait City. It was deep and had what was needed to initiate Kuwait's seafaring activities.

Kuwait's topography is mostly desert with a gradual slope from the southwest to northeast with some low hills and shallow depressions. Apart from Kuwait's Bay and its shores, another notable physical feature is Jal AlZor escarpment, which runs along the northwest shore of the Bay in an area of around 80 km and is 148m above sea level. Another is AlAhmadi ridge, which runs parallel to the east coast, is about 8 km, and rises to over 137 meters (MOI:1992).

2.2.2 Climate

Another major factor that affected local lifestyles and shaped its architecture is climate. Kuwait is in a desert environment and its climate is of a desert; hot and arid with two major seasons' summer and winter. It is known to have one of the harshest summers in

the world from early May to late September where temperatures may rise above 50°. Kuwait City's people are fortunate to be in a dry zone with hot air and low humidity compared to other Gulf cities with hot air and high humidity such as Dubai or Muscat. In old Kuwait City people would sleep outdoors in courtyards or rooftops to cool down after a hot summer's day. South-easterly winds or *Kos* as they are called by Kuwaitis, are strong and sometimes carry with them humidity. Sand storms are at their peak during July bringing with them fine dust suspended in the air reducing visibility and causing health problems.

Winter in Kuwait is short and unpredictable constantly changing over the years. It can be cold with below freezing temperatures with good amounts of rainfall or warm being an extension of autumn. The cold northerly winds or *Shamal* in Kuwait can last several days. The average rainfall ranges from less than 30 millilitres to about 300 millimetres falling mostly between October and April. Both spring and autumn are warm and short. Spring is known to finish with thunderstorms called *AlSarayat* that signal the arrival of summer.

Overall, the climate in Kuwait reflects a microclimate within the larger Arabian Peninsula and its far-reaching endless deserts. This climate may at times reflect extreme and harsh climatic conditions. In his book *The History of Architecture in old Kuwait City*, Saleh AlMutuwa describes how the *Sinat AlHadama* or the year of demolition was a major natural disaster that struck Kuwait destroying most of its mud houses. In around the 1850s "heavy rains accompanied by severe winds hit the old Kuwait City, and demolished most of the mud houses. Sea waves went high and hit and wrecked ships. It was a disaster for Kuwaitis" (AlMutawa:1994:19). Again in 1954 heavy rains demolished houses and around 18,000 Kuwaitis took refuge in newly built schools. These examples reflect the fragile and temporary nature of mud brick housing at the time.

2.2.3 Water Resources

Earth is covered by oceans yet only three percent of it is freshwater. Water is an essential and precious life-giving resource essential for human survival. Due to the scarcity of water in desert climates it becomes even more important for life. The availability of water to the inhabitants of early Kuwait made it possible for them to settle, and therefore, played a critical role in its development. Throughout its history, Kuwaitis were in a constant search for new water sources. The lack of rain resulted in a small number of natural underground aquifers.

In old Kuwait most houses had a *Jelleb* or well in their courtyards. The water was mainly brackish and only water from wells in the outskirts of town was drinkable. These were a shallow group of water wells in the eastern parts of the country. However, this kind becomes saline in late summer and is almost undrinkable. In the beginning of the 20th century as Kuwait city grew they imported their water by *Dhows* from the sweet waters of Shatt-al Arab. This area is formed by the confluence of the Euphrates and the Tigris rivers in southern Iraq.

Today, with the wealth of oil, Kuwait brings its water from the sea to meet demands for its rapid urban growth and development. In 1950, the distillation industry started and today it has become Kuwait's main source of water. Also after oil, in 1960 a fresh water reservoir called *Raudhatain* was discovered near the Iraqi border in the north. It is formed by the "Dibdibba formations" and contains no less than 100 billion gallons. It is sold commercially in the local market.

2.3 Old Kuwait City: Its birth until 1951

2.3.1 Origins

No date has been confirmed for the origins of the town of Kuwait. However, numerous sources suggest sometime in the 17th century. The first settlement clustered around a small fort or *Kut*, the origins of the present name of Kuwait. It is said that the fort was built by Sheikh Barrak of the Bani Khalid tribe that controlled northeast Arabia at the time (Abu Hakima:1983:2). Yousef bin Isa AlQinai a Kuwaiti historian also affirmed that *Kut* was recognized and used by Sheikh Barrak (AlQinai:1954:5).

After severe drought many tribal groups started to immigrate to Kuwait for survival. Among them was the Utab, a branch of the Anaza tribe. In around 1752 the settlers and families of the Utab elected Sabah I the first independent ruler of Kuwait, "he was chosen by the inhabitants of Kuwait, in the tribal manner, to administer justice and the affairs of the thriving town"(Abu Hakima:1983:6). This marked a time of stability and Kuwait continued its journey developing as an urban and trade centre.

Accounts from visitors give fascinating insight of old Kuwait that present a glimpse into the past. In 1709 Murtudha Ibn Alwan a Syrian traveller visited Kuwait. His description of old Kuwait is one of the earliest accounts written revealing its built environment at the time. The following is an extract from his travelogue:

> Fifteen days after our departure from Al Hasa we came to a town named Al-Kuwait. It is a sizable town that resembles Al Hasa. To be true, it is smaller, but in its buildings and towers it is its like…. the harbour is directly adjacent to the town, without anything in between (Slot:2003:38).

Ibn Alwan sheds light on the size of the old town and its architecture. AlHasa is a town in eastern Arabia south of Kuwait (currently in Saudi Arabia) and at the time was the capital

of the Bani Khalid tribe. Perhaps a reason behind this similarity indicates Bani Khalid's influence over Kuwait's early settlement.

The earliest account of European travellers visiting Kuwait started around the middle of the 18th century. These descriptions portray an interesting perspective on Kuwait, its people and architecture. In his book *The Modern History of Kuwait*, Ahmad Abu Hakima quotes J.S Buckingham's travels, saying:

> Kuwait has a great seaport in the northwestern corner of the Gulf with a sizable population. The city was walled, as it had been before, with the sands creeping upon it from the neighbouring desert. The people of Kuwait, he reports, are in the main merchants who are brave and freedom loving, for Kuwait, unlike other cities and countries in the region, has always kept its independence (Abu Hakima:1983:73).

These insights not only show Kuwait's old built environment but also gives clues to how people lived at the time. Another traveller of the period J.H. Stocqueler, who stayed in Kuwait for a few days in 1831, writes:

> Koete, or Grane as it is called in the maps, is in extent about a mile long, and a quarter of a mile broad. It consists of houses built of mud and stone, occasionally faced with coarse chunam, and may contain about four thousand inhabitants. The houses being for the most part square in form, with a courtyard in the centre, (having the windows looking into the yard), present but a very bare and uniform exterior, like, indeed, all the houses in the Persian Gulph (Ibid:74).

By the 1860s Kuwait's trade flourished and a British explorer William Palgrave described Kuwait as "the most active port on the Persian Gulf" (Facey:1998:12).

Throughout its history Kuwait was able to manoeuvre through different regional geopolitical forces. This provided the foundation for stability and security essential for a commercial sea town. However, regional tensions escalated and Kuwait's rulers saw it necessary in 1899 to sign the British-Kuwait agreement that offered Kuwait protection.

Harold Dickson was the most active political agent representing Britain and provided complete accounts of old Kuwait City. He writes:

> Kuwait town now measures about three and half miles along the shore, having extended considerably in recent years towards Ras al Ajuzah, where stands one of the greatest depth, about a mile and a quarter, is near its centre, where the long suburb called Murgab had grown out from it towards the south-west. Slightly to the West of Dasman are the new Political Agency and two large houses…. (Dickson:1956:34-36).

These accounts from early travellers to Kuwait clearly depict the image of old Kuwait City through its physical form, urban patterns and the life of its people.

2.3.2 Old Kuwait City

Old Kuwait City's form, urban patterns and morphology reflected several features known to the traditional Islamic and Arab City. It is only by gaining insight in these cultural factors that shaped the urban fabric of the city that one might discuss its traditional architectural elements. Although one may not directly see similarities of eminent Islamic towns such as AlMadinnah, Cairo, or Baghdad, the influence of Islam is definitely clear on the city and its architecture. Kuwait did not have the iconic Mosques, plazas or palaces, but it was the urban pattern of the city that resembled that of most Islamic cities around the Middle-East.

2.3.3 The Influence of Islam on the City

It is essential to understand Islam in order to understand Islamic civilizations and their cities. The foundation of a Muslim's faith is the belief of ***La illaha illa Allah Muhamed rasool Allah*** - that there is no God but God and Muhamed is his prophet. The Holy Scripture of Islam is The Holy Quran, the final revelation from God to humanity, intended to reteach the doctrine of monotheism, a message conveyed to numerous Semitic prophets of earlier times. The basic principles in the Quran provide the creation of a whole

culture and civilization ranging from lifestyle to architecture and the arts. Allah is described in the Quran as a transcendent Being of Whom no visual or sensory experience is possible. "No vision can grasp Him… He is above all comprehension (The Holy Quran:6:103)… Nothing is like unto Him" (The Holy Quran:42:11). He is beyond exhaustive description, and incapable of being represented by any anthropomorphic or zoomorphic image. In fact, "Allah is that which defies answers to the questions of who, how, where, and when? It is this idea of ultimate oneness and transcendence of Allah that is known as *tawhid"* (AlFaruqi:1982:163).

Islamic art, architecture and aesthetic creativity was to fulfil the declaration of faith of ***La illaha illa Allah*** – that there is no God but God and He is completely other than human and other than nature. The goal of its art could not be achieved through depiction of man and nature. "It could be realized only through the contemplation of artistic creations that would lead the percipient to an intuition of the truth itself that Allah is so other than His creation as to be unrepresentable and inexpressible" (AlFaruqi:1982:163). Lois AlFaruqi professor of Islamic studies eloquently describes Islamic artistic philosophy:

> The aspect of Transcendent which the Islamic doctrine taught was that God is infinite in every aspect – in justice, in mercy, in knowledge, in love. However, one might try to enumerate His many attributes, or describe any one of those attributes as applied to Him, the attempt would end in failure. His qualities are always beyond human comprehension and description. The pattern, which has no beginning and no end, which gives an impression of infinity, is therefore the best way to express in art the doctrine of tawhid. It is the structures created for this purpose that characterize all the arts of the Muslim peoples. It is these infinite patterns, in all their ingenious variety, that provide the positive aesthetic breakthrough of the Muslims in the history of artistic expression. It is through these infinite patterns that the subtle content of the Islamic message can be experienced (Ibid:163).

The Islamic city has usually been seen as a maze by visitors who did not comprehend its internal logic. However, this intricate pattern is like any other Islamic infinite pattern (Ibid:431).

For example, old Kuwait City's urban fabric had a multifunctional character expressed through its harbours, courtyard houses, souqs, and open spaces. The city grew semi concentrically around the old fort and harbour. As it expanded courtyard houses started to follow stopping only for the protective walls. This was its beauty, its internal logic an urban pattern expressing the "concept of infinity" that made it a uniquely Islamic City.

Similarly, the city's traditional houses also expressed Islamic teachings that saw the house as a private domain where the courtyard was the heart of this exclusive sanctuary. After the Holy Quran, the *Sunna* and *Hadith* or actions, sayings, and judgments and attitudes of the Prophet (PBUH) passed down through his companions are essential to guide and support Muslims in their faith. One hadith stresses the importance in respecting people's privacy, "If any one of you asks permission thrice to enter (a house), and permission is not given, then he should return" (AlBukhari:2003). While another states, "Whosoever believes in Allah and the Last Day should not harm his neighbour and entertain his guests generously" (Ibid:2003). This along with other *Hadiths* have provided guidelines for not only the design of traditional houses but how people live; the first is people's responsibility towards and respect for one's neighbour, the second privacy, third treatment of guests and visitors, and fourth modesty and simplicity of lifestyle, expressed through the avoidance of ostentatious decoration (AlSanafi:2001:92).

2.3.4 Old Kuwait City and its Elements

The 1951 Hunting Aerosurvey (figure 2.2) shows old Kuwait City and its elements still untouched by modernization. Kuwait was one of a few countries in the region, which used aerial photography to capture its organic traditional vernacular. Saba Shiber who was an architectural and city planning advisor of the Kuwaiti Government in the 1960s witnessed old Kuwait city's urban fabric being dramatically ripped apart. In his series of articles combined together as a book entitled *The Kuwait Urbanization*, Shiber's documentation and analysis contributed towards understanding the direction of Kuwait's city and architecture at the time. In describing the Arab city, "Looking at the Arab city from the air, one is impressed by its almost lace-like cellular form". He continues to write about the house, saying:

> For the Arab house is typified by its interior courtyard where frequently a fountain is placed and some trees, flowers and creepers planted. This provided shelter - an outdoors bit brought indoors - and a central private meeting place for the family. Looking at the city from ground level, it is generally flat and punctuated, here and there, by the needle of the minaret and hemisphere of the dome of the mosque (Shiber:1964:17).

Shiber described the courtyard before discussing the city, which indicates the significance of this element, which dominated the urban fabric of almost all cities in the Middle-East. Similarly, in Kuwait the courtyard was an important building block that shaped the city's mosques, houses, and institutional buildings.

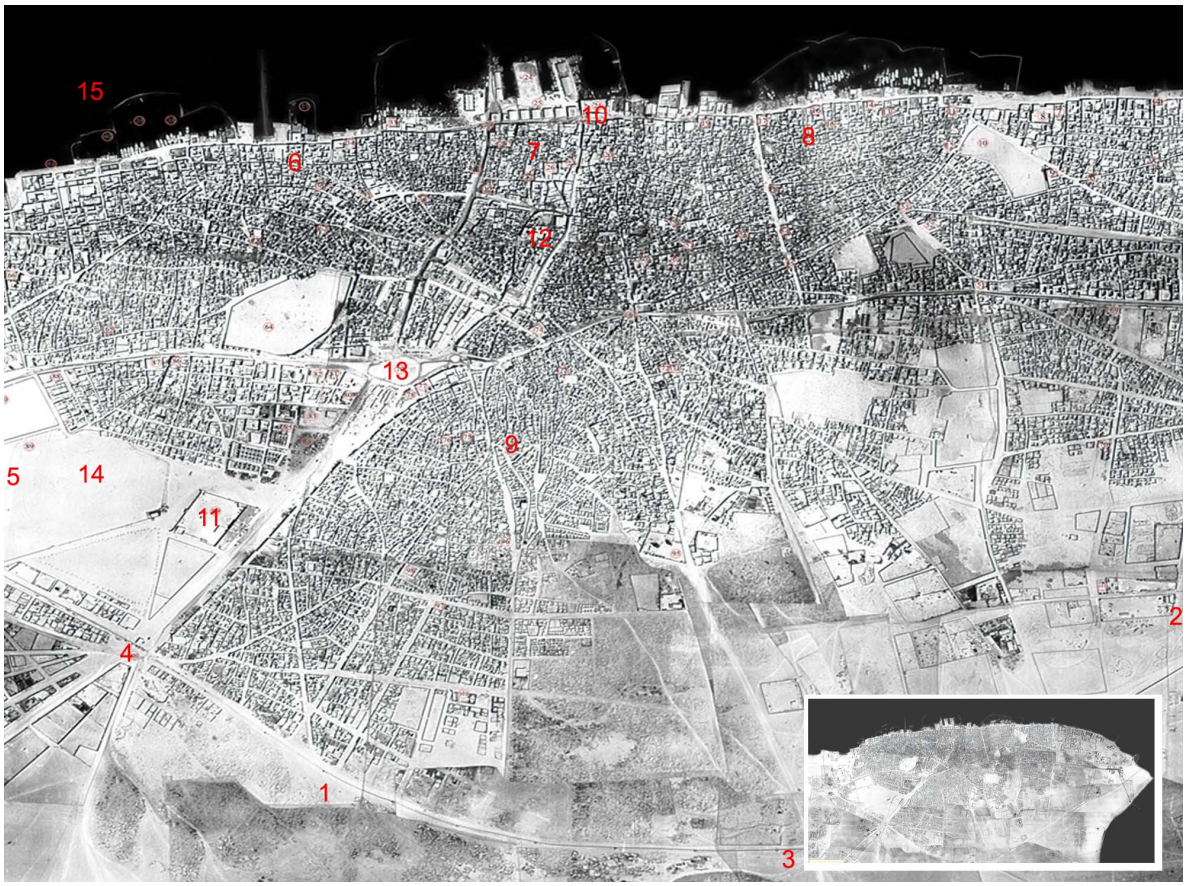


Figure 2.2:Vertical aerial photograph of Old Kuwait City: Source: Original source is from the 1951 Hunting Aerosurvey commissioned by the late Sheikh Abdulla AlSalem Amir of Kuwait. At the bottom right is a zoom out view of the city. By Courtesy of Eng. Fahad AlSulity who complied the images from the Kuwait Municipality and other Kuwaiti research centres.

Key:

1. Third Wall of Kuwait	6. AlQibla Area	11. Naif Palace
2. Dasman Gate	7. AlWasat Area	12. Traditional Souqs
3. AlSheab Gate	8. AlSharq Area	13. Safat Square
4. AlShamiya Gate	9. AlMirgab Area	14. Cemetery
5. AlJahra Gate	10. Seif Palace	15. Kuwait Bay

The city's organic form grew in semi concentric circles from the main harbour close to *Seif* Palace. Visitors from the desert would usually enter from AlShamiya gate that leads to *Safat* square, which in turn would take people into a maze of sub-souqs towards the harbour. Old Kuwait City may be divided into six elements: *AlSoor* or the Wall of the City, the Harbour, the Mosques, the *Souqs,* and *Safat* Square (Central Square), and the Residential Districts. Each element also carries various architectural features distinguishing it from other cities in the region. Figure 2.3 below takes a closer look at the residential

district of AlSharq. The photograph clearly illustrates Kuwait's traditional urban fabric where the courtyard was found in almost every building. Also evident is Kuwaitis important relationship to the sea, the picture shows how close the ships are to people's houses.

Figure 2.3: Vertical aerial photograph of AlSharq area and the sea front. Source: Original source is the 1951 Hunting Aerosureys. By courtesy of eng. Abdulla AlBishi and Kuwait Municipality.

Figure 2.4: Aerial Photograph of AlQibla residential district overlooking the seafront sometime in the 1940s. Source: From the archives of Kuwait Oil Company.

Figure 2.5: Photograph of Old Kuwait 1: An ally looking towards a Mosque. **Source:** Centre for Research and Studies on Kuwait.

Figure 2.6: Photograph of Old Kuwait 2: Old Kuwait harbour. **Source:** William Facey, Kuwait by the first photographers.

Figure 2.7: Photograph of Old Kuwait 3: Traditional covered *Souq*. **Source:** William Facey, Kuwait by the first photographers.

AlSoor - The Walls of the City

In Arabic the word *AlSoor* means the Wall. With a growing population and a strategic trading crossroads, Kuwaitis rebuilt a protective wall three times, to protect it from tribal attacks. The people built these walls together: every district and *Freej* (neighbourhood) where responsible for the construction of the wall adjacent to their communities. It was a testimony of Kuwaitis teamwork and when together can repel outside threats.

The First Wall was built in 1760. It was around 750 meters in length, which protected a town area of 11.275 hectares. In 1811, the town grew to 72.4 hectares, and therefore, a Second Wall was built with a length of around 2300 meters. Finally, the Third Wall in 1921 stretched 6400 meters and the town area grew to 750 hectares (NCCAL:2010:142-163). Consequently, in 1957 the Kuwaiti Government decided to demolish the third wall and preserve its gates, which still survive today.

AlNegah - Harbours

The sea front in old Kuwait City and especially its harbour had a great impact on its development. It was not only the centre that started the town but also was a lively place full of activity that served as a link with the outside world. There are numerous *Neqahs* or little harbours spread across the waterfront usually named after a merchant family who owned and managed them.

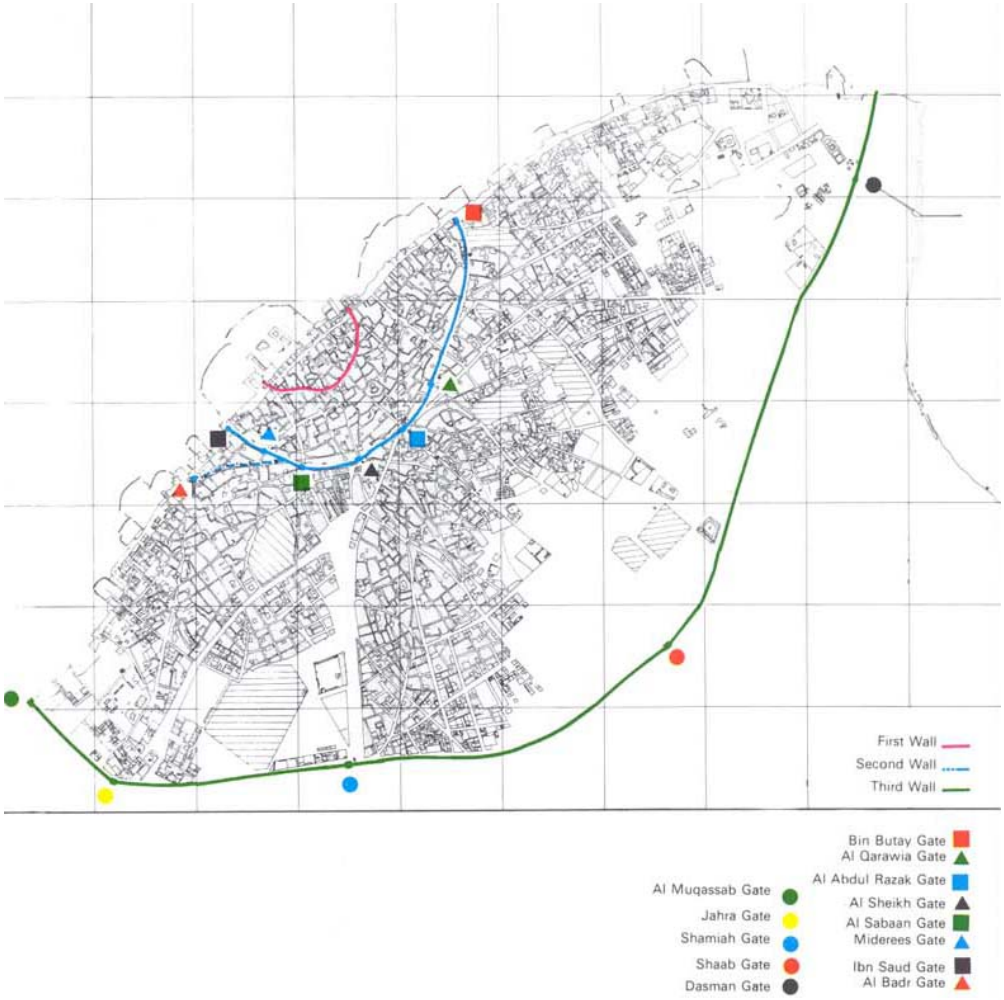


Figure 2.8: Overlays of the 1951 Hunting Aerosurveys map of old Kuwait. It shows the area believed to be the location of the early settlement behind the first wall. Also evident is the old city's growth patterns, which are usually formed with the protective walls. **Source:** From Kuwait Municipality.

AlMasjid - The Mosques

Islam was and still is today the religion of most Kuwaitis. The expression of faith is distinct through its architecture and especially in the Mosque, the Muslims place of worship. In old Kuwait, Mosques were found in almost every *Freej* (neighbourhood) and all are in walking distant to each other. The town had a large number of Mosques around forty or more and several are Friday Mosques. The largest of the Mosques was *Masjid AlSouq AlKabir* (The Souq Grand Mosque). The Mosques have been usually built by individuals or families and are an integral and important part of the urban fabric of both old

and new Kuwait City. The Mosques in old Kuwait are basically a form of courtyard structure. A built prayer room opens to a courtyard with a minaret rising above.

The *Souqs* and *Safat* Central Square

After entering AlShamiya gate, *Safat* square was the main hub for Bedouins from the desert to sell their goods and a point of arrival and departure for caravans. *Safat* square was an important feature of the town, which linked trade from the desert to the sea. Other *Souqs* had various sub-souqs branch out from the square towards the AlWassat district, which lead to the Harbour.

The Residential Districts

Old Kuwait City was divided into 4 major residential districts, which are AlQibla, AlSharq, AlWassat, and AlMirgab. The history behind the formation of the areas and the origins of their names has been discussed by many researchers of old Kuwait including Abu Hakima. He asserts that the Utab families and the AlSabah ruling family shared the wealth from trade and "settled in such a way that made every section of town take one family or more. Thus, the town was divided into three main districts Sharq (People of the East), Qibla (the West, because this is the direction of Makkah), and the Wasat (Center)" (Abu Hakima:1983:7).

2.3.5 The Courtyard House

2.3.5.1 Background

The Courtyard house may be considered one of the oldest and most wide spread house type in history. Its origins date back to the ancient city of Ur in Mesopotamia and the workmen's town in the Fayum around the 30th century B.C (Blaser:1985). Evidence of other earlier types of courtyard houses has also been found in the Middle-East, India, China, Mediterranean, and Scandinavia. Its long history of inward looking form satisfied an array of social, cultural, and environmental needs. Grouped together the courtyard house

created a dense usually organic urban fabric with a clear separation of public and private spaces (Fathy:1986). The courtyard itself offers many benefits; socially it provides a private open space inside the house, which allowed for many social activities such as family gatherings and a safe playground for young children. Environmentally, the courtyard creates a microclimate by bringing nature to the heart of the house and providing a cool shaded space. It also serves as a buffer for sandstorms in harsh desert regions. Economically, the courtyard uses the land efficiently, which in turn allows for energy conservation. Another advantage is the flexibility of the interior space that may allow to use space for different living activities (Hirichs:1989).

The importance of how courtyards bring nature into the buildings has been recognized by many cultures. In the Middle-East, Noor asserts, that the courtyard house seems to offer the ideal solution for people of the desert:

> The natural environment, the desert, in which the Arabs lived for many generations before settling in the cities has also been a major influence on them, i.e., the scarcity of water, lack of plants, high glare and endless open space. As a result when they settled they used to close their houses to the outside and turn them into courtyards. These courtyards often embodied most of the missing aspects of the desert such as water, plants, shade, reference points and a sense of enclosure (Noor:1991:62).

Egyptian architect Hassan Fathy discusses his views on courtyards, which reveal yet another level of understanding between the individual and his/her world. He states:

> The Arab wants to secure his house against the desert on the outside, opening parts of the inside of the house to the sky, such as courtyards, which give relief to the inner rooms. This courtyard space gives the inhabitants a sense of ease and calm, and the feeling that they have their own piece of sky to use and protect them. The calmness provided by this courtyard is a fact that can be felt by anyone entering an Arab house (Reynolds:2002:37).

One can understand the social and natural importance of this central space through Fathy's remarks. Fathy used the courtyard in most of his residential designs. He had a deep concern for establishing a "place of refuge" within the home that was untouched by the world outside. In Arabic one name for house is *Sakan* derived from the word *Sakina* that relates to peace and purity. In Fathy's designs he constantly tried to capture this "elusive quality" in the courtyard. He describes it as follows:

> The word *Sakina* means peaceful and holy, while the word *Harim* that means woman and is related to the word *Haram*, meaning sacred, denote the family living quarters within. This peace and holiness, this feminine inwardness, this atmosphere of a house for which 'domesticity' is so inadequate a description, is so frail that the least little rupture in the frail walls that guard it allow it to escape (Ibid:39).

One example were Fathy successfully expressed this quality in the courtyard was in the Kallini House. The courtyards in the house have a cross-axial position allowing them to relate directly to the various parts of the house in the same time physically and visually separated from each other (Ibid:38).

Privacy was and still is of great importance in a Muslim's household. The courtyard offered a perfect solution to maintain privacy adhering to religious and traditional values. John Warren and Ihsan Fethi, in their book, *Traditional Houses in Baghdad* illustrate the cultural significance of the courtyard:

> the inward-lookingness of the courtyard house, with no view to the outside world, may have stimulated the concern for privacy… Just as the house was always screened so women were always veiled in public. Like the women the house was a private preserve and as such protected (Warren:1982:86-94).

The courtyard house was a result of social and environmental factors. Women's privacy in the Middle-East was and still is very important. In a way the courtyard house was a

recognition and celebration of this respect and it only further strengthens the family unit. The size and finishing of the courtyard houses depended on one's social and economic status in the community.

2.3.5.2 The Courtyard House in Kuwait

In Kuwait, the courtyard house was one of the most important elements that made up the urban fabric of the old City. The harsh desert environment and religious values encouraged the development of this innovative architectural concept. Thus, the courtyard house emerged, which maintained a delicate balance between culture and sustainable resourceful living, reflecting awareness and sensitivity towards the natural world. Shiber described how the courtyard functioned as a protective capsule against the climate, he says, "its buildings were a closely knit labyrinth that repelled heat and sandstorms to the minimum, having thick walls, narrow apertures and properly located slits for ventilation" (Shiber:1964:16).

The courtyard house emerged in Kuwait like the rest of Arabia and the Middle-East. It was the ideal solution for a home that balanced religion, culture and the environment. In investigating traditional architecture, in his thesis *The Evolution of Kuwaiti Traditional Architecture Prior to the Discovery of Oil*, AlAjmi argues that one reason for the building of courtyard houses in Kuwait is, "perhaps they were influenced by what they saw in the already established settlements in the neighbouring regions such as AlHasa, Basra, and Hajd since Gulf Bedouin used to visit these regions at least once a year for trading and purchasing necessary goods" (AlAjmi:2009:71). He continues to assert that there are three major factors that shaped traditional buildings in Kuwait: Kuwaiti mores, climate, and realities. Here, the mores are derived from religion and by realities he means that the people built their houses "to suit their environmental, social, and economic needs" (Ibid:158).

2.3.5.2.1 Bayt AlGaith (AlGaith House)

Bayt AlGaith is one of the few old Kuwaiti houses that survived the demolition of the old city. It belonged to the late Ghaith bin Abdullah bin Yousef, and later was later annexed by the National Council for Culture, Arts and Letters Department of Museums and Antiquities and was recently renovated to give new generations a glimpse of Kuwait's traditional courtyard houses. The house was constructed in the 1930s in the AlA'asema Sharq area of old Kuwait City and currently is located in AlSharq area next to the Museum of Modern Art.

The house (280 square meters) is close to resemble the typical traditional courtyard house, which accommodated a small family. As one enters he or she makes their way through the *Dahress* (a corridor after the entrance), which leads to the courtyard. The various rooms overlook inwardly towards the courtyard, which takes almost all the house space. The house was a simple architectural layout typical of the urban structures at the time, particularly in terms of its empty space, its multifunctional features, and construction techniques using a combination of mud bricks and sea rocks (NCCAL:2009:219).

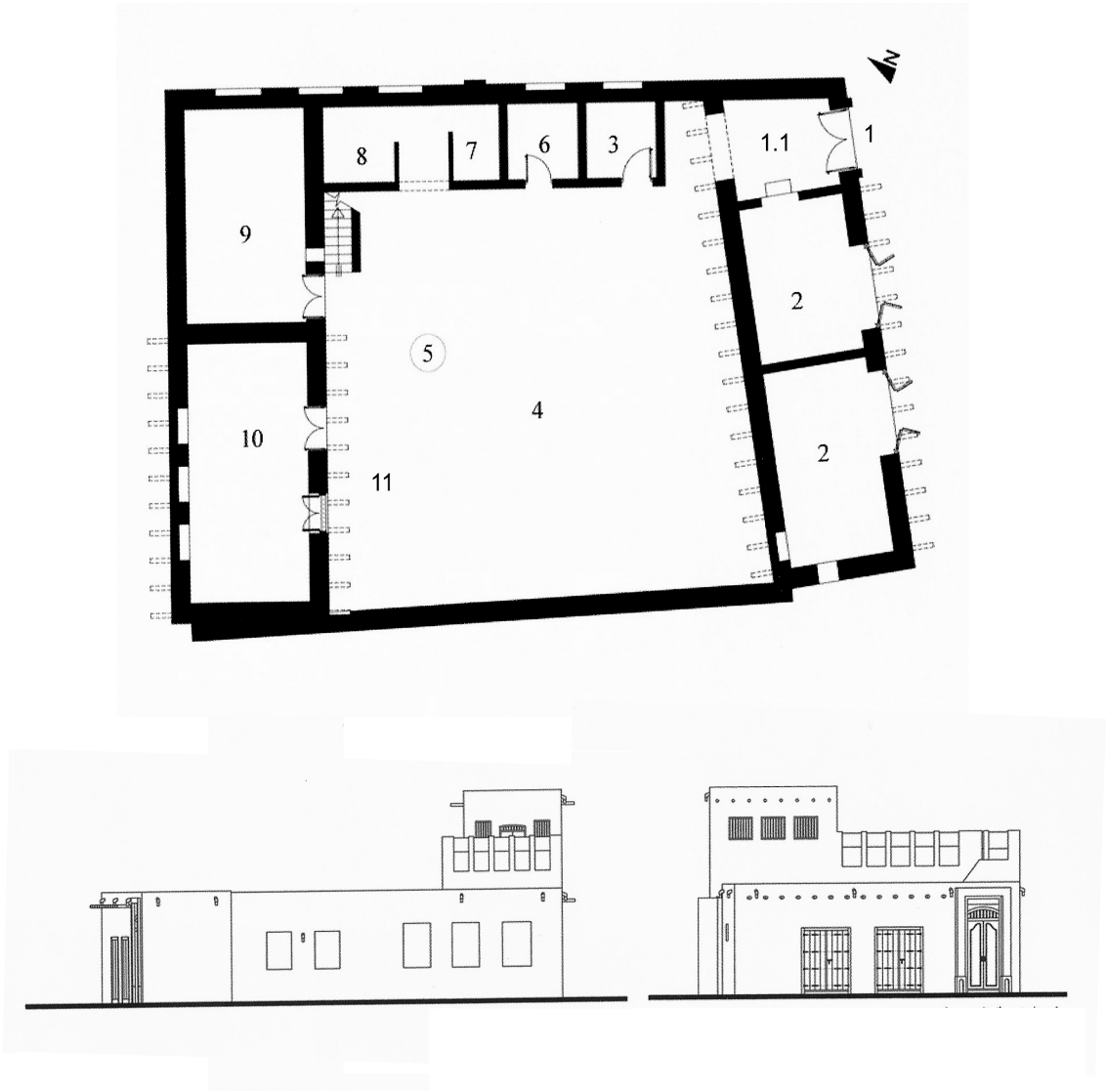


Figure 2.9: Traditional Courtyard House (AlGaith house): At the top the floor plan clearly illustrates the courtyard in the centre. At the bottom right is the south elevation of the house and bottom left is the east elevation. **Source:** National Council for Culture, Arts, and Letters:2009.

Key:

1. Traditional Door
1.1. Dahress
2. Store
3. Kitchen
4. Courtyard
5. Bircha
6. Toilet
7. Old Toilet
8. Jelleb or well
9. Bedroom
10. Living Room
11. Possible Liwan space

2.3.5.2.2 Bayt AlBader (AlBader House)

Bayt AlBader is also among the few traditional houses that survived the demolition of the old city. The house was built between 1837-1847 by Abdul Aziz and Abdul Mohsin Yousef AlBader two important merchants of old Kuwait. It was annexed by the National Council for Culture, Arts and Letters Department of Museums and Antiquities from the heirs of the AlBader family. In 1976 it was used as a temporary venue for the Kuwait National Museum and today is the main office of the Department of musical heritage.

It is located in the AlQiblah district (AlBader quarter) and overlooks the western side of the Gulf. Bayt AlBader is a prime architectural example depicting the social and economic lifestyle of a rich merchant family in old Kuwait. It is also in great condition due to the durable materials used in its construction, which preserved it throughout the years. Bayt AlBader was built of adobe and coral sea rocks. Its walls are solid and painted with stucco. Imported beams were used in the ceilings, which rise 4 meters. The house consists of five uncovered courtyards: the *Diwaniya* (men's reception), the *Harem* (women's court), the kitchen, the works (storage), and the barn. Each courtyard served a specific function yet all interconnected within the house's social and spatial structure. The floor plan shown in figure 2.10 clearly shows how each space completes the other.

There are a number of remarkable architectural features in this house. First, are the traditional doors both intricate with wooden carvings yet modest in their welcome. Second, is the use of the arches that shaped the *Liwan* (shaded space adjacent to the courtyard) around parts of the courtyard. Third, is the *Bagdir* (wind catch) which channelled air through a shaft cooling the interior of rooms.

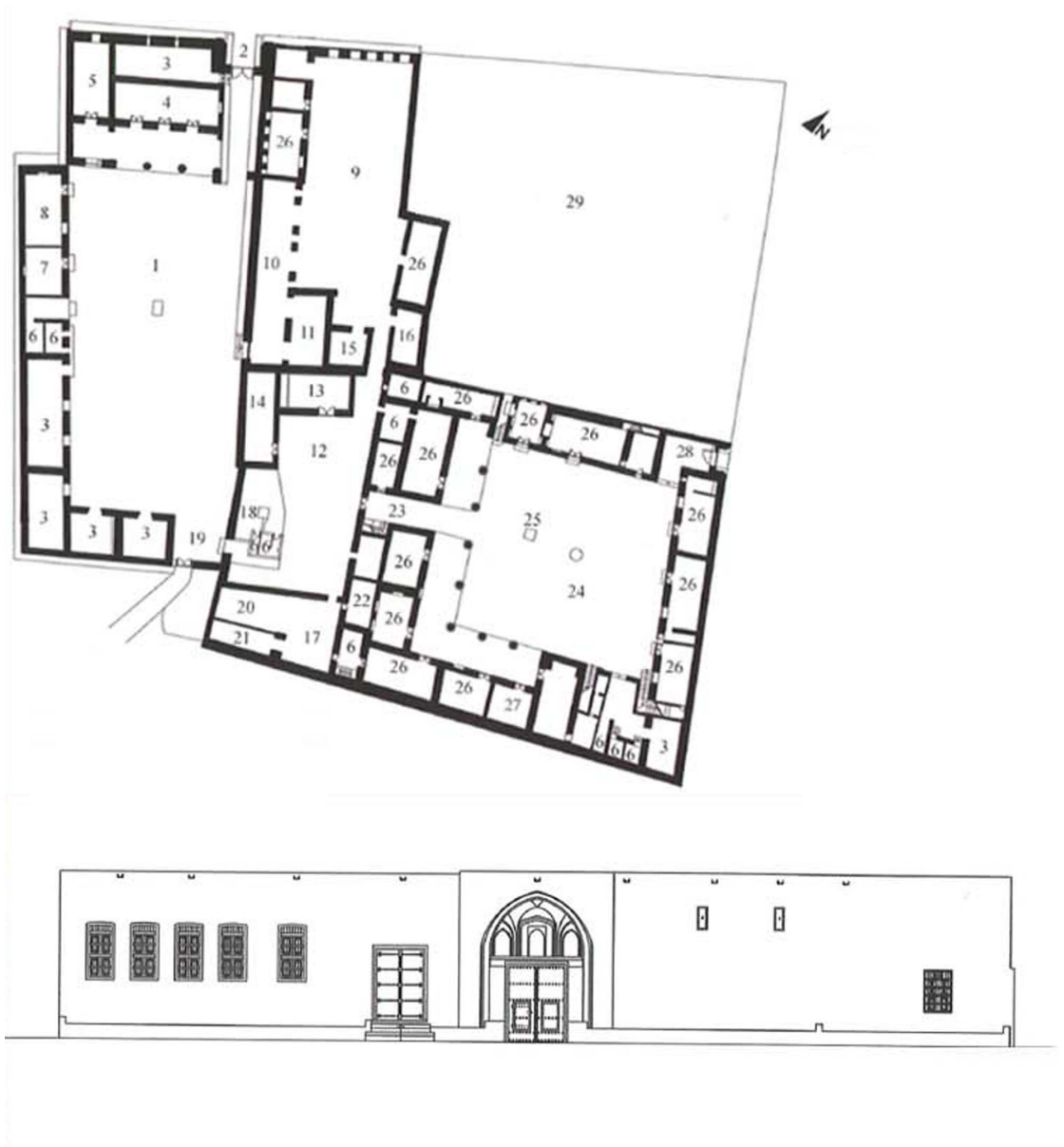


Figure 2.10: Traditional Courtyard House (AlBader house) : This is another renovated traditional house in Kuwait. At the top is the floor plan, which illustrates the use of multiple courtyards. At the bottom is the north elevation. **Source:** National Council for Culture, Arts, and Letters:2009.

Key:

1. AlDiwaniya Courtyard
2. Main Entrance
3. Store
4. AlDar AlMoraba'a
5. Dar um Deresha
6. Toilet
7. Room
8. Dar um AlLewaq
9. AlEmara
10. Horses stalls
11. Dar AlDebs
12. Kitchen Courtyard
13. Kitchen
14. Dar AlAeish
15. Dar AlRaha
16. Dar AlTamer (Dates Room)
17. Goat Courtyard
18. Water Well
19. Back Entrance
20. Cow house
21. Dar AlSaa'f
22. Dar AlRomad
23. AlDereeb (corridor)
24. Women Courtyard
25. Well
26. Bed room
27. Binding books room
28. Side Entrance
29. AlSadu house

2.3.6 Traditional Vernacular Elements

The traditional Arabic[1] courtyard house is to some extent different from the Kuwaiti courtyard house. The following traditional vernacular elements were found in the Kuwaiti house: the *Hosh* or courtyard itself, the *Liwan*, traditional Kuwaiti door, its rooms, the *Diwaniya*, the *Bagdir*, the *Merzam*, the *Jelleb*, the *Bricha*, mud brick, its flat roof and the fact it is usually a one story structure. The following section will present in some detail the main traditional vernacular elements found in Kuwait's traditional courtyard houses.

***AlHosh* - Courtyard**

The courtyard was the most dominant element in the old Kuwaiti House. It was a multi-purpose room in nature, an open space where the entire family would gather and socialize. Some would have a tree or shrub and most would have a well. These courtyards had many design variations and each courtyard had a specific function, such as the main courtyard, the *Harem*, the *Diwaniya*, the kitchen courtyard, and the livestock courtyard. The larger the family, sometimes the larger the house and in larger houses more courtyards were required to accommodate the family's needs. The courtyard served as a private sanctuary at the heart of the house, giving it form and serving most of its functions. All rooms overlooked the courtyard, which was open to the sky. Although usually small in size, the courtyard was often perceived to be wide and was the largest room in the house.

The *Liwan*

A *Liwan* or loggia is a covered walkway that would separate the edge of the courtyard with some rooms while the rest would directly overlook into the courtyard with windows

[1] The traditional Arabic courtyard house is a term that refers to a regional vernacular courtyard house found in the Middle-East and North Africa. Each region has its own variation of this house type, and therefore, for this study it will be referred to as the Kuwaiti courtyard house.

especially for ventilation. The *Liwan* also provided a form of protection for some rooms from direct sunlight. It would be used alongside the courtyard as a place where the family would gather and socialize.

The *Bagdir*

The *Bagdir* (also referred to as *Malkaf*) or wind catch was a clear example of an architectural feature within the courtyard house that was derived from climactic conditions. It was a mud brick shaft that rose above the courtyard house with an opening facing prevailing winds. It then funnels the air down to a level that allows the breeze to reach a seated or sleeping person directly. The *Badgir* was used for passive cooling and ventilation but today it is treated as a decorative architectural element.

The *Merzam*

Another feature derived from climate is the *Merzam* or gutter was purely functional. The roofs were flat with some degree of sloping that gently funnelled rainwater through the *Merzam* on to the streets. They were originally made of timber and by the early 1900s converted to metal. In an attempt to relate with the traditional, some designers now use it to decorate house facades.

The Traditional Door

Kuwait's traditional door was the public image of the house and usually symbolized family status. It had an opening called the *Khoka* and was the most used form of entry. One would bow as he or she entered the house as a first shield for privacy, limiting direct eye contact. The *Dahress* (a usually narrow corridor after the door) was the second shield, primarily used to provide more protection for the exclusive and private domain of the courtyard.

The *Jelleb*

The *Jelleb* or well was an essential water source found in almost every house. It was often in the courtyard and provided usually salt water for the household cleaning and washing services.

The *Bircha*

During the winter months people used the *Bricha* or cistern to collect and store rainwater. It was a round collecting tank placed in the courtyard. People would wrap a tent like fabric on the top edges of the courtyard and use it to funnel the rainwater into the *Bricha.* This water sometimes provided for the household throughout the hot summer months.

Mud bricks

The houses were built of mud brick or adobe, one of the oldest materials known. Traditionally, they were used as part of construction materials in the Arabian Peninsula and throughout the Middle-East and North Africa. It was widely available and met the need to protect against harsh climactic conditions. Adobe's main advantage is its insulation qualities, protecting the interior from the heat. Throughout the day the heat gradually moves through the material insulating the interior, and during the cold desert night the heat makes it inside the interior providing a heat source. The main disadvantage of adobe is its deterioration with strong rainfall during winter months. However, with the advancement of more efficient mixtures and construction technologies adobe can be maintained to withstand harsh variations of the climate.

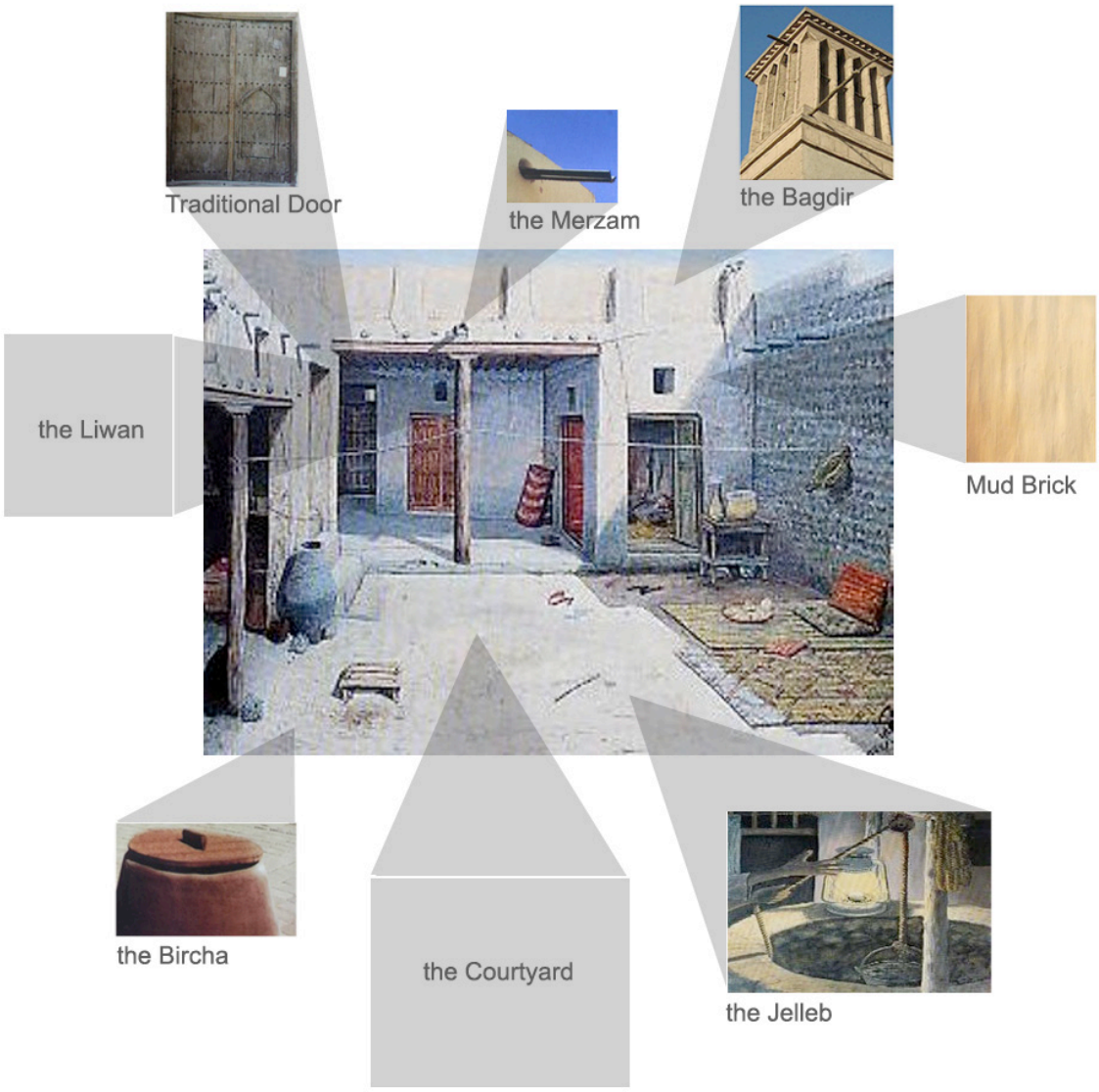


Figure 2.11: Traditional Vernacular Elements of Kuwait's courtyard house. The main illustration in the centre of the diagram is a painting of a traditional courtyard house by artist Ayoub AlAyoub. (AlGhunaim:2005). The images of the elements have been obtained from various sources primarily (NCCAL:2009). Not all houses had the Bagdir, which is usually found in the roof tops while the Jelleb and Bircha are often found in the courtyard space. **Source:** Diagram put together by the Author, 2014.

2.4 The Transformation of Kuwait City: From 1951-1967

2.4.1 Oil in Kuwait

A new era of prosperity and hope for a better future began with the discovery of oil. The city jumped towards modernization, which transformed its built environment from a picturesque small Arabian Sea port to a planned regional metropolis. This phenomenon changed Kuwait, its built environments, and people forever. The origins of Kuwait's oil ambitions date back to the 1920s. In 1921, Sheikh Ahmad AlJaber AlSabah became Ruler of the State of Kuwait and was aware of the oil prospectors around Arabia and Iran. Consequently, the search for oil established Kuwait Oil Company in 1934 by the Anglo-Persian Oil Company (now British Petroleum) and Gulf Oil Corporation (now Chevron). There were early findings that pointed towards oil in Kuwait and in 1938 it was discovered in Burgan, one of the world's largest oil fields. Due to the Second World War all efforts to export the oil stopped and it was only in 1946 that Kuwait exported its first cargo of crude oil. In June of 1961 Kuwait declared its independence, which paved the way for the Kuwaiti Government in 1975 to take full control of Kuwait Oil Company. Today oil is the main income of Kuwait. It not only served as the force behind its initial boom but also still provides for its development.

2.4.2 Master Planning

As oil revenues started to increase so did the plans for the future of the city. The transformation of Kuwait City was guided by a constant renewal of master plans. The First Development or Master Plan was prepared by Minoprio, Spencely, and Macfarlane of Britain in 1952. It was a network of ring roads and radials extending outwards from the old town. Despite respecting several old routes and *Safat* square it completely erases the old urban map.

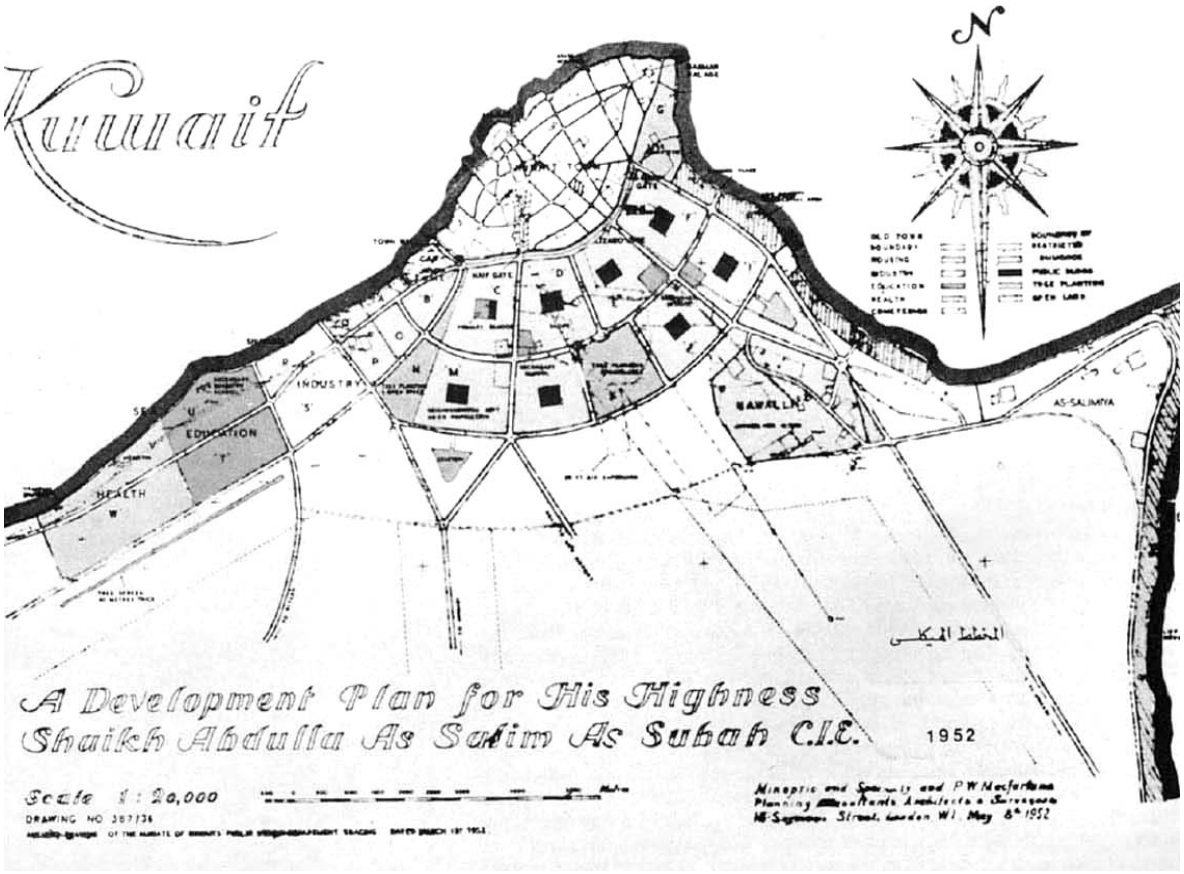


Figure 2.12: First Master plan for Kuwait City and its suburbs: Designed in 1952 by Minoprio and Spencely. **Source:** Stephen Gardiner from the Making of a City.

In his thesis called *The Urbanization of Kuwait since 1950* Mohammad Abdo asserts that the design was prepared hastily by people who were unfamiliar with Kuwait, worked with little data, and had a limited vision as to the course and scale of the future development of the State (Abdo:1988). In his analysis of the plan he says:

> Kuwait's first development plan was not the kind of organic plan one might have hoped for. For one reason or another it did not explore the possibilities of creating a new and imaginative physical environment which would capitalise on the new techniques and knowledge while preserving the old urban patterns and structures. While it is easy to judge it in retrospect, it can be fairly stated that the plan was essentially a product of its time and circumstances (Ibid: 247).

Many researchers on Kuwait's built environment agreed on how the first master plan created discontinuity with Kuwait city's organic form. Shiber argues:

> The physical layout and build-up of Kuwait has been conductive to social disfellowship instead of fostering that type of social interaction and intercourse which the contemporary planning dogmas and practices are purportedly designed to foster. To use an expression of Emile Durkheim, an 'anomic' atmosphere and environment has been engineered (Shiber:1964:120).

Furthermore, architect Evangelia Simos Ali explains how the first master plan affected Kuwait's old town. Ali stresses that the plan "destroyed old town contiguity" which resulted in a:

> Consequent outer-city migration coupled with unremitting urban clearance - unchecked by any serious conservation policy - resulted in the lightening erosion of the old fabric… Within a single generation practically the entire old town had been wiped out leaving in its wake a westernized central business district (Fullerton: 1994:185-186).

The removal of the old town was a policy decision made without fully understanding its future implications. In fact the designers initially wanted to keep the wall and thought that it could make a strong edge for the city (Abdo:1988:245) and in a sign of respect and memory of the third wall of Kuwait a road called *AlSoor* or the Wall runs parallel to it overlooking a garden belt. In retrospect, the first master plan did not maintain the harmony of old Kuwait City and did not fully address potential future issues of development. However, one main element of the plan is effective until today. The ring road system provided the basis for future expansion and served as major arteries of the city carrying people from east to west.

From 1952 to 1967 various planning studies were used for different areas called the Municipality Development Plan. Control over master planning supervision has been transferred from the then Department of Public Works to the Kuwait Municipality. The

Municipality filled a void at the time after the initial implementation of the first master plan. It was responsible for designing several residential blocks and road expansion projects. By the late 1960 a new master plan was long overdue. The Second Master plan was developed by Colin Buchanan and Partners from 1967 to 1968. This plan was a renewal of the first master plan and the design team had no choice but to start where the first plan ended. The design team's main objective was to prepare a master plan and national physical plan of the state including Kuwait City.

Subsequently, in 1977 Shankland Cox Partnership reviewed the Second Master Plan, which then in 1983 underwent another review by Colin Buchanan and Partners due to changing circumstances and policies. The plan was divided into three parts: the City Centre structure, Metropolitan structure plan, and National physical planning strategy. In 1993, after the first Gulf War, Kuwait Municipality proposed its own Master Plan. Finally in 2003, the Third Master Plan was a joint venture by Kuwait Engineering Group and Colin Buchanan, which underwent a review in 2005.

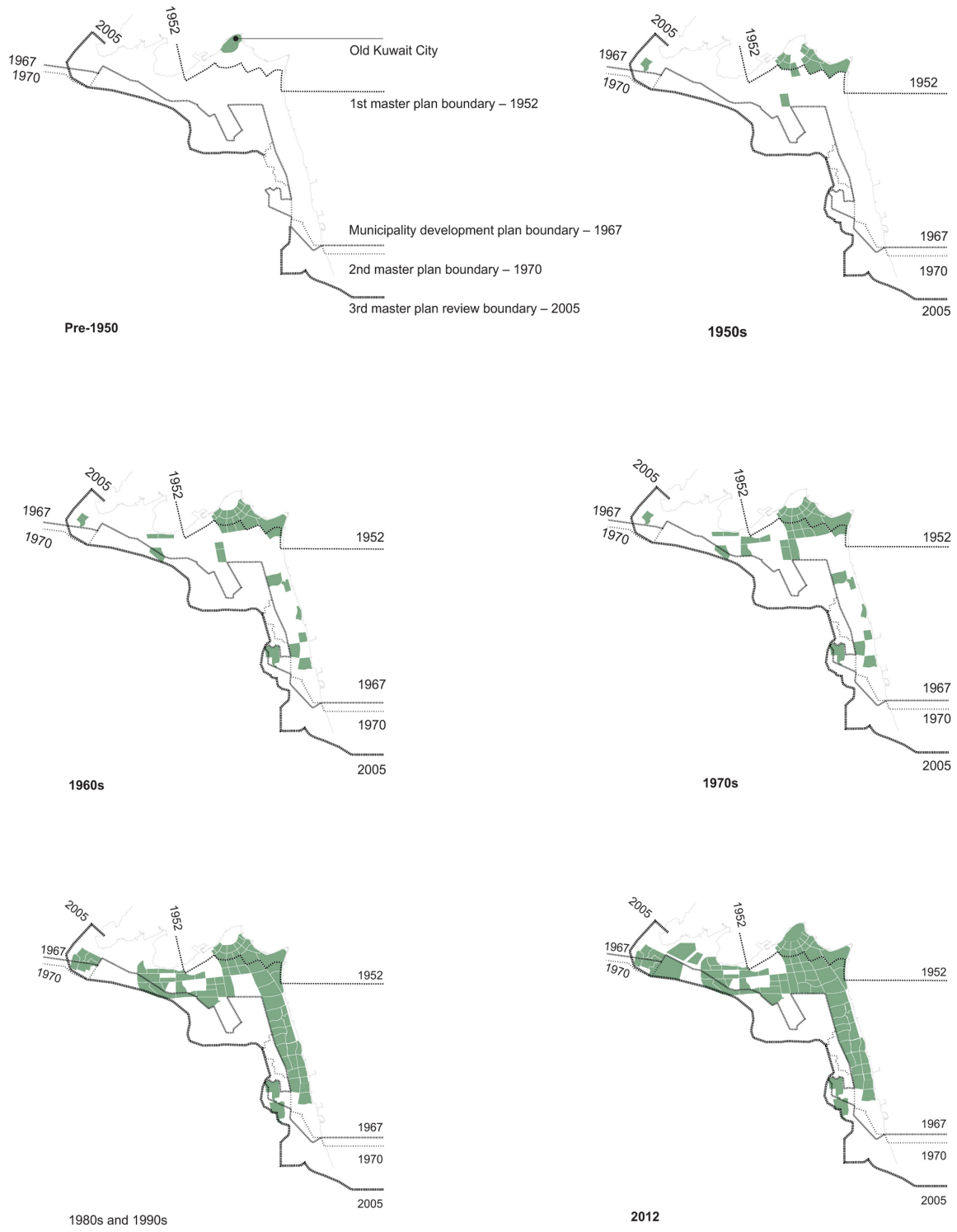


Figure 2.13: Residential urban growth in Kuwait over time: Shows the effects of master planning from 1950-2012. **Source:** Kuwait Municipality.

2.4.3 The Transformation

The following section will present extracts of people who witnessed the dramatic transformation of Kuwait City. Shiber described this period like a "dramatic urban revolution that swept over Kuwait as a hurricane, leaving one dizzied and dazzled in its wake. … Kuwait literally exploded from a small village to a fast-urbanizing regional metropolis in just over 12 years" (Shiber:1964:6). Shiber continued to write as he witnesses the turn of events, "perhaps nowhere in the world do so many contrasting urban types and relationships stand in such close proximity to each other" (Ibid:434).

In a 1952 article in *The National Geographic Magazine* called *Boom Time in Kuwait*, Paul Case recalled a fascinating experience visiting Kuwait on the eve of its modernity. He said, "I have been watching a revolution in progress. It is a peaceful revolution… In all my years as a resident of the Near East I have never witnessed a greater transformation" (Paul:1952:783). Moreover, Michael Bonine described the oil boom as "One of the most spectacular transformations in the history of urban development" (Bonine:1981:245). Abu Hakima remarked, "The nation witnesses a spectacular state of development and change, both human and material" (Abu Hakima:1983:159).

Old Kuwait City was gone, leaving new generations only traces of their architectural heritage. The phenomenon had a great impact beyond Kuwait and its people. Quickly, people started to know of Kuwait and come for work all providing the needed manpower to build the new City. Eventually, the population of foreigners surpassed that of Kuwaitis. Their different backgrounds and cultures also played a role in shaping the new built environment.

Figure 2.14: The Transformation of Kuwait City 1: The photograph shows construction of major streets and roundabouts cutting through the fabric of old Kuwait City. Its timing is unknown but may be sometime in the 1950s. **Source:** The archives of Kuwait Oil Company.

Figure 2.15: The Transformation of Kuwait City 2: This is another photograph that continues to show how the dramatic contrast and disunity in urban form. The massive modern building in the centre of the picture is the Baladia or Municipality and across the street is the once residential district of AlMirgab packed with courtyard houses. Also of unknown timing but may be sometime in the 1960s. **Source:** The archives of Kuwait Oil Company.

2.4.4 The Modern Villa

With new suburbs sprawling beyond the new city, so too came new houses. The Kuwaiti domestic built environment had been clearly affected by the various economic, political, social and technological changes that the city and nation had undergone. The transformation of the city through its master plans literally forced a new house design on Kuwait and its people. No one had a choice. People moved to completely new neighbourhoods and adapted to a new way of life. The speed of change gave no time to reflect on the far-reaching side effects that reshaped the city's urban fabric. The courtyard once an oasis in the desert of city streets was no longer a major element in Kuwait's new urban fabric. Again, on his observations on Kuwaiti development Shiber writes:

> The modern house or villa plunked on a uniform and non-descript plot which, with several hundred similar plots constitute the inorganic and uneconomic new neighbourhoods of Kuwait, it often a caricature house in a caricature setting, obeying a caricature philosophy of architecture… The house sits clumsily in its plot exposed on all four sides to the elements, with a garden that is no garden at all for it consists of the corridor set backs from every boundary of the lot. And each lot is surrounded by a boundary wall, a costly matter of dubious aesthetic and functional merits (Shiber: 1964:287).

Like the city, the house changed overnight creating a disunity between people's past and present built environments.

The modern villa had an extroverted form, which changed the way people lived in Kuwait. This has created many issues for Kuwaitis who moved from the old town to the new suburbs. First was that of privacy - Kuwaitis were used to a more private domain where the courtyard shielded them from the street. Suddenly, they found themselves in houses with a different spatial structure and privacy/public hierarchy. In reaction to this, some houses were designed with screens that covered larger glass windows to not only protect against the sun but also provide more privacy. Another issue was the emergence of

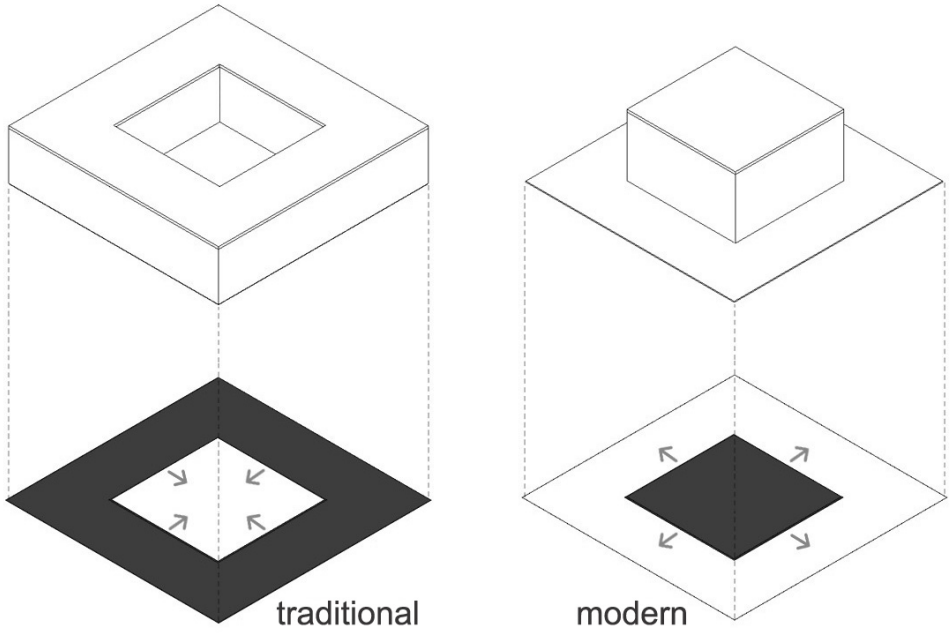


Figure 2.16: Traditional vs. Modern house type: A simple representation of the traditional courtyard house with an opening in the centre in contrast with the open spaces that surrounds the contemporary villa. **Source:** The Author, 2012.

the balcony, which due to Kuwait's hot and dry weather had no functional role whatsoever. After years of collecting dust many have been closed and were extended as additions to the house.

In contrast with the traditional courtyard house, today, houses in Kuwait are usually two or three storeys and have come to accommodate an array of requirements deemed necessary by the Kuwaiti user. These include, large guest reception halls, *Diwaniya* spaces, which usually are spaces that face the street, family living rooms, master bedrooms, garden spaces, swimming pools, and an extensive services zone to provide staff quarters, kitchens, garages, and storage space. The houses are environmentally unsustainable; using exported building materials and relies heavily on electricity and water from the state's grid. Culturally, they do not represent Kuwait's traditional vernacular in any way. With this new reality people's perceptions of their houses changed. They looked for other cultures for

inspiration to build their houses, and as a result, today Kuwait's domestic built environment reflect styles from around the world. This environment has significantly changed people's lifestyles.

AlBahar asserts that after the oil boom Kuwait's domestic architecture went through three socio-stylist phases; the first was the rejection of the past and the dissociation with the traditional context in search for modernization, the second was rejection of conformity in search of individuality, uniqueness, status, and prestige, the third is the search of a post-oil Kuwaiti identity which attempts to reinstate traditional values and concepts (AlBahar:1990:419). She argues, "the dramatic contextual leap between the traditional and the modern environments in Kuwait has, over a period of more than a quarter of a century, resulted in a complete physical and socio-cultural discontinuity with the past" (Ibid:421) and concluded that there is no obvious morphological continuity between the traditional and modern house (Ibid:447).

Similarly, Hamed Shuaib one of the first architects in Kuwait asserts that Kuwaiti residential architecture has passed through 3 distinctive phases since the end of the fifties until the end of the 20th century. The first phase, was a mixture of houses built according to the traditional Kuwaiti courtyard house and some modern western villas. The second phase during the sixties and seventies was marked by the introduction of the modern villa mostly different experiments with concrete. The third phase covers the eighties until the present is marked by an array of different styles from all over the world (Shuaib:1999).

The demolition of Kuwait's vernacular has created a vacuum, which made it possible today for Kuwaitis to import different architectural styles from around the world. As one drives through the suburbs of new Kuwait City, the houses showcase Islamic, Modern, Neo- Classical, Mediterranean, and even Japanese styles. Rapoport's (1982) book entitled *The Meaning of the Built Environment: A Non-Verbal Communication Approach*

may explain one reason for the generation of this form of built environment. After the oil boom people wanted to express their socio-economic status in the modern villa, images of different facades around the world was a way to visually (non-verbally) communicate this newfound wealth. As a result, people's houses did not necessarily reflect how they wanted to live, instead conveyed messages in how they would like to be perceived in the world.

This built environment has been shaped by the speed towards modernity without fully understanding its consequences and the government's misplaced push towards generating a new modern identity for Kuwait, which has resulted in a failure to preserve its own. However, despite the complete transformation of the Kuwaiti house there are some socio-cultural elements that persisted. AlJassar's (2009) study highlighted how the social space and specifically the diawaniya, an integral element in Kuwait's social fabric persisted, yet the courtyard disappeared (AlJassar:2009). Similarly, the present study's exploratory study highlighted the persistence of certain elements and social structures from Kuwait's vernacular. The role of the courtyard has been replaced by the family living room and the diwaniya still plays an important role in Kuwait's contemporary houses (AlHaroun:2014).

People have adapted to change despite a complete transformation of their living environments. This concept has been referred to as passive or active adaptation (Priemus:1986). Figure 2.17 below shows a plan of a modern villa in Kuwait sometime between the 1970's and 1980's. If one looks closely at the spatial configuration, they will start to notice the influence of socio-cultural understandings in the house. For example, there are usually two doors, an outer boundary door and main house door, which attempts to provide a certain degree of security and privacy. The guest reception halls have been separated according to gender, the diwaniya (2) for men, and guest reception hall (10) for women.

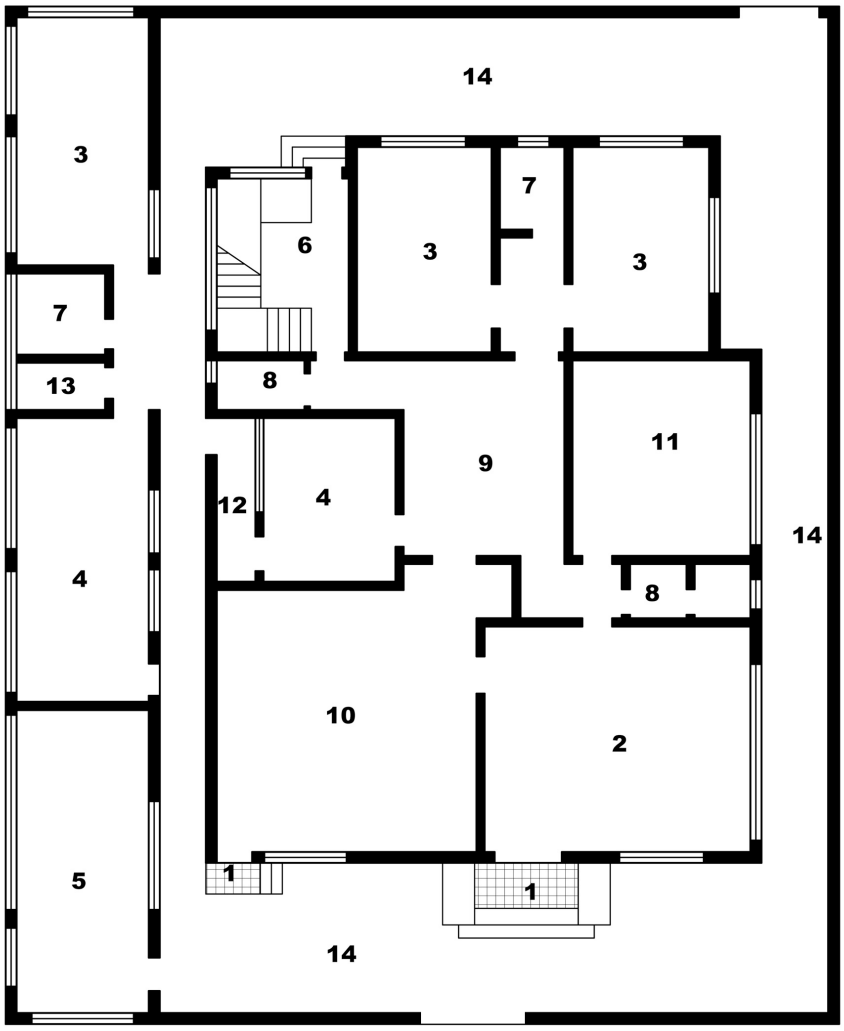


Figure 2.17: Plan of a modern villa in Kuwait. The above ground level plan is of a typical modern villa built in between the 1970's and 1980's. It stands between two streets with a degree of segregation between gender spaces highlighted via the Diwaniya (2) and Guest Reception (10).

Key:

1. Entrance
2. Diwaniya /Men's Reception
3. Bedroom
4. Kitchen
5. Garage
6. Stairs
7. Bathroom
8. Guest Toilet
9. Living Room
10. Guest Reception Hall
11. Dinning room
12. Corridor
13. Storage
14. Outside Space

Islamic -Moroccan

Post Modern

Neo Classical

Early Modern in Kuwait

Eclectic

Mediterranean

Figure 2.18: Contemporary housing styles in Kuwait. These are a few houses in Kuwait City's close suburbs. Although they reflect a wide variation of styles, they all share similar extroverted forms. **Source:** Photographs taken by the Author, 2013.

2.5 New Kuwait City: From 1967 until Today.

2.5.1 The New City

Kuwait City grew to become one of the largest in the region. It is now cosmopolitan with a population around three and a half million, of which one million and so are Kuwaitis and the rest from the international community. Like old Kuwait, the city still maintains a good commercial centre but now in banking, investment, and real estate companies. It is also the home of Kuwait's government: the Amiri Diwan (Office of the Amir) and Council of Ministers, ministry complex, municipality, and others. The city has several traditional *Souqs* recently called AlMubarikiya and efforts are underway to restore more of the old market places. Besides a handful of apartment buildings, the city does not have any major residential blocks within its boundaries. In fact most people in Kuwait live in the suburbs within the ring roads and commute to Kuwait City for work.

This reveals the forces of modernization and urbanization working under globalization. The semi-circular movement of the protective walls of old Kuwait has transformed into ring roads and highways stretching the new city over the vast desert. This planning provided the basis of the infrastructure for a modern city; however, it also paved the way for the destruction of the old urban fabric and loss of an architectural cultural identity. As one looks closely (figure 2.19), the city itself has huge plots of open unused land. Where once complete neighbourhoods stand now lay scattered empty spaces throughout the city. Also, apart from a park the proposed green belt is not really green. Old Kuwait's walkable and friendly town now has been overpowered by the automotive. The car and its roads radically changed the city dynamic and overall layout. People cannot easily walk from one part of the city to another. Also, the city's high-rise structures rise with no harmony and aesthetic unity.

Figure 2.19: New Kuwait City. Source: The Dept. of Publications, Kuwait Oil Company.

Great economic activity is evident in every sector of the economy witnessing the full force of modernization. As stated by Abel "it is easy to conclude that the forces of a globalized consumer culture have all but won" (Abel:1994:190). He identified the visual attributes of familiar Western models as: the central business district, the air-conditioned office towers, the McDonald's franchises, the shopping centres selling the same consumer products, the jam-packed highways spreading out into the suburbs (Ibid:190).

Kuwait is unique in that it was the first to modernize in the Gulf. Despite this, the effects of modernity in Kuwait are less evident than in other cities. This is due to several reasons. First, after the first Gulf War, the Kuwaiti government took a more conservative position with regards to socio-economic growth and development, this has led to less foreign companies and business investments in Kuwait. Secondly, in Kuwait the ratio between local citizens and foreigners is less than other Gulf cities such as Dubai or Doha. This atmosphere makes Kuwait less vulnerable to outside socio-cultural influence.

2.5.2 The Rise of the Landmark

Inspiration from Kuwait's past has provided aspiration for its future, through the creation of new iconic structures. The courtyard houses, gone from Kuwait City are now born again through a contemporary reinterpretation in the Kuwait National Assembly. The *Bagdir* cooling the people is now regenerated as a decorative element in Souq Sharq shopping mall. The *Dhow,* gone from its harbours, has been rebranded through fabric structures in the Kuwait Scientific Centre. The significance of culture is present in almost all the landmark, iconic, monumental projects in Kuwait. The city has been transformed again into an architectural playground for post-modern architecture. As landmarks they give Kuwait an image for its contemporary public architecture, however, no initiative has been attempted to express a contemporary cultural identity for Kuwait's domestic built environment.

2.5.3 Future of Kuwait City

As Kuwait moves forward in its modernization and development it is hoped lessons have been learned from the past. However, a glimpse into the social, economic, and political realities of the nation indicates otherwise. *Madinat AlHarir* or The City of Silk is a proposal for a new city just north of Kuwait Bay. Eric Kuhne and Associates, a London based firm, are the designers and describe the project in their website as, “An emerald necklace of lakes and parks, like ribbons of silk, intertwine and weave each of the 25 neighborhoods together into one cohesive city” (Civicarts:2012). It is a city for the future of Kuwait that will hold a new large business centre, conference areas, athletic areas, a new airport with a focus on media, health, education, and industry. The main attraction of *Madinat AlHarir*, will be *Burj Mubarak* or Mubrark Tower and will stand at 1,001 m (3,284 ft) tall - far beyond *Burj Khalifa* (previously Burj Dubai). It is estimated to cost over 94 billion dollars.

Is this a true ambition for Kuwait or is it a geopolitical decision? Perhaps it is the government's way of competing with regional rising cities such as Dubai and Doha. And what will happen to Kuwait City once this mega project is built? What are the future implications for Kuwait's built environment? To what extent does this project impact Kuwait's natural environment and particularly Kuwait Bay? These and more questions all need to be answered before thinking of taking this leap exacerbating an already sensitive built environment. This is especially true given that the nation now is in a critical moment in its history at a time of increasing volatility in the region with constant changing realities.

2.6 Conclusion

This chapter presented a story of Kuwait City; a story unfinished for no city is ever static or complete. In today's world, change is the new constant, and it is by understanding phenomena associated with development that people might obtain a clearer vision for the future. Therefore, reviewing Kuwait City's architectural history becomes of paramount importance. The review highlighted Kuwait's rapid development, which resulted in mass demolitions that led to the rise of modern architecture out of context and without cultural significance. This has created disunity between Kuwait's past and present architecture. The problem is not necessarily with modernization but with the side effects of its rapid development. The chapter also attempted to examine various dimensions involved in the constant pushing and pulling of social, economic and cultural forces throughout its urbanization. The upcoming chapter intends to continue highlighting these forces in the context of sustainability in an increasingly globalized world.

Chapter 3: Literature Review: Theoretical Framework

3.1 Introduction

Essential to any research endeavour is a theoretical framework, a construct to understand not only the scope and context of the study within its field but its relation to the practical investigation undertaken. According to Glassie, “the scholar who believes that he works without theory, works with a bad theory”, and a well defined theoretical framework is an essential foundation for any scientific or scholarly investigation (Glassie:1975:9). This chapter presents a proposed theoretical framework for an empirical investigation that intends to develop an understanding of the many issues surrounding the transformation of the Kuwaiti House. Specifically, the research aims to use Kuwait's traditional vernacular elements as a vehicle for exploring the broader socio-cultural, economic and political issues surrounding the move towards modernity in the built environment and away from the vernacular and sustainability.

The theoretical framework chapter is divided into two parts, the first - Towards a Contemporary Vernacular House, which draws on literature in the following areas: 1. The impact of Globalization, 2. Transition to Sustainability, 3. A Contemporary Vernacular. 4. Using Vernacular as precedent for Sustainable Design. The second part - Regional Discussions, covers regional studies with specific emphasis on Kuwait and the built environment divided into the following sections: 5. Regional Discussions and Initiatives on Sustainability, 6: Studies on Kuwait. Finally, the chapter concludes with the researcher’s critical position. The literature review has provided many useful ideas, however, the research intends to build on an architectural approach and design ethos embodied in the work of contemporary vernacular architects such as Hassan Fathy (1986) and Charles

Correa (1991). Although different these architects shared similar traits that envisioned sustainable architecture derived from their local culture.

3.2 Towards a Contemporary Vernacular House

3.2.1 Globalization - "Thrust of Modernity"

3.2.1.1 Impact of Globalization

Globalization[2] is an economic and social phenomenon; its forces have had a great impact in the world, transforming people's way of life. Although its opportunities give hope for a better future it has created many challenges. Through modernization and change it has not only reshaped once sustainable built environments, but also continues to be a barrier to socio-cultural and environmental sustainable development. Anthony Giddens (1990) sees globalization as the inherent "thrust of modernity" that works for a greater interconnectedness global-wide. He defines globalization as, "the intensification of world-wide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa" (Giddens:1990:64).

Madison (1998) understands globalization as a dynamic at work in the present stage in the development of human civilizations. He is neither an advocate nor critic of globalization saying:

> The phenomenon of globalization is itself global, that is to say, all-encompassing. It is of course in the first instance a material or economic phenomenon, but, like all significant civilizational developments, it also has profound cultural or spiritual significance (Madison:1998:5).

Madison clearly stresses how the phenomenon of globalization has a great impact on nations and their people. Despite the many challenges of globalization, some have

[2] The term 'globalization' emerged in the second half of the twentieth century to describe the state of intense interaction and interdependency of world economies. It is credited to Theodore Levitt, who in 1983 coined the term in the article he wrote at the Harvard Business Review entitled 'Globalization of markets'.

suggested it as having a more positive impact for the world. In his keynote address at a conference on globalization organized by the Emirates Centre for strategic studies and research, William Cohen asserts that:

> Globalization has enabled individuals, corporations and nation-states to influence actions and events around the world faster, cheaper and more significantly than ever before. It has led to the breaking down of many barriers, and has the potential for further innovation as well as social and cultural exchanges, while offering outstanding opportunities for dialogue and understanding (ECSSR:2008:15).

Cohen also acknowledges the dark side of globalization in some cases forcing countries to abandon protection for consumers, workers and the environment (Ibid:19).

3.2.1.2 Impact on Culture

The impact of globalization on socio-cultural and environmentally sustainable development is evident all over the world. Culturally, some are concerned that "globalization will impose conformity and homogeneity and that their familiar, personal neighborhood coffeehouses and indigenous religious communities will be replaced by impersonal global identities"(Ibid:19). It is clear that this new wave of global social, economic, and political changes brings huge opportunities for development yet it also pushes cultural diffusion and environmental problems to its extremes. Hiding under the logo of 'prosperity and hope' from world markets a cultural and economic invasion is taking place shifting the foundation of entire nations. Yasser Mahgoub's paper *Globalization and the Built Environment in Kuwait* highlighted different views towards globalization. Mahgoub asserts:

> Globalization is viewed by some as a new form of colonialism and occupation…Economic superiority, allowing two-thirds of the world's wealth to go to only one-third of the world's population while one-third of

> the world's wealth is going to two-thirds of the world's population, is increasing the 'gap' between poor and rich countries (Mahgoub:2004:507).

The polarization is evident not only between nations but between classes. "Many fear the loss of identity and privacy; in general, fear of the unknown"(Ibid:507). Among the concerns, especially from the 'Global South'[3] is that "the impact of globalization on the culture of the 'developing' 'post-colonial' countries is pervasive and endemic" (Dandekar:1998:6). Some in the Arab world view globalization as "another term for capitalism and imperialism" and that "all Arabs and Muslims need to consider it an imminent danger that is endangering the political, social, cultural and economic stability" (Za'za':2002:1).

Modernization via globalization also affected social relationships, as Beck claims:

> These changes have also generated new forms of individualsation. They affect patterns of interaction dependent upon housing and living arrangements .... Thus traditional forms of community beyond the family are beginning to disappear (Beck:1992:97).

Beck argues that the solution to the "negative consequences of modernity is not the rejection of modernity itself, but its radicalization"(Ibid:1992). As a result, necessary are critical reflections on "modem impacts and their ecological, urban, and social conditions of existence, and hence potentially to seek approaches to change them" (Ibid:1992).

Therefore, the challenge is to work within globalization yet recognize and confront its side effects by being "active participants instead of passive recipients of globalization" (Mahgoub:2004:518). Satler remarks:

> Today feelings about globalization are more sophisticated. Globalization may bring within each regions of cultural difference, but it also threatens those regions with sameness. No global culture can absorb everything. A

[3] The North-South divide is a socio-economic and political division. Global South refers to the nations in Africa, Central and Latin America and most of Asia. Global North refers to the nations in North America and Europe.

> coexistence of diverse philosophies is not only possible but necessary (Satler:2000:22).

The paradigm of the balance between globalization and localization becomes useful in viewing globalization as part of human development that needs to respect the identity of cultures and diversity of humanity. Satler defines globalization differently:

> One that understands the essential need to preserve and respect diversity as well as house seemingly disparate philosophies of space, people, and their interactions with and within the built form. That is an architectural (and social) terrain that one could call global in the deepest sense of the term (Satler:1999:15).

Moreover, this paradigm is also argued by ElSheshtawy asserting that cities that witnessed rapid growth within the last decades are moving towards a model that attempts to balance forces of modernization and change while trying to preserve traditional elements within society (ElSheshtawy:2000). Furthermore, Liangyong states, "that globalization and regionalization are like two sides of a coin and that they are inseparable" (Liangyong: 2000:12).

There seems to be a consensus that globalization is an inevitable reality and one needs to recognize its far-reaching effects all over the world. However, it is also important to understand and accept globalization as another phase of human development. As Madison asserts, "there can be no doubt that globalization will force people the world over to make far-reaching, sometimes even painful, changes in their accustomed ways of doing things. But if the challenges are great, so also are the opportunities" (Madison:1998:20).

3.2.1.3 Impact on the Environment

The making and remaking of globalization in recent decades has only intensified its impact on the natural environment. It cares only for development and not the quality of growth giving little respect for different cultures and traditions (Reid:1995). Moreover, as a

consequence of this development, the construction industry is responsible for over 10% of the world's freshwater withdrawals, 25% of its wood harvest, and 40% of its material and energy flows (Roodman, Lenessen:1996). The extent of the 'global crisis' is evident in many environmental issues within sustainable development:

> Global pollution of atmosphere and oceans; national consumption patterns of fossil fuels contributing to climate change and sea-level rise; fresh water pollution; soil degradation and erosion, chemical pollution from excessive use of fertilizers and pesticides, and soil salinization from improper irrigation (Carley:1994).

The effects of globalization do not stop at the natural environment but provide many challenges for sustainable development more broadly. According to Abel (2000) local sustainable design solutions becomes important in promoting sustainable development around the world. There is a "loss of local control over the economic and cultural forces that presently affect all aspects of the environment" (Abel:2000:198). Therefore, to improve the quality of architecture in relation to the environment, what is needed is more local ability to influence decisions that impact their environment (Ibid:198).

Malaysian architect Ken Yeang has dedicated his life and career to promote environmentally sustainable design. In his book, *Designing with Nature*, Yeang argues that the extent of environmental impact of a built environment is related to the extent of its user requirements. In other words:

> Environmental impact of humans increases when their demands for living conditions go beyond those of a 'simple existence'. The more people depart from a simple pattern of existence, the more complex is the support that they will draw from the environment, and consequently the more they have to plan for and expect environmental impairment (Yeang:1995:46).

The forces of globalization continue to shape the built environment based on a higher standard of living, and therefore, increasing impact on the natural world. Yeang sees

moving to a sustainable approach in design is not only an option but is necessary to secure a healthier future for the generations to come. He believes that architects should follow an 'ecological design' instead of the traditional approach to architecture. Also vital is the "predication of the ecological impacts of any a project becoming an essential factor in all design decisions" (Ibid:52).

3.2.4 Transition to Sustainability

Throughout the last half of the 20th century the thrust of modernity through globalization has contributed to massive environmental degradation. This has been regarded as a universal problem and has the potential to threaten society's existence. An environmental understanding has been vital to slow down this environmental impact and its future consequences on our planet. Thus a concern over environmental issues began that gave rise to a new approach to environment and development, the concepts of sustainability and sustainable development.

Sustainability is a broad term and has many interpretations and meanings for different people. Due to its multi-disciplinary nature it is difficult to have an agreed definition of sustainability. In 1987 the World Commission on Environment and Development (WCED) published "Our Common Future" known as the Brundtland Report. It defined sustainable development as, "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED:1987:43). This definition has become the most accepted and recognized understanding of sustainability. Nonetheless, many authors have presented a more operational definition. Barton describes sustainable development as:

> about maintaining and enhancing the quality of human life…. while living within the carrying capacity of supporting eco-systems and the resource base. Sustainability is about the maintenance of the health of the biosphere and the

> husbanding of key resources of air, water land and minerals. The notion of development in the context of sustainability is broader than economic growth or GNP. It implies improvement to the quality of life, health and nutritional status, equity… (and the) perceived quality of the human environment (Barton et al:1995:8).

Therefore, although developments are vital for a good economy they are only sustainable if designed, constructed and managed with sensitivity and respect towards people and the natural environment.

Some authors highlight that in order to achieve sustainable development it is important to balance environmental capacity and the social and economic needs of society (Farookhi:1998). This balance is commonly discussed when defining sustainable development; an area that attempts to balance human needs with environmental or ecological integrity over time (Forman:1995), to find solutions to challenges by successfully maintaining human welfare and ecological robustness (Barton:2000), where there is an integration between human welfare and the environment instead of traded off against the other (DETR:2000a). Furthermore as the UNEP suggests, local factors need to be taken into account:

> …development at regional and local levels should be consistent with the potential of the area involved, with attention given to the adequate and rational use of the natural resources, and to appreciation of technological styles (innovation and assimilation) and organizational forms that respect the natural ecosystems and local socio-cultural patterns (UNEP:1976:1).

Without a socio-cultural support framework, sustainable development may be a challenge to achieve. People need motives and incentives to think and act sustainably, and therefore, culture may be the answer to promote a more sustainable way of life.

3.2.4.1 Cultural Sustainability

As part of the larger movement of sustainability, cultural sustainability has

increasingly become recognized as another approach to counter the far-reaching effects of modernization and globalization. It is an interdisciplinary concept that aims to promote the significance of culture through sustainable development. Culture is a key dimension in sustainability (Duxbury & Gillette:2007) and it is important to recognize its impact in providing local solutions to global challenges. Moreover, the value in linking cultural and ecological sustainability provides for a better foundation to implement successful sustainable development (Throsby:2008). Some researchers have also used the term 'social' when incorporating notions of 'culture' or cultural issues in society. Gleeson et al asserts that sustainable development "is about the achievement on a global scale of three principles: economic development, social justice and ecological responsibility" (Gleeson et al:2000).

Therefore, in order to understand cultural sustainability, an understanding of the term 'culture' becomes essential. The word is complex and may be interpreted in many different ways. In his paper *The Fourth Pillar of Sustainability*, Hawkes states two inter-related definitions of Culture:

> - the social production and transmission of identities, meanings, knowledge, beliefs, values, aspirations, memories, purposes, attitudes and understanding;
> - the 'way of life' of a particular set of humans: customs, faiths and conventions; codes of manners, dress, cuisine, language, arts, science, technology, religion and rituals; norms and regulations of behaviour, traditions and institutions (Hawkes:2001:3).

His description encompasses a wide range of human behaviour that embodies and expresses the values of a society. These values and aspirations in turn provide tangible and intangible manifestations in the real world (Grogan et al:1995:12). Hawkes argues that it is these values of culture that become crucial in order to drive and reconfigure government policy towards sustainability.

Alongside social, economic and environmental Hawkes calls culture the "fourth pillar of sustainability" (Hawkes:2001). In order to achieve a sustainable and healthy society he suggests that a cultural framework is needed in parallel with social, economic, and environmental frameworks (Ibid:2001). Hawkes explains how it is through society's values that everything is built and is an expression of its culture. Therefore, the 'application of culture' is integral for new paradigms that emphasis sustainability and well being: "without a foundation that expressly includes culture, the new frameworks are bereft of the means of comprehending, let alone implementing, the changes they promote. Culture has to be a separate and 'distinct' reference point" (Ibid:2001).

3.2.5 Towards a Contemporary Vernacular

Until recently, the 'vernacular' has been largely ignored in architectural discourse. Architectural history has been more focused on civilization's monumental buildings designed by architects. In fact, vernacular architecture has been referred to as 'primitive' or 'folk' by researchers in around the middle of the twentieth century (Rapoport:1969, Oliver:1969). The first reference to the word 'vernacular' was in 1861 by J.L. Petit (Collins:1965:122-123) and it has been used very broadly ever since. In architecture the term 'vernacular' came to refer to indigenous or traditional that covers an immense range of building types, forms, traditions, uses and contexts (Oliver:1997). All forms of vernacular are built to meet specific needs, accommodating the values, economies and ways of living of the cultures that produce them (Ibid:1997 and 2003:xxiii). Fathy believed that true vernacular came from a "living tradition" and it was not about style. It was the essence of the traditional that Fathy wanted to revive in buildings through local materials and light construction to bring back quality to the things that were paramount in people's everyday life (Fathy:1973:20).

Rapoport sees vernacular as an environment that has not been controlled by a designer (Rapoport:1969:1). He asserts that, "building a house is a cultural phenomenon, its form and organization are greatly influenced by the cultural milieu to which it belongs"(Ibid:46). However, in later years in his search to redefine the term Rapoport acknowledges that there are many implicit definitions. In his paper *Defining Vernacular Design*, he attempts to redefine vernacular using a scale of three styles within the vernacular that depend on the characteristics of the building, first the vernacular itself, primitive high style, and popular style. (Rapoport:1990:97) In the other hand, Turan understood vernacular architecture as being "a practical activity pursuing environmental adequacy rather than knowledge; it is a way of acting within the conditions of existence, fulfilling certain environmental needs for a particular group of people" (Turan:1990:15).

Richards argues two ways to conceptualize 'vernacular', the first is "descriptive and pragmatic…" which sees architects and anthropologists "who want to understand and preserve vernacular structures for their own aesthetic, historical and technical merits and to find out how they might be adapted for future building practices" (Richards:2012:38). The second is "prescriptive and idealistic" which may be seen in the works of architects, historians, and theorists as "a renewal of Modernist vows in vernacular vestments" (Ibid:38). Richards closely focuses on the second understanding and explores how the "vernacular was being forwarded as an antidote to the perceived wrongs of Modernism"(Ibid:38).

Many early architects of the modern movement acknowledged how vernacular forms may have significance for modern architects. In his *Introduction* of philosophy of architecture Frank Lloyd Wright argued to learn the "spiritual lessons that the East has to teach the West" (Wright:1941:62). Le Corbusier was fascinated by the vernacular mud bricks houses of Algeria. He described them as "a centre of happiness, of

serenity…founded upon the solid rock of fundamental truth. This city exists to serve mankind, to serve both body and soul" (LeCorbusier:1947:135-6). Other architects such as Alvaro Siza and Jorn Utzon also used culture in varying degrees to produce contemporary expressions.

Today with the constant shaping and making of the built environment comes the urge to preserve the local in a more globalized world, and thus, the beginning of new vernacular expressions. The challenge is to make a 'new or contemporary vernacular architecture' which is as Richardson puts it, "to reflect by analogous inspiration the characteristics of local buildings, their scale in particular… to concentrate on the use of materials, the landscape, the local culture or even no more than the idea of continuity with past" (Richardson:2001). A contemporary vernacular is described as a "commitment to uncover a particular tradition's unique responses to spatial arrangements, place and climate and thereafter exteriorize these established and symbolic identities into creative forms" (Lim:2004:19).

In his book *Architecture Without Architects*, Rudofsky advocated understanding and learning from vernacular societies that may revive "the art of living in buildings" (Rudofsky:1964:25-29). Rudofsky suggested that the insights architects gain from non-architect-designed or vernacular landscapes might guide them to lead a movement for new designs (Ibid:1964). In fact, it has been suggested that the preservation of tradition and specifically residential form may also be essential for the preservation of cultures (Alexander et al:1969). This is further evident with Pearson, he writes:

> Much misunderstanding of the past stems from our lack of information, so many indigenous cultures and traditions have disappeared from the link with knowledge and values formally passed down from generation to generation has been broken. The demise of vernacular building is part of this general process (Pearson:1994:96).

Furthermore, Paul Oliver's paper *Vernacular Know-How* highlights the effects of modernization and specifically how it relates to vernacular buildings. He stresses that:

> We have witnessed the thoughtless destruction of many traditional buildings, the censure of architects and planners who wish to "modernize" and who are wedded to the idea that Western building forms and technology are applicable in all climates and cultures. We know that inappropriate housing has been mindlessly inflicted upon countless numbers of people in the name of modernity, and we are all too aware that traditional skills are in decline, that Western building types reflect status, and that vernacular architecture in the eyes of many, is 'backward' and 'underdeveloped' (Oliver:1990:159).

The effects of modernization and globalization evident throughout built environments around the world are taking local societies away from their vernacular expression and sustainable living. However, there are an increasing number of architects worldwide that are committed to a cultural and environmental response within their local contexts. It is a response that aims to balance the natural environment, cultural significance and the ever changing social and economic needs of society. Before discussing examples of contemporary architects and their work, the sections below intend to highlight the various understandings and contemporary vernacular directions as it relates to domestic architecture.

3.2.5.1 Socio-Cultural Understandings

Social symbolism of house form has been examined by numerous researchers. One of which was Amos Rapoport known for his work in culture and theory most highlighted by his 1969 book *House Form and Culture*. He understands house form and culture as primarily "a socio-cultural determinism of architectural form" (Rapoport:1969:10). He explains that houses "provide the best way of relating the whole system of house, settlement, landscape, and monumental buildings to the way of life" (Ibid:10). Also that the act of building a house is a "cultural phenomenon" and the socio-cultural forces are

considered primary in shaping house form, whereas climate, construction materials, methods, and technologies are secondary (Ibid:9:47). Rapoport illustrates this clearly by the following:

> Given a certain climate, the availability of certain materials, and the constraints and capabilities of a given level of technology, what finally decides the form of a dwelling, and moulds the spaces and their relationships, is the vision that people have of the ideal life. The environment sought reflects many socio-cultural forces, including religious beliefs, family and clan structure, social organization, way of gaining a livelihood, and social relations between individuals. This is why solutions are much more varied than biological needs, technical devices, and climatic conditions, and also why one aspect may be more dominant in one culture than it is in others. Buildings and settlements are the visible expression of the relative importance attached to different aspects of life and the various ways of perceiving reality (Ibid:47).

Despite Rapoport giving primacy to socio-cultural factors he does not exclude other aspects. In vernacular architecture, cultural and environmental factors are seen to merge as one, manifested in traditional vernacular elements. For example, in the Middle-East the courtyard meets the culture's need for privacy and is also a direct response for the harsh desert climate. Similarly, the verandahs and large windows in the Australian house is a translation of people's desire to 'connect with nature' as well as an environmental solution for ventilation. It is true that socio-cultural aspects are important, however, the final house form is influenced by both culture and the environment equally. Moreover, Rapoport's understanding of how "cultural determinants" shape domestic form is not analytically explained or methodologically explored.

Appleyard sees the home as a symbol that conveys and expresses identity, and buildings are seen to "carry social messages…for their creators, owners and neighbors, about who they are" (Appleyard:1979:4). While social symbolism has been referred to, the

reasons behind symbolic use of architectural elements have not been clarified. Tognoli (1987) highlights that the research direction is towards a more socio-cultural understandings of the house. He suggests that the home environment is more than just physical place, "in fact research on home shows a de-emphasis on the physical and special, and a reliance on social, cognitive, cultural, and behavioural issues that emphasize home as a security, comfort, and symbol of a place of departure and return"(Tognoli:1987:655).

3.2.5.2 Identity

Culture has also been very much associated with identity. The concept of identity expresses who people are and how they see themselves. In UNESCO'S declaration of cultural rights they state:

> [C]ultural identity applies to all cultural references through which individuals or groups define or express themselves and by which they wish to be recognised; cultural identity embraces the liberties inherent to human dignity and brings together, in a permanent process, cultural diversity, the particular and the universal, memory and aspiration (UNESCO:1996).

Cultural identity is therefore an expression of who people are, and it is by recognizing these differences that one may embrace the diversity of humanity. Many have recognized the value of identity in architecture. Identity can be rooted in an interpretation of a culture and it's self-expression, it can also give a sense of meaning for a place. "Architecture of identity" rivals "architecture as space" and "architecture as language" as one of the principle themes in architectural discourse (Abel:2000:141).

There are many examples in which people seek to explore identity in their dwellings. Rapaport argues for, "open-ended" design in housing to enable homeowners to take an effective part in designing their living spaces (Rapaport:1968). Similarly, John Turner asserts that self-built housing provides opportunities for expressions of personal and social identity (Turner:1976). Norberg-Schulz understands the relation of man to place is

more than simply a matter of being able to orientate oneself to one's surroundings but has to do with a much deeper process of identification. In defining the purpose of architecture he states:

> The basic act of architecture is therefore to understand the 'vocation' of a place. In this way we protect the earth and become ourselves part of a comprehensive totality. What is advocated here is not some kind of environmental determinism. We only recognize that man is an integral part of the environment, and that it can only lead to human allientation and environmental disruption if he forgets that. To belong to a place means to have an existential foothold, in a concrete everyday sense (Norberg-Schulz:1980:23).

When a cultural identity is disconnected from its past it starts to search for a new form of self-expression. Its journey towards a new understanding of 'the self' may be understood through the constant changing of architectural landscapes. Perhaps in finding a new expression for a culture's identity it may use meanings from it's past to address future concerns. Abel states:

> We do not have architecture, therefore, but rather, a part of us is architecture. Architecture is a way of being, just as science, art, and the other major culture-forms are ways of being. So when we come to define the true and deeper functions of architecture, we will not be simply describing the production of a certain type of artifact, but explaining one of the original ways in which we know ourselves (Abel:2000:150).

Abel's statement views architecture as a reflection of a culture and its people, and therefore, is a manifestation of their identity and self-expression.

3.2.5.3 Regionalism and Critical Regionalism

The term "Critical Regionalism" has been used by Alexander Tzonis and Liane Lefavire (1981) and by Kenneth Frampton (1985) to describe a contemporary architecture that is between internationalism and traditionalism. It has attempted to "put back in

architecture what modernism took out, continuity in a given place between past and present forms of building" (Abel:2000:163). In his book *Architecture and Identity*, Chris Abel sees regionalism as having special meaning in the 'Global South' where the effects of modernism and rapid development have been most evident. In describing the challenges that face new design initiatives Abel writes that the "business of deciding what does or does not belong in their region acquires political and emotional dimensions that smack of a basic struggle for cultural survival, frequently couched in the plaintive terms of a 'search for identity'"(Abel:2000:163).

The approach has been viewed as an alternative to postmodernism and:

> is interested in specific elements from the region, those that have acted as agent of contact and community, the place-defining elements, and incorporates them 'strangely', rather than familiarly, it makes them appear strange, distant, difficult even disturbing. It disrupts the sentimental 'embracing' between buildings and their consumers and instead makes an attempt at 'pricing the conscience'…A critical approach reintroduces 'meaning' in addition to 'feeling' in people's view of the world (Lafaivre et al:2001:9).

For Alexander Tzonis and Liane Lefavire it is not about style but a different approach for architecture that leads design to respond to specific regions. Furthermore, Frampton's interpretation of regionalism is more associated with relationships of a building to its site and location. For Frampton, "the fundamental strategy of Critical Regionalism is to mediate the impact of universal civilization with elements derived indirectly from the peculiarities of a particular place" (Frampton:1985:20).

Although the concept provides an approach of using the local in an architectural expression it has been challenged by many critics. "In modern societies these regional differences are largely obliterated, or as I would add, hybirdised" (Lim:2004). In further explaining this, Mahgoub writes, "It overlooks fundamental differences and neglects

important factors underlying the postcolonial developments of architecture in these countries and superimposes a rather static and narrow notion of local versus universal, traditional versus modern concepts" (Mahgoub:2007:170). Furthermore, as an analytical approach has been suggested that it fails to capture the essence of local architecture (Tzonis et al:2003).

3.2.6 Using Vernacular as Precedent for Sustainable Design

New or contemporary vernacular architects such as Hassan Fathy (1986), Charles Correa (1991), and Adrian Welke and Phil Harris (1980) all use culture as a basis for sustainable design. Although from different and diverse regions of the world these architects share a similar visions that attempt to translate cultural understandings with environmental sensitivity producing a contemporary vernacular.

The challenge for designers is to maintain 'balance' between the environment, culture, and socio-economic needs of society. Therefore, the logical question to ask is what are the limitations of using vernacular precedents in sustainable development? Although many 'contemporary vernacular designers' use traditional elements, everyone has a different approach in their application. Also there is little research to examine the barriers and facilitators to using these elements in today's built environment. Therefore, examining precedent case studies of architects that design with a cultural and environmentally awareness may further illuminate directions to promote a contemporary vernacular. Hassan Fathy and Frank Lloyd Wright, for example, used local materials and crafts to produce a contemporary architecture out of regional building traditions. The upcoming sections will examine the works of architect Hassan Fathy giving insight in his approach towards a contemporary vernacular. It will also briefly discuss architect Charles Correa and architects Adrian Welke and Phil Harris.

3.2.6.1 Contemporary Vernacular Architects

3.2.6.1.1 Hassan Fathy

The late renowned architect Hassan Fathy revived local vernacular architecture through the use of traditional elements and local materials. Fathy advocated the importance of not only maintaining cultural traditions, but also society's responsibility to bridge the gap between the old and new to shape a new form of architecture. Since his death in 1989 his influence has been felt internationally for sustainable methods and the responsible use of natural materials. Fathy has also been very critical of the forces of development that undermines local culture and traditions. He describes the side effects of modernization as follows:

> With the advent of the industrial revolution, the inherited techniques and perfected knowledge of creating, using handmade tools, were lost and are now forgotten. Energy-intensive mechanized tools have diminished man's personal, cellular contribution to the fabrications of objects, the building of structures, and the growing of food. The lesser the challenge for man to imprint his genius, the less artistic is the product (Fathy:1986:xix).

Fathy reflects on the negative consequences of how the industrial revolution and consequent modernization. He argues that industrially developed societies have weakened the craft developed societies through increased communication (Ibid:xx) or as it is more known today – globalization.

In his book *Architecture for the People* James Steele presented the complete works of Hassan Fathy. Steele sees Fathy's work as having a "complex duality" of eastern and western influences, and contradictions between them (Steele:1997:6). He states, "Fathy respected and admired European traditions and on the other he resented them as part of a colonial legacy that threatened Egypt's identity" (Ibid:6). He has also been known for being

the first to stand up against the many effects of modernization and that in fact is “his most important and enduring legacy” (Ibid:187).

It is said that one critique of Fathy's designs is that they, “incorporate the view of an easterner looking at his own culture through western eyes and interpreting it as he though an easterner should” (Ibid:6). In the contrary, Fathy's designs reflect not only local culture but also use of traditional methods promoting sustainable living. It is this application of building techniques with local materials that made his work unique. His works are known to have represented a “silent dialogue between tradition and modernity” in the making.

> There are six fundamental principles that underlie Hassan Fathy’s work:
>
> 1.Belief in the primacy of human values in architecture, 2.Importance of a universal rather than a limited approach, 3.Use of appropriate technology, 4.Need for socially oriented, cooperative construction techniques, 5.The essential role of tradition, 6.The re-establishment of national cultural pride through the act of building (Steele1997:16).

Fathy's first principle of fundamental humanism has “anticipated many concerns about the destruction of the environment” (Ibid:16). For his time Fathy set himself apart from other architects by giving great importance to each individual regardless of their social or economic status instead of reducing building users to “anonymous ciphers” (Ibid:16). An example of this is presented through his design of the village of New Gourna intended for seven thousand people. In this project Fathy insisted on the custom design of each house in the settlement and, as a result, the project identified him “with a deep concern for the plight of the homeless throughout the world” (Ibid:16).

In his fifth principle Fathy highlights the importance of tradition in architecture. This is clearly illustrated in his work and specifically through the use of local vernacular elements such as the courtyard. It is a clear example of a vernacular element that has both socio-cultural and environmental value. Therefore, examining its use may inform directions

for its integration in future residential built environments. Alongside traditional vernacular elements Fathy also supported the use of local materials. He used adobe in most if not all of his designs.

In his uncompleted village at New Gourna in Egypt, Fathy combined traditional Egyptian mud brick construction with old Nubian arch building techniques. He created a new architectural vocabulary that meets the needs of the present with respect to culture and sensitivity to the environment. What made this project different is that despite it being a large public housing village, attention was given to each homeowner by allowing creative expression through customizing parts of their house. Another example, which also used adobe design is the Dar-Al-Islam village. This project is a religious and educational community that was originally intended for 100 families, as a model for others housing throughout the United States. In the deserts of the Middle-East or the South-West, Hassan Fathy always maintained a delicate balance between architecture, culture, and the environment. His works present an understanding and gives direction to how one is able to revive culture in architecture through the reintroduction of local vernacular and materials.

3.2.7.1.2 Charles Correa

Correa, an Indian architect, is noted for the use of traditional methods and materials in his works. He is also known for his sensitivity to suit the many socio-economic realities in India. Correa's works highlights the importance of using original cultural inspiration in architecture. He states, “Architecture based on the superficial transfer of images from another culture or another age cannot survive; architecture must be generated from the transformation of those images, that is by expressing new mythic beliefs that underlies those images” (Correa:1991:95). Correa aimed to reshape India's architectural image with reference to local cultural and environmental factors contributing to a new architecture

language for India after independence. He often promoted designs inspired by local vernacular and questioned current understandings of architecture:

> When one looks at the indigenous life-styles and built form topologies prevalent all over India, one wonders: in our warm climate, must a family's essential activities (cooking, sleeping, entertaining friends) really take place within the four walls of a room? Could they not occur in verandas and terraces and courtyards? (Correa:1989:7).

In residential designs, he developed the "tube house", a narrow house form aimed to conserve energy. This house form was realized in 1964 in the Ramkrishna House and in 1968 in Ahmedabad, which has a hot and arid climate. In addition, another method of responding to climate was when he employed a large oversailing shade roof, an element first seen in 1968 in the Engineering Consultant India Limited complex in Hyderabad.

3.2.7.1.3 Adrian Welke and Phil Harris

In the early 1980's Welke and Harris founded the Australian firm Troppo Architects. They are one of the first Australian architecture firms who suggested "a reappraisal of vernacular design as a source for inspiration for contemporary architectural forms appropriate to climate, place, people and history" (Quattrone:2006:231). Welke states, "if we are going to be successful architects we need to be about understanding a place and the climate and the people and the history, all of those bound together, to put together some sort of sustainable…building process…" (Welke:199). The idea of minimal modification of the site, using available materials and climate responsive building typology has made Troppo develop architecture as a functional and economic response to a precise need.

They aimed to respond to the region's climate and express the "Australian feeling of connectedness to the landscape" (Quattrone:2006:232). For them a house was:

> A minimal house which shelters rather than encloses, disregards architectural composition, blurs the physical boundaries between inside and outside through the verandah, the most outstanding architectural element of the Australian house, in that allowing man to participate in the environment (Ibid:232).

Like Fathy, their architectural practice has founded their design philosophy on a set of thematic constants, which for them are guidelines in approaching environmental design in Australia. However, they also represent an evolving set of architectural themes that include practical suggestions, responses to site/culture and phenomenological models (Ibid:233). This open-ended flexible approach may provide opportunity to have the freedom and flexibility needed in some projects but it also suggests a very local approach limited to Australia.

3.3 Regional Discussions

3.3.1 Regional Discussions and Initiatives on Sustainability

"In its earlier attempts to catch up with modernity, the Arab city has lost, whether intentionally or unintentionally, its local image." Omar Khattab from Kuwait University continues by asserting that, "architectural development followed international trends without addressing the Arab tradition, resulting in a loss of identity and a separation between the Arab city's past and present, as well as a concern for its future" (Khattab:2001:56). This rupture has taken away the integration of beautiful simplicity of Islamic form and intricate geometric patterns in the built environment. Also gone was years of cultural and environmental sustainability manifested through the cities maze of alleys and courtyard houses. The bagdirs, mashrabiyas (a type of projecting oriel window) and its mud brick constructions. What it lost was its traditional vernacular expression.

In Kuwait, despite the recognition by many architects to create a new vernacular form, no significant changes have been made to date. There seems to be a lack of research to further understand this phenomenon, and therefore, find ways to overcome any obstacles to assimilate the old with new. Similar desires are evident throughout the Arab world. These phenomena have produced a clash of styles in the built environment with no clear cultural identity and environmentally unsustainable structures. Khattab sees that there are two emerging styles in Kuwait. He remarks:

> Recognition and acknowledgment of tradition can take the form of interpreting the essence, in the meaning and function, of certain elements of architectural heritage and abstracting them in modern designs. It can also take the form of reusing, or recreating, some of these architectural elements in a contemporary design to convey a traditional image (Ibid:56).

Khattab recognizes the need to use traditional elements and describes how they may be used today. However, there is a growing consensus among designers that advocate an understanding of these elements and their application needs to go beyond abstraction or to reflect a only a traditional image. These elements represent the harmony and coming together of cultural and environmental conditions in old Kuwait City. The idea is not to replicate the past but learn from it and enhance these elements through new technologies to express a new form of contemporary vernacular.

In Saudi Arabia, many architects have highlighted the effects of rapid development and modernization. AlHemaidi (2001) study highlighted the metamorphosis of Riyadh's urban fabric. He argues how imported forms and regulations did not relate to the built environment, culture, and climate, which in turn resulted in significant cultural issues (AlHemaidi:2001). AlNaim sees architects' increasing awareness of cultural issues as a form of "Cultural Resistance" (AlNaim:2005:96). In his book *Architecture and Culture: Critical Studies of Arab Architecture* AlNaim argues that the rapid urbanization in the Arab

world has produced two main divisions, “while the first group rejects historical heritage, the second considers the past as the only valid evidence that should be considered to shape the present. They both accept the use of technology as a necessity that cannot be avoided” (Ibid:105).

Saleh also from Saudi Arabia presented a study that analysed integration of tradition and modernity. He asserts that climatic, social, topographic and economic aspects are all important factors to create a regionalism (Saleh:1998). This further reveals the need to not clash but merge various environmental social and economic frameworks to achieve a successful contemporary vernacular. In Oman, Taylor et al studied environmental advantages of vernacular architecture for contemporary design. They highlighted how traditional passive cooling techniques in contemporary buildings presents a significant opportunity for energy savings (Taylor et al:2009).

In the U.A.E many initiatives are underway to use sustainable design as means to improve people's quality of life. The Estidama (which means sustainability in Arabic) Guidelines in Abu Dhabi have contributed to discussion of how to create more sustainable communities, cities, and global enterprises (AlSallal et al:2012:80). A manifestation of this policy is Masder City, an eco-city that brings together green companies from around the world to collaborate on the advancement and innovation of green technologies. In Dubai, the Dubai Municipality recently made it mandatory for private sector buildings to follow their new Green Building Regulations. The purpose of the regulations is:

> To improve the performance of buildings in Dubai by reducing the consumption of energy, water and materials, improving public health, safety and general welfare and by enhancing the planning, design, construction and operation of buildings to create an excellent city that provides the essence of success and comfort of living (GBRS:2014).

These regional initiatives by the U.A.E are one of the first that requires all buildings to follow green regulation and may become a model for the region and world.

In another front, researchers in the U.A.E University of AlAin presented a recent 2012 study with a holistic approach to designing a sustainable house in the desert of Abu Dhabi. “The design achieved considerable improvement over the typical Emirati house case; 59% reduction in the greenhouse gas emissions and the utility bill” (AlSallal et al :2012:84). Although commended on their study, the researchers focused mainly on the environmental efficiency of the building. However, essential also is an understanding of people's attitudes and perceptions about a sustainable house. These understandings may provide insight into potential barriers and facilitators for a sustainable house, which may inform designers to design and construct such endeavours in the real world.

The effects of modernity on traditional form continue to have a tremendous impact on the architecture of the Middle-East, highlighted by the disruption of continuity between past and present built environments. With the economic explosion of the oil boom the push towards free trade and globalization created a higher standard of living bringing with it the fading of local cultural identity and the threat of a rapid erosion of tradition, values and environmental sensitivity.

3.3.2 Studies on Kuwait

Within the last 30 years there has been a handful of studies on topics relating to Kuwait’s built environment and within that group very few on sustainability. One of the earliest was Shiber’s (1964) documentation and critique of Kuwait’s early planning and development years. The collection of essays depicted the dramatic chain of events that shaped Kuwait’s urbanization. Although Shiber worked as a consultant for the Kuwaiti government at the time and was critical of the demolition of Kuwait’s traditional urban

fabric, he stood helpless from the overwhelming forces of the transformation. In (1988) Abdo's thesis investigated the urbanization of Kuwait since 1950, a documentation of the making of urban Kuwait during its modern era by specifically examining the urbanization process through master plans, public policy, economic, and demographic issues. Abdo concluded that decades of planning has not created a poor nor ideal built environment, instead it has been an "outcome of a combination of dynamic and unpredictable forces, public policy considerations and changes, and certain constraints on planning" (Abdo:1988).

Over the years there has been a series of studies that focused on Kuwait's changing domestic built environments. Ebrahim (1982) studied Kuwait's urban geography where he investigated traditional Islamic and Arabic houses alongside its modern counterpart. The study revealed designers' disregard for climatic conditions in modern houses evident in their use of large glass windows and vast external verandas (Ebrahim:1982). Whereas AlMunayies (1985) investigated the influence of socio-economic factors on housing in Kuwait, which suggests reasons why the modern villa has overtaken the traditional courtyard house. One explanation was due to Kuwaitis 'opening up' to the outside world, which changed the concept of the house from a place for security and shelter into one of luxury and comfort (AlMunayies:1985). AlMutawa (1994) in the other hand explored the side effects of modern house designs in Kuwait. He argued that they did not provide enough privacy for women and did not allow enough segregated areas between the two genders. Moreover, the houses did not reflect an environmentally sensitive approach with poor orientation, had large windows, and use of verandas all of which resulted in over exposure to the sun and were vulnerable to dust storms (AlMutawa:1994).

AlBahar's comprehensive thesis (1990) was an empirical and theoretical study of the evolution of Kuwait's domestic architecture. She also examined changes from the

traditional to the modern house in the context of the socio-cultural, economic, political, and technological transformations of Kuwait. AlBahar's empirical work presented a spatial analysis using space syntax of Kuwaiti houses in relation to time, and in the context of socio-cultural evolution. The study argues that Kuwait's oil boom has created a "complete physical and socio-cultural discontinuity with the past" (AlBahar:1990:421).

AlAzmi's (2000) study through the Centre for Research and Studies on Kuwait looked at factors that contributed to changing the house type from traditional to modern. Among other factors the findings highlights the effects of globalization, after the oil boom and consequent modernization there has been an influx of immigrants with an array of cultural backgrounds, which contributed to different architecture styles from around the world. It also discusses the beginnings of new socio-economic issues such as high real estate prices that effect housing trends (AlAzmi:2000). AlSanafi (2001) examined the influence of socio economic changes on house design in Kuwait. It explored homeowners, architects, and religious scholars understandings of traditional and modern housing and while her findings revealed people's recognition of the benefits of modern housing, which improved their quality and standard of living, they were also sceptical about some aspects of the Western inspired modern housing design in Kuwait. The modern villa did not relate well with the climate and long established socio-cultural traditions (AlSanafi:2001).

In recent years there has been significantly more studies on Kuwait's built environment. One reason for this is due to the establishment of the Department of Architecture (1997) and later College of Architecture (2012) in Kuwait University. AlMumin's thesis (1995) investigated the "thermal performance prediction of shaded sunken courtyard buildings in hot and arid climates"(AlMumin:1995). In (2008) AlRagam's thesis was a critique of an architectural *Nahdha* or Awakening, which is mostly a theoretical study and analyses the phenomenon of Kuwait's modern transformation. It

highlights various social and political conditions that necessitate symbolic and pragmatic spatial transformations. AlBaqshi thesis (2010) continues this line of inquiry in a theoretical examination of Kuwait's architectural spatial history through the social production of space. His study attempts to link Kuwait's social production of space with its modernization tracing chronologically the various phases that gave birth to modern architecture in Kuwait.

AlAjmi's thesis (2009) was a historical examination of the evolution of Kuwaiti traditional architecture prior to the discovery of oil. His study sheds light on the mechanisms that produced a specific and distinction architecture in Old Kuwait. It also discuses how architectural meaning changed under different social and cultural settings (AlAjmi:2009). AlNakib's recent thesis (2011) also contributes in filling the gap in the documentation of Kuwait's architectural history. Her historical investigation of Kuwait City, its urbanization, built environment, and the urban experience before and after oil examines the changing political and socio-economic forces that drove processes of urbanization before and after oil, and the impact of these forces on the built environment and the urban experience of the city's inhabitants (AlNakib:2011).

In (2009) AlJassar's dissertation studied constancy and change in contemporary Kuwait City examining "socio-cultural dimensions of the Kuwaiti Courtyard and Diwaniya". The study used interviews to see how various socio-cultural dynamics reshaped the Kuwaiti house revealing various understandings into the disappearance of the courtyard and persistence of the Diwaniya. AlJassar asserts that drastic changes in Kuwait's built environment were not only a result of increase of wealth from the discovery of oil but from various socio-cultural factors that helped accelerate the process. Moreover, his findings indicate that social and cultural fabrics have not been victims of the transformation; in fact they have been instrumental in the process of change (AlJassar:2009:217).

There have been no known studies on Kuwait's built environment that examine issues within the context of cultural and environmental sustainability. However, the few studies that do cover sustainability are various environmental and ecological investigations with regards to policy frameworks. One such study was Ali Khuraibet's thesis (1990), which examined the potential role of environment impact assessment (E.I.A) at the project and policy levels in order to achieve sustainable development in Kuwait. Khuraibet argues that decision-making is responsible for many of the environmental problems that now exist. His study conducted a series of case studies and evaluations and suggests that the Environmental Impact Assessment (E.I.A) may be the most effective environmental management to help protect Kuwait's environment and achieve the concept of sustainable development (Khuraibet:1990). Another study was Faten AlAtar's thesis (1997) intended to formulate and find ways to implement Sustainable Development Strategies (S.D.S) in Kuwait. She examines different strategies and asserts that formulating an effective S.D.S is a key approach to achieve sustainability, which in turn requires committed leadership (AlAtar:1997). These studies highlight the key role of decision-making and how without it achieving sustainable development will be difficult.

These research endeavours have been a great first step in contributing to the knowledge of understanding the effects of development before and after the oil boom on Kuwait and its people. However, little has been done to move to the second step, which is to explore possible solutions for the many socio-cultural, economic, and environmental challenges that came with modernity. Therefore, the present study intends to gain deeper insights into the wider effects of modernity by understanding people attitudes and perceptions of the traditional in a contemporary domestic context. Perhaps exploring the potential for using the past as precedent for the present one is able to inform future sustainable development.

3.4 Conclusion

3.4.1 Critical Position

The oil boom was an opportunity for change and not all for the better. Globalization and development transformed desert areas that used courtyards as cooling strategies into building rectangular boxes with air conditioning systems. Instead of sustainable materials or the cooling nature of the badgir, people turned to technology to solve their problems. Some see technology as a form of luxury; they have air conditioning and do not need a courtyard or bagdir anymore for natural ventilation. With money, people wanted something different that did not remind them of the poorer days; this difference is not always better.

Today some designers use the bagdir only as an aesthetic element with no regard to its function. Clear in the writings of many contemporary vernacular architects is the concept of originality and a warning not to replicate or mimic vernacular elements in a new building without understanding the inner logic, dynamics, and relationships of their meaning. Therefore, the bagdir need not be used only as an aesthetic element but as a true natural cooling device using the latest technology. The bagdir's conventional alternative is air conditioning, which not only takes up space; it also uses excessive electric energy and releases gases that contribute to global warming. In fact, Fathy argues that using air conditioning instead of traditional vernacular elements has caused a vacuum in the culture. Disruptions of the balance between people and their environment may have a detrimental effect on their way of living (Fathy:1986:xxi). Not using this as a functional element is therefore, a wasted opportunity that could have lead to innovation in environmental design.

Similarly, the mashrabiya has many socio-cultural and environmental functions. Not only does it provide privacy, cut down glare, and allow natural ventilation but also has hygroscopic properties (the wood retains humidity of the air that passes through them)

(Steele:1997). Why do designers today often only focus on the mashrabiya's aesthetic features and neglect its other qualities? In fact people do not use mashrabiyas as they once did.

Moreover, courtyards have always been important for many cultures. One reason that may explain people's attachment to the courtyard is their deep-rooted cultural association that expresses who they are and where they came from. Prior research has showed its environmental benefits specifically acting as a microclimate moderating nature's extremes. If the courtyard holds many positive qualities, then why is it not used as it once was covering the urban fabric?

In every level traditional vernacular elements prove, as Fathy states, that "culture is the unique human response of man to his environment in his attempt to answer both physical and spiritual needs" (Fathy:1986:85). The vernacular of any given region provides rich precedent for knowledge, and therefore, taking inspiration from the past is necessary to direct people's sustainable aspirations for the future. Hawkes argues that its more productive, "to concentrate on ensuring that the cultural manifestations in a community have a direct relationship with the culture of that community" (Hawkes:2001:15). Kuwait's 'post oil' transformation created disunity between it's past and present built environments, and as a result, the "cultural manifestations" (or traditional vernacular elements) as discussed by Hawkes have disappeared and lost their relationship with Kuwait's culture. The idea is not to replicate the past but learn from it by revisiting the principles behind the traditional vernacular. "What appears to be needed is an appraisal of the conditions under which the traditional solutions are technically, environmentally, socially and economically valid, so that use can be made of this knowledge in appropriate situations" (Fathy:1986:17).

This study intends to use Kuwait's traditional vernacular elements as the 'traditional solutions' regarded by Fathy. These elements will be used as a vehicle to explore the socio-

cultural, economic, and political issues surrounding the move towards modernity and away from the vernacular and sustainability. In turn these understandings will reveal the potential applications of these elements and may provide a step forward for a new contemporary vernacular expression by empowering local communities to overcome the challenges of modernization and globalization highlighted by the world's ecological crisis and loss of cultural identity.

The forces of globalization continue to impact the built environment and a transition to a more sustainable approach has now more than ever become even more important to elevate people's quality of life. The literature reviewed suggests that success for sustainable design comes with the recognition of a culturally sensitive approach. It is by allowing local expression that addresses cultural needs and responds to climate that a contemporary vernacular may be possible. This chapter presented a theoretical framework for this understanding and intends to work in parallel with empirical research to inform direction to learn from and explore the potential use of traditional vernacular elements in the contemporary Kuwaiti house.

Chapter 4: Methodology and Methods

4.1 Introduction

This chapter will discuss the study's methodology and specifically the reasoning behind using mixed methods. But first it is essential to acknowledge the relationship between the study's theoretical framework presented through the literature review, methodology, and findings. In summary, the literature review examined the many challenges that face the built environment in a constantly changing globalized world. It also discussed understandings of the various forces that contributed to the disappearance of traditional vernacular elements and presented successful precedents for their revival in a contemporary context. Thus, the role of culture becomes even more paramount in promoting local sustainable architecture. To explore this complex social phenomenon in Kuwait, the study intends to use more than one method. As all social phenomena are multifaceted with different layers of meaning, a variety of approaches enable an exploration of their complexity. In turn, the findings intend to relate back to the literature review and address future research. This concept is represented through (figure 4.1) a diagram of the research process.

The chapter is divided into two main sections; the first will cover methodology and rationale behind mixed methods while the second will describe the methods. It will first present the rationale and then review the theory of mixed methods and pay particular attention to a qualitatively driven approach to mixed method research. The following sections explain the specific mixed method design. Subsequently, a preview of the methods used via workshops, participant selection, and piloting will be described while detailed explanations of each method will be presented in chapters 5-8.

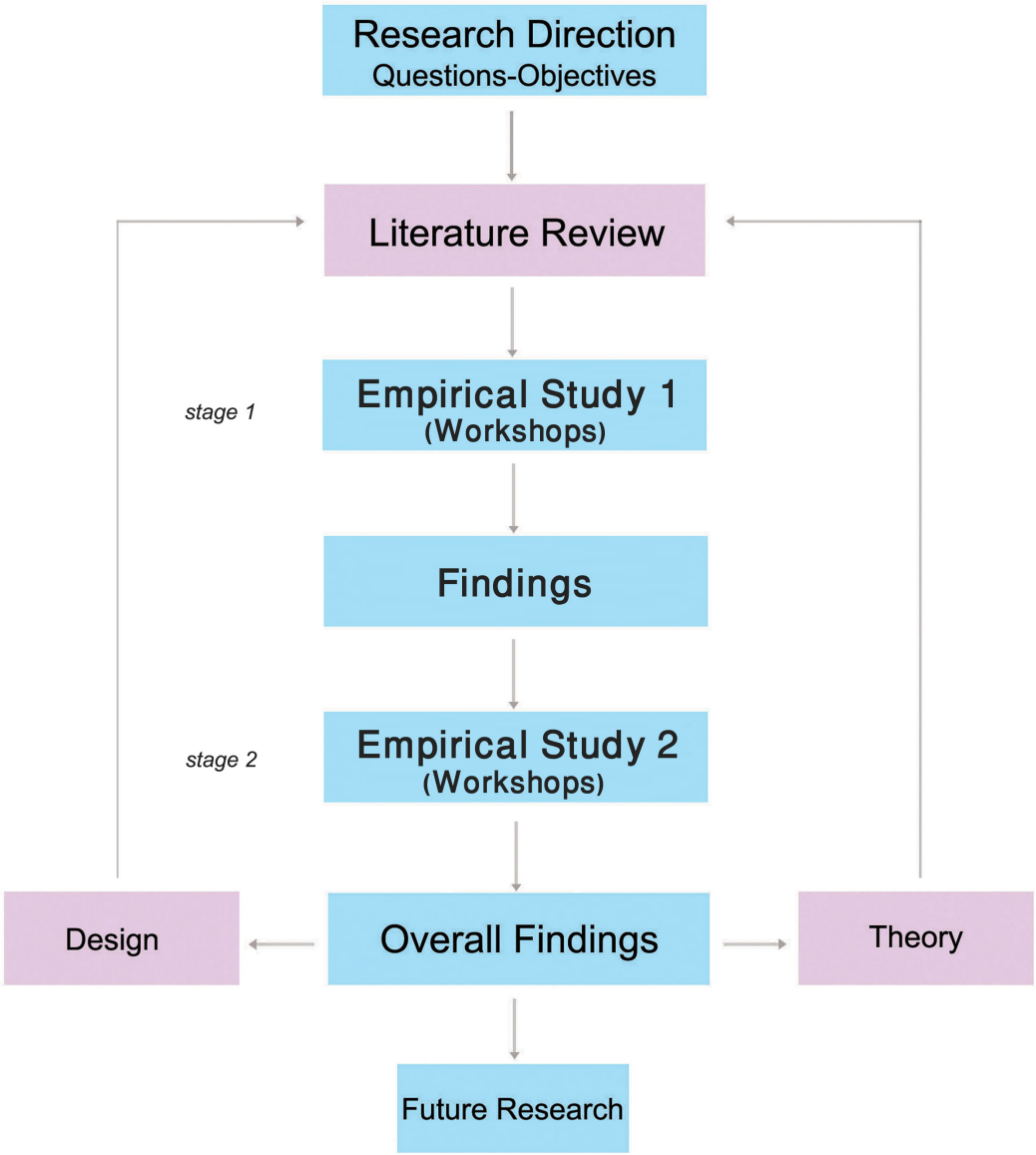


Figure 4.1: A diagram of the research process. It clearly illustrates the study's path using two empirical stages with an overall sequential strategy. The diagram also highlights how the findings relate back to the literature review and address future research. **Source:** The Author, 2014.

4.2 Rationale for using Mixed Methods

In order to address the research questions and objectives, several research methods are required to understand people's perceptions of their house and the potential drawing for traditional vernacular elements. Specifically, the approach combines various qualitative methods with embedded quantitative components. The specific justification for using each method will be described in chapters 5-8, however the reasons for mixing them will be explored here. In a 2007 report O'Cathain et al reviewed interviews with researchers who conducted mixed method studies and stated only a third of the researchers provided a reason why they did that study. They found that the main justification for using a combined approach was to enhance comprehensiveness of the study and by using a broad range of questions they are able to understand the complexity of the phenomenon (O'Cathain et al:2007).

As discussed there are many motives for using mixed methods when investigating social phenomena. The primary reason for conducting mixed methods for this study is to gain a comprehensive understanding of people's attitudes and perceptions regarding tradition vs. modern through Kuwait's traditional vernacular elements and their potential contemporary applications. Furthermore, a key advantage of mixing methods is to explore the similarities and differences within each method and between methods. It is through these issues that contradictions may arise. An advantage of mixed method research is that it does not always yield similar results. These differences are part of the attraction for using a combination of methods providing an opportunity to find new insights in understanding cultural and social phenomena. In fact it has been argued that one of the aims of mixed methodologies should be to allow for the expression of contradictory views (Branmen:1992).

In order to do this the study seeks to use the following five purposes of mixed methods studies derived from Greene, Caracelli and Graham's (1989) framework:

1. *Triangulation:* seeking convergence and corroboration of findings from different methods that study the same phenomenon.
2. *Complementarity:* seeking elaboration, illustration, enhancement, and clarification of the results from one method with results from the other method
3. *Initiation:* discovering paradoxes and contradictions that lead to a re-framing of the research question/questions.
4. *Development:* using the results from one method to help inform the other method.
5. *Expansion:* seeking to expand the breadth and range of the investigation by using different methods for different inquiry components. (Greene:1989)

The study's exploratory and inductive direction naturally leads to an emphasis of a qualitative research approach. Qualitative research methods use many forms of explorations; "open-ended, evolving, and non-directional" (Creswell:1998:99). In the same time representing broad or central questions and have specific sub questions (Ibid:99). They intend to seek, discover and explore a process, or describe experiences attempting to gain insights into social processes and experiences that exist within a specific location and context (Connolly:1998). The research objectives intend to address the questions and direct the methods used. However, before this progression Johnson and Christensen suggest that there are five major standard research objectives or directions for quantitative or qualitative phases of a study: 1.Exploration, 2.Description, 3.Explanation, 4. Prediction, and/or 5. Influence (Johnson and Christensen:2004). The qualitative phases of each mixed methods research study can be linked to one or more of these five research directions. (Onwuegbuzie and Leech: 2006:479). Moreover, an important principle in mixed method studies is that research questions drive the methods used. (Newman and Benz: 1998:Tashakkori and

Teddlie:1998). Therefore, the type of research direction serves as the foundation that constructs the research framework, questions, objectives and methods used. It also is a key factor that links between the research questions, objectives and methods for a study.

For this study, the questions and objectives reflect an open-ended direction that aim to explain the many meanings and understandings of the role of tradition in modernity by exploring the potential to use traditional vernacular elements in a contemporary domestic context. With an over arching qualitative exploratory direction these objectives demonstrate the link between the study's questions and the methods used. People's perceptions, attitudes, aspirations and understandings of Kuwaiti traditional vernacular elements are elicited, in order to identify potential structural opportunities (social, political, organizational) that may support the use of these elements today. Basically, that to know the potential for using traditional vernacular elements in today's domestic architecture an exploration on the barriers for their contemporary applications and facilitators becomes essential. Thus, to discover these factors the research objectives seek to identify possible social, economic, political and structural explanations to answer the research questions. These strands may produce many understandings, and therefore, more than one method is required to analyse the wide range of perspectives, enriching the study with in-depth insights from different groups of participants. This is further clarified through a diagram of the research framework (figure 4.2) presented below.

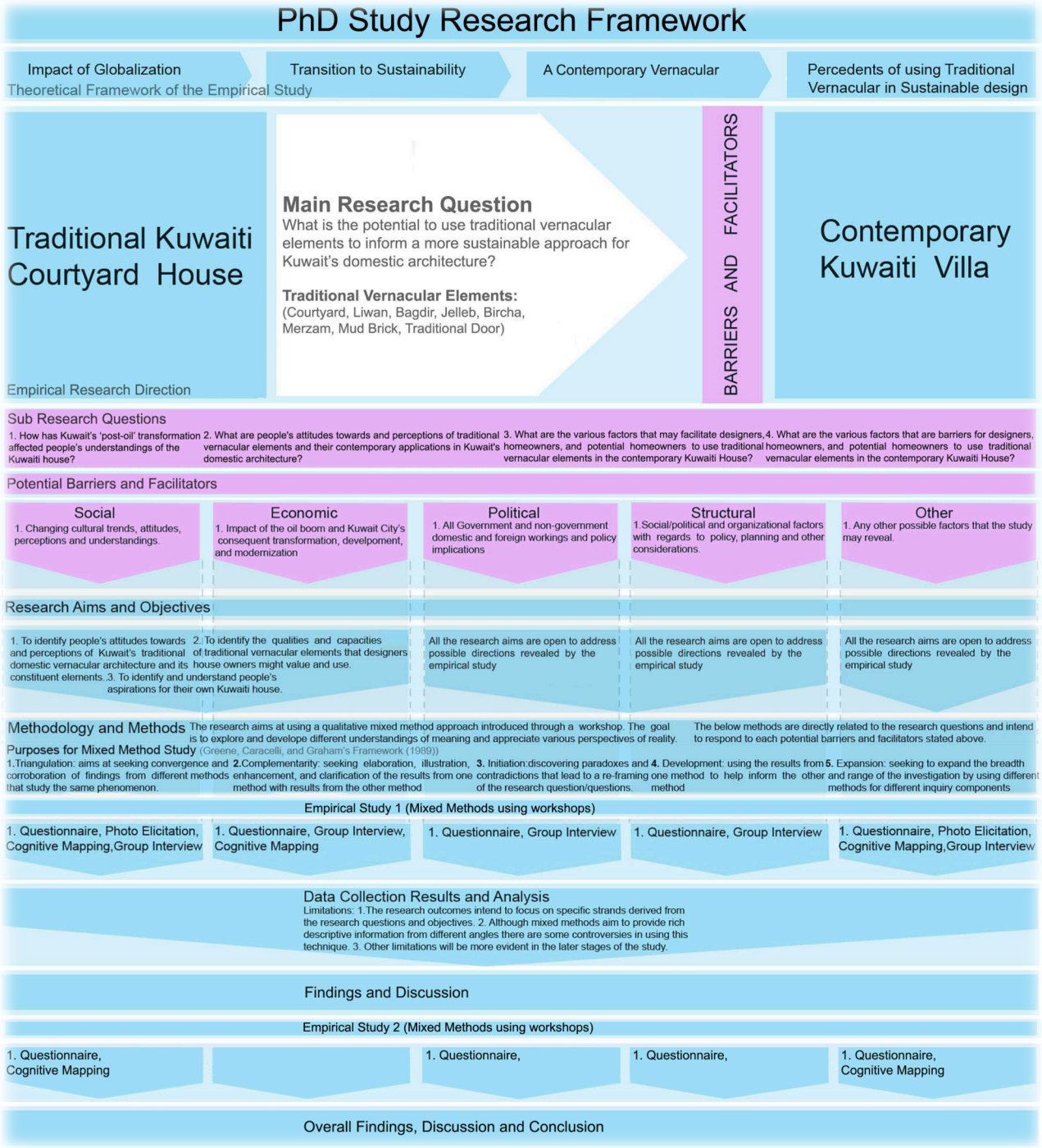


Figure 4.2: PhD study research framework. Source: The Author, 2013.

4.3 Theory of Mixed Methods

In recent years there has been increasing interest in combining qualitative and quantitative research known as 'mixed methods' (Burke et al:2007). This interest is reflected in the development of new journals (*Journal of Mixed Methods, International Journal of Multiple Research Approaches*) and the rise of research using and theoretical discussion of mixed methods (O'Cathain:2007, 2009). There are many definitions of mixed methods, however, the term usually indicates the use of qualitative and quantitative within the same research study (Tashakkori & Teddlie:2003). Mixed method research is described as:

> A type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (Burke et al:2000:123).

Another understanding that combines several research methods is presented in Creswell et al work, entitled *Advanced Mixed Methods Research Design*. They state that:

> A mixed methods study involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research (Creswell et al.:2003:165).

Central to both these descriptions is the idea of combining qualitative and quantitative methods, thus distinguishing mixed methods from multi-method studies using only either quantitative components or qualitative components, and from studies with both quantitative and qualitative components but with no evidence of 'mixing' (Tashakkori & Teddlie:2009).

Early social scientists used different names for mixed methods (Burke et al:2007, O'Cathain:2007, Creswell & Plano Clark:2007). It has been called "multitrait /multimethod

research" (Campbell & Fiske:1959) where the concept originated to study validity of psychological traits (Creswell:2009). Researchers acknowledged that all methods have limitations and thought by using mixed methods it was possible that the biases in one method may cancel the biases of other methods. This was the start of triangulation - a technique that aimed to find convergence across qualitative and quantitative methods (Jick:1979).

In the 1990's researchers started to integrate and connect qualitative and quantitative data. This was done by using results from one method to be further explored using another method (Tashakkori & Teddlie:1998) or by analysing data side by side to strengthen each other such as using qualitative quotes that support statistical results (Creswell & Plano Clark:2007). Today, the name 'mixed methods research' is widely used by researchers evident in publications such as the *Handbook of Mixed Methods in Social and Behavioural Research* (Tashakkori & Teddlie:2003).

During the 20th century a gradual polarization occurred between researchers that adopted qualitative and quantitative directions. This was due to qualitative and quantitative approaches as seen as having different epistemological positions which are incompatible, as a result, they employ different approaches gathering and analysing data. Although may be used in relation to many positions, some researchers see quantitative research greatly influenced by the natural science model and specifically the positivist research. In this approach the researcher aims at minimizing their role to obtain objectivity in testing theories by examining the relationship among variables. These variables are usually measured in instruments providing numbered data that in turn can be analysed using statistical procedures (Creswell: 2009).

On the other hand, qualitative research comes from a position that rejects the idea that natural sciences can be used to aid understanding of human beings. It aims to explore

and understand the meaning people ascribe to social or human problems (Ibid:2009). It is known to centre on an interpretative epistemology, which emphasizes context and meaning and acknowledges the role of the researcher as integral to the research process (Brannen:1992). Bryman further elaborates this:

> The concern in quantitative research about causality, measurement, generalizability etc. can be traced back to its natural science routes; the concern in qualitative research for the point of view of the individuals being studied, the detailed elucidation of context, the sensitivity to process can be attributed to its epistemological roots (Bryman:1992:59).

Bryman, however sees that quantitative and qualitative approaches to research do not have to be strictly determined by their epistemological beginnings. Researchers who argue that mixed methods are not possible see quantitative and qualitative as fixed incompatible epistemological positions. Whereas, researchers who view mixed methods as possible, emphasis the advantages in combining quantitative and qualitative approaches. Bryman explains, "there is a recognition that quantitative and qualitative research are each connected with distinctive epistemological and ontological assumptions but the connections are not viewed as fixed and ineluctable" (Bryman:1992:446).

Quantitative Methods ➡	**Mixed Methods**	⬅ **Qualitative Methods**
- Pre-determined - Instrument based questions - Performance data, attitude data, observational data and census data - Statistical analysis - Statistical interpretation	-Both pre-determined and emerging methods - Both open and closed ended questions - Multiple forms of data drawing on all possibilities - Statistical and text analysis - Across databases interpretation.	- Emerging methods - Open ended questions - Interview data, observation data, document data and audio-visual data. - Text and image analysis - Themes, patterns interpretation

Table 4.1: Quantitative - Qualitative - Mixed Methods: The table presents the different approaches of data collection, analysis and interpretation for specific research methods. **Source:** (Creswell:2009:15)

Some researchers take a more pragmatic approach, focusing on the research problem and questions instead of underlying philosophical concerns (Bryman:1992;May:2007;O'Cathain:2009;Hammersley:1992). May suggests that researchers should bring together quantitative and qualitative when practical and where research questions lead you in that direction (May:2007). Therefore, both quantitative and qualitative approaches may be valuable in a mixed method study depending on the research question. Mason highlights another strength of combining methods. She asserts, "adhering to only one method can lead to conservatism of thought, of repeatedly asking the same questions while failing to pose innovative questions that would illuminate the social world in a new way"(Mason:2002:297). By using two different methods one can understand different levels of reality and "compared to the single method this would help expand the scope of our understanding"(Sosu et al:2008:172).

Past divisions between researchers have tended to fail to see the many ways that qualitative and quantitative data are related. Research approaches are usually connected; qualitative data can be described numerically and quantitative data can be based on qualitative judgments. The mixed method concept gives researchers more tools to explore the problem in almost every angle. There are more options, choices and approaches to consider, and therefore, is considered by some to be the "third methodological movement" (Creswell & Plano Clark: 2007:13).

4.3.1 Qualitatively Driven Mixed Method Research

In her article *Mixing Methods in a Qualitatively Driven Way*, Jennifer Mason suggests:

> That a 'qualitatively driven' approach to mixing methods offers enormous potential for generating new ways of understanding the complexities and contexts of social experience, and for enhancing our capacities for social explanation and generalization (Mason:2006:2).

She continues to assert that "mixing methods can enhance and extend the logic of qualitative explanation" (Ibid:9). Qualitative methods therefore allow one to explore and develop understandings of meanings in more detail.

There are some authors who claim that mixed methods gives privilege to quantitative research and downgrade qualitative research (Denzin & Lincoln:2005, Howe: 2004). Creswell et al (2006) responds to this position with a paper entitled *How Interpretive Qualitative Research Extends Mixed Methods Research.* They argue that in fact "qualitative research can enhance mixed method research" drawing from many qualitative researchers who advance the importance of mixed method research (Creswell et al:2006:1). One example is through the types of mixed method design such as "exploratory sequential" which begins with qualitative research and then followed up by a quantitative component. (Ibid:3) In many mixed method studies researchers use qualitative approaches as a dominant method in the study. Creswell et al describe the signs of this priority that:

> might include: the wording of the title, the explicit identification of a guiding worldview, the primary aim in a purpose statement, the use of more space for qualitative than quantitative in the article, or a more in depth analysis of the qualitative themes than the statistical results (Ibid:3).

Other studies use qualitative data to expand and elaborate on quantitative findings (Ibid:5). Mason argues that qualitative research has much to contribute to mixed methods explanations; in the same time mixed methods explanations can be driven by qualitative research (Mason:2002).

4.4 Specific Mixed Method Design

As the use of mixed methods research gradually increased over the past two decades, researchers began to develop approaches to mixed-methods designs. (Greene, Caracelli, & Graham:1989, Creswell & Plano Clark: 2007, Tashakkori & Teddlie: 2009).

Mixed method research used different methods in different ways providing different perspectives of reality. This strategy becomes essential in understanding specific social phenomena. Therefore, for this study the research framework employed more than more method to study people's diverse perceptions to gauge the potential learning from or use of Kuwait's traditional vernacular elements in contemporary domestic built environments. However, before selecting a particular method it is important for the researcher "to know what kinds of data and knowledge in relation to specific social phenomena a method can potentially produce" (Mason & Dale:2011:1) The main research questions are open, rather than closed to reflect an exploratory approach which in turn requires various inductive methods to gain rich insightful understandings of the topic within its social context. Some methods are more suited than others to particular research questions and "it may be difficult to work out the implications of using one method over another, or combining different methods and approaches"(Ibid:1).

This study has two phases; the main study and a follow-up study, and therefore, an overall sequential approach has been employed where research using two or more methods is conducted at different times. However, a concurrent (also referred as simultaneous or parallel) method of conducting the research was employed during the workshops in both the first and second stage of the study. This section will describe how the two different mixed method designs have been used together with an overall qualitatively driven sequential design (stage one and two), and a concurrent design (for each stage).

The two stages of the research reflect an overall sequential mixed method design. Specifically, it is a form of a sequential exploratory design, which is conducted in two phases with priority to the first phase. It starts with "an initial phase of qualitative data collection and analysis followed by a phase of quantitative data collection and analysis. Therefore, the priority is given to the qualitative aspect of the study" (Creswell:2009:15).

The main intention for this design is to use quantitative data to assist in the interpretation of qualitative findings (Ibid:16). For that reason, for this study a quantitative follow-up study (the second stage) intends to examine in more detail and complement the findings from the qualitative workshops (the first stage). Furthermore, the quantitative follow-up also gives the study an opportunity for statistically significant findings by collecting a more representative sample of the population.

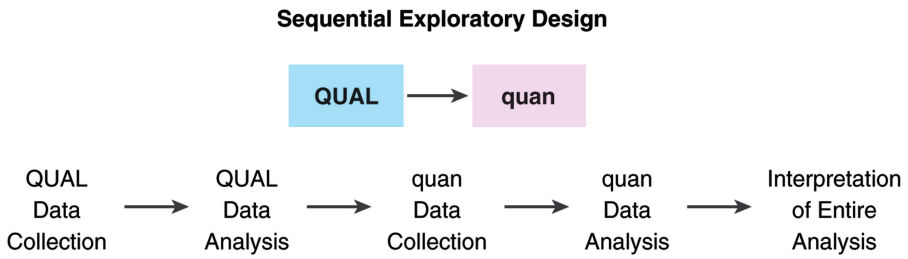


Figure 4.3: Sequential Exploratory Design: The capitalization of the abbreviated qualitative and quantitative phrases indicates the priority and emphasis of the specific approach. A QUAL to quan notation indicates that the qualitative workshops for the first stage are followed by a more quantitative follow-up for the second stage. **Source:** The Author, 2014 after Creswell et al:2003.

The workshops employ a concurrent design, more specifically it is a form of 'concurrent embedded or nested' design which intends to merge and converge qualitative and quantitative data to provide a "comprehensive analysis of the research problem" (Creswell: 2009:14). Creswell et al further describe it as follows:

> The concurrent nested design can be identified by its use of one data collection phase during which quantitative and qualitative data both are collected simultaneously… a method (quantitative or qualitative) is embedded, or nested, within the predominant method (qualitative or quantitative)(Creswell:2003:184).

In his book *Design by Inquiry*, John Zeisel states, "The most effective way to study E-B Environment-Behaviour problems is to employ several methods in parallel, the choice of methods depending on the specific problems and the research situation" (Zeisel:1981:xi). Therefore, the study uses not only more than one method but two different mixed methods

designs, with the intention of gaining a more comprehensive understanding of the research topic.

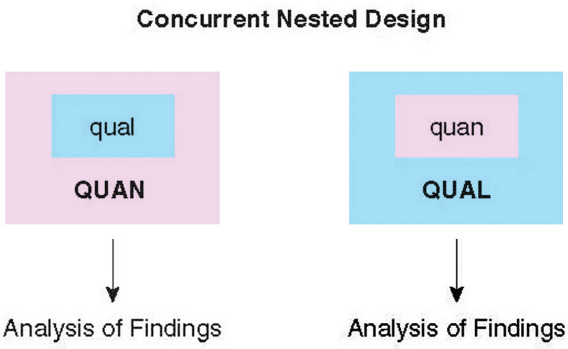


Figure 4.4: Concurrent Nested design: The capitalization of the abbreviated qualitative and quantitative phrases indicates the priority and emphasis of the specific approach. A QUAL/quan notation indicates that the quantitative methods are embedded or nested within an overall qualitative design. The first stage of the study is represented at the right and the second follow-up stage at the left of the diagram. **Source:** The Author, 2014 after Creswell et al:2003.

This design fits the study questions and objectives which intend to understand the meanings behind people's many understandings and perceptions. As a result, the study design is predominately qualitative in nature with embedded quantitative sections. The concurrent or parallel research method has several advantages: not only is the researcher able to simultaneously collect the data during one data collection phase but also to use different methods to gain different types of data from different levels within the study (Creswell:2003:185). Similarly, the sequential design also has many advantages, primarily to extend, expand, and develop the research to another level of exploration. The data from the various methods enrich understandings, identify areas of interest and possible relationships within each method and between methods: as a result, supporting emerging themes and providing a stronger basis for theoretical understandings and future research questions. In addition, using two mixed method designs together has enabled both a simultaneous strategy which provides a platform to collect the data independently limiting

influence between the different methods and a sequential strategy which provides an opportunity to examine the findings in more detail and with greater precision.

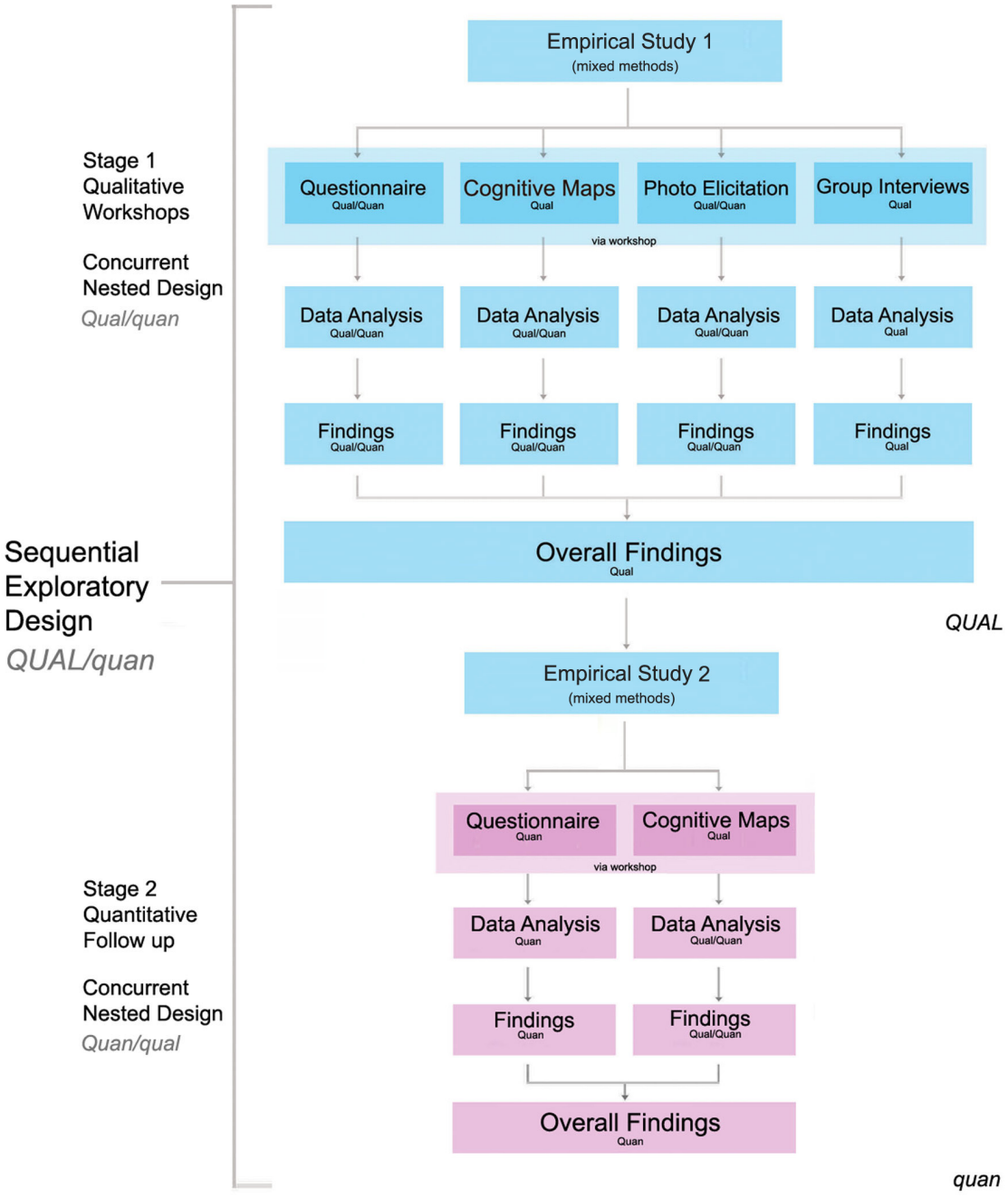


Figure 4.5: Visual model of the current mixed methods study design. The model depicts the sequential exploratory and concurrent nested design showing the dominant QUAL (Qualitative) direction of the study and in it embedded is the Quan (Quantitative). The mixed method process is presented, which shows the connections between both QUAL and Quan during data collection, analysis and findings. **Source:** The Author, 2014.

4.5 The Methods

Workshops were selected as the platform to simultaneously collect data using the following methods: 1. Questionnaires, 2. Cognitive maps, 3. Photo elicitation, 4. Group interviews. The reasoning behind using workshops as the main vehicle for combining the different methods in one data collection event, pilot study, and sampling strategy will be described in the sections below, however, detailed explanations of each method, analysis, and findings will be presented in chapters 5-8. An exploratory study was used to not only find lines of inquiry that would direct the main empirical research but also explore different data collection methods. The exploratory used cognitive maps as the main data collection tool to provide deeper knowledge of how people were affected by the transformation of Kuwait City, and as a result, cognitive maps have been also used as a data collecting instrument for both the first and second stages of the main study. For more information please refer to Appendix D for the exploratory study's summary and discussions of the findings.

4.5.1 Pilot Study

The workshop booklet (please refer to Appendix A for the workshop booklet) included the various data collection methods, which were tested through a pilot study that consisted of the researcher's family and friends. It was conducted on the 3rd of September 2013 with the participation of 3 homeowners in a seminar atmosphere. The intention was to almost replicate the conditions of the main workshop event and experiment to discover any amendments needed to minimize issues that may arise with a larger group of participants. The individuals who completed the workshop booklet and questionnaire also provided feedback to develop the booklet and workshop further. Therefore, together with the researcher's observations the following changes were made:

1. A power point presentation: An overall introduction of the project was required beyond the information sheet to visually engage the participants to more understand the background of Kuwait's development and traditional vernacular elements. It was used to put the research within the framework of Kuwait's development providing only information with no intention of leading the participants. Thus, the presentation was used to refresh people's images of traditional vernacular elements of old Kuwait (same images used for the photo elicitation segment of the workshop) and clarify some terminology comprehension that may arise especially for homeowners.

2. Timing constraints: The pilot study revealed that it was important to time each workshop method segment. There were varying levels of speed of the participant responses. The idea was to balance between giving participants enough time to finish each section and not go over the 2 hour workshop event. Therefore, an average response time was taken for each section and was used as the basis for the final workshop schedule. It was a challenge to find a timeframe to work with in an interactive workshop activity; therefore, the pilot study provided only guidelines to allow room for flexibility for the main study.

3. Questionnaire questions: The pilot study also identified differences between some questions for designers and homeowners. It was essential to unify the questions to not only collect accurate information but also accurately compare the data during analysis. Consequently, changes have been made to present the same questions with subtle variations in sentence structure.

4. Photo elicitation group activity: During the photo elicitation diamond 9 activity the participants were asked to break into groups and discuss the 3 parts of question 2, however, the issue of how to decide the rank emerged. Participants asked if they would decide as a group or individually. The decision was made by the researcher to discuss as a group and individually answer the specific questions. This was done in order to come back during data

analysis and see to what extent the participants were influenced by other participants as they moved forward in the workshop. The photo elicitation exercise intended to act as a catalyst for discussion and prepare the participants for the upcoming group interview.

4.5.2 Participants (Drawing the sample)

4.5.2.1 Sampling approach

The sampling approach for the workshop is directly related to the study's qualitative direction. The data derived from the workshop activities is intended to extend the range of our thinking about tradition and modernity by exploring the potential use of Kuwait's traditional vernacular elements in contemporary domestic architecture. To do this, the study intended to find groups that are defined in relation to the study's conceptual framework also called "theoretical sampling" (Glaser & Strauss:1967).

Theoretical sampling is an important way of reasoning in selecting participants for qualitative study. It aims to find people that relate to the phenomena under investigation and not the need for representativeness. First coined by Glaser and Strauss (1967) it eventually evolved into the following definition:

> Sampling on the basis of concepts that have proven theoretical relevance to the evolving theory. (Relevance means) that concepts are deemed to be significant because they are repeatedly present or notably absent when comparing incident after incident, and are of sufficient importance to be given the status of categories (Strauss & Corbin:1990:176).

Furthermore, Masons describes theoretical sampling being concerned, "with constructing a sample which is meaningful theoretically because it builds in certain characteristics or criteria which help to develop and test your theory and explanation"(Mason:1996:94). This sampling approach was essential to enable the study to answer its research questions and meet its objectives.

4.5.2.2 Sample Size

Due to this form of sampling the size of sample varies from one qualitative study to another. The concept of obtaining more data does not always lead to more information. Huberman et al argue that in qualitative research:

> One occurrence of a piece of data, or a code, is all that is necessary to ensure that it becomes part of the analysis framework. However, it remains true that sample sizes that are too small cannot adequately support claims of having achieved valid conclusions and sample sizes that are too large do not permit the deep, naturalistic, and inductive analysis that defines qualitative inquiry (Huberman et al cited in Denzin:1994:428).

The authors continue by claiming that the adequate sample size is determined by the researcher's, "judgment and experience in evaluating the quality of the information collected against the uses to which it will be applied and the particular research method and purposeful sampling strategy employed"(Ibid:428). Therefore, for this study the main reasoning behind determining the sample size was the workshop event. In order to have enough feedback for the methods and final group interview it was decided that at least 10-15 participants were needed for each workshop. The idea was to obtain rich and descriptive quality of data from a select group of participant responses rather than to achieve a high quantity of participants. Invitations of around 20 were given per workshop to anticipate any cancellations. Eventually, 14 people participating in the homeowner workshop and 17 people for the designer workshop with a final participant count of 31.

4.5.2.3 Why Designers and Homeowners

The research participants have been divided into two groups - designers and homeowners. The study aims to investigate people's perceptions, attitudes, and beliefs of traditional vernacular elements and examines potential barriers and facilitators of their use in the contemporary Kuwaiti house. In order to research this phenomenon it is necessary to

understand the various factors that affect the Kuwaiti individual. For the Kuwaiti house, it is specifically designers and homeowners who play a key role in shaping current domestic architecture.

The study targeted upper and middle class[4] homeowners. In Kuwait these two groups usually design and build their houses, and therefore, are appropriate participants to explore the research direction. Homeowners are actively engaged in the design and construction of their houses. The study selected homeowners who commissioned the design of their own houses, meaning although an architect designed their house they were involved in the design and build process. Also to examine homeowners' experiences the study required the participants who lived at least five years in their house. This will provide insight into their preferences and indifferences and is crucial in understanding their current house built environment.

Equally important are the designers who designed these houses, and therefore, it is by investigating their design priorities and attitudes that the study intends to further address the research question. They are architects and designers who have some level of experience in designing and constructing houses in current day Kuwait. Together these two groups play a significant role in shaping Kuwait's contemporary houses, and they may provide understandings into the potential role of using the traditional in today's domestic built environment.

4.5.2.4 Participant Selection

The why behind selecting the two groups have been discussed in the previous section, whereas, this section explains how the participants have been selected for the workshops. The study started with the researcher's family, friends and work colleagues.

[4] The word upper and middle refers to the economic class of a specific group in society. In Kuwait these groups usually design and build their houses while the lower income group have to wait for government housing.

From that point, a snowball sampling technique was used (Strauss & Corbin:1998) where family and friends would ask their family and friends and recommend potential participants for the workshops. The workshop compromised mostly the researcher's family and friends who had designed and built their own house. For designers the idea was to ask preferably Kuwaiti designers who designed houses in Kuwait, i.e. people most familiar with local culture, tradition and the environment. The researcher is an instructor at Kuwait University's College of Architecture and asked colleagues to participate in the designer workshop. Again they asked their friends and colleagues and recommended fellow designers in the field.

Table 4.2 presents personal details about the designers; they totalled 17 participants with 11 male and 5 female and one participant not providing their personal information. The designers are all Kuwaiti citizens and their occupation ranged from a variety of public and private sectors. Table 4.3 presents all the personal details about the homeowners; they totalled 14 participants with an equal gender ratio of 7 male and 7 female. The homeowners are also all Kuwaiti citizens and their occupations are of diverse backgrounds. Their houses are predominately in Kuwait City's close suburbs. A more detailed breakdown of the study's initial workshops participant's demographic descriptive analysis may be found in Appendix B.

WORKSHOP 1 (DESIGNERS): PARTICIPANTS' INFORMATION LIST

NAME	*AGE*	*G.*	*EDUCATION*	*OCCUPATION*	*COUNTRY*	*RESIDENTIAL AREA*	*HOUSE TYPE*	*YRS IN HOUSE*
1.D.M	34	M	UNIVERSITY DEGREE	ARC ENG. CIVIL AVAITION	KUWAIT	ALADALYIA	HOUSE	10+
2.D.M	37	M	UNIVERSITY DEGREE	ARC/DR KUWAIT UNIVERSITY	KUWAIT	ALDAIYA	APT IN HOUSE	1-5
3.D.M	53	M	UNIVERSITY DEGREE	ARC/ENG. CONSULTANT	KUWAIT	ALJABRIYA	HOUSE	10+
4.D.W	27	F	UNIVERSITY DEGREE	INTERIOR DESIGNER	KUWAIT	MISHREF	HOUSE	10+
5.D.M	35	M	UNIVERSITY DEGREE	CIVIL ENG CEO COMPANY	KUWAIT	ALSHAAB	HOUSE	6-10
6. D.W	28	F	UNIVERSITY DEGREE	ARCHITECT	KUWAIT	ALMANSURIYA	HOUSE	10+
7.D.W	26	F	UNIVERSITY DEGREE	ARCHITECT	KUWAIT	MISHREF	HOUSE	10+
8.D.W	-	F	UNIVERSITY DEGREE	ARCHITECT	KUWAIT	KUWAIT CITY	APT IN HOUSE	6-10
9.D.M	38	M	UNIVERSITY DEGREE	ARC/DR KUWAIT UNIVERSITY	KUWAIT	KUWAIT CITY	HOUSE	10+
10.D.M	-	M	UNIVERSITY DEGREE	ARC/CIVIL ENG. CIVIL AVIATION	KUWAIT	BAYAN	APT IN HOUSE	10+
11.D.W	29	F	UNIVERSITY DEGREE	N.A	KUWAIT	ABDULLAH ALSALEM	HOUSE	10+
12.D.M	32	M	UNIVERSITY DEGREE	ARC ENG	KUWAIT	KUWAIT CITY	HOUSE	10+
13.D.M	32	M	UNIVERSITY DEGREE	ARCHITECT	KUWAIT	ALSURRA	HOUSE	10+
14.D.M	45	M	UNIVERSITY DEGREE	ARC/DR KUWAIT UNIVERSITY	KUWAIT	ABDULLAH ALSALEM	HOUSE	10+
15.D.M	30	M	UNIVERSITY DEGREE	ARCHITECT	KUWAIT	MISHREF	HOUSE	10+
16.D.M	23	M	UNIVERSITY DEGREE	ARCHITECT	KUWAIT	ALFARDOUS	HOUSE	10+
17.D.?	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A

Table 4.2: Workshop 1 (Designers): Participant information list.

WORKSHOP 2 (HOMEOWNERS): PARTICIPANTS' INFORMATION LIST

NAME	*AGE*	*G.*	*EDUCATION*	*OCCUPATION*	*COUNTRY*	*RESIDENTIAL AREA*	*HOUSE TYPE*	*YRS IN HOUSE*
1.H.M	74	M	UNIVERSITY DEGREE	AMBASSADOR	KUWAIT	BU HASANI	HOUSE	6-10
2.H.W	55	F	UNIVERSITY DEGREE	LAWYER	KUWAIT	BU HASANI	HOUSE	6-10
3.H.M	35	M	UNIVERSITY DEGREE	INVESTMENT MANAGER	KUWAIT	BU HASANI	APT IN HOUSE	6-10
4.H.W	32	F	UNIVERSITY DEGREE	MANAGING PARTNER	KUWAIT	BU HASANI	APT IN HOUSE	6-10
5.H.W	35	F	UNIVERSITY DEGREE	ADMINISTRA-TOR	KUWAIT	ABDULLAH ALSALEM	HOUSE	1-5
6.H.M	47	M	UNIVERSITY DEGREE	AS. UNDER SECRETARY	KUWAIT	QURTOBA	HOUSE	6-10
7.H.M	45	M	UNIVERSITY DEGREE	ENG. KUWAIT MUNCIPALITY	KUWAIT	KUWAIT CITY	HOUSE	10+
8.H.W	-	F	UNIVERSITY DEGREE	HOUSE WIFE	KUWAIT	ALSHAMIYA	HOUSE	6-10
9.H.M	43	M	UNIVERSITY DEGREE	COMPUTER ENGINEER	KUWAIT	KUWAIT CITY	HOUSE	10+
10.H.W	27	F	UNIVERSITY DEGREE	CIVIL ENG. MPW	KUWAIT	ALRAWDA	APT IN HOUSE	1-5
11.H.W	52	F	UNIVERSITY DEGREE	MANAGER	KUWAIT	KUWAIT CITY	HOUSE	1-5
12.H.M	33	M	UNIVERSITY DEGREE	AUDITOR	KUWAIT	ALRAWDA	APT IN HOUSE	6-10
13.H.M	48	M	UNIVERSITY DEGREE	CIVIL ENGINEER	KUWAIT	QURTOBA	APT IN HOUSE	10+
14.H.W	-	F	UNIVERSITY DEGREE	DR KUWAIT UNIVERSITY	KUWAIT	KUWAIT CITY	HOUSE	10+

Table 4.3: Workshop 2 (Homeowners): Participant information list.

4.5.3 Data Collection

4.5.3.1 Workshops

A workshop is an interactive, participatory group exercise. It may be used for many purposes ranging from educational, training, research to public engagement and collaboration. According to the University College London's Public Engagement Unit it is a method that can "be used to gauge and compare opinions on a range different aspects, criteria or qualities of a project or activity" (UCL:2010). They continue describing workshops as, "a means of capturing more qualitative information … probing the meanings

participants give to their behaviour, ascertaining reasons, motives and intentions" (Ibid:2010). In summary it provides an interactive way to understand different people's experiences and views and is a good opportunity for discussion and to reach a direction on a given topic (Ibid:2010).

Therefore, using workshops has many benefits that may significantly contribute to a research study. First, it provides an opportunity to gain direct insight into people's many meanings and understandings of the subject. Second, group discussions may encourage the exchange of ideas and suggest possible solutions to the research questions. Third, it gives a practical platform to introduce more than one method in a few hours. As a result, it is the intention the data generated will provide rich descriptions, emerging themes, and patterns within groups of participants and between workshops.

4.5.3.2 Workshop Design

In this study participants provided feedback through two workshops (one for designers and the other for homeowners) using the following data collection methods: 1.Questionnaires, 2.Cognitive maps, 3.Photo elicitation, 4. Semi-structured group interviews. After a short introduction (why are we here; what will happen; how long will it take) and a quick power point presentation (background information framing the research study) from the workshop facilitator the participants completed the questionnaire. After that a short cognitive map exercise was followed by a break. Subsequently, the participants conducted a photo elicitation activity and the workshop concluded with the facilitator conducting a semi-structured group interview. Although the workshop was one data collection event, careful consideration has been made for the sequence of each method. It has been designed for four stages; first to enable participants to individually respond to the topic without any influence from other participants and researcher through the questionnaires and cognitive maps. As the workshop moved forward during the photo

elicitation phase the participants broke down into small groups initiating the discussion process. Finally the group interview provided a platform for an overall discussion where many of the workshop participants exchanged their views.

4.5.3.3 Workshop 1 (Designers) and Workshop 2 (Homeowners)

The designer workshop was held in a seminar room at Kuwait University's School of Architecture - AlAdeliya campus on the evening of the 8th of September 2013. Participants of the first group (designers) totalled 17 consisting of 11 males, 5 females and 1 participant did not state their gender. The Homeowner workshop was conducted in a conference room at Dar AlAwadi office tower at the heart of Kuwait City on the evening of the 16th of September 2013. Participants of the second group (homeowners) totalled 14 participants with an even distribution of 7 males and 7 females. Overall, the participants in the two groups totalled 31 with 18 males and 11 females.

4.5.3.4 Ethical Issues

Ethical approval was given for the study from the University of Sheffield, School of Architecture ethics committee on the 21st of June 2013 (please refer to Appendix A for the letter). The workshop booklet presented a clear research information sheet that explained the study and the participant's role, also enclosed was the research study consent form. Participants in both workshops were informed that their booklet, which contained their data would be kept confidential, and that their answers would not be connected with their names. All participants were required to sign the consent forms in order for them to participant in the workshop activities and use their data. The booklets were made anonymous through the use of a code number, which in turn was used as the identifier within the subsequent analysis. Furthermore, the booklets were stored in a secure filing cabinet and the group interview recordings saved in the researcher's password protected personal computer.

4.5.4 Data Analysis

All the workshop method segments provided different types of data, and therefore, several data analysis techniques were used. The generated qualitative data has been analysed qualitatively and through content analysis quantified into tables and graphs. The emphasis was on the words in more than one level; first their meaning from the participant's perspective, and second through their frequency in the number of times a participant identified a word or concept. The approach for the data analysis directly responded to the question and method. For method 1, the questionnaire, there were two question types; for the open-ended questions qualitative coding through content analysis was used and for the Likert scales a quantitative statistical analysis was conducted. For method 2, cognitive maps, a form of content analysis was used (this will be further explained in chapter 6). For method 3, photo elicitation, a combination of qualitative and quantitative approaches have been used to respond to the different types of data collected from the participants. Finally, for method 4, group interviews, a qualitative post coding analysis approach has been implemented. Further explanations of how each method's specific data analysis will be presented in the upcoming findings chapters.

4.6 Conclusion

This chapter explained why mixed methods were used for this study. It also described the methods involved, while the following chapters 5-8 will cover them in more detail. The chapter highlighted how a variety of different methods are essential to gain deeper insight of the social phenomenon while providing multiple vantage points. It also showed how exploratory, inductive and open-ended research methods were required to understand people's perceptions and attitudes. It is the intention that together these methods will come presenting a larger mosaic with some answers and more questions directing researchers for future research.

Chapter 5: Questionnaire

5.1 Introduction

This chapter explores the first workshop method, the questionnaire, which employed qualitative and quantitative elements. It starts by presenting background information on questionnaires and explains the rationale for there use in this study. It then highlights the questionnaire design issues, explores the structure of the questionnaire, and presents the questions. Subsequently, the later sections cover the data analysis stages, and finally present the data results/findings. The chapter concludes with a discussion of the questionnaire's key findings.

5.2 Background and Rationale

Questionnaires have been an effective conventional tool for obtaining information. Its motives are many ranging from market, academic, and industrial research or as simple as a need to understand a topic through a quick survey. The UCL's public engagement unit state that, "questionnaires are useful to build background and baseline information" (UCL:2010). They continue to assert that open-ended questions requiring an opinion or qualitative response may be problematic with people responding in cryptic ways and sometimes the researcher may not find out what they mean. (Ibid:2010) Therefore, although questionnaires are useful, for this study it is important to have more than one method to provide a richer in-depth understanding of the research topic.

To start the workshop, a simple well-known method was needed to not only introduce and familiarize the participants into the subject matter but also provide a direct way of gauging people's first perceptions. It was for that reason that a questionnaire was used for the first workshop method. This strategy intended to not only introduce the research topic but also collect people's understandings, attitudes and perceptions before the

more interactive segments of the workshop, thus, limiting participant influence over each other. The reasoning for using the other methods will be discussed in the relevant findings chapters.

5.3 Questionnaire Design

Having a good quality questionnaire was crucial to obtain accurate no bias information from the participants. Therefore, it was important to keep the language of the questions simple, avoid double-barreled questions and leading questions which could bias responses (De-vaus:1993). Also negative questions were avoided as much as possible. Overall, the questions intended to gain as close to accurate as possible descriptions of the topic without influence from the researcher or other participants.

The study participants were asked to complete a mostly qualitative questionnaire before all other workshop activities. But before that, they were asked to complete some personal information such as age, gender, educational level, occupation, country of origin, where do they live today, what type of house they live in and how long have they lived there. It is the intention to use this to classify the data during analysis in order to find any relationships between demographic information and participant responses to provide yet another level to further understandings.

The participants were then asked to respond to two question types; the first questions are open-ended and intend to explore the participants many meanings and understandings of the topic. All the participant groups (designers and homeowners) answered the same questions. This was done in order to more accurately compare their responses during the data analysis stage. The only differences were slight variations in the sentence structure of some questions directing designers or homeowners. In addition, question number nine was only given to designers. The questions are as follows:

1. How would you describe the traditional Kuwaiti house? What are its key features?

2. How would you describe the contemporary Kuwaiti house? What are its key features?

3. Which of the following factors do you aspire to have significance in your house: Culture, Identity, Environmental Sustainability or any other? And why?

4. Do you believe there are problems facing the contemporary Kuwaiti house?

5. For designers: When you design new houses what are the general requirements/design elements/styles your clients usually ask for? For homeowners: If you had the opportunity to build a new house what user requirements would you give your architect/designer? And what design elements do you think should be in your new house?

6. When you think of Kuwait's traditional vernacular elements what is the first element you visualize?

7. Do you think that traditional vernacular elements should be used in the contemporary Kuwaiti house?

8. In your current house do you have any traditional vernacular elements? If yes why? If no why?

9. For designers only: Do you include traditional Kuwaiti vernacular elements in your house designs? If yes why? If no why?

The second question type is quantitative and intends to measure participant's positive, neutral and negative responses towards the question. Specifically, they are Likert scale questions, were a respondent is asked to what extend they agree or disagree with the statement. Usually a 5-point scale is used as in the questions that were presented to the designers/homeowners; however also used sometimes are 7-point scales. Responses are ranked from 1 to 5 and are treated as ordinal data (has order) as opposed to interval data (quantitative and continuous). In other words, one cannot say that a participant response that selected 'very likely' instead of 'likely' prefers the former twice as much as the latter.

Therefore, the ranking is expressed but not by how much quantitatively. Question 10 and 11 are Likert scale questions and are as follows:

10. How likely would you use the following traditional vernacular elements in your own current house or future house design for yourself? The question aims to see what (if any) traditional vernacular elements may be used in today's houses. It is a Likert scale table with the following elements; Courtyard, Traditional Door and *Khoka* (small opening within the traditional door), *Dahress* (corridor after the main door), *Liwan* (a covered area usually in the courtyard), *Ferya* (passage between two houses), *Jelleb* (well), *Bircha* (a tank for collecting rain water), *Diwaniya* (social gathering space for men), *Bagdir* (wind catch), *Merzam* (water gutter), Mud Brick, or other. It then asks the participants to what extent would they use the elements in their current houses ticking one of five boxes from very likely, likely, neutral, not likely and not at all likely.

11. In choosing or designing your house how important was each of the following factors? This question intends to ask the participants to what extent were specific design factors taken into consideration when designing their current houses. The factors were; cultural identity and expression, environmentally sustainable design, meeting all your spatial requirements, privacy, orientation, circulation, exterior façade, interior design, greenery/landscaping, within a specific budget and other. It then asks the participants to what extent would they use the elements in their current houses ticking one of five boxes from very important, important, neutral, not important, and not at all important. (Refer to Appendix A for the workshop booklet and questionnaire)

5.4 Data Analysis

5.4.1 Content Analysis

There are numerous ways to analyse texts to represent reality (Silverman:2001,Charmaz:2006). In this study for the questionnaire, cognitive maps and photo elicitation methods a form of content analysis was used to extract the data in a series of stages leading to relationships and the emerging themes. Silverman the author of the book *Interpreting Qualitative Data* describes it as, "an accepted method of textual investigation" where "researchers establish a set of categories and then count the number of instances that fall into each category"(Silverman:2001:123). It therefore becomes imperative to have sufficiently precise categories to enable other researchers to have the same results using the same code and body of text (Ibid:123).

Many of the questions were open-ended and resulted in a wide array of qualitative responses that touched on many areas. For these questions content analysis was used to categorize and group the responses so that they could be quantitatively and statistically analysed. It is important that the categories were not too broad, nor too narrow and often times it was necessary to read through all the responses several times before deciding on meaningful and appropriate categories. It is important that the categories are mutually exhaustive (i.e. not overlapping) and between them cover all possible outcomes (comprehensive). Sometimes categories were grouped together to form larger categories that fell into a broader area, or a category labelled 'others' or 'miscellaneous' can be used to address opinions that are outliers, but they should not be large in number.

The key ideas or themes that were expressed in the qualitative responses to the open questions were first listed for the two groups (designers/homeowners) separately and then filtered and merged together. It was also possible to create new quantitative variables from

the qualitative responses, for example, nature of the participant's opinion or their outlook that was classified into positive, neutral and negative and this then yielded further insights into the respondent's attitudes.

Content analysis has been used as a means to quantify the qualitative data in most of the open-ended questions in the questionnaire. Again it was important to maintain the same coding framework for the questions in order to ensure that when different researchers use them in the same way they will validate the results. The coding concept will be further explained below.

5.4.2 Coding

In this study coding was used in much of the preliminary stages of qualitative analysis, and therefore, becomes an essential tool to not only properly transform the data into emerging themes but provides as a link between the data's analysis and findings. "Any researcher who wishes to become proficient at doing qualitative analysis must learn to code well and easily. The excellence of research rests in a large part on the excellence of coding"(Strauss:1987:27 cited in Bazeley:2007:67). Charmaz argues "that coding is more than a beginning; it shapes an analytic frame from which you build the analysis", (Charmaz: 2006:45) she continues to stress that coding is the "pivotal link" between collecting the data and developing an emergent theory to explain these data. "Through coding, you define what is happening in the data and begin to grapple with what it means"(Ibid:46).

Therefore, if "coding means categorizing segments of data with a short name that simultaneously summarizes and accounts for each piece of data" (Ibid:43), it also means that there are different approaches to coding. In this study, the decision was made to first develop specific rather than broad categories as starting points and second to use an open coding strategy. It was important to start small and work upwards. This approach is inspired

by a grounded theory approach that focuses on minute details in the analysis of the text. It is by starting in a specific level the researcher acknowledges all the issues and a word alone may not be understood but their subtle references throughout the methods may give direction for possible patterns and relationships. In contrast, by starting broad and trying to fit issues into larger categories one may lose the details or other issues that do not fit in with these categories.

Using open coding refers to codes that are derived from the data. Strauss and Corbin describe it as:

> the analytic process by which concepts are identified and developed in terms of their properties and dimensions. The basic analytic procedure by which this is accomplished are: the asking of questions about data; and the making of comparisons for similarities and differences between each incident, event, and other instances of phenomena. Similar events and incidents are labeled and grouped to form categories (Corbin and Strauss:1990:74).

Whereas priori coding refers to codes that are developed at earlier stages and then attached to the relevant data. Axial coding usually means working strongly in one category but putting data, "back together in new ways by making connections between a category and its sub categories"(Ibid:97). Drawing upon the inductive research methods of the study open coding was used. It was vital to leave things open at first and than coming back later to seeing things that perhaps where not there or missing important concepts. However, even with an open coding scheme it is misleading to suggest there were no prior assumptions of certain issues and in others areas it was clear that codes were required. Although the researcher analysed the data with the general question in mind all efforts were made to extract all the relevant information in the study.

The coding of the data followed the content analysis concept described in the previous section. Codes were given to words or sentences that contained a similar concept.

A colour maker in a written extract also highlighted them. The researcher labelled initial headings in order to group the concepts into categories and from that point further categories merged under a larger category. The number of times this process repeated itself depended on the question and complexity of the participant responses. Finally, a group of categories emerged that provided the basis for findings, relationships in each method and between the methods; consequently, this gave direction for the study's emerging themes.

5.4.3 Using Computer Software: Excel and SPSS

Many of the tables were done using Excel pivot tables. Pivot tables have been valuable in analysing the same data in a number of different ways. A lot of the questionnaire variables were categorical in nature, especially because the data was generated from the content analysis done on the open-ended questions. Therefore, the use of excel and its many features played a central role in during data analysis.

SPSS (Statistical Package for Social Sciences) allows data to be seamlessly imported from Excel for more specialized analysis to be done and to perform tests of significance. Hence, it made perfect sense to use Excel as the main data repository location and to use SPSS when needed through exporting variables for further analysis. This was done for the analysis of quantitative data in order to test for reliability, normality, correlation, and significance.

5.4.4 Cronbach's Alpha Reliability Test

Cronbach Alpha (α) checks the reliability and internal consistency of the variables, which is based on the rationale that items measuring the same construct will highly correlate (Sharma, 2001; Hair et al. 2006). The Cronbach alpha statistic has been widely used for internal consistency in the social sciences. It estimates the reliability for a given sample, and therefore, it has been used specifically for the Likert scale questions in the first and second stages of the study. Moreover, to obtain more accurate findings it was essential

to check for reliability before conducting other tests on the data. If an unacceptable result has been generated from the test then the questionnaire may not have conclusive results and would have to be redone.

5.4.5 Shaprio-Wilk Normality Test

Normality of the data becomes important in order to determine further parametric or non-parametric statistical testing. Using SPSS the study conducted the Shaprio-Wilk test of normality for the initial workshops and Kolmogorov-Smirnov for the follow-up study. If the significance value of the test is above .05 than the data is normal, which means further parametric testing would be used such as the T-Test, if the significance value of the test is below .05 than the data is not normal, which means further non-parametric tests would be required such as Spearman and Mann-Whitney.

5.4.6 Spearman Correlation Test

The Spearman coefficient is a non-parametric measure of "statistical dependence between two variables". A Spearman correlation between +1, 0, -1 determines the level of relationship between each variable. If the correlation coefficient is above 0.5 the relationship between the two variables is above average and if it's below 0.5 it is below average. The relationship may provide the basis for different theoretical explanations and hypothesis.

5.4.7 Significance Testing

The results of significance tests are important as they reveal underlying patterns among the participants and allow the researcher to make inferences and generalizations. However, due to the qualitatively driven nature of the first stage of the study the intention is to gain meanings and understandings behind the words of the participants. Limitations for using significant tests for a small sample sizes will be discussed in the study's limitations section in chapter 11.

5.4.7.1 Pearson Chi-Squared Statistic

The Pearson Chi-Squared test is one of the most used test for 'significance of the relationship between categorical variables'. In this study, the Pearson chi-squared test was to test if there was a significant variation in responses between the different groups, mainly the homeowners vs. designers, but also males vs. females and older vs. younger respondents (where the cut-off age 35). The data have been further analysed according to these groups to gain another layer of understanding, gleaning some insights and trends.

In addition, it was important to determine if there were statistically significant variations between responses amongst these categories. To understand associations between these two groups, cross tabulation was used (also knows as a contingency table) – Excel's pivot tables quickly computed these counts and percentages; however, SPSS was used to compute the Pearson chi-squared statistic. This statistic tells us if the differences we see are significant or not (i.e. due to random chance). If the statistic's p-value result is less than 0.05 then it is statistically significant at the 95% level. In other words, you can say fairly confidently (95% confidently) that there is a difference in responses between the two groups. Besides the Chi-Squared there are other statistics such as the Likelihood ratio test and Fishers test, but the chi-squared is the most widely used in these cases.

5.4.7.2 Mann-Whitney U Statistic

As the Chi-Squared statistic was used to study the significance of results based on response categories, in an analogous manner, the Mann-Whitney U-Test is the standard statistic used for the study of ordinal ranked Likert scales. It is a non-parametric test and SPSS was used to compute it. Using SPSS, the non-parametric test was used for 2 Independent Samples procedure. The grouping variable was the designer/homeowner, gender, or age group and the test variable was the response for each of the Likert questions. The Mann-Whitney U Statistic was chosen. Although it is the most common statistic for

analysing these types of questions, it is important to be aware of others such as the Kolmogorov statistic.

5.5 Questionnaire Data Results/Findings

5.5.1 Question 1

The first question intended to understand participant's perceptions and attitudes towards traditional Kuwaiti courtyard houses. It states, how would you describe the traditional Kuwaiti House? What are its key features? The open-ended nature of this question was chosen to not only elicit the most prevalent elements but also gain deeper insights into the meanings behind how people associate these domestic built elements with socio-cultural understandings. As a result, the participants provided rich descriptions of how they perceived the traditional courtyard house.

Content analysis was used to generate the categories presented in Table 5.1 and 5.2, whereas. Table 5.1 ranks the most identified vernacular elements when describing the traditional Kuwaiti house. It also adds design elements that are associated with vernacular design. Figure 5.1 graphically shows the top five most identified traditional vernacular elements by the participants when describing the traditional Kuwaiti house. The courtyard appeared most frequently, appearing in 16 of the participants' responses, followed by mud bricks, jelleb, and liwan.

Rank	Vernacular Element	Designers Frequency	Homeowners Frequency	Total
1	Courtyard	9	7	16
2	Mud/Clay Bricks	5	2	7
3	Jeleeb in the courtyard	3	3	6
4	Liwan	2	2	4
5	Khokha (double door)	1	3	4
6	Merzam	1	1	2
7	Bagdir	2		2
8	Dahress	2		2
9	Roof parapet	2		2
10	One level house		2	2
11	Introverted	2		2
12	Bircha		2	2
13	Ceilings built of wood and ropes	1		2
14	Roshina	1		1
15	Façade-wooden doors/windows	1		1
16	Small scale construction	1		1
17	Reception area		1	1

Table 5.1: Describing the Traditional Kuwaiti house 1: Ranking and frequency of the most identified traditional vernacular elements by designers and homeowners.

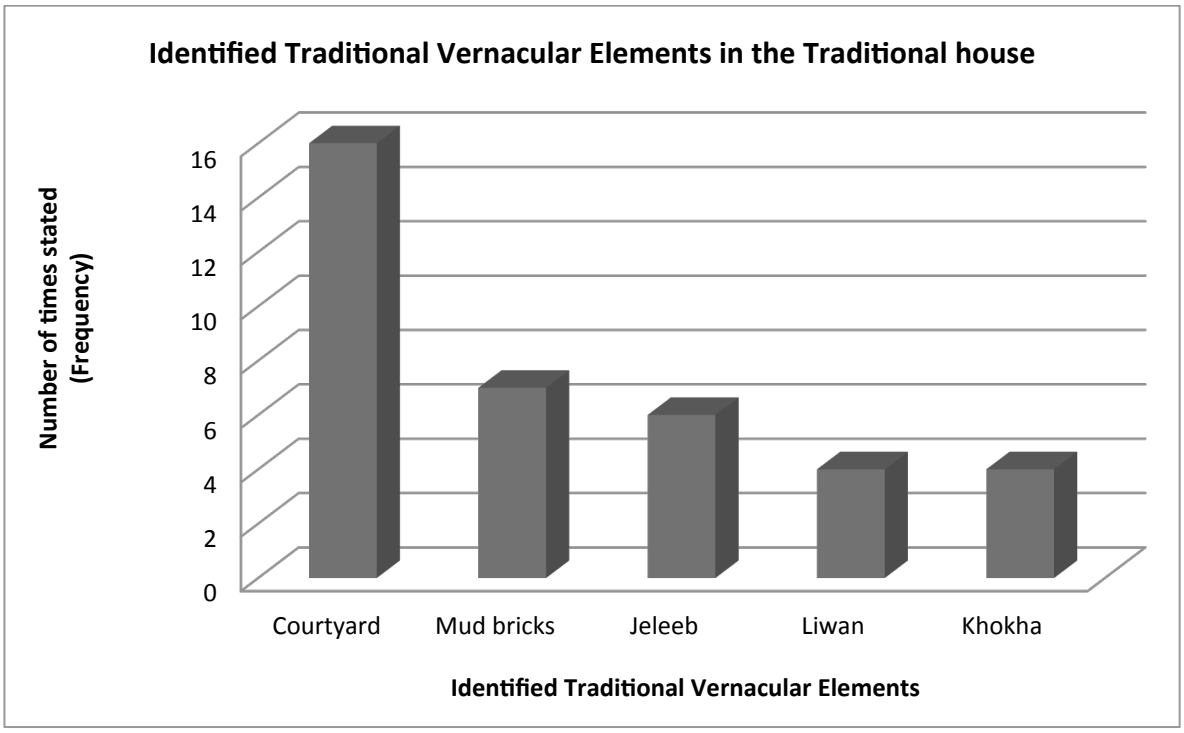


Figure 5.1: Describing the Traditional Kuwaiti house: Ranking and frequency of the most identified traditional vernacular elements by designers and homeowners.

Further content analysis generated categories of the different ways participants expressed traditional houses. The homeowner and designer responses were filtered separately and then merged together. They were finally grouped into two broad categories; the first was environmental sustainability aspects, which covered observations related to sustainability, efficiency and harmony and the second was social/cultural aspects, which covered the provision of basic needs, social bonds and privacy. In general participants discussed socio-cultural issues more than environmental regarding the traditional Kuwaiti house. Table 5.2 below presents categories derived from participants' descriptions of the traditional Kuwaiti house.

Traditional Kuwaiti house- key functional aspects	Designers Frequency	Homeowners Frequency	Total
Socio-Cultural - Hospitality - Design of adjacent houses built to strengthen Social - Direct/extended family and neighbourhood bonds - Built to provide basic needs (shelter/comfort, food & water storage, privacy, accessibility), - Simple design	24	13	37
Environmental Sustainability - Harmonious - Green building/Sustainable - Optimum design (orientation, size of windows, elevations, heat management, ventilation) - Addresses the harsh environment and difficult lifestyle	22	9	31

Table 5.2: Describing the Traditional Kuwaiti house 2: Shows broad categories, sub-categories and frequency by designers and homeowners.

5.5.2 Question 2

To elicit contrast with the first question the second intends to understand different perceptions and attitudes towards Kuwait's contemporary houses. The question states: How would you describe the contemporary Kuwaiti House? What are its key features? This was

also an open-ended question and content analysis was used to generate quantitative data. The emergent categories were: spatial aspects, that included comments related to structure of the buildings and other design issues such as optimum utilization of space; social and cultural aspects, that included matters related to family and behaviour; comfort and modern amenities, that addressed lavish spending and status; and finally, environmental aspects that mainly touched on sustainability and the consumption of natural resources such as electricity and water. Evident in the findings was the need for space to fulfil people's requirements. This has been discussed the most in regards to the contemporary Kuwaiti house. Table 5.3 shows categories derived from participants' descriptions of the contemporary Kuwaiti house.

Contemporary Kuwaiti house- key functional aspects	**Designers Frequency**	**Homeowners Frequency**	**Total**
Spatial - Large heterogeneous, - Box-like, multi-storey concrete structures, - With large rooms and poor utilization of space - Apartments space to increase family income	13	11	24
Socio-Cultural - Extended family, - Introversion - Unfriendliness	9	4	13
Comfort and Luxury - Modern amenities, - Excess luxury - Status symbol	7	5	12
Environmental Sustainability	6	3	9

Table 5.3: Describing the Contemporary Kuwaiti house: Shows broad categories, sub-categories and frequency by designers and homeowners.

One further qualitative measure that was elicited from the responses and analysed was an overall classification of participant opinions into positive, neutral and negative. It did appear that males were more critical in their judgment of modern housing compared to

females as were the older generation. However, the Pearson chi-squared statistic that was computed for these groups (Designer/Home Owner, Male/Female and Below 35/Above 35) did not show significantly different results. Alongside the main groups of designers and homeowners further categories of male and female, and age below and above 35, are used in analysis where necessary. 35 was the median age of participants and hence deemed most suitable to be used as the cut-off value.

Pearson Chi-Square Tests Between groups of the Contemporary Kuwaiti house

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square (Designers/Homeowners)	0.271[a]	2	0.873
Pearson Chi-Square (Male/Female)	3.584[a]	4	0.465
Pearson Chi-Square (Below 35/Above 35)	3.578[a10]	4	0.466

Table 5.4: Pearson Chi-Square test results for Question 2: Between designers/homeowners, male/female, below/above 35 to see if the groups have differences in their positive/negative opinions of the Contemporary Kuwaiti house.

5.5.3 Question 3

After obtaining different understandings of Kuwait's old and new domestic built environment, question 3 asked participants what factors are important for them in their houses. It reads, which of the following factors do you aspire to have significance in your house? And asked the participant to choose from 4 factors: culture, identity, modernity, and environmental sustainability and then to rank them. The question's closed nature intended to gain quantitative data and let the following qualitative questions provide meanings behind the ranking of factors of significance (importance).

A borda count was used to rank the different factors. Participants ranked the factors (first, second, third) where importance was calculated by giving points to the rank of each factor. The highest ranking factor received the highest number of points. Then the points

were added to determine the importance. Only those factors ranked 1-3 by the participants were included in the analysis, whereas, factors not listed were assigned a score of zero.

Rank	Factors	Designers		Homeowners		Total	
		Frequency	%	Frequency	%	Frequency	%
1	Environmental Sustainability	32	36	17	25	**49**	**32**
2	Identity	15	17	24	36	**39**	**25**
3	Culture	23	26	14	21	**37**	**24**
4	Modernity	18	20	12	18	**30**	**19**

Table 5.5: Factors of significance in participants' houses.

The designers gave environmental sustainability the highest borda count tally, whereas the homeowners selected identity. Overall environmental sustainability got the highest count. It was interesting that the environmental sustainability was ranked first overall and from the designers, whereas it was ranked second behind identity by the homeowners. This distinction is presented in both Table 5.5 and Figure 5.2.

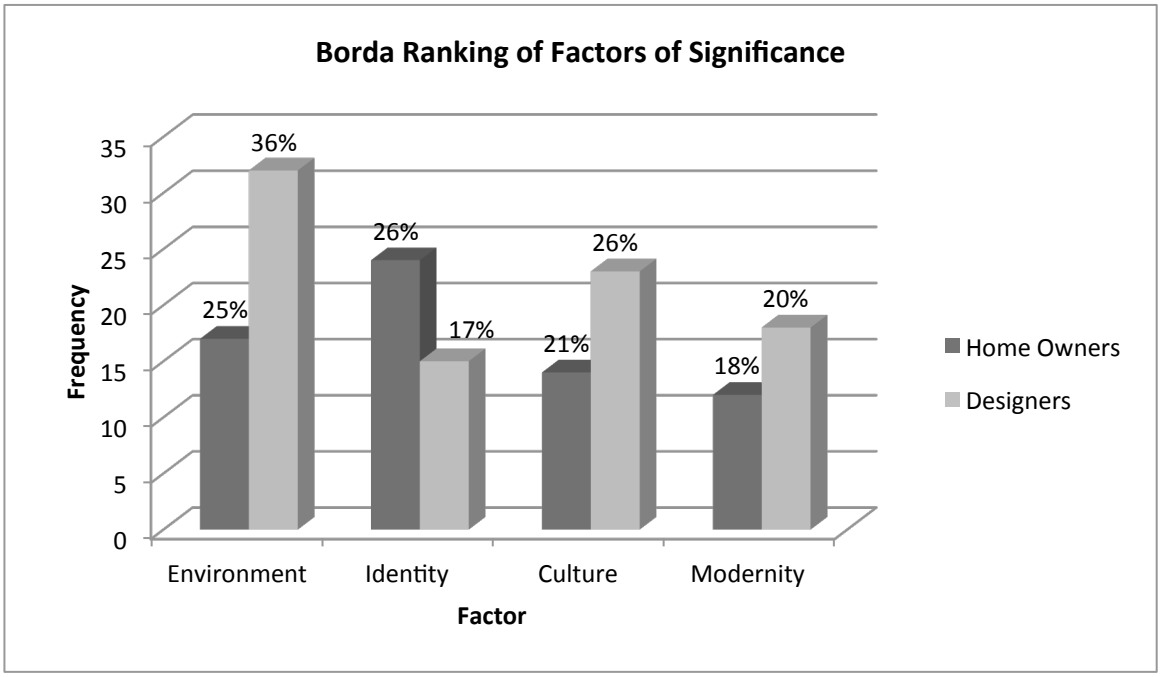


Figure 5.2: Factors of significance in participant's houses.

5.5.4 Question 4

This question aims at understanding people's perceptions, beliefs, and attitudes towards the problems that face contemporary houses in Kuwait. It is intended that these descriptions reveal challenges facing the domestic built environments; this in turn may provide understandings into potential barriers and facilitators of using traditional vernacular elements and their contemporary applications. It was an open-ended question and content analysis was also used, which translated into the following categories (table 5.6): Socio-Cultural, Environmental, Commercial and Heterogeneous Design of Houses. The majority (84%) of respondents stated that there existed problems facing the contemporary Kuwaiti house. Designers highlighted socio-cultural dimensions, whereas homeowners focused on environmental issues.

Problems facing the Contemporary Kuwaiti house	**Designers**		**Homeowners**		**Total**	
	Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**
Socio-Cultural - Loss of identity - Lack of leisure space - Society - Imposed luxuries	13	50	5	24	18	38
Environmental Sustainability - Unfriendly - Unsustainable - Waste of space - Not green - Waste of energy	4	15	9	43	13	28
Commercial - Poor quality - No standards and regulations, - Unskilled builders	4	15	4	19	8	17
Heterogeneous - No uniformity - Eyesores - Aesthetically unpleasant	5	19	3	14	8	17

Table 5.6:Problems facing the Contemporary Kuwaiti house: Shows broad categories, sub-categories by designers and homeowners.

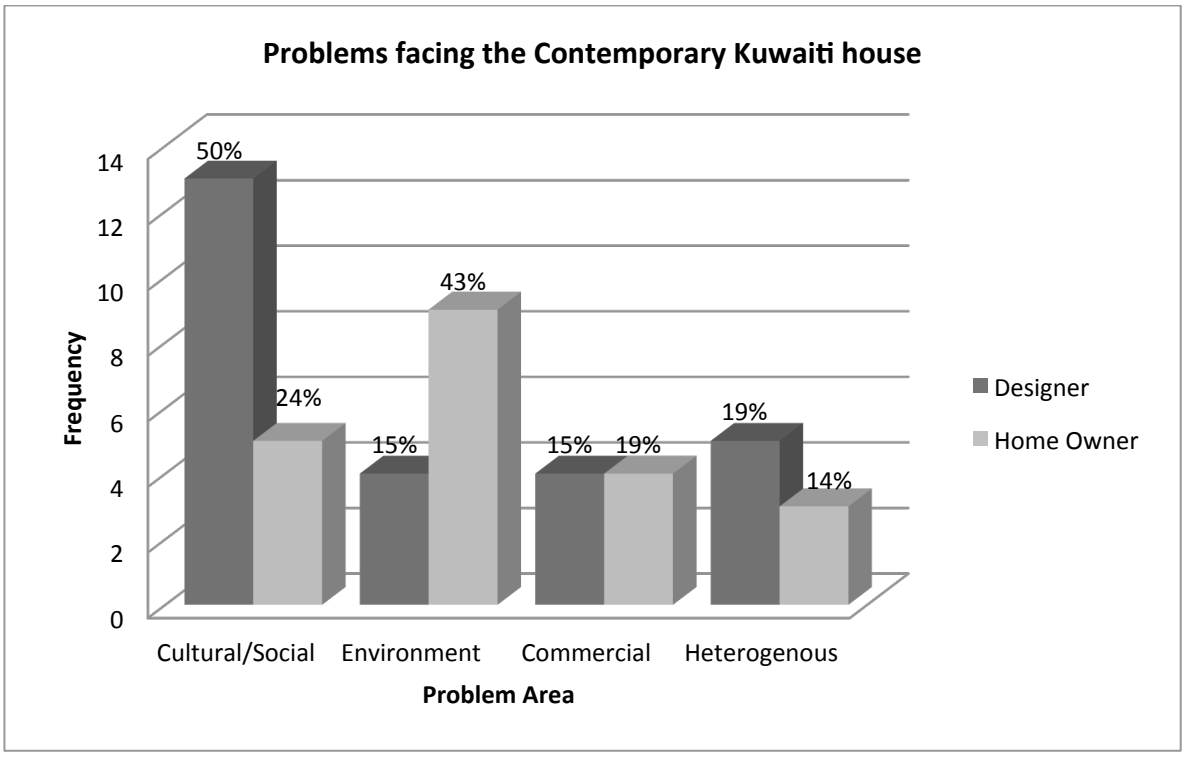


Figure 5.3: Problems facing the Contemporary Kuwaiti house: Clearly shows the differences between what designers and homeowner regard as the main problems facing Kuwait's domestic built environment.

5.5.5 Question 5

Question 5 attempted to identify what designers and homeowners aspire to include in their houses by asking them to state their desired deign elements. It too was an open-ended question that intended to obtain a wide range of detailed descriptions. After content analysis, the four categories that most comments fell into presented in Table 5.7 and Figure 5.4 were: Expandability, Luxuries, Outdoor Areas and Modern Design. Expandability – i.e. ability to expand in the future and adding apartment space - was ranked the highest category and falls in line with and confirms current trends in the society for the perceived need for space.

Designer and Homeowner - most desired design elements	Designers		Homeowners		Total	
	Freq.	%	Freq.	%	Freq.	%
-Expandability (Apartments, fully utilize space)	9	31	7	23	16	27
-Luxuries (Pools, children play areas, high-tech)	6	21	6	20	12	20
-Outdoor areas (Gardens, Natural Lighting, Courtyards)	1	3	10	33	11	19
-Modern Design	5	17	0	0	5	8
-Vernacular Elements	1	3	2	7	3	5
-Heterogeneous (different designs)	3	10	0	0	3	5
-Reduced cost	2	7	1	3	3	5
-Comfort	1	3	2	7	3	5
-Others (parking, storage areas)	1	3	2	7	3	5

Table 5.7: Most desired elements.

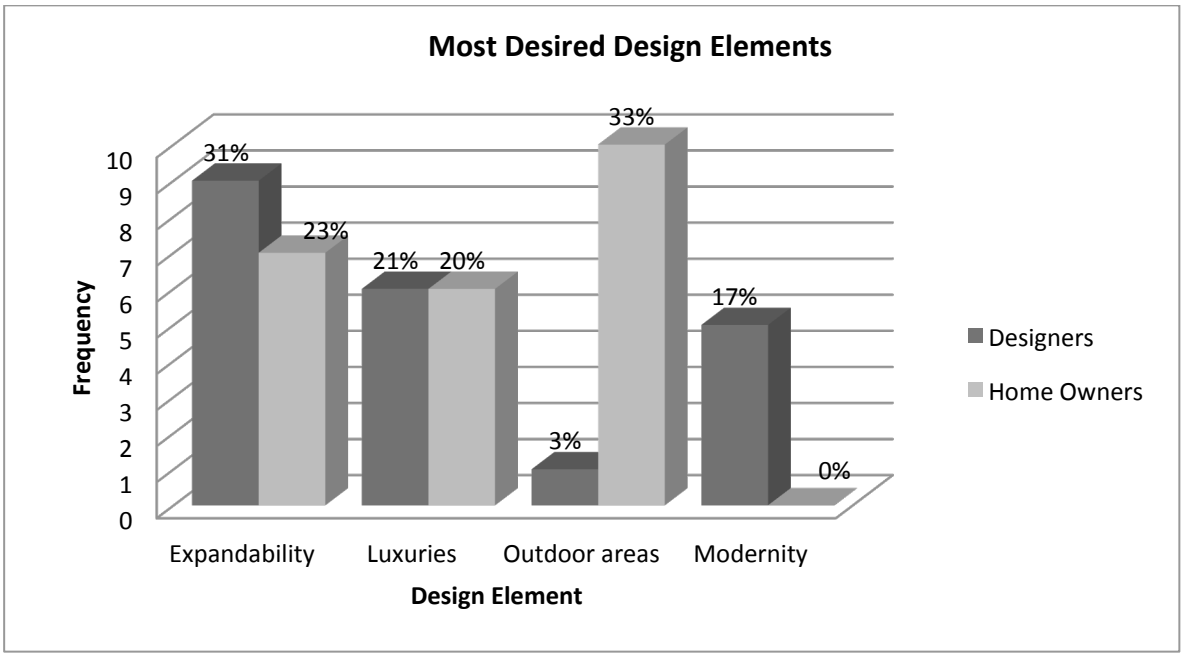


Figure 5.4: Most desired elements: Homeowners focused on outdoor areas, future expandability and luxuries, whereas designers noted expandability, luxuries and modern designs.

5.5.6 Question 6

This question asked the participants what is the first vernacular element they visualize in a Kuwaiti traditional house. The question intended to understand what element was foremost in people's mind and for both designers and homeowners the courtyard is by far the most recognized element. A rank of the elements is shown in Table 5.8 below.

Rank	Element	Designers	Home Owners	Total
1	Courtyard	11	5	16
2	LIwan		3	3
3	Mud walls	2		2
4	Doors		2	2
5	Parapet wall	1		1
6	Simplicity		1	1
7	Passages/Alleys	1		1
8	Jeleeb		1	1
9	Ceiling	1		1
10	Merzam	1		1

Table 5.8: Rank of the first Traditional Vernacular Element people visualize.

5.5.7 Question 7

This question played an important role in understanding the potential use for traditional vernacular elements in contemporary houses. It asked should vernaculars be applied in contemporary houses? An overwhelming 80% of participants answered yes. Table 5.9 shows that males were more for its use, as were designers and the younger age group.

Response	Designers	Homeowners	Male	Female	Below 35	Above 35
Yes	82%	79%	83%	75%	92%	79%
No	18%	21%	17%	25%	8%	21%

Table 5.9: Application of Traditional Vernacular Elements.

Pearson Chi-Square Tests Between groups of for use of Traditional Vernacular Elements

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square (Designers/Homeowners)	0.070[a]	1	0.791
Pearson Chi-Square (Male/Female)	0.568[a]	2	0.753
Pearson Chi-Square (Below 35/Above 35)	2.338[a]	2	2.338

Table 5.10: Pearson Chi-Square test results for Question 7: Between designers/homeowners, male/female, below/above 35 to see if the groups have differences in their responses to apply Traditional Vernacular Elements.

The Pearson Chi-Test results indicate that there is no significant difference between the groups. Content analysis was then done to analyse the reasons for answering yes or no. The environment and issues relating to sustainability was identified in a total of 35% of the participants as the most important reason for applying vernaculars. It's followed by socio-cultural reasons identified in a total of 29% of participant responses. The last three categories were adaptability 16%, functionality 10%, and aesthetics 10%. Both Table 5.11 and Figure 5.5 show participants justification for the application of traditional vernacular elements in their houses.

Reasons	Designers		Homeowners		Total	
	Freq.	%	Freq.	%	Freq.	%
-Environmental Sustainability	8	36	3	33	11	35
-Socio-Cultural	7	32	2	22	9	29
-If adaptable	3	14	2	22	5	16
-Functional (proven)	3	14	0	0	3	10
-Aesthetics	1	5	2	22	3	10

Table 5.11: Participants' reasons to apply Traditional Vernacular Elements.

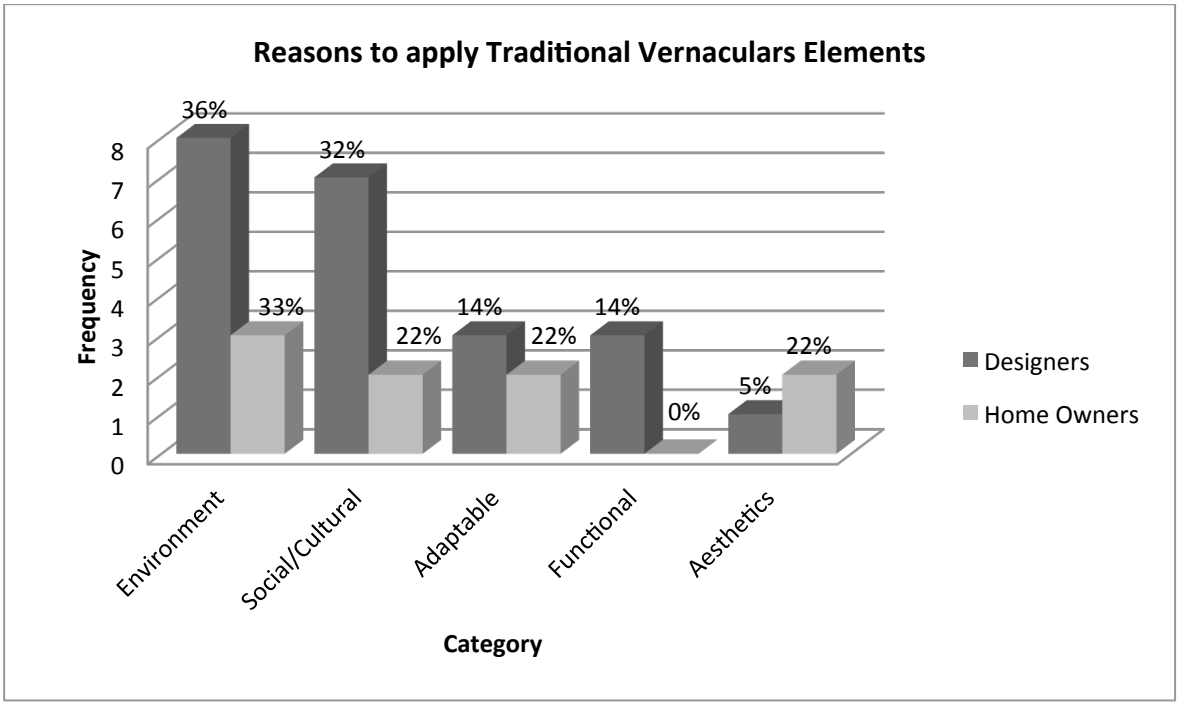


Figure 5.5: Participant reasons to apply Traditional Vernacular Elements.

5.5.8 Question 8

After asking the participants if they were to use vernacular elements, question 8 asked if the participants have traditional vernaculars in their current houses. Around 65% of the participants answered no (table 5.12). In the previous question participants indicated the willingness to use traditional vernacular elements, however the result of this question reveal, that the majority of participants do not have these elements. The reasons for this have been categorized in Table 5.13.

Response	Designers	Homeowners	Male	Female	Below 35	Above 35
Yes	35%	36%	39%	33%	17%	57%
No	65%	64%	61%	67%	83%	43%

Table 5.12: Traditional Vernaculars Elements in participant's houses.

Participants no reasons	Designers	Homeowners	Total
-Not involved in decision (now owner)	4	1	5
-House built at a time when modern ideas prevailed	4		4
-Lack of awareness (copying existing trends)	2	2	4
-Limited areas and land nowadays	1	1	2
-Shortage of architects who can adapt vernaculars	1	1	2
-No need for them	1		1

Table 5.13: Participants reasons for not having Traditional Vernacular Elements in their houses.

For the few participants who answered that they do have vernaculars in their current house, the courtyard was identified as the first, followed by the Liwan, and Merzam shown in Table 5.14. The participant groups above the age 35 usually had more vernacular elements in their houses.

Vernacular applied	Designers	Homeowners	Total
-Courtyard	2	2	4
-Liwan	2	1	3
-Merzam		3	3
-Door		1	1
-Roshina	1		1
-Diwaniya	1		1
-Parapet	1		1

Table 5.14: Traditional Vernacular Elements currently in participants' houses.

5.5.9 Question 9

This question is a continuation of question 8 and asks only designers if they included vernaculars in their designs. Of the designers who answered this question 53% included some form of vernacular elements in their past or current designs, 23% did not, while 24% did not answer the question (table 5.15). 5 designers stated that they used the courtyard, with some justifying it by saying that the outside room is *"environmentally friendly"* and *"socially functional"*. 2 designers indicated they used a liwan, whereas parapet wall, wooden door, and diwaniya were identified only once. Designers who did not include traditional verncular elements in their designs justified their position by stating that *"Kuwait's current building laws don't encourage such concepts"* and that it is *"not required by most clients… our fault for not encouarging its use"*. While other designers argue there is *"no need for it"* and *"modern design can't include verncalurs"*.

Participant response	%
Yes	53
No	23
N.A	24

Table 5.15: Designer use of Traditional Vernacular Elements in their designs.

5.5.10 Question 10

Finally, the last two questions of the questionnaire are Likert scale questions. Question 10 aims to see what (if any) traditional vernacular elements may be used in today's houses. It shows traditional vernacular elements and asked the participants to what extent would they use the elements in their current houses ticking one of five boxes from very likely, likely, neutral, not likely and not at all likely. The results are as follows:

Descriptive Statistics and Mean Likert Score-Question 10

Vernacular Element	N	Minimum	Maximum	Mean	Std. Deviation
Courtyard	31	1	5	1.61	1.054
Diwaniya	31	1	5	1.81	1.046
Liwan	31	1	4	2.16	.969
Merzam	31	1	5	2.65	1.427
Dahrees	31	1	5	3.03	1.048
Khokha	31	1	5	3.23	1.283
Mud Brick	31	1	5	3.55	1.410
Bagdir	31	1	5	3.61	1.086
Ferya	31	2	5	3.61	.919
Bircha	31	1	5	3.61	1.453
Jelleb	31	1	5	4.10	1.248
Valid N (listwise)	31				

Table 5.16: Ranking of Traditional Vernacular Element according to mean Likert score.

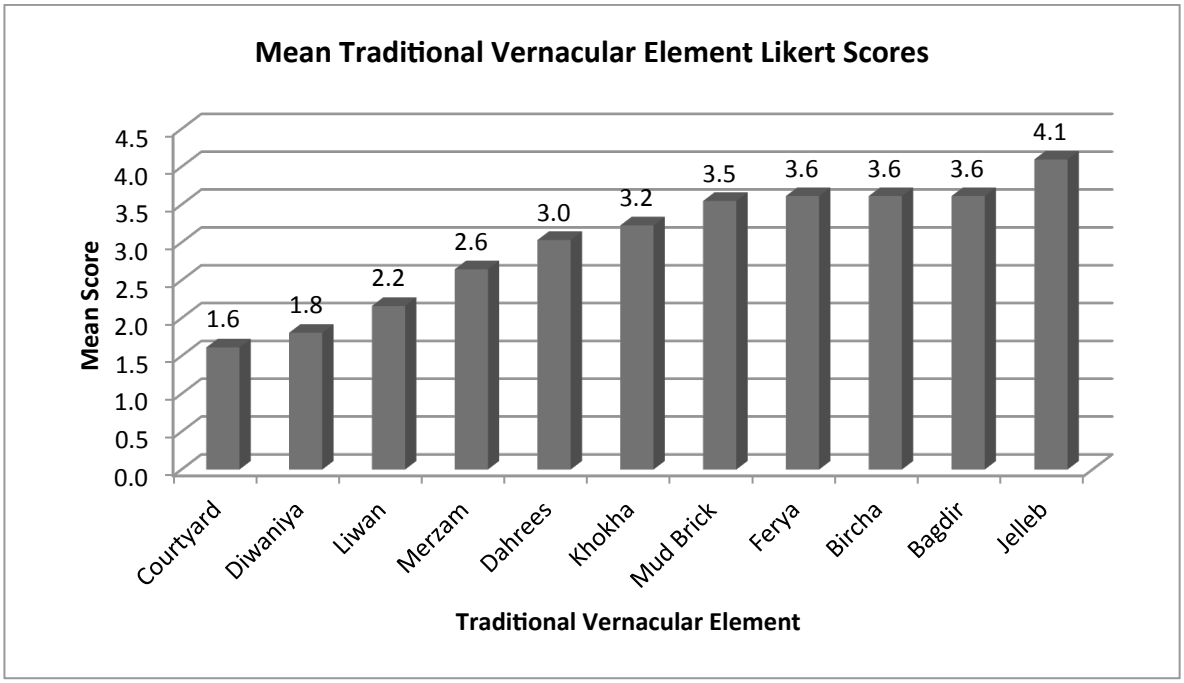


Figure 5.6: Ranking of Traditional Vernacular Elements according to mean Likert score.

The question asked how likely would you use traditional vernacular elements in your house where 1= very likely and 5 = not at all likely. On this scale a mean score of 2 or less can be interpreted as positive or likely and a mean score more than 2 can be interpreted as negative or not likely. Only the Courtyard and Diwaniya received a mean score below 2 (table 5.16),

which indicates as a group both designers and homeowners felt that they are likely to use these particular traditional vernacular elements in their current or future house designs.

The three highest ranked elements for the designers and the homeowners were the Courtyard, the Diwaniya and the Liwan. This may suggest they are the most likely to be used by the participants. The three lowest ranked elements for the designers were the Jelleb, Mud bricks and the Bircha; whereas for the homeowners they were the Jelleb, Bagdir and Mud bricks. These suggest that these elements are the most unlikely to be used by the participants in their houses.

Cronbach's Alpha Reliability Test:

Reliability Statistics

Cronbach's Alpha	N of Items
.762	11

Table 5.17: Cronbach's Alpha Reliability Test for Question 10.

In order to state the results and findings with more reliability and confidence further statistical analysis and tests were required specifically for the Likert question. The first test conducted was the Cronbach's alpha to test for the reliability of the data. A suggested guideline to describe the internal consistency using Cronbach aplha's is as follows: if the value of Cronbach alpha coefficient is equal or higher than 0.9 than the internal consistency is excellent, if the value is between 0.7 to 0.9 than the internal consistency is good, if the value is between 0.6 to 0.7 than the internal consistency is average, if the value is between 0.5 to 0.6 than the internal consistency is poor, and finally if the value is below 0.5 than the internal consistency is unacceptable. (George & Mallery: 2003). The outcome of the test was .762 for all 11 Likert questions, which means that the internal consistency of the data is good.

Shaprio-Wilk Normality Test:

The second test conducted was the Shaprio-Wilk normality test. If the significant value of the test is above .05 than the data is normal, which means further parametric testing will be used. However, if the significance value of the test were below .05 than the data is not normal, which means further non-parametric will be required. Table 5.18 below shows all the significance values between .000 and .007, which mean that the data in the Likert scale is not normal, and as a result, the final tests will be non-parametric.

Tests of Normality

	Shapiro-Wilk		
	Statistic	Df	Sig.
Courtyard	.650	31	.000
Khokha	.872	31	.002
Dahrees	.900	31	.007
Liwan	.847	31	.000
Ferya	.876	31	.002
Jelleb	.727	31	.000
Bircha	.816	31	.000
Diwaniya	.768	31	.000
Bagdir	.891	31	.004
Merzam	.874	31	.002
Mud Brick	.848	31	.000

a. Lilliefors Significance Correction

Table 5.18: Shapiro-Wilk Test for Normality for Question 10.

Spearman Correlation Test:

The third test is the Spearman Correlation test, which plays an important role in identifying significant relationships from the data. There is two numbers in Table 5.19 that together indicate if the Spearman correlation is significant. If the Sig. value is below 0.05 that means there is a significant relationship between the elements. The R value (correlation coefficient) determines the strength of that relationship. If the R value is above .5 (or 50%) that means the relationship between the two elements is above average. The data below reveals that there is a significant and above average relationship between the courtyard and

liwan, and between the jelleb and bagdir. The liwan is adjacent to the courtyard and may explain how when people selected the courtyard they usually selected the liwan as well.

Correlations

			Courtyard	Khokha	Dahrees	Liwan	Ferya	Jelleb	Bircha	Diwaniya	Bagdir	Merzam	Mud Brick
Spearman's rho	Courtyard	Correlation Coefficient	1.000	.412*	.273	.502**	.161	.123	.190	-.179	.146	.216	.380*
		Sig. (2-tailed)		.021	.137	.004	.388	.508	.307	.335	.435	.244	.035
		N	31	31	31	31	31	31	31	31	31	31	31
	Khokha	Correlation Coefficient	.412*	1.000	.344	.379*	.258	.054	.139	.361*	.056	.089	.188
		Sig. (2-tailed)	.021		.058	.035	.161	.773	.454	.046	.764	.635	.311
		N	31	31	31	31	31	31	31	31	31	31	31
	Dahrees	Correlation Coefficient	.273	.344	1.000	.136	.187	.052	.083	.212	.362*	.203	.195
		Sig. (2-tailed)	.137	.058		.465	.314	.781	.659	.251	.046	.273	.294
		N	31	31	31	31	31	31	31	31	31	31	31
	Liwan	Correlation Coefficient	.502**	.379*	.136	1.000	.078	.213	.334	-.039	.269	.385*	.290
		Sig. (2-tailed)	.004	.035	.465		.678	.250	.066	.836	.143	.032	.114
		N	31	31	31	31	31	31	31	31	31	31	31
	Ferya	Correlation Coefficient	.161	.258	.187	.078	1.000	.235	-.078	-.041	.173	-.205	.469**
		Sig. (2-tailed)	.388	.161	.314	.678		.204	.677	.827	.351	.268	.008
		N	31	31	31	31	31	31	31	31	31	31	31
	Jelleb	Correlation Coefficient	.123	.054	.052	.213	.235	1.000	.438*	-.039	.531**	.120	.523**
		Sig. (2-tailed)	.508	.773	.781	.250	.204		.014	.836	.002	.520	.003
		N	31	31	31	31	31	31	31	31	31	31	31
	Bircha	Correlation Coefficient	.190	.139	.083	.334	-.078	.438*	1.000	.014	.407*	.412*	.320
		Sig. (2-tailed)	.307	.454	.659	.066	.677	.014		.941	.023	.021	.080
		N	31	31	31	31	31	31	31	31	31	31	31
	Diwaniya	Correlation Coefficient	-.179	.361*	.212	-.039	-.041	-.039	.014	1.000	-.032	-.191	-.102
		Sig. (2-tailed)	.335	.046	.251	.836	.827	.836	.941		.865	.304	.587
		N	31	31	31	31	31	31	31	31	31	31	31
	Bagdir	Correlation Coefficient	.146	.056	.362*	.269	.173	.531**	.407*	-.032	1.000	.347	.598**
		Sig. (2-tailed)	.435	.764	.046	.143	.351	.002	.023	.865		.056	.000
		N	31	31	31	31	31	31	31	31	31	31	31
	Merzam	Correlation Coefficient	.216	.089	.203	.385*	-.205	.120	.412*	-.191	.347	1.000	-.018
		Sig. (2-tailed)	.244	.635	.273	.032	.268	.520	.021	.304	.056		.923
		N	31	31	31	31	31	31	31	31	31	31	31
	Mud Brick	Correlation Coefficient	.380*	.188	.195	.290	.469**	.523**	.320	-.102	.598**	-.018	1.000
		Sig. (2-tailed)	.035	.311	.294	.114	.008	.003	.080	.587	.000	.923	
		N	31	31	31	31	31	31	31	31	31	31	31

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5.19: Spearman Correlation Test for Question 10.

Mann-Whitney U Test

The final non-parametric test for significance differences used was the Mann-Whitney U statistic. The test has been conducted to see if there is any significant difference between, homeowners and designers, and male and female. A significance value of above .05 indicates that there is no significance relationship between the groups and below .05 indicates a significant difference. The conclusion: we cannot reject the null hypothesis for any of the vernaculars, i.e. we cannot state that the groups are significantly different between designers and homeowners, and males and females.

Test Statistics between Designers and Homeowners

	Courtyard	Khokha	Dahrees	Liwan	Ferya	Jelleb	Bircha	Diwaniya	Bagdir	Merzam	Mud Brick
Mann-Whitney U	108.500	107.000	77.500	98.000	113.500	109.000	111.000	114.000	85.000	113.000	100.500
Wilcoxon W	261.500	260.000	230.500	251.000	266.500	214.000	216.000	267.000	238.000	218.000	253.500
Z	-.503-	-.495-	-1.716-	-.886-	-.230-	-.438-	-.336-	-.216-	-1.406-	-.244-	-.759-
Asymp. Sig. (2-tailed)	.615	.620	.086	.376	.818	.661	.737	.829	.160	.807	.448

a. Grouping Variable: Respondent

b. Not corrected for ties.

Table 5.20: Mann-Whitney U Test between Designers and Homeowners for Question 10.

Test Statistics between Genders

	Courtyard	Khokha	Dahrees	Liwan	Ferya	Jelleb	Bircha	Diwaniya	Bagdir	Merzam	Mud Brick
Mann-Whitney U	105.500	111.000	92.500	92.000	91.000	107.000	94.000	97.500	88.500	78.000	92.500
Wilcoxon W	183.500	189.000	282.500	170.000	281.000	297.000	284.000	287.500	278.500	156.000	282.500
Z	-.416-	-.127-	-.908-	-.948-	-.983-	-.313-	-.859-	-.729-	-1.078-	-1.497-	-.901-
Asymp. Sig. (2-tailed)	.677	.899	.364	.343	.326	.754	.390	.466	.281	.134	.368

a. Grouping Variable: Gender

b. Not corrected for ties.

Table 5.21: Mann-Whitney U Test between Genders for Question 10.

5.5.11 Question 11

Like question 10, question 11 was also a Likert scale question and asked the participants how important were specific design factors when designing their current house. Table 5.22 ranks the importance of factors according to the mean Likert score, whereas, Figure 5.7 illustrates this ranking graphically.

Descriptive Statistics and Mean Score-Question 11

Design Factors	N	Minimum	Maximum	Mean	Std. Deviation
Requirements	31	1	2	1.35	.486
Privacy	31	1	3	1.42	.564
Circulation	31	1	3	1.48	.677
Greenery	31	1	3	1.52	.626
Interior	31	1	3	1.52	.677
Façade	31	1	4	1.68	.871
Budget	31	1	3	1.68	.791
Orientation	31	1	4	1.71	.902
Environment	31	1	5	1.77	1.023
Cultural	31	1	4	2.03	.875
Valid N (listwise)	31				

Table 5.22: Ranking of importance of design factors according to mean Likert score.

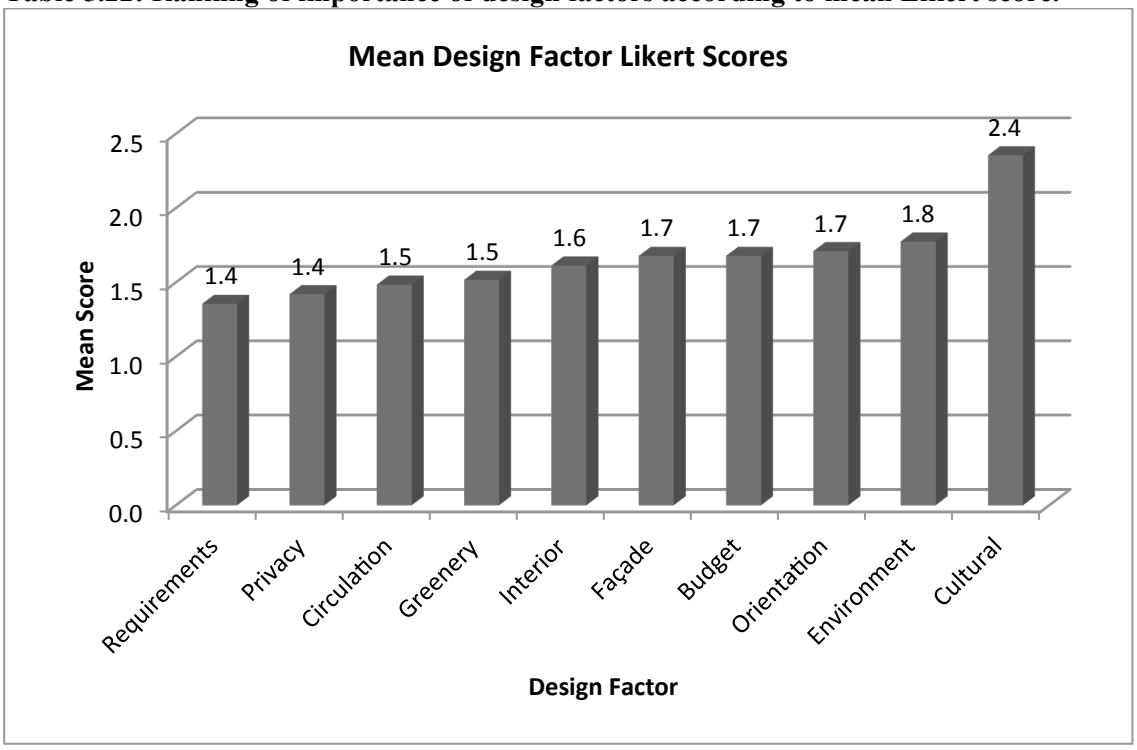


Figure 5.7: Ranking of importance of design factors according to mean Likert score.

The question asked in choosing or designing your house how important were each of the following factors where 1= very important and 5 not at all important. A mean score of 2 or less can be interpreted as positive or important and a mean score more than 2 can be interpreted as negative or not important. All but Cultural identity has a mean score below 2 that indicates as a group both designers and homeowners felt that all the factors are important in designing their house except Cultural identity.

The highest elements for the designers were people's user requirements, followed equally by privacy, orientation, circulation and greenery; whereas for the homeowners the highest ranked were people's user requirements and privacy, followed by the budget and greenery. The lowest three ranked elements for the designers were the façade followed equally by the cultural and environmental elements; whereas for the homeowners they were cultural, then the orientation and finally followed by the interior and environment elements.

Cronbach's Alpha Reliability Test:

Reliability Statistics

Cronbach's Alpha	N of Items
.707	10

Table 5.23: Cronbach's Alpha Reliability for Question 11.

The first test conducted was the Cronbach's alpha reliability test. The outcome of the test was .707 for all 10 Likert questions, which means that the internal consistency of the data is good.

Shaprio-Wilk Normality Test

The second test again for question 11 was the Shaprio-Wilk Normality Test. Table 5.24 below shows all the significance values between .000 and .006, which mean that the data in the Likert scale is not normal, and as a result, the final tests will be non-parametric.

Tests of Normality

	Shapiro-Wilk		
	Statistic	Df	Sig.
Cultural	.895	31	.006
Environment	.757	31	.000
Requirements	.607	31	.000
Privacy	.679	31	.000
Orientation	.758	31	.000
Circulation	.697	31	.000
Façade	.741	31	.000
Interior	.745	31	.000
Greenery	.725	31	.000
Budget	.750	31	.000

a. Lilliefors Significance Correction

Table 5.24: Shaprio-Wilk Normality Test for Question 11.

Spearman Correlation Test

Like question 10 the third test is the Spearman Correlation test. The data below reveals that there is a significant and above average relationship between requirements and orientation, requirements and circulation, and orientation and circulation. These design factors are usually functionally connected with each other, and therefore, may explain why participants often selected them together.

Correlations

			Cultural	Environment	Requirements	Privacy	Orientation	Circulation	Façade	Interior	Greenery	Budget
Spearman's rho	Cultural	Correlation Coefficient	1.000	.223	.354	-.011	.275	-.050	.350	.260	.272	.011
		Sig. (2-tailed)		.228	.051	.952	.134	.790	.054	.158	.139	.953
		N	31	31	31	31	31	31	31	31	31	31
	Environment	Correlation Coefficient	.223	1.000	.284	.276	.251	.157	.002	-.140	.125	.093
		Sig. (2-tailed)	.228		.121	.134	.173	.400	.991	.452	.503	.619
		N	31	31	31	31	31	31	31	31	31	31
	Requirements	Correlation Coefficient	.354	.284	1.000	.265	.596**	.506**	.338	.339	.269	0.000
		Sig. (2-tailed)	.051	.121		.149	.000	.004	.063	.062	.143	1.000
		N	31	31	31	31	31	31	31	31	31	31
	Privacy	Correlation Coefficient	-.011	.276	.265	1.000	.166	.109	.214	.312	-.115	.234
		Sig. (2-tailed)	.952	.134	.149		.372	.561	.247	.087	.537	.206
		N	31	31	31	31	31	31	31	31	31	31
	Orientation	Correlation Coefficient	.275	.251	.596**	.166	1.000	.483**	.333	.266	.100	-.169
		Sig. (2-tailed)	.134	.173	.000	.372		.006	.067	.149	.592	.364
		N	31	31	31	31	31	31	31	31	31	31
	Circulation	Correlation Coefficient	-.050	.157	.506**	.109	.483**	1.000	.222	.294	.122	.082
		Sig. (2-tailed)	.790	.400	.004	.561	.006		.230	.109	.514	.661
		N	31	31	31	31	31	31	31	31	31	31
	Façade	Correlation Coefficient	.350	.002	.338	.214	.333	.222	1.000	.809**	.432*	.253
		Sig. (2-tailed)	.054	.991	.063	.247	.067	.230		.000	.015	.170
		N	31	31	31	31	31	31	31	31	31	31
	Interior	Correlation Coefficient	.260	-.140	.339	.312	.266	.294	.809**	1.000	.447*	.109
		Sig. (2-tailed)	.158	.452	.062	.087	.149	.109	.000		.012	.560
		N	31	31	31	31	31	31	31	31	31	31
	Greenery	Correlation Coefficient	.272	.125	.269	-.115	.100	.122	.432*	.447*	1.000	.028
		Sig. (2-tailed)	.139	.503	.143	.537	.592	.514	.015	.012		.883
		N	31	31	31	31	31	31	31	31	31	31
	Budget	Correlation Coefficient	.011	.093	0.000	.234	-.169	.082	.253	.109	.028	1.000
		Sig. (2-tailed)	.953	.619	1.000	.206	.364	.661	.170	.560	.883	
		N	31	31	31	31	31	31	31	31	31	31

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5.25: Spearman Correlation Test for Question 11.

Mann-Whitney U Test

Like question 10, a Mann-Whitney U non-parametric test was performed on the data to test if there were a significant difference between the responses of designers and homeowners. To conclude we can only accept the null hypothesis for the requirements and circulation factors and state that at the 5% level the designers and homeowners groups exhibit significant differences in their responses. The results of the tests are presented below.

Test Statistics between Designers and Homeowners

	Cultural	Environment	Requirements	Privacy	Orientation	Circulation	Façade	Interior	Greenery	Budget
Mann-Whitney U	101.000	107.000	72.000	95.000	76.000	65.000	116.500	118.500	108.500	109.000
Wilcoxon W	206.000	260.000	225.000	200.000	229.000	218.000	269.500	223.500	261.500	214.000
Z	-.754-	-.521-	-2.250-	-1.118-	-1.875-	-2.483-	-.110-	-.023-	-.473-	-.435-
Asymp. Sig. (2-tailed)	.451	.603	.024	.263	.061	.013	.913	.982	.636	.663

a. Grouping Variable: Respondent

Table 5.26: Mann-Whitney U Test between Designers and Homeowners for Question 11.

Test Statistics between Genders

	Cultural	Environment	Requirements	Privacy	Orientation	Circulation	Façade	Interior	Greenery	Budget
Mann-Whitney U	112.000	105.500	94.500	102.000	104.500	90.000	108.000	112.500	88.000	81.500
Wilcoxon W	190.000	183.500	172.500	180.000	182.500	168.000	298.000	190.500	166.000	271.500
Z	-.086-	-.377-	-.954-	-.571-	-.423-	-1.128-	-.269-	-.069-	-1.196-	-1.445-
Asymp. Sig. (2-tailed)	.932	.706	.340	.568	.672	.260	.788	.945	.232	.148

a. Grouping Variable: Gender

Table 5.27: Mann-Whitney U Test between Genders for Question 11.

5.6 Questionnaire Key Findings

5.6.1 The Courtyard

The courtyard has been the most identified traditional vernacular element throughout the questionnaire. In question 1, when asked to describe the traditional Kuwaiti house, over half the participants specifically identified the courtyard. In question 6 the majority of participants (16) recognized the courtyard as the first traditional vernacular element they visualized. This reinforces how people directly relate the courtyard to the traditional Kuwaiti house - the courtyard house. Finally question 10 asked the participants would they be likely to use traditional vernacular elements in their current or future house. An overwhelming number of designers and homeowners were likely to use the courtyard (mean=1.6).

5.6.2 Disconnects in Perceptions

If the courtyard is important for designers and homeowners alike why are they not implementing it in their house designs? In fact when asked[5] if vernacular elements should be applied in contemporary houses 82% of designers and 79% of homeowners said yes. However, when asked if there are vernacular elements currently in their house 65% of designers and 64% of homeowners said no. The question then arises, if people desire the applications of these elements why are they not used in their current houses? The findings revealed contradictions in participants' responses, which suggests disconnects in understandings between traditional and modern.

5.6.2.1 Culture

In describing Kuwait's traditional courtyard houses participants primarily discussed socio-cultural issues. The house was described as being "*hospitable*" and design of adjacent

[5] The workshops and methods have been presented to the participants with a brief understanding of the topic. All efforts have been made to limit any outside influence either from the researcher or the participants.

houses served to built and strengthen social fabrics through family and neighbourhood bonds. It's simple design provided people's basic needs and maintained cultural norms and privacy. In complete contrast when describing the contemporary Kuwaiti house participants usually expressed a negative tone referring to the new houses as being "*unfriendly*".

Although heavily discussed by both designers and homeowners, when asked about the importance of various factors in their new house design, culture was ranked third by both designer and homeowner groups behind environmental sustainability and identity. In question 11 when participants were asked to rank the importance of factors in designing their house, culture ranked the last (mean=2.4). If traditional vernacular elements are perceived to be an expression of cultural and environmental sustainability why then do participants agree to their use but at the same time not acknowledge cultural importance for their house design? This contradiction may reveal deeper meanings about how people perceive culture and perhaps suggests that although they respect their cultural identity they may not express it or give it priority in their domestic built environments.

5.6.2.2 Environmental Sustainability

The questionnaire included the concept of environmental sustainability in several questions in order to elicit participant understandings of this issue. It first was identified from the responses of the first question in relation to the traditional Kuwaiti house. A total of 31 participants associated the traditional house with being more environmentally sustainable. In contrast when asked what are the problems facing today's domestic architecture, 13 participants related contemporary houses as unfriendly and unsustainable with a waste of space and energy. This reinforces an important association between the traditional as being sustainable and the modern as being unsustainable. Furthermore, question 3 asked participants; what are the factors they aspire to have significance in their

house? 32% selected environmental sustainability to have the most significance in their houses followed by identity, culture and then modernity.

Nonetheless, when the participants were asked the importance of factors in designing their house, environmentally sustainable design ranked second to lowest after culture. Why would participants identify environmental sustainability as having the most significance in their houses but do not consider it an important factor in designing their house? Moreover, in question 7, the majority of participants agreed traditional vernacular elements should be used in contemporary houses and the main justification for this was environmental sustainability followed closely by socio-cultural factors. The findings indicate environmental sustainability as an essential motive for using traditional vernacular elements. However, again contradictions within participant responses suggest that although they acknowledge the importance of environmental sustainability they still do not feel it's an important factor in designing their house.

5.6.3 Spatial Issues

Spatial issues have emerged to be an important finding, which sheds light on people's perceptions towards past and present domestic architecture. Spatial aspects and specifically the use of space to meet the many modern requirements[6] have been identified as a key feature in the contemporary Kuwaiti house. Moreover, 84% of designers and homeowners believe there are problems in modern houses, of which spatial and cultural aspects of the house were among the highest responses. Spatial problems usually reflected a waste of space, lack of leisure areas and society imposed luxuries. Participants described the house as large heterogeneous *"box like"* and *"multi-storey concrete structures"* with

[6] After the oil boom Kuwait's houses literally transformed from mud brick courtyard houses into modern concrete villas. From that point people changed their lifestyle to a lavish modern standard of living. The phrase modern requirements here refers to the endless list of amenities that come along with this type of living such as large reception halls, swimming pools, and gardens etc.

large rooms and poor utilization of space. In addition some participants indicated that people are building an extra floor to add apartments to increase family income.

Question 5 asked the participants what design elements they wanted to include in their house. Most of the discussions involved spatial issues; first was the idea of expandability (27%), which refers to adding more space for current of future requirements, second was the desire for luxury space (20%) such as large receptions, swimming pools and high-tech applications, the third was to increase outdoor space (19%) and have places like courtyards and gardens with natural lighting. An interesting note that 10 homeowners (33%) expressed the need for outdoor spaces compared to only 1 designer (3%). This may suggest that there is a gap between homeowners' needs and designers' priorities for more outdoor areas.

Furthermore, in question 11, when the participants were asked how important were specific design factors when designing their house they clearly expressed that their requirements are the most important factor for them (mean=1.35). This may suggest the importance for the participants to maintain their high standard of living, which usually accommodates their modern requirements. It may also indicate their own personal desires, which varies from one individual to another. This has been clearly highlighted in the upcoming method, when participants sketched their houses. Privacy was the second most important factor participants took into consideration when designing their current house (mean=1.42). It is interesting to note that sometimes it may be a challenge to accommodate modern requirements and provide a high degree of privacy. For example, this issue is evident with the introduction of the outdoor swimming pool. Without proper screens, neighbours may view people swimming, and people in the street may hear them. So what do participants mean when they give importance to privacy? And are they willing to give up their privacy to accommodate their need for more space to fulfil their modern

requirements? And why is people's desire for space also viewed as a problem? If so does that mean that despite acknowledging the negative consequences of luxury living people want it anyway? And may that suggest a potential barrier for the application of vernacular elements in contemporary designs? One may argue that participants' responses are perhaps a reflection of Kuwait's socio-cultural and economic reality, where people are constantly adapting to the collisions between traditional concepts and modern practices of space.

Chapter 6: Cognitive Maps

6.1 Introduction

This chapter will present some history of cognitive maps and discuss why cognitive maps have been used as a method for this study. It will then explain the specific cognitive map design, and a note on the specific content analysis strategy. Subsequently, the chapter will present the findings, which are divided into three sections; first homeowners, second designers, and third both homeowners and designers. The chapter will end with a discussion of the key findings.

6.2 Background and Rationale

Origins of mapmaking date back thousands of years to when early cartographers started to chart land and sea, giving new direction to world exploration. These maps were interpretations that illustrated vague and approximate geographic locations. However, a geographer's map usually represented what was recorded in contrast to a cognitive map, which could be used to represent what a person remembered. The term *cognitive* means a "conscious intellectual activity such as thinking, reasoning, remembering, imagining, or learning words" (Merriam-Websters Dictionary:2012), which are all elements of perception. Therefore, cognition is a person's perceptual and sensory translation of the real world; the person's personality and experiences are therefore revealed through his or her cognitive expressions.

One such expression, and a significant tool in environmental cognition research, is the 'cognitive map'. The concept of drawing a space or place reflects various individual interpretations and provides a platform for researchers to discover and analyse emerging perceptions and understandings of the built environment. Cognitive mapping "is a process composed of a series of psychological transformations by which an individual acquires,

stores, recalls, and decodes information about the relative locations and attributes of the phenomena in his everyday spatial environment" (Downs and Stea:1973:7). Similarly, cognitive maps:

> Suspend impressions, thoughts, feelings and ideas until, for some reason, consciously or unconsciously, the mind solicits, changes, and often distorts or manipulates its contents for some immediate purpose. In this way cognitive maps (images) allow us to bridge time, by using past experiences to understand present and future situations (Downing:1992:442).

Today, research in cognitive spatial mapping and perception traces its origins to Edward Tolman's work in 1948 and Kevin Lynch's notable study in 1960, introduced in his book *The Image of The City*. His book was the first to study "the mental image of a city" as it was, "a first word not a last word, an attempt to capture ideas and to suggest how they might be developed and tested" (Lynch:1960:3). Lynch continues to define the city image and its elements as physical forms and classifies them as: paths, edges, districts, nodes and landmarks. Since then, there have been many studies of cognition and perception that have used cognitive maps. Topics within cognition include spatial cognition, cognitive maps, wayfinding, and perception of the environment. Cognitive approaches to the study of human environments gained momentum and were used to study people's perceptions of space around the world.

What is the significance of studying cognitive approaches to built environments? Over the past 40 years researchers have used knowledge from environmental cognition to improve people's quality of life. At the city level, having a clear path and distinct landmarks, for example, improves spatial cognition (Appleyard:1976,Lynch:1960). At the building level, clear wayfinding design through good signage greatly increases travel rates in complex buildings (O'Neil:1991). Cognitive mapping has also been used by police in

crime fighting by recognizing spatial patterns of crimes and to identify perpetrators or the location of next strikes (Canter and Larkin:1993).

A 2009 study addressing the progression in environmental psychology research found that cognition took the lead in the number of papers, since the inception of *The Journal of Environmental Psychology* and *Environment and Behaviour*. (Giuliani and Scopelliti:384:2009) Therefore, one may conclude cognitive research approaches are clearly recognized and have been significantly used by researchers as important tools in interpreting perceptions of space. Cognitive maps in particular have not only provided a platform for promoting discussion and future research directions but also have improved people's quality of life.

In Kuwait, the first use of the 'cognitive expression' started after the demolition of old Kuwait City from the mid-1950s to the mid-1960s. In an attempt to save past imagery, Kuwaiti artists such as the renowned Ayoub Hussein AlAyoub painted from his memories scenes of old Kuwait City. Born in 1932 in Kuwait, AlAyoub painted over 600 works representing life in Kuwait's past (AlGhunaim:2005). In parallel, a few historians and researchers used cognitive maps to locate houses from old neighbourhoods; however, their research was not usually focused on the built environment. Recently, a 2014 exploratory study of Kuwait's built environment was the first to use cognitive maps as a research method in this disciplinary context. The study presented a new perspective on how people were affected by Kuwait's transformation and provided insights into people's perceptions of Kuwait City and Kuwaiti houses before and after the discovery of oil (AlHaroun:2014). Please refer to Appendix D for information on the exploratory study.

The concept of drawing a space or place reflects various individual interpretations and provides a platform for researchers to discover and analyse emerging perceptions and understandings of the built environment. This study uses cognitive maps to illuminate

current understandings of the wider effects of modernity on Kuwait's built environment through exploring people's perceptions of house spaces. By using cognitive maps the goal is to gain deeper knowledge of how people perceive their current domestic built environments, which will reveal to what extent homeowners currently use traditional vernacular elements and to what extent they might be used (if at all) in their current house.

6.3 Cognitive Maps Design

This method intended to understand people's perceptions of their house with or without traditional vernacular elements, and therefore, will reveal what (if any) and how vernacular elements may be used in current or future house designs. The term cognitive maps have been used throughout this study; however, in order to simplify the understanding of this method for the participants the term 'sketch maps' have been used in the workshop booklet and during the workshops. The participants were asked to first draw their current house and second how they would alter their current house designs by incorporating or learning from traditional vernacular elements. The questions were asked in the sketch maps segment of the workshop booklet, with 2 A4 pages provided for each question (Please refer to appendix A). The written instructions given for the two sketch maps are presented below:

Question 1: The House: Please draw the plan of your house. It is the place that you live now but it is not your dream home. The sketch is only a rough plan that you may want to use for the future.

Question 2: A Contemporary Vernacular House: Now please draw your house plan again, however, if you had the opportunity to include traditional vernacular elements how would you redesign your house. (If you feel you do not want to use any elements do not respond to this question).

6.4 Cognitive Maps Data Analysis

The findings further reflect the value of cognitive maps in research through the participant's perceptions and mental representation of their houses. The sketches do not always portray an accurate geographic reality; rather they reflect reality as seen in the minds of the inhabitants. These perceptions of space go far beyond spatial drawings in that they give insight into how people see their world. The maps, "are not just a set of spatial mental structures denoting relative position, they contain attributive values and meanings" (Kitchin:1994:2). Furthermore, "the knowledge of space (cognitive maps) is critical to attitudes toward, decision making about and behavior within places" (MacEachern:1992:245).

There are many factors that shaped participants' understandings of their houses such as: life experiences, age, gender, education, and social and economic status. As a result, almost all of the cognitive maps have unique individual expressions. However, despite these differences they also share similar perceptions of the domestic built environment. The examination and analysis of the data indicate major elements and understandings in how Kuwaitis perceive modernity in Kuwait and how they see the traditional within modernity. For a more detailed content data analysis explanations please refer to chapter 5, however, below is a brief description of the form or process of content analysis that was conducted specifically for cognitive maps.

6.4.1 Content Analysis of Cognitive Maps

A form of content analysis using open coding was used to analyse the cognitive maps. Instead of looking at only words within texts the strategy was to look specifically for design elements within the sketch. The cognitive maps have been carefully examined and general observations have been made regarding the sketches. The second step was to

analyse the data from all the participants ranking the most identified house element in their current house and vernacular house (if any). Any vernacular element drawn or written by the participants has been recognized and identified as an element in the data analysis. The data collected was the number of participants who identified a specific element in their sketches. The house elements became the categories and from this point contrasts, similarities and emerging patterns have been observed from the data, providing the themes used to structure the discussion presented below.

6.5 Cognitive Maps Data Results/Findings

In contrast with the questionnaire findings, in this chapter the presentation of results will be discussed by the two main groups of the study (homeowners and designers) and not by question. The first question asked the participants to sketch their current house and the second asked them to sketch their house if they were to add any traditional vernacular elements. The results of both questions have been analysed separately for each group, however presented together. This has been done to clearly show the differences not only between their current house and contemporary vernacular house (if any) but between the different groups as well.

6.5.1 Homeowners

Out of the 14 homeowners who participated in the workshop 13 sketched their current house, 10 sketched their house if they were to add traditional vernacular elements, and 3 homeowners did not incorporate any vernaculars in their current house. It is important to acknowledge that there is usually a disparity between what people say they would do and what they then actually do. There is also the possibility that some participants made the drawing without really thinking through whether or not they would actually like to do this themselves. When comparing the two sketches, in their current house 92% of the

homeowners identified the family living room, followed by 84% identified general rooms and the kitchen, and 77% the main external door or entryway. For their proposed contemporary vernacular house, 90% of the homeowner's drew the courtyard, 70% the liwan, and 50% identified the main external door or entryway. A ranking of the most identified elements for both homeowners' sketches is presented in Table 6.1.

CURRENT HOUSE				CONTEMPORARY VERNACULAR HOUSE			
RANK	**NAME OF HOUSE ELEMENT**	**NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS**	**% OF MAPS IN WHICH ELEMENT APPEARS**	**RANK**	**NAME OF HOUSE ELEMENT**	**NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS**	**% OF MAPS IN WHICH ELEMENT APPEARS**
1	*FAMILY LIVING*	*12*	*92.3%*	**1**	*COURTYARD*	*9*	*90%*
2	*ROOMS*	*11*	*84.6%*	**2**	*LIWAN*	*7*	*70%*
3	*KITCHEN*	*11*	*84.6%*	**3**	*DOOR/ENTRY*	*5*	*50%*
4	*DOOR/ENTRY*	*10*	*76.9%*	**4**	*ROOMS*	*5*	*50%*
5	*BATHROOM*	*10*	*76.9%*	**5**	*BATHROOMS*	*5*	*50%*
6	*MASTER BEDROOM*	*9*	*69.2%*	**6**	*KITCHEN*	*4*	*40%*
7	*GUEST LIVING*	*8*	*61.5%*	**7**	*LIVING ROOM*	*3*	*30%*
8	*STAIRS*	*8*	*61.5%*	**8**	*DINING ROOM*	*3*	*30%*
9	*SERVICES*	*8*	*61.5%*	**9**	*GARDEN*	*3*	*30%*
10	*GARDEN*	*6*	*46.1%*	**10**	*GUEST LIVING*	*2*	*20%*
11	*GUEST BATH*	*5*	*38.4%*	**11**	*DIWANIYA*	*2*	*20%*
12	*STORAGE*	*5*	*38.4%*	**12**	*BIRCHA*	*2*	*20%*
13	*LIWAN*	*4*	*30.7%*	**13**	*STAIRS*	*2*	*20%*
14	*ELEVATOR*	*4*	*30.7%*	**14**	*WATER FOUNTAIN*	*1*	*10%*
15	*DINING ROOM*	*4*	*30.7%*	**15**	*OPEN TO SKY*	*1*	*10%*
16	*OUTDOOR KITCHEN*	*3*	*23.0%*	**16**	*GLASS EXTERIOR*	*1*	*10%*
17	*WINDOW*	*2*	*15.3%*	**17**	*SERVICES*	*1*	*10%*
18	*GARAGE*	*2*	*15.3%*	**18**	*MERZAM*	*1*	*10%*
19	*DIWANIYA*	*2*	*15.3%*	**19**	*MASTER BEDROOM*	*1*	*10%*
20	*GUEST ROOMS*	*2*	*15.3%*	**20**	*STORAGE*	*1*	*10%*
21	*STREET*	*2*	*15.3%*	**21**	*APT. SUITE*	*1*	*10%*
22	*PLAY ROOM*	*2*	*15.3%*	**22**	*TV ROOM*	*1*	*10%*
23	*COURTYARD*	*2*	*15.3%*	**23**	*STREET*	*1*	*10%*
24	*CORRIDOR*	*2*	*15.3%*	**24**			
25	*LIBRARY*	*1*	*7.6%*	**25**			
26	*DRESSING ROOM*	*1*	*7.6%*	**26**			
27	*TERRACE*	*1*	*7.6%*	**27**			
28	*BALCONY*	*1*	*7.6%*	**28**			
29	*OFFICE*	*1*	*7.6%*	**29**			
30	*SWIMMING POOL*	*1*	*7.6%*	**30**			

Table 6.1: Comparative data table between sketches of homeowners current house and proposed contemporary vernacular house.

6.5.2 Designers

Out of the 17 designers 16 sketched their current house, 11 sketched their house if they were to add traditional vernacular elements, and 5 designers did not add any vernacular elements to their current house. When comparing the two sketches, in their current house 100% of designers identified the family living room and kitchen, 93% the guest bath, 87% other bathrooms, and 81% general rooms. For their proposed contemporary vernacular houses, 81% of the designers drew the courtyard, 63% general rooms, and 45% the diwaniya. A ranking of the most identified elements for both designer sketches is presented in Table 6.2.

CURRENT HOUSE				CONTEMPORARY VERNACULAR HOUSE			
RANK	**NAME OF HOUSE ELEMENT**	**NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS**	**% OF MAPS IN WHICH ELEMENT APPEARS**	**RANK**	**NAME OF HOUSE ELEMENT**	**NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS**	**% OF MAPS IN WHICH ELEMENT APPEARS**
1	*FAMILY LIVING*	*16*	*100%*	**1**	*COURTYARD*	*9*	*81.8%*
2	*KITCHEN*	*16*	*100%*	**2**	*ROOMS*	*7*	*63.6%*
3	*GUEST BATH*	*15*	*93.7%*	**3**	*DIWANIYA*	*5*	*45.4%*
4	*BATHROOM*	*14*	*87.5%*	**4**	*KITCHEN*	*5*	*45.4%*
5	*ROOMS*	*13*	*81.1%*	**5**	*FAMILY LIVING*	*4*	*36.3%*
6	*STAIRS*	*13*	*81.1%*	**6**	*LIWAN*	*3*	*27.2%*
7	*DOOR/ENTRY*	*12*	*75.0%*	**7**	*DINING ROOM*	*3*	*27.2%*
8	*MASTER BEDROOM*	*10*	*62.5%*	**8**	*GARDEN*	*3*	*27.2%*
9	*GUEST LIVING*	*10*	*62.5%*	**9**	*DOOR/ENTRY*	*3*	*27.2%*
10	*DINING ROOM*	*9*	*56.2%*	**10**	*MASTER BEDROOM*	*2*	*18.1%*
11	*SERVICES*	*5*	*31.2%*	**11**	*BATHROOM*	*2*	*18.1%*
12	*GUEST ROOM*	*3*	*18.7%*	**12**	*STORAGE*	*2*	*18.1%*
13	*ELEVATOR*	*3*	*18.7%*	**13**	*SERVICES*	*2*	*18.1%*
14	*LAUNDRY*	*3*	*18.7%*	**14**	*ROOF GARDEN*	*1*	*9.0%*
15	*WINDOW*	*2*	*12.5%*	**15**	*STAIRS*	*1*	*9.0%*
16	*OUTSIDE KITCHEN*	*2*	*12.5%*	**16**	*PLAY ROOM*	*1*	*9.0%*
17	*COURTYARD*	*2*	*12.5%*	**17**	*SWIMMING POOL*	*1*	*9.0%*
18	*BALCONY*	*2*	*12.5%*	**18**	*ELEVATOR*	*1*	*9.0%*
19	*DRESSING ROOM*	*2*	*12.5%*	**19**	*GUEST BATHROOM*	*1*	*9.0%*
20	*STORAGE*	*2*	*12.5%*	**20**	*GUEST LIVING*	*1*	*9.0%*
21	*DIWANIYA*	*1*	*6.2%*	**21**	*FARM*	*1*	*9.0%*
22	*LIBRARY*	*1*	*6.2%*	**22**	*LIBRARY*	*1*	*9.0%*
23	*SUN ROOM*	*1*	*6.2%*	**23**	*STREET*	*1*	*9.0%*
24	*GARDEN*	*1*	*6.2%*	**24**	WINDOWS	*1*	*9.0%*
25	*OFFICE*	*1*	*6.2%*	**25**			
26	*STREET*	*1*	*6.2%*	**26**			
27	*CORRDIOR*	*1*	*6.2%*	**27**			
28	*COVERED SPACE*	*1*	*6.2%*	**28**			
29	*EXTERIOR FAÇADE*	*1*	*6.2%*	**29**			

Table 6.2: Comparative data table between sketches of designers current house and proposed contemporary vernacular house.

6.5.3 Homeowners and Designers

This section will discuss findings of both homeowner and designer cognitive maps together. The first comparison was the participant's perceptions of their current house. Both participant groups identified the family living room, designers 55% and homeowners 41% appearing in 96% of the cognitive maps shown in Table 6.3 below. The table shows the 5 highest elements identified by both homeowners and designers. The final total percentage in the last column of the table indicates the total percentage of maps in which the element appears.

Name of Element	Designers Freq.	%	Homeowners Freq.	%	Total Freq.	Total # of Maps completed	Total % of maps in which element appears
Family Living	16	55	12	41	28	29	96.5
Kitchen	16	55	11	38	27	29	93
Bathroom	14	48	10	34	24	29	83
Rooms	13	45	11	38	24	29	83
Doors/Entry	12	41	10	34	22	29	76

Table 6.3: Comparative data table between designers and homeowners for their current house sketches.

A Person Chi-Square test has been done to see if there has been a significant difference between designers/homeowners, male/female, and below/above 35 groups in terms of the overall frequency of identified elements. One would think that due to designers' professional background and training would have more detailed sketches of their current houses than homeowners, however, the sketches reflected a similar ratio of identified elements for each group. The results presented in Table 6.4 conclude that there is not enough evidence to suggest that the groups are significantly different in their selections.

Pearson Chi-Square Tests Between groups of Sketch maps

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square (Designers/Homeowners)	6.254[a]	7	0.510
Pearson Chi-Square (Male/Female)	12.166[a]	14	0.593
Pearson Chi-Square (Below 35/Above 35)	12.587[a10]	14	0.559

Table 6.4: Pearson Chi-Square test results for Question 1: Between designers/homeowners, male/female, below/above 35 to see if the groups have differences in their selections in the sketches of their current houses.

In comparing the participant responses of the second cognitive map question, both designers and homeowners identified the courtyard in 85% of their contemporary vernacular house sketches. Table 6.5 presents the 5 highest elements identified by both homeowners and designers. From these 5, only 3 are traditional vernacular elements (courtyard, liwan, door/entry).

Name of Element	Designers Freq.	%	Homeowners Freq.	%	Total Freq.	Total # of Maps completed	Total % of maps in which element appears
Courtyard	9	42	9	42	18	21	85
Rooms	7	33	5	23	12	21	57
Liwan	3	14	7	33	10	21	47
Kitchen	5	23	4	19	9	21	42
Door/Entry	3	14	5	23	8	21	38

Table 6.5: Comparative data table between designers and homeowners for their contemporary vernacular house sketches.

Again for the second question a Person Chi-Square test has been done to see if there has been a significant difference between designers/homeowners, male/female, and below/above 35 groups. The results are presented in Table 6.6 conclude that there is not enough evidence to suggest that the groups are significantly different in their selections.

Pearson Chi-Square Tests Between groups for Sketch maps

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square (Designers/Homeowners)	4.715[a]	5	0.452
Pearson Chi-Square (Male/Female)	9.724[a]	10	0.465
Pearson Chi-Square (Below 35/Above 35)	5.496[a10]	10	0.856

Table 6.6: Pearson Chi-Square test results for Question 2: Between designers/homeowners, male/female, below/above 35 to see if the groups have differences in their selections in the sketches of their proposed contemporary vernacular houses.

6.6 Cognitive Maps Key Findings

6.6.1 The Courtyard

Both designers and homeowners in their proposed contemporary vernacular house have drawn the courtyard the most. It appeared in 85% of the participants' cognitive maps. When the participants drew the courtyard they usually mimicked a form of Kuwait's traditional courtyard house in the centre of the page and then added their modern requirements. However, some designers drew variations of the courtyard in a contemporary expression. This observation may suggest that homeowners and designers had different perceptions of how to incorporate traditional vernaculars in contemporary domestic architecture. Similar to the findings from the questionnaire it seems that the participants identify very much the courtyard not only as a significant traditional element but one that may be applied in a contemporary context. It is the intention that the analysis of the findings from other methods will further illuminate understanding and the courtyard's role in Kuwait's contemporary domestic built environment.

6.6.2 More Space

Cognitive maps of participants' current houses reflected the extent of people's desire for space in Kuwait's 'post oil' era. The rankings of the most identified house

elements presented in Tables 6.1 and 6.2 clearly shows the wide range of house requirements or amenities, which suggest a luxury oriented lifestyle. Examples of these elements include; master bedroom, guest reception halls, staff services, elevators, garages, play rooms, sun room, gardens, libraries, offices, balconies, and swimming pools. It is interesting to note that when the participants drew their contemporary vernacular house they usually included fewer house elements and requirements, which may mean that the participants related the vernacular with the need for less space or user requirements. Therefore, according to the participants' cognitive interpretations of their contemporary vernacular house perhaps in their subconscious a connection was made that associated traditional elements with use of less space and their current modern house with use of more space. Does this mean that people need to relinquish their desire for more space in order to use traditional vernacular elements in contemporary domestic architecture?

6.6.3 Social Space

The transformation of social spaces in Kuwait's built environment after the discovery of oil has been studied extensively (AlBahar:1990, AlJassar:2009, AlHaroun:2014) In this study, the findings from cognitive maps concur some earlier concepts that discuss how Kuwait's social space evolved after its urbanization. Specifically, when drawing current and contemporary vernacular houses the participants revealed fascinating insights into how they perceived their social space. Both homeowners and designers identified the family living room the most appearing in 96% of the sketches (figure 6.1). This suggests the importance of the space where the entire family would come and socialize. When drawing their contemporary vernacular houses the courtyard was the most identified by both groups appearing in 85% of the sketches (figure 6.1), while the family living room appeared in 33% of the drawings. Why did the participants not highly rank the family living room in their proposed contemporary vernacular house? One reason

may be people already perceived the courtyard as a social space and did not need to also identify the family living room.

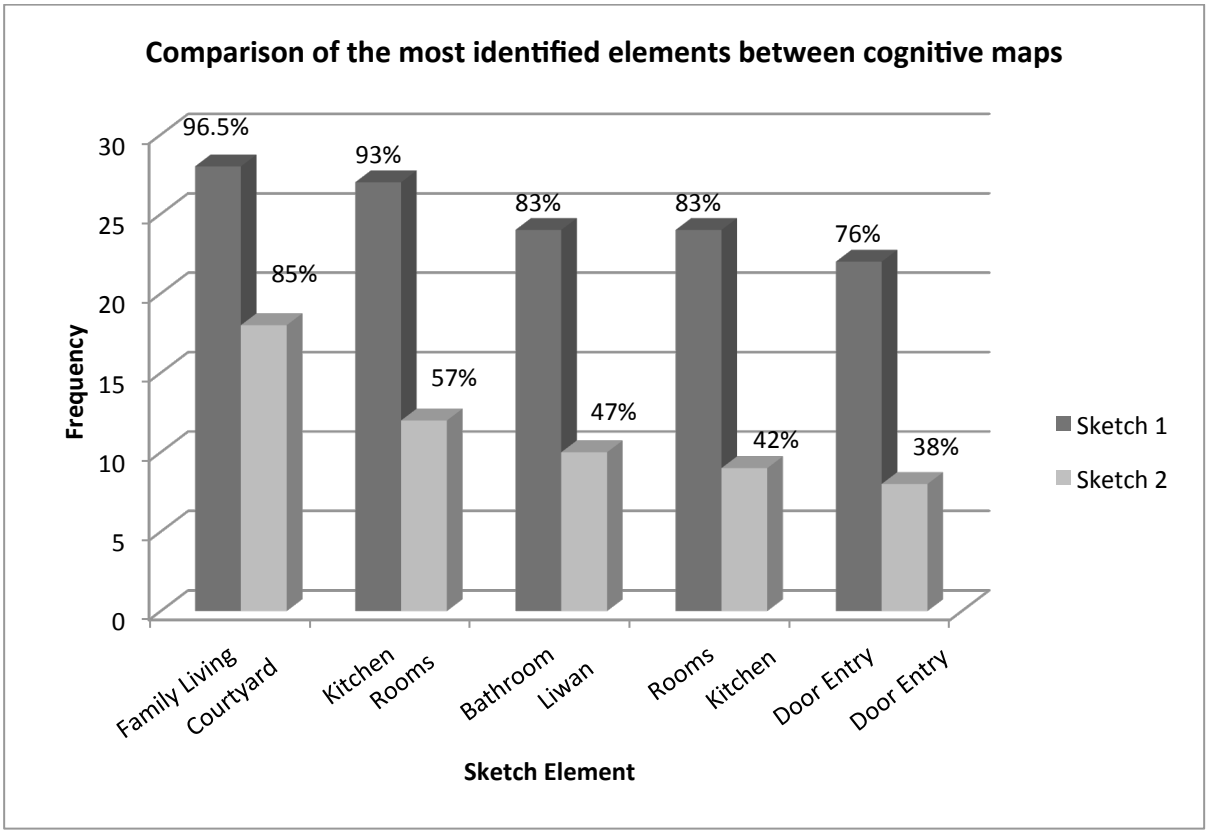


Figure 6.1: Comparison of the most identified elements between cognitive maps (Sketch 1 and Sketch 2). The bar chart shows that fewer participants drew their contemporary vernacular house than their current house. It also illustrates the relationship between the family living room and courtyard.

Moreover, this finding suggests that the courtyard, which once was the house's central social space, has been replaced by the family living room. And when the participants had an opportunity to incorporate traditional vernacular elements in their house the courtyard was most identified and it was not necessary for spaces such as the family living room, outdoor garden space, play room and much more. Furthermore, the diwaniya (men's social space) identified by the participants in a prior study (AlJassar:2009, AlHaroun:2014) as being a significant social space that persisted despite Kuwait's rapid development was not recognized by the participants as an important house element in either

their current houses or proposed contemporary vernacular house. In fact, the homeowners identified it only twice in both their current (15%) and vernacular house (20%); while the designers drew it once in their current house (6%) and 5 times in their vernacular house (45%).

The sketches revealed not only how people perceive their current houses but also the potential to use traditional vernacular elements and especially the courtyard. Although, the courtyard was the most identified element how can one be sure what participants sketched is what they would actually do? Are they really willing to reshape their current houses to add a courtyard or other vernacular elements? It is the intention that the other workshop methods will complement these findings and further illuminate participants' perceptions and understandings of the potential of using Kuwait's traditional vernacular elements in contemporary domestic built environments.

Chapter 7: Photo Elicitation

7.1 Introduction

This chapter will discuss the participants' different meanings and understandings of traditional vernacular elements explored through photographs of Kuwait's old and new domestic built environments. The chapter starts with some background information on photo elicitation and an explanation for why photographs have been used as the third method in the workshop. Subsequently, a brief description of the design will be followed by the photo elicitation findings and again the chapter concludes with the key findings.

7.2 Background and Rationale

Photo elicitation is a method that uses photographs (usually provided by the researcher) as a visual tool for understanding people's beliefs, attitudes and perception on a subject. The method was first named in a 1957 paper by John Collier. Collier was part of a research team in Cornell University that used photo elicitation to "examine how families adapted to living among ethnically different people". The researchers found that it would be a challenge exploring the topic in conventional surveys and interviews, and therefore, came up with an alternative method of using photographs of old and new worlds inhabited by the subjects. In the study Collier noted, "the pictures elicited longer and more comprehensive interviews but at the same time helped subjects overcome the fatigue and repetition of conventional interviews" (Collier:1957:858).

In the past, visual research methods usually played a limited role in social research and the capacity of images to reveal 'the truth' has been questioned (Harper:2002:17). However, today these techniques have become one of the most common and user-friendly research methods widely used in many disciplines ranging from healthcare to geography. Within these fields, it has been used in different ways for example some researchers use it

as a means to promote discussion (Collier:1987, Hazel:1996) while others use it to "invoke comments, memory, and discussion in the course of a semi-structured interview"(Banks:2001:87). In addition, the photographs and their presentation gave researchers the opportunity to understand people's social relationships (Rasmussen:2004, Smith & Barker:2004).

In his paper *Talking about Pictures: a case for photo elicitation* Douglas Harper sees photo elicitation as a, "simple idea of inserting a photograph into a research interview" (Harper:2002:13). He asserts that the:

> Images evoke deeper elements of human consciousness that do words; exchanges based on words alone utilize less of the brain's capacity than do exchanges in which the brain is processing images as well as words (Ibid:13).

Harper argues that photo elicitation produces a different kind of information, one that evokes feelings and emotions due to a photographs form of representation. Therefore, it only enriches the meanings of understandings in qualitative research. He sees studies in photo elicitation concentrating in four areas: 1.social organization/social class, 2. community, 3. identity, 4.culture/cultural studies. (Ibid:16)

In this study, the questions overlap between three of the above mentioned four areas - social organizational, identity and culture. It intends to use photographs to examine people's attitudes towards and perceptions of traditional vernacular elements, the old courtyard house, and the array of architectural styles in Kuwait's contemporary houses. This method provides a visual approach as a means to evoke feelings of the issue and in the same time gives an opportunity to express these attitudes in a discussion. Unlike words pictures elicit different meanings for different people, and therefore, gives another layer of understanding. Images of traditional vernacular elements may have greater significance for older instead of younger participants who perhaps have experiences living in old Kuwait

City. Similarly, there may be a difference of perception between genders. A male or female may perceive elements differently by associating them with different spaces and their traditional cultural roles. Therefore, by using pictures the study intends to gain new in depth insights on participants' experiences and attitudes towards the old and new house environments through traditional vernacular elements.

7.3 Photo Elicitation Design

It is essential for researchers to know the difference between the form of a visual image and its content (Banks:2001). Form usually is what people see in the picture while content is the message sent to the viewers. Therefore, for this method the selection of the photographs underwent a screening process that was intended to balance between form and content. The photographs aimed to express an idea of a space or traditional element to elicit the participant's varying perceptions and understandings. Other strategies were also experimented with such as Harper's concept of "breaking the frame" where pictures where presented in a different and unusual angle to allow participants to explore a new view of their social world (Harper:2002:20).

For this study the photo elicitation segment of the workshop used several paper-based photo eliciting techniques with a small group exercise. The photographs were presented in the photo elicitation segment of the workshop booklet as well as being displayed by a power point presentation in an overhead screen during the workshop and were directly related to the research questions and conceptual framework (refer to the methodology chapter). The following sections explain the photographs and their presentation.

Question 1: The first question showed a photograph (taken by the researcher) of an old Kuwaiti courtyard house. The picture was in colour presented in half of an A4 page in the

photo elicitation part of the workshop booklet (please refer to figure 7.2). The participants where asked to describe the image in a written paragraph expressing what meaning it held for them and how it made them feel.

Question 2: In the second question the participants were presented with a set of photographs depicting specific traditional vernacular elements. The photographs were also in colour obtained from various sources: some photographs are by the researcher and the rest from Kuwaiti historical and preservation books mainly *Kuwait: History, Heritage, Architecture* (NCCAL:2009). There were 8 images presented side by side in three rows in an A4 page (please refer to figure 7.2). For this part of the photo elicitation the participants were divided into small groups of 3-5 and after discussing each question they individually ranked the photographs in a diamond 9 [7].

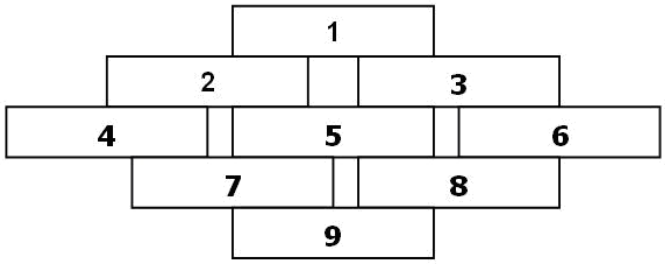
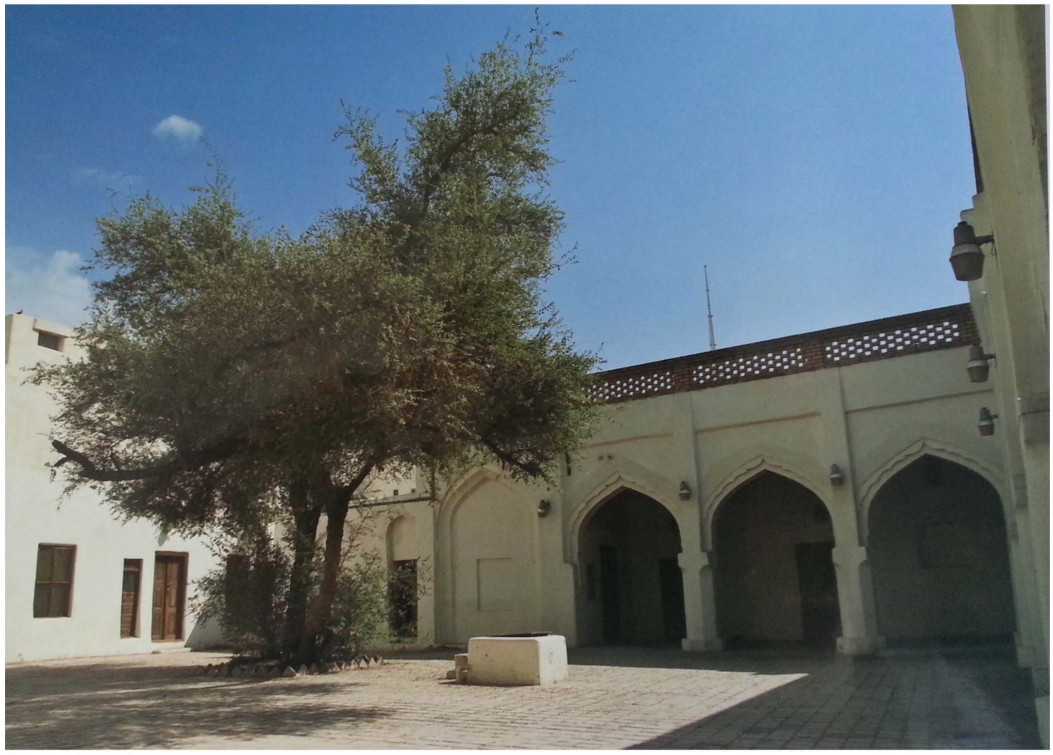


Figure 7.1: Diagram of the specific Diamond 9 used in the study (Please refer to Appendix A for more information).

The participants were asked to answer a few questions completing a diamond 9 for each as follows: 1. What do you think is the most culturally expressive element? Please explain 2. What is the most environmentally sustainable element? Please explain? 3. What elements would you use in your house design (if any)? Please explain. The participants recorded their responses in writing on the diamond 9 itself.

[7] A diamond 9 diagram helps to prioritize, categorize, or rank key factors. The most important factors are in the top of the diamond 9 and the least important are at the bottom.

Question 3: Like the previous question, the participants were presented with a set of photographs showing various styles of houses that exist in today's built environment. The 12 photographs were also in colour (taken by the researcher) and presented side by side in four rows in an A4 page (please refer to figure 7.2). After looking at the photographs the participants were asked to individually answer the following question, recording their responses in writing: Please select the house or style that expresses what you think a contemporary house in Kuwait should look like. Also describe why you choose that house or style. If your idea of a Kuwaiti house is not represented below please indicate that and describe it.



Question 1

1. the liwan

2. the courtyard

3. the door

4. the well

5. the bagdir

6. the merzam

7. the bercha

8. adobe or mud brick

Question 2

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

Question 3

Figure 7.2: Photographs used for Photo elicitation: At the top is a photograph of a traditional courtyard house used for question one. At the bottom left are photographs of traditional vernacular elements used for question 2 and bottom right are images of current houses in Kuwait used for question 3. The images have been minimized to all fit this page. For a more accurate representation on how they were used and presented in the workshop booklet please refer to appendix A.

7.4 Photo Elicitation Data Analysis

Please refer to chapter 5 for further explanation.

7.5 Photo Elicitation Data Results/Findings

7.5.1 Question 1

Question one of this method intended to elicit responses to a picture that depicted a courtyard in *Bayat AlBader* (AlBader house) one of the few remaining renovated courtyard houses left after the demolition of old Kuwait City. It asked participants to in a short paragraph describe the photograph of the courtyard house and express what meaning it holds for them and how does it make them feel. Almost all homeowners and designers responded to the question reflecting a wide range of perspectives. Some participants had positive rich descriptions of the space triggering childhood memories while others neutrally described the elements and literally said it had no meaning for them. Therefore, this particular question provided a unique added value capturing many meanings in different levels of participants' experiences. Table 7.1 below displays the categories generated by content analysis which shows overall similar responses from both homeowners and designers.

Category	Designers		Homeowners		Total	
	Freq.	%	Freq.	%	Freq.	%
-Courtyard	5	19	6	16	11	17
-Natural Environment	4	15	6	16	10	15
-Culture or Tradition	5	19	5	13	10	15
-Positive feelings	3	11	6	16	9	14
-Other Elements	3	11	6	16	9	14
-Simplicity	2	7	3	8	5	8
-Privacy	0	0	4	11	4	6
-Family	3	11	1	3	4	6
-Identity	0	0	1	3	1	2
-Need to use today	1	4	0	0	1	2
-Based on needs	1	4	0	0	1	2

Table 7.1: Categories from describing the photograph of a Kuwaiti courtyard house.

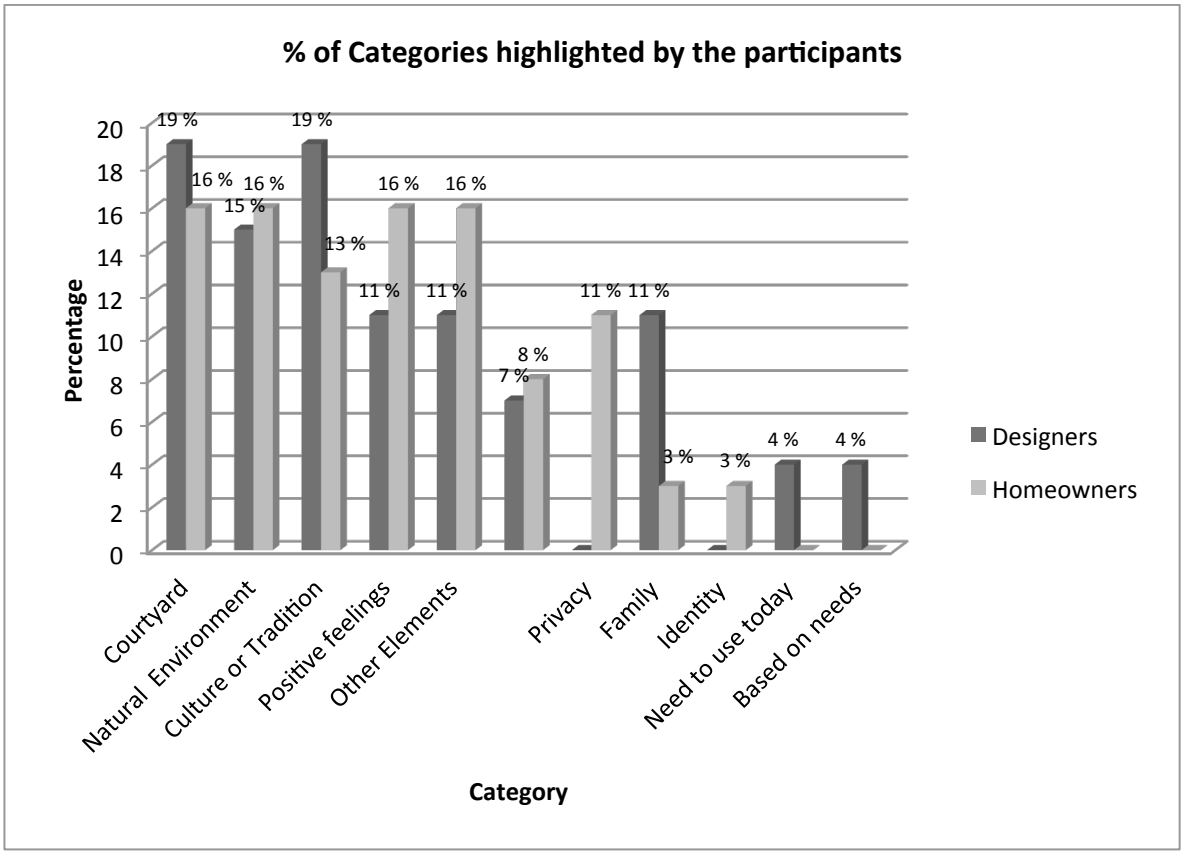


Figure 7.3: Percentage of categories from describing the photograph of a Kuwaiti courtyard house.

In Figure 7.3 the frequency in the y-axis reflects the number of times the participants discussed a specific category or concept. Percentages have been calculated using the overall frequency within each group (designers or homeowners). Although there were 3 more designers who participated in the workshops than homeowners, for this question homeowners discussed more issues.

The courtyard space was distinctly recognized by most of the participants with 5 designers and 6 homeowners identifying the word in their descriptions. The courtyard is a space open to the sky, and therefore, it is connected to the natural environment. Many participants recognized this relationship with 4 designers and 6 homeowners identifying the environment in their responses. This has many interpretations; one is the recognition of the

importance of the value of living in an environmentally sustainable way. The following extracts by the participants clearly reflect this:

> ***H.F.4.-35[8]:*** *This photo represents an old traditional Kuwaiti house. We see the courtyard where we see the well and a tree that provides shade. The liwan is a shaded walkway leading to the rooms. I am increasingly interested in old Kuwaiti ways and architecture. I feel it fits our weather and environment.*
>
> ***D.F.4.-35:*** *Relaxing place to live in, close to the environment and the sky comfortable and original. The courtyard is a very pleasant space that we miss in our new house, the whole family comes together there, it is safe and the water element and vegetation makes the environment more pleasant.*
>
> ***H.F.10.-35:*** *In this house we can see an environmentally friendly house with a large courtyard that has some green plants. Also it has a liwan and water well. This house provides privacy and natural sun light thru the rooms.*
>
> ***D.M.5.+35:*** *Simple, natural elements, green, open space, centre of the house (the heart), the big family house, reflects the nature of the area, it shows how people were good in wood crafting and they build based on their needs.*
>
> ***H.M.3.-35:*** *Environmental sustainability. Better usage of space, more greenery and trees, more brightness.*

When describing the picture of the courtyard, homeowners expressed more positive feelings than designers. Homeowners also described more traditional vernacular elements in the picture and recognized the privacy of the space compared to designers. These descriptions often were associated with positive sentiments reflected in the following participant statements:

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[8] The following key explains the meaning behind the letters and numbers, which make up the participant's name.
Participant name key:
H = Workshop group-Homeowner
D = Workshop group-Designer
F = Gender group-Female
M = Gender group-Male
+35 = Age group-over 35 years
-35 = Age group-under 35 years
= Random sequence of the participant

H.F.7.+35: *A picture of an old Kuwaiti house. It reflects the Kuwaiti culture in building houses and their love of privacy. It makes me feel relaxed and comfortable.*

H.M.1.+35: *It is a very important place because I lived there in a smaller house when I was a child. That was before the discovery of oil in Kuwait. So I feel very happy when I see this house. The picture is of a house with a liwan and hosh [courtyard].*

These participant quotes reveal significant insights into understandings in how they value Kuwait's traditional courtyard houses. The responses clearly show relationships between culture, environment and participant's individual identity. These perceptions indicate different yet similar meanings people associate with traditional buildings. Positive feelings and with some participants expressing nostalgia suggests how people perceive their individual identities in regards to their houses. This also raises questions in what might be the significance of this for homeowner and designer choices? For example one participant related with the environment and the courtyard space through the local Sidra tree:

D.F.5.-35*: The Sidra tree holds a lot of meaning for me personally. I grew up with it in my old grandpa house and me and my cousins used to make up stories about what lived up in its big bushy canopy. Although it was a modern house the Sidra was heritage that was preserved and the love of its heritage was passed down to me. The rest of the features are features I admire and respect and see depth in. However, I have never experienced them on a personal level except in theory. I would love to live in a house like that.*

Finally, also evident between some participants the urge to bring back these elements and spaces was expressed in one designer's remarks:

D.F.8.-35: *The picture depicts a traditional Kuwaiti house complete with a courtyard and a well with the rooms overlooking it. I think that we can really take a modern approach to it and make it into a design that is*

aesthetically and functionally successful. It's a shame that Kuwaitis feel the need to look to other cultures for inspiration and neglect their own.

7.5.2 Question 2

Question two of this method displayed pictures of the following traditional vernacular elements: 1.the Liwan, 2.the Courtyard, 3.the Door, 4.the Jelleb, 5.the Bagdir, 6.the Merzam, 7.the Bircha, 8. Mud Brick. It then asked the participants in each workshop to break up into small groups of 3-4 and discuss each of the following questions. After a brief discussion each participant individually ranked the traditional vernacular elements in a diamond 9.

7.5.2.1 Question 2.1

A 5-scale system to obtain the mean score was done to rank participants' preferences for all the diamond 9 responses. This analysis method was employed to gain more meaningful results and is more accurate and indicative of the participants' overall preferences. In the diamond approach, levels are considered equally preferred. Level one is preferred to level 2 which is preferred to level 3 and so on. In the same level, items have equal preference. In the diamond 9, level one has only one item, level 2 has 2, level 3 has 3, level 4 has 2 and level 5 (the least preferred has 1) giving the shape of a diamond and 9 items. Many users only gave a few items in their responses, hence only the top 3 may be indicative of the participant responses. The first level was given a score of 1, the second and third levels have equal importance and are given a score of 2, the fourth fifth and sixth have a score of 3, seventh and eighth have a score of 4 and the ninth has a score of 5. The analysis conducted was similar but different to the Likert analysis approach.

The first diamond 9 question asked the participants to rank the most culturally expressive element. Table 7.2 shows the courtyard with the lowest (mean=1.43), which means participants identified it as the most culturally expressive element followed by the

liwan (mean=2.04) and door (mean=2.50).

Descriptive Statistics and Mean Ranking for Question 2.1

Element	N	Minimum	Maximum	Mean	Std. Deviation
Courtyard	30	1	3	1.43	.728
Liwan	28	1	3	2.04	.693
Door	24	1	4	2.50	.722
Merzam	25	2	4	2.84	.624
Bagdir	26	1	4	2.96	.916
Mud Brick	25	2	4	3.20	.913
Bircha	24	2	4	3.25	.737
Jelleb	25	2	4	3.36	.700
Valid N (listwise)	19				

Table 7.2: Descriptive Analysis and Mean ranking of the most culturally expressive element.

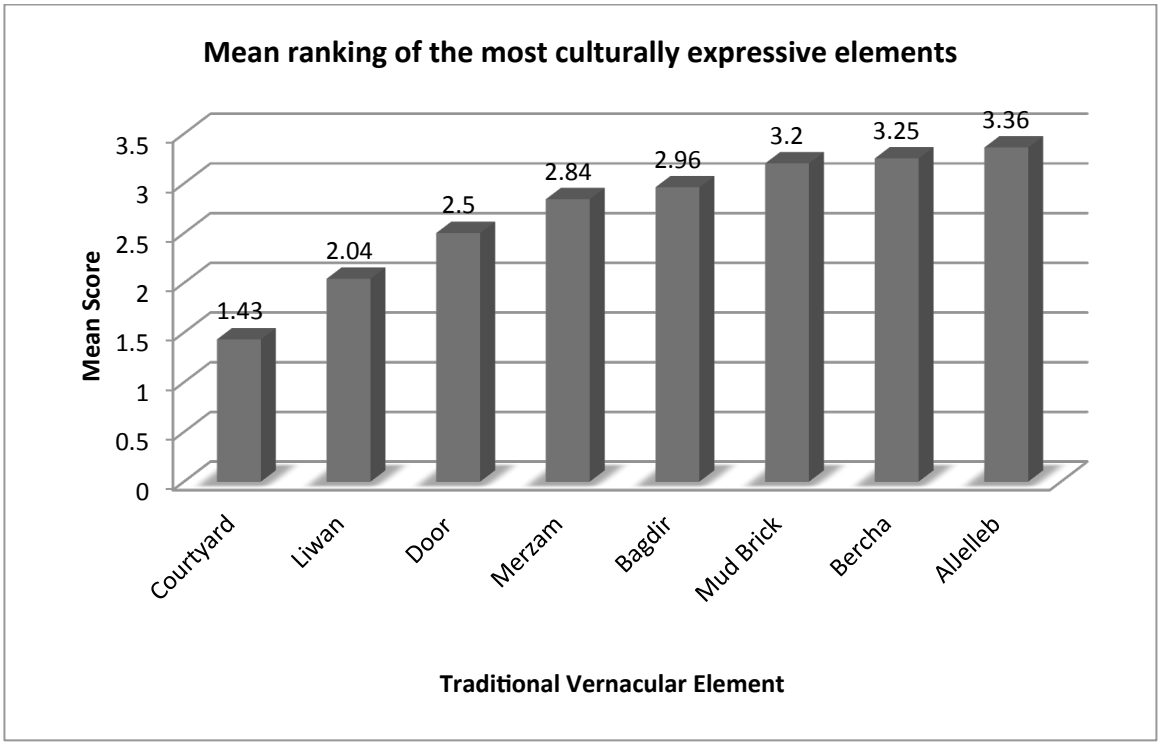

Figure 7.4: Mean ranking of the most culturally expressive vernacular elements.

Mann Whitney U Test

The test result for the courtyard gave a significance value of .017, which indicates that there is a significant difference between the responses of designers and homeowners. The designers had a higher mean score (Please refer to appendix B for group mean scores)

than homeowners, which suggests more designers than homeowners selected the courtyard as the most culturally expressive element. In addition, in analysis comparing the results according to different groups shows different responses, both males and females indicated similar results and no significant difference has been found.

Test Statistics between Designers and Homeowners for Question 2.1

	Liwan	Courtyard	Door	Jelleb	Bagdir	Merzam	Bircha	Mud Brick
Mann-Whitney U	93.000	64.500	61.000	48.500	74.000	59.000	57.500	75.000
Wilcoxon W	184.000	217.500	116.000	126.500	165.000	164.000	123.500	166.000
Z	-.229-	-2.387-	-.581-	-1.767-	-.593-	-1.129-	-.879-	-.180-
Asymp. Sig. (2-tailed)	.819	.017	.561	.077	.553	.259	.380	.857
Exact Sig. [2*(1-tailed Sig.)]	.856[b]	.053[b]	.625[b]	.110[b]	.614[b]	.344[b]	.424[b]	.894[b]

Table 7.3: Mann-Whitney U Test between Designers and Homeowners for Question 2.1

Test Statistics between Gender for Question 2.1

	Liwan	Courtyard	Door	Jelleb	Bagdir	Merzam	Bircha	Mud Brick
Mann-Whitney U	78.500	84.500	44.500	47.500	73.000	46.500	37.500	60.000
Wilcoxon W	144.500	150.500	164.500	152.500	139.000	91.500	92.500	165.000
Z	-.226-	-.513-	-1.097-	-1.453-	-.243-	-1.195-	-1.845-	-.209-
Asymp. Sig. (2-tailed)	.821	.608	.273	.146	.808	.232	.065	.834
Exact Sig. [2*(1-tailed Sig.)]	.838[b]	.677[b]	.325[b]	.192[b]	.851[b]	.305[b]	.088[b]	.877[b]

Table 7.4: Mann Whitney U Test between Genders for Question 2.1

7.5.2.2 Question 2.2

The second diamond 9 question asked the participants to rank the most environmentally sustainable element. Table 7.5 clearly depicts adobe or mud brick having the overall highest (mean=1.92), followed by bagdir (mean=2.14), and the courtyard (mean=2.24).

Descriptive Statistics and Mean Ranking for Question 2.2

Element	N	Minimum	Maximum	Mean	Std. Deviation
Mud Brick	26	1	3	1.92	.935
Bagdir	22	1	4	2.14	.990
Courtyard	21	1	4	2.24	.944
Bircha	21	1	4	2.57	.926
Liwan	21	1	4	2.67	.856
Jelleb	19	1	4	2.68	.749
Merzam	21	1	4	3.10	.831
Door	17	2	4	3.76	.562
Valid N (listwise)	15				

Table 7.5: Descriptive Analysis and Mean ranking of the most environmentally sustainable element.

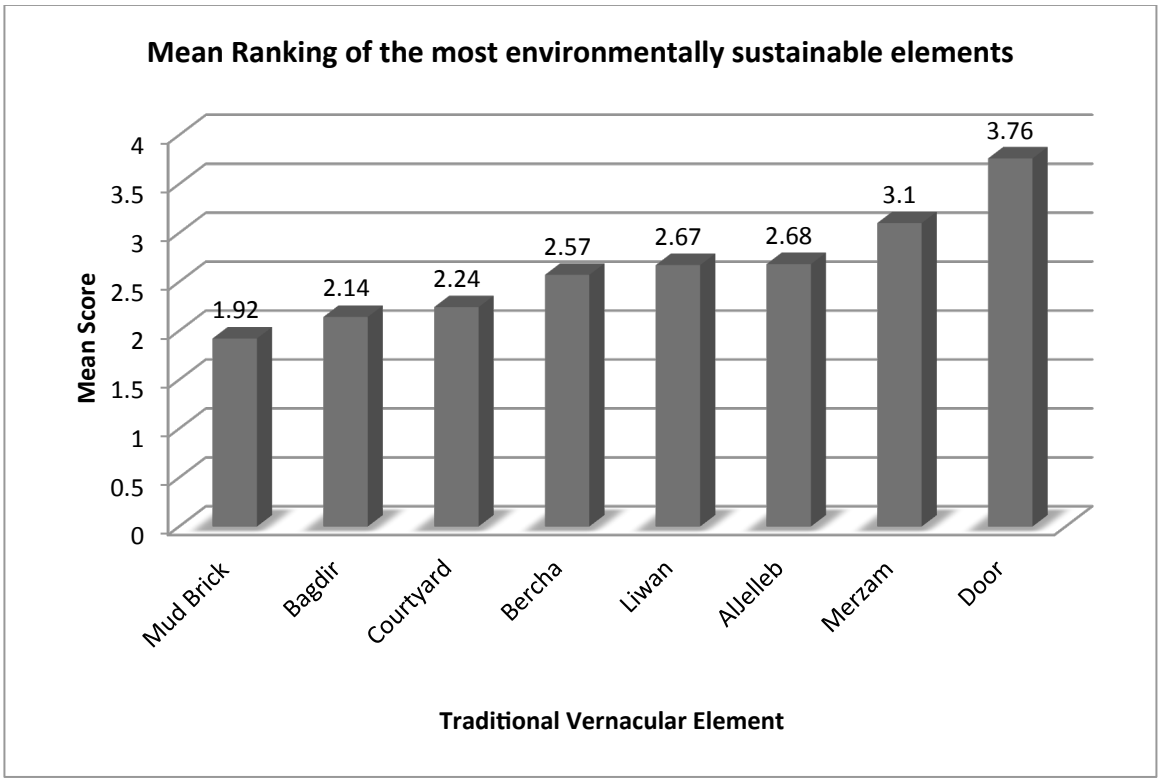

Figure 7.5: Mean ranking of the most environmentally sustainable elements.

Mann Whitney U Test

When comparing designers/homeowners and male/female the test results below indicate there is no significant difference between the two genders, however, there is a significant difference between designers and homeowners in their selection of both the door

with a significance value of .028 and merzam with a significance value of 0.009. The mean scores (Please refer to appendix B for group mean scores) indicate that in their selection there is a significantly more number of homeowners that thought the door and merzam are more sustainable elements than designers.

Test Statistics between Designers and Homeowners for Question 2.2

	Liwan	Courtyard	Door	Jelleb	Bagdir	Merzam	Bircha	Mud Brick
Mann-Whitney U	34.500	51.500	20.000	36.500	56.000	20.500	40.000	71.000
Wilcoxon W	112.500	129.500	48.000	72.500	134.000	75.500	106.000	126.000
Z	-1.478-	-.186-	-2.204-	-.682-	-.276-	-2.629-	-1.117-	-.517-
Asymp. Sig. (2-tailed)	.139	.852	.028	.495	.783	.009	.264	.605
Exact Sig. [2*(1-tailed Sig.)]	.169[b]	.862[b]	.161[b]	.545[b]	.821[b]	.013[b]	.314[b]	.660[b]

Table 7.6: Mann Whitney U Test between Designers and Homeowners for Question 2.2

Test Statistics between Genders for Question 2.2

	Liwan	Courtyard	Door	Jelleb	Bagdir	Merzam	Bircha	Mud Brick
Mann-Whitney U	78.500	84.500	44.500	47.500	73.000	46.500	37.500	60.000
Wilcoxon W	144.500	150.500	164.500	152.500	139.000	91.500	92.500	165.000
Z	-.226-	-.513-	-1.097-	-1.453-	-.243-	-1.195-	-1.845-	-.209-
Asymp. Sig. (2-tailed)	.821	.608	.273	.146	.808	.232	.065	.834
Exact Sig. [2*(1-tailed Sig.)]	.838[b]	.677[b]	.325[b]	.192[b]	.851[b]	.305[b]	.088[b]	.877[b]

Table 7.7: Mann Whitney U Test between Genders for Question 2.2

7.5.2.3 Question 2.3

The last of the diamond 9 question asks the workshop participants what elements would they use in their houses (if any). Table 7.8 shows the courtyard again ranked the highest (mean=1.38), followed by the liwan (mean=1.83), and door (mean=2.59).

Descriptive Statistics and Mean Ranking for Question 2.3

Element	N	Minimum	Maximum	Mean	Std. Deviation
Courtyard	26	1	3	1.38	.637
Liwan	23	1	2	1.83	.388
Door	17	1	4	2.59	.795
Bagdir	15	1	4	2.60	.737
Merzam	17	2	4	2.94	.659
Bircha	15	2	4	3.00	.756
Mud Brick	14	1	4	3.14	.770
Jelleb	16	1	4	3.37	.885
Valid N (listwise)	9				

Table 7.8: Descriptive Analysis and Mean ranking of the most desired element.

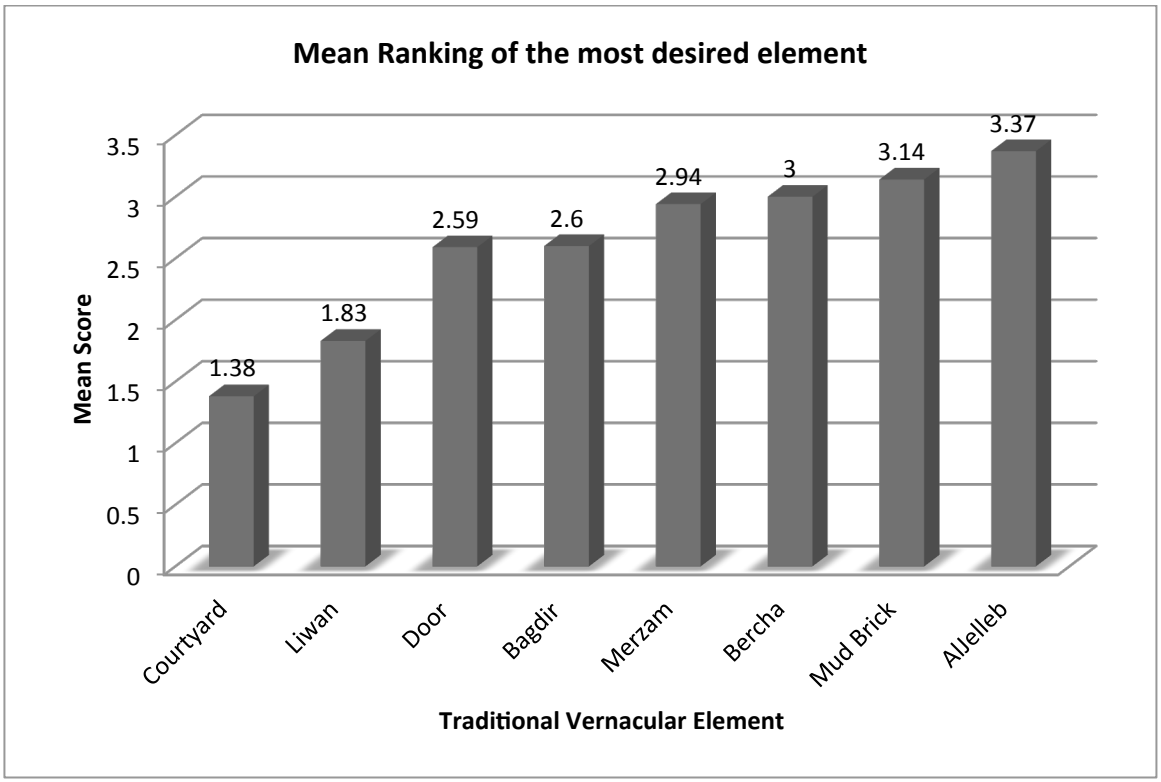

Figure 7.6: Mean ranking of the most desired element.

Mann Whitney U Test

The test results have indicated a significant difference between genders for the courtyard with a significance value of .005 and bircha with a significance value of .039. In comparing gender mean scores (Please refer to appendix B for group mean scores) a

significantly more females selected courtyard and bircha as their most desired traditional vernacular element compared to males.

Test Statistics between Designers and Homeowners for Question 2.3

	Liwan	Courtyard	Door	Jelleb	Bagdir	Merzam	Bircha	Mud Brick
Mann-Whitney U	65.000	56.000	25.000	17.000	21.000	33.000	22.500	16.500
Wilcoxon W	131.000	192.000	61.000	45.000	49.000	78.000	50.500	37.500
Z	-.094-	-1.561-	1.195-	-1.722-	-.898-	-.327-	-.685-	1.146-
Asymp. Sig. (2-tailed)	.925	.118	.232	.085	.369	.744	.494	.252
Exact Sig. [2*(1-tailed Sig.)]	.976[b]	.220[b]	.321[b]	.142[b]	.463[b]	.815[b]	.536[b]	.345[b]

Table 7.9: Mann Whitney U Test between Designers and Homeowners for Question 2.3.

Test Statistics between Genders for Question 2.3

	Liwan	Courtyard	Door	Jelleb	Bagdir	Merzam	Bircha	Mud Brick
Mann-Whitney U	36.000	30.000	17.500	17.000	18.000	23.500	9.000	17.000
Wilcoxon W	127.000	85.000	72.500	83.000	63.000	44.500	30.000	62.000
Z	-1.702-	-2.822-	1.928-	-1.335-	-.657-	-.816-	2.065-	-.868-
Asymp. Sig. (2-tailed)	.089	.005	.054	.182	.511	.414	.039	.386
Exact Sig. [2*(1-tailed Sig.)]	.268[b]	.019[b]	.088[b]	.267[b]	.606[b]	.492[b]	.059[b]	.518[b]

Table 7.10: Mann Whitney U Test between Genders for Question 2.3.

7.5.3 Question 3

The last photo elicitation question presented the participants with photographs of current houses in Kuwait and then asked them to select a house that expresses what they thought a house in Kuwait should be today. The question intended to understand people's preference of house styles in Kuwait's contemporary domestic built environment. The following key has been used in the data analysis to categorize the photographs according to their description: # 1 is a contemporary expression with traditional elements, #2 is a form of contemporary Islamic design, #3 is a traditional Kuwaiti house façade (cut and pasting of

vernaculars meaning they have only aesthetic and no functional value), #4 is a contemporary modern house with no traditional vernaculars, #5 is an early oil boom modern style house.

House Style	Designers Frequency	Designers %	Homeowners Frequency	Homeowners %	Total Frequency	Total %
#1: Contemporary with Elements	8	67	2	18	10	43
#2:Contemporay Islamic design	2	17	4	36	6	26
#3: Traditional house (cut- paste)		0	3	27	3	13
#4: Modern house design		0	2	18	2	9
#5:Early oil boom modern	2	17		0	2	9
N.A	5		3		8	

Table 7.11: Participants' house preferences by type/style.

The findings indicate that the majority of participants (43%) selected #2, which is a form of a contemporary vernacular house. It is possible that because the workshop revolves around the potential use of traditional vernacular elements in contemporary domestic houses that some participants would select an image of a house that expresses traditional vernacular elements. Out of the 17 designers only 12 answered this question, and out the 14 homeowners 11 answered it, 8 participants left this question blank. This may indicate that around 25% of the participants did not feel that the photographs expressed their vision of a Kuwaiti house.

7.6 Photo elicitation Key Findings

7.6.1 The Courtyard

In the first question the photograph of a courtyard in a traditional Kuwaiti house triggered a vast array of responses from both homeowners and designers. The participants and especially homeowners associated positive feelings and memories when they described this space. For some it gave them a sense of belonging emphasizing culture, tradition, and identity for others it conveyed the essence of connecting with the environment and

sustainable living, and for a few it did not have any meaning for them. Despite these diverse understandings the courtyard as a space was and still is crucial in how people understand Kuwait's traditional domestic built environment. Although it sparked many diverse understandings, almost all the participants acknowledged the importance of this space. This fact is further highlighted by the findings of the first and third diamond 9 questions. The first question asked the participants to rank the most culturally expressive element and the majority of both homeowners and designers selected the courtyard (mean=1.43). In the third diamond 9 question when asked what element would they use in their house the courtyard again was the highest ranked (mean=1.38).

7.6.2 Contemporary Vernacular

For this method, the concept of a contemporary vernacular has been introduced in question 3. The question presented various photographs that portrayed different house designs and styles of Kuwait's current domestic architecture. Among these images was an image of a courtyard house with, Islamic geometric reference, and use of a few traditional vernacular elements such as the door. It may be considered to be a form of contemporary vernacular. 8 designers, and 2 homeowners, totalling 10 participants (43%) identified this form of housing that best expresses what they think houses in Kuwait's built environment should be. However, although the participants highlighted this form around 25% also did not answer this question, therefore, further overall analysis from findings of the other methods are required to support the notion that people desire a form of contemporary vernacular.

Chapter 8: Group Interviews

8.1 Introduction

Qualitative group interviews have been chosen for the final workshop method to directly engage the participants and for their responses to enrich and complement the other workshop methods. As Hakim argues:

> Qualitative research is concerned with individuals own accounts of their attitudes, motivations and behaviour. It offers richly descriptive reports of individuals' perceptions, attitudes, beliefs, views and feelings, the meanings and interpretations given to events and things (Hakim:1997:26).

This chapter will start with a brief overview, literature of group interviews, followed by a discussion behind the rationale for selecting this method. Subsequently, after a description of the interview design and analysis process, the chapter will present the findings of the group interviews. The findings will be analysed according to the participant groups - designers and homeowners. Finally, the last section will present the key findings highlighting emerging themes of the interview discussions within and between each group.

8.2 Background and Rationale

The group interview is "essentially a qualitative data gathering technique that relies upon the systematic questioning of several individuals simultaneously in a formal or informal setting" (Denzin et al 2000:651). The interviews may take different forms depending on their purpose, for example they can be investigating a topic or just a brainstorming session, they may be structured, semi-structured, or not structured, they maybe formal or informal (Ibid:651). The groups do not always reach consensus on issues as Hennink asserts they "encourage a range of responses which provide a greater understanding of the attitudes, behavior, opinions or perceptions of participants on the research issues" (Hennink:2007:6). Silverman points out that we are currently part of an

"interview society" where interviews play a central role in making sense of our lives (Silverman:1993:19). Some researchers view interviewing as currently being a central resource through which contemporary social science engages with issues that concern it (Atkinson & Silverman:1997). The interview "pervades and produces our contemporary cultural experiences and knowledges of authentic personal, private selves" (Rapley in Seal et al:2004:15).

Although group interviews range in their variations and types, they are also called focus group interviews. According to Lederman a focus group interview is a, "technique involving the use of in-depth group interviews in which participants are selected because they are a purposive, although not necessarily representative, sampling of a specific population, this group being 'focused' on a given topic" (Thomas et al:1995). On the other hand, focus groups coined in 1956 by Merton, Fiske, and Kendall, emerged as a form of group interview associated with market research (Denzin et al 2000:651). They are group discussions, which are arranged to examine a specific set of topics (Kitzinger: 2005). The primary aim of a focus group is to describe and understand meanings and interpretations of a select group of people to gain an understanding of a specific issue (Liamputtong: 2009). Some researchers argue that group discussions can generate more critical data than individual interviews (Watts & Ebbutt:1987).

For this study, a group interview was used providing a perfect platform to conclude the workshop activities with a discussion that aimed to "understand, and explain, the meanings, beliefs and cultures that influence the feelings, attitudes and behaviours of individuals" (Rabiee:2004:655). The exchange of ideas between participants, and emerging themes is the glue that puts together the findings from the other methods into a final collage or mosaic. The group discussions aimed to triangulate, complement and expand on the participants' earlier responses (questionnaire, sketch maps, and photo elicitation) cementing

or not overall emerging patterns, themes, and relationships. The intention is that this approach will enhance the meanings of the participant's response and give more credibility to the final overall findings.

Therefore, an interview or in this study's case group interview provides several important features as it concludes the workshop. First, it gives participants a chance to have in-depth discussions and exchange ideas that may produce useful ideas and directions. Second, it involves a relatively small number of people that makes it easy to not only encourage participation between members but manageable for the researcher. Third, group interviews can be used for triangulation by a process of "indefinite triangulation," by putting individual responses into a context (Cicourel:1974). Finally, the group interviews most distinct feature is its group dynamics, as a result, "the type and range of data generated through social interaction of the group are often deeper and richer than those obtained from one-to-one interviews"(Rabiee from Thomas et al.1995:2004:656).

Furthermore, Kitzinger asserts that the interaction between participants can be achieved for seven aims:

> **1.** To highlight the participants' attitudes, priorities, language, and framework of understanding. **2.** To encourage research participants to generate and explore their own questions and develop their own analysis of common experience. **3.** To encourage a variety of communication from participants – tapping into a wide range and form of understanding. **4.** To help to identify group norms/cultural values. **5.** To provide insight into the operation of group social processes in the articulation of knowledge (e.g. through the examination of what information is censured or muted within the group). **6.** To encourage open conversation without embarrassing participants and to permit the expression of criticism. **7.** Generally to facilitate the expression of ideas and experiences that might be left underdeveloped in an interview and to illuminate the research participants perspectives through the debate within the group (Kitzinger:2005:67).

In addition, combining focus group interviews with other data collection techniques enriches the mixed method study. The other methods help to, “provide basic background information, and may offer participants opportunities to say things they would not rather reveal in the group”(Ibid:59). Information collected from the group interviews intends to provide a range of ideas and feelings participants have about the issue, similarly it will illuminate differences of perspective within and between groups - homeowners and designers. Consequently, this study intends to use the value behind group interviews to further understand homeowners’ and designers’ perceptions and attitudes for using traditional vernacular elements in their contemporary houses. The group interview will also attempt to identify specific barriers and facilitators and specifically structural issues (social, political, organizational) that prevent or encourage the traditional vernaculars to be expressed in Kuwait's domestic built environment. This in turn may allow issues of the larger phenomenon associated with modernity to emerge.

8.3 Group Interview Design

8.3.1 Semi-Structured Group Interviews

Qualitative interviews are usually either unstructured or semi-structured. This study uses a semi-structured approach to facilitate the discussions with specific direction yet also be flexible to allow for follow-up questions. The order of the questions followed an understanding of the research, a logic derived from the research questions and theoretical framework. The participants were allowed space to discuss issues of interest. When participants talk about something not covered in the guide it is obviously important to them (Bryman:2004).

The value behind the participants' views is particularly important in exploratory research. Furthermore, exploring the participants' contradictory and complex perspectives would be almost impossible to be captured by quantitative methods. As Banister explains:

> Your aim in using semi-structured interviews may be to explore precisely those areas where your interview perceived gaps, contradictions and difficulties. Hence another advantage of using a less structured approach is that you can tailor your questions to the position and comments of your interviewee, and you are not bound by the forced standardization and replicability to soldier on through your interview schedule irrespective of how appropriate it is for your interviewee (Banister et al:1994:54).

Therefore, the motive behind using a semi-structured qualitative approach directs the overall flow of the interview yet allows room for flexibility. The next section will explore how this understanding is transformed into an interview guide.

8.3.2 Group Interview Design

The group interview design intended to give an opportunity for the participants to discuss and even debate the issues presented in the workshop. It also was a platform to see to what extent the participants brought up the emerging themes of the prior methods. Each question reflected a strand obtained from either the research questions, sub-questions, or theoretical framework of the research. Some questions were asked before in a prior method, however, the reasoning for this was to start the group interview with a familiar issue to initiate discussion. The questions were as follows:

1. Which of the following factors do you aspire to have significance in your house: Culture, Identity, Modernity, Environmental sustainability or any other? And why?

2. Do you think there are problems facing the contemporary Kuwaiti house? And if so what do you think are the solutions to the current problems facing the contemporary Kuwaiti house?

3. Do you think traditional vernacular elements should be used in the contemporary Kuwaiti house?

4. Do you think there are any barriers to drawing on traditional vernacular elements in contemporary house design?

5. What do you think can be done to re-introduce traditional vernacular elements in the contemporary Kuwaiti house?

8.4 Participants

The study's sampling approach has been described in chapter 4, however, this section will briefly discuss the sampling in more detail to how it relates to the group interviews. The success of both a workshop and group interviews relies on its ability to generate data based on the synergy of the group interaction (Green et al:2003). Krueger advocates a homogenous group to promote full engagement and discussions within its participants (Kruger:1994). Therefore, essential for the study was not only to target specific groups (homeowners and designers), but also to invite participants who feel comfortable with each other in their discussions.

Another factor that was taken into account for the workshop as a whole and group interviews in particular was the number of participants. Some researchers suggest smaller groups 6 to 8 (Krueger & Casey:2000), while others recommend 6 to 10 participants where it's "large enough to gain variety of perspectives and small enough not to become disorderly or fragmented" (Rabiee:2004:656). For this study, the target participant number for each workshop was between 10-15 in order to increase responses for the other methods and have a reasonably sized group interview. Moreover, to limit the number of non-attenders the study over-recruited by 20% (Ibid:656). Therefore, this resulted in a slightly higher than suggested numbers with a total of 31 participants who attended both

workshops, in which there were 14 in the homeowner's group interview and 17 in the designer's group interview.

8.5 Data Collection

"The process of data analysis begins during the data collection, by skillfully facilitating the discussion and generating rich data from the interview, complementing them with observational notes and typing the recorded information" (Rabiee:2004:657). Moreover, Wengraf asserts that, "when learning a craft such as that of interviewing, it is particularly important to constantly review what you did and the way you did it so as to see how you might have done it differently and better" (Wengraf:2001:28). Therefore, all efforts have been made before, during, and after the group interviews to obtain rich descriptive data to address the research questions and objectives. The study's overall data collection approach has been discussed in chapter 4, whereas, the following sections will explain the stages of data collection with regards to the group interviews.

8.5.1 Observational Notes

The researcher's field notes and memos during parts and after the interviews helped to enhance interpretations of the conversations. In order to gain deeper insights into the group interviews and to further understand the meanings behind participants' responses, the interview facilitator (main researcher) immediately wrote observational notes after each interview. The various process of qualitative analysis aims to explore meanings of a given situation, and therefore, alongside participant's responses collecting notes on for example tone and gestures provided another layer of meaning. The main idea behind these notes is to before analysing to come back and, "immerse in the details and get a sense of the interview as a whole before breaking it into parts" (Ibid:657).

8.5.2 Recording

Research suggests that recording interviews eliminates the potential concern of misinterpretation. Pile states, "The analysis of language can only be carried out with confidence if there is an entire record of a conversation. Hastily scribbled notes…are not accurate enough to be used in this way. Tape recorded session provide the only viable data for this kind of analysis" (Pile:1990:217). Both group interviews were recorded using a digital voice recorder. It is the intention of the researcher to provide an accurate representation of the discussions avoiding misinterpretation, and therefore, without the recording only the main topics and issues can be captured missing out on rich descriptive information.

8.5.3 Transcription

After the recording came transcribing the group interviews in order to start analysis. Some researchers argue that transcription is part of analysis (Kvale & Brinkmann:2009, Denscombe:1998) due to the fact that decisions are being made throughout the transcription process such as what to include and exclude, amount of detail and other aspects of communication. Therefore, because of the direct affect of interpretation, the interview transcriptions have been made by the researcher in order to be more familiar with the data and represent what participants said more accurately than a third party not aware of what exactly happened in the group interviews.

The group interviews were conducted in both Arabic and English to allow people to express their ideas in the language most comfortable with them. As a result, the transcriptions underwent translation by the researcher when required. The interview was transcribed almost word for word trying as much as possible to accurately represent what was said. The following conventions have been used:

1. All words are transcribed, using conventional spelling (not using the spelling to indicate the pronunciation in any way),

2. Repeated words, broken-off words and back channel utterances (uh-huh,mm) are ignored,

3. Uncertain or inaudible passages are indicated,

4. There are no indications of pauses, overlaps, stresses, volume, pace or intonation, except in conventional punctuation (Macnaghten & Myers in Seale:2004:73).

8.6 Group Interview Data Analysis

8.6.1 Analysis

Qualitative research range in many topics with different aims and approaches, which therefore necessitates different analysis methods. With limited methodological literature and study reference researchers usually devise their own scheme for analysing interviews (Stroh:1999). Moreover, in practice researchers usually use a combination of methods (Green & Thorogood:2004). One such approach is Krueger's framework analysis that advocates the use of long tables for arranging data by comparing and contrasting information (Krueger:1994). Krueger suggests the following categories as a framework for interpreting coded data: words, context, internal consistency, frequency and extensiveness of comments, specificity of comments, intensity of comments, and big ideas (Ibid:1994).

The idea that analysis "does not take place in a linear form and that one part of the process overlaps another"(Rabiee:2004:657) has been recognized by many researchers. Krueger asserts that focus group analysis occurs in parallel with data collection as a "continuum of analysis"(Krueger:1994). Furthermore, Ritchie & Spencer's 'framework analysis' is "an analytical process which involves a number of distinct though highly interconnected stages" (Ritchie & Spencer:1994). Despite using a thematic approach, their process allows themes to be developed from the research questions and participant

discussions. They suggest 5 stages: familiarization, identifying a thematic framework, indexing, charting, mapping, and interpretation (Ibid:1994). It is safe to state that, in response to researchers many theoretical interests and approaches there are a myriad of approaches researches employ to analyse interviews. However, they all revolve around the idea of analysing what actually happened, "how your interaction produced that trajectory of talk, how specific versions of reality are co-constructed, how specific identities, discourses and narratives are produced" (Rapley in Seal et al:2004:16).

For this study the analysis of the group interviews did start during data collection by collecting rich descriptions from the interviews, observational notes, and transcriptions. From that point the researcher listened to the recordings and read the transcripts several times. Aware of the many analysis techniques, for this study the overall group interview analysis followed the same open coding strategy explained in chapter 5. However, for the group interviews, the coding served as a bridge providing categories to then qualitatively discuss the issues with direct participant quotes. Please refer to chapter 5 for further explanations on content analysis and coding.

8.7 Group Interview Data Results/Findings

8.7.1 Designers

The first group interview saw rich discussions and exchange of ideas among designers, which complemented the other methods at the designer's workshop. The group interview took around an hour concluding the workshop event on the 8th of September 2013 at a seminar room in Kuwait University's AlAdeliya campus, Kuwait City. There were 17 designers who participated in the workshop: 4 PhD holders teaching in the College of Architecture, 6 practicing architects, 3 architectural engineers, 1 civil engineer, 1 interior designer, and 2 did not identify their professional background. All of the designers who

attended the workshop remained during the group interview. Within that group, there were 11 men, 5 women, and 1 individual did not identify their gender. In addition, most of the designers although young had experience working in Kuwait's built environment sector, the youngest of the group was 23 and the eldest was 53. The different designer groups within the workshop resulted in intense discussions that covered philosophical, theoretical, and practical viewpoints. In general, the group was active with many designers involved in the discussions. The sections below present the major themes generated from the group interview.

8.7.1.1 Issues facing Kuwait's domestic built environments

8.7.1.1.1 Cultural

A major theme that emerged from the designers group interview was diverse discussions revolving around cultural issues. Designers usually had different perceptions of the traditional and contemporary Kuwaiti house, and some questioned the need to apply traditional vernacular elements. Culture was not only the most discussed but was also mentioned in many forms by designers:

> ***D.M.3.+35:*** *For me social aspects are very important and if we are just saying identity we may not see the other aspects of it like functionality. Social and behavioural aspects…I would look at A. Rappaport model and how he dissects culture because he does it through identity, social values, and looks at all these things.*
>
> ***D.M.4.+35:*** *I would advise a modern nationality. I would use something to express myself. I would say culture is number one… Regarding utility and how we want to express our culture. The house was sustainable in the outside it was…what they are doing now in private design is not that and in the future we are going to lose more our identity.*
>
> ***D.M.5.+35:*** *Culture came from the needs of the people in their houses at that time. Now we have different needs but some of them are the same like we still have diwaniyas that have some cultural aspects but at the same time how comfortable are we in the house.*
>
> ***D.W.1.-35:*** *Yes, but within this culture we have different understandings. So I think design is personal there is something general but still its personal.*

Some designers recognized the importance of the traditional house and how it played an important role in bringing together the family:

> ***D.M.7.+35:*** *The house before what did it have? It had its courtyards, and with many services. Secondly, the idea of having people's children live with them is an old understanding. Now everyone is going further away and that's wrong. And if you go to Qatar and the Emirates till this day their children are with them.*

> ***D.W.1.-35:*** *Today the children they may have an apt. within the house and they can close the door and may have privacy more than when he stayed in his fathers house before.*

Also fascinating is the relationship between the family sphere and privacy and how it relates to the traditional vernacular.

> ***D.W.2.-35:*** *And another thing privacy I was very close to my grandmother may Allah have mercy on her said, life before was easy and right there was privacy but still they had their family all in one house, four, five children in one room, some rooms had husband wives with children in a room so there wasn't privacy. If someone had an argument with his father in the house everyone would know. So privacy was between one family to the other but not within the family.*

> ***D.M.1.-35:*** *Now I see houses with people all over the place but my sister I don't see because she has a whole flat and I have my own but if we go back to the old designs we would have roof yes I know we will have problems with privacy but I will see my sister which is more important.*

It is important to note that after the oil boom Kuwait's society underwent a dramatic transformation creating a kind of tension between current and past cultural and social practices. For example, today some family gatherings have two forms; they either socialize together or would have some sort of gender separation. In the past, men and women in larger families would usually socialize and have lunch separately. This has been acknowledged, with one designer saying:

> ***D.W.1.-35:*** *Before culture is more tradition and norms than religion…after the exposure to other countries I think that people have things that are uyb*[9] *and people not. Today for family gatherings there are people who don't mind to have men and women together and others men and women seat in different areas. For me in part of my family we sit together and then for other gatherings we sit separately.*

During the group interview discussions, many designers had different perceptions of traditional vernacular elements. Although acknowledging the significance of these elements some designers disagreed on how and if they should be applied in Kuwait's contemporary domestic built environment. These understandings reflected their various professional backgrounds and suggest that designers have many differences that they expressed in the group interview. One older aged designer stressed that traditional vernacular elements should be viewed beyond an aesthetic feature as he puts it, "*we should think of not only the physical manifestations of these elements but also the functional aspects. How it worked for us in the past"* (D.M.3+35). The concept of understanding the past built environment has also been highlighted, " *identity like the diwaniya has remained but there are other things yes we lost. As for the house it was under 400 square meters and only the wealthy had more than one courtyard and if your rich enough you would have a liwan or otherwise you won't have a liwan"* (D.M.3+35). Moreover, despite this designer's acknowledgement of the importance of identity and tradition, questions the role of traditional vernacular elements in todays contemporary domestic built environment, he continues to argue that, "*the need for space was much smaller…Why would we use elements what was the courtyard, why do we have the door and smaller door[khoka]*[10]*, do we still need two doors, we might not need them, yes identity is very important, tradition is very important"* (D.M.3+35).

[9] Uyb: This term is Arabic which when translated means shame, however, in the participant's context it implies something that breaks a social norm.
[10] Khoka was a smaller door within the larger traditional door. As a person enters the house they would bow down through the khoka, the first shield for privacy before arriving at the exclusive domain of the courtyard.

Designers in general recognized the value behind traditional vernacular elements, however, not all understood how and if they should be assimilated into Kuwait's domestic built environment. One designer argued that, "*we can integrate some elements but not all elements. We can't put some elements with modern designs we just can't… Do we need the courtyard in the middle of the house or outside its different?"* (D.M.5.+35). Another designer contended that the traditional Kuwaiti house is a myth stating that its part of a regional archetype, as a result sparking a debate between designers:

> ***D.W.5.+35:*** *I think we are creating a myth of saying that there is a traditional Kuwaiti house when in fact there is no relevance. We are importing from Zanzibar and different areas Africa depending where the trade routes were. And then at a certain time things change because technologies changes - we brought things from Palestine and from Lebanon and we brought from Egypt. But we don't have the idea of the traditional Kuwaiti House. Yes there are certain elements that reflect an architectural dynamic here. The idea of one Kuwaiti house is not there… It's an archetype it's something that you grip from different places not necessarily Kuwait.*

The counter argument from some designers contend that civilizations build on one another throughout the ages, therefore, despite there being similarities in some architectural features they all had evolved through different circumstances producing unique local architecture. This is true for Kuwait, for example the courtyard is a universal element sharing similar social and environmentally sustainable qualities, however, its uniqueness comes through the subtle details, materials, and how its relates to not only the traditional norms and customs but urban fabric of the city.

In response to the idea of there being no unique traditional Kuwait architecture another designer replies by questioning the definition of identity:

> ***D.M.10.-35:*** *That means there is no architectural design that is identified… That means no one who started structures in the world has an identity. For example like she said the Chinese the Japanese they all copy from each other, Another Islamic Architecture that means your saying there is no Islamic architecture!?*

These discussions provided deep insights in the many perceptions and meanings designers have in regards to Kuwait's traditional built environment and how its relates to today's architecture. One particular female designer tries to explain the evolution of Kuwait's built environment as being local and regional in the same time, "*In reference to time it responds to a certain period, the wood, the doors how they are made. There was cultural influence of different cities that we visited that represented the identity of the old houses. The trade in the sea, the people it represented"* (D.W.2.-35). In the same time highlighting the fact that everything changed after the demolition of old Kuwait City, which created a disconnect between Kuwait's past, present, and future architectural identities. She states that:

> *if we made a gradual change to these houses, but we actually destroyed the whole city. That horrible thing that made a break, the market had mud brick stone wood now its concrete you see this it's not gradual and there is a disconnection in zoning. You can't see this gradual change* (D.W.2.-35).

8.7.1.1.2 Spatial

Another theme closely related to culture and society is how people perceived space in Kuwait's built environment. One significant point that was made by several designers was how unlike the past, today people need more space. Space is usually associated with people's strong demand for modern luxury amenities and requirements that for them are considered a requirement for life in the 21st century.

> ***D.M.5.+35:*** *But the needs are different. The bedroom can hold three people before but now everyone wants their own room. Now they have many living rooms for guests of 200 people and they use it once a year.*

> ***D.W.2.-35:*** *Space, definitely more space. Before families would settle for a room or two now modern life facilities each family needs more space, maids room, so I would definitely say space.*

Why would designers view people's desire for more space as a problem facing the contemporary Kuwaiti house? Is it that this space has become more luxury than a need and

is usually translated to unused reception and room spaces with wasted energy costs? This may indicate that this issue may be associated with designers' sensitivity towards the role of environmental sustainability in today's domestic built environment. However, only a few designers in their discussions gave importance to sustainability issues. One designer understood the development of architecture has always been based on needs and as society transformed so to did its needs and requirements. However, this designer also sees that in order to live comfortably people should design in an environmentally sustainable way:

> *Actually if we go back to the old past they designed based on their needs. They used mud because it's cooler. Now these days our requirements changed. It is designed to be more comfortable to needs than to be environmentally friendly. So I think in my view that's number one* (D.M.5.+35).

8.7.1.2 Government's role

Another major theme intensively examined by the designers was the role of the government and specifically its 'lack of vision' regarding the current design and built environment in Kuwait. When designers were asked what do they think are problems facing the contemporary Kuwaiti house? And solutions? The designers directly stated that the government represented for them by the baladia or municipality is both the problem and may also provide the solution:

> ***D.M.8.+35:*** *The baladia should have better regulation to begin with. It is already bad regulation.*

> ***D.M.5.+35:*** *Its is a lot of corruption. Some sections shouldn't be there the baladia approved it and we didn't approve it.*

However, some designers put the blame on people violating the law:

> ***D.M.1.-35:*** *The baladia is not the problem the violations of the people is the problem.*

This is clearly evident by the design and built process. After obtaining their building permits and electricity[11] some homeowners alter their house designs. This issue has been identified by a few designers and one in particular saying:

> ***D.M.6.+35:*** *I have an engineering office and the biggest challenge we have today is the client says what can you do for me after I get electric power. The first few years I was refusing to do that but now you have the baladia work and what ends up in reality. Now if we don't do it they will take the business somewhere else. The killer is when you say it's against the baladia regulations. And when we go there, the baladia manager says ya bu flan [Mr.] take your electricity and then cut all you want [change your design].*

While some view the problem with architectural offices that do not professionally 'design' for the client but rather 'cut and paste' from generic designs.

> ***D.W.2.-35:*** *People are going for architects but there are many people who go for an engineering office and they just give them a template and that's what they apply to it by most of the houses like after the sixth (ring road) its starts to be generic but you see someone takes another plan and does it.*

> ***D.M.4.+35:*** *More and more our houses are convention. Its not my private haven where I can settle down and enjoy. More and more it's a factory that produces. More laws to go up to the sky. This phenomenon is increasing in the far areas. They want to live next to their relatives and there is high demand for apts… Who created this problem are the government, big private sectors, and real-estate owners. I support this move because they are from objective studies… If we continue it will change the skylines and…their streets surrounded by cars instead of shops and pedestrians. Let people enjoy their streets.*

However, some designers' response to that is that these violations are due to archaic laws that need to reflect the changing times and needs of the public. They continue to assert that there is a disconnect between current laws and reality. As one designer put it:

[11] Today in Kuwait, some homeowners demand user requirements that usually violate current municipality regulations and codes. The way people overcome the law is usually done after obtaining electricity from the government. The process starts legally obtaining their building permit that adheres strictly to current building codes, and after construction they need an electric connection to the nation's grid. In order to process this, an inspection is required to make sure that the building has no violations and is consistent with the approved plans submitted for the permit. After people obtain the required approvals and electricity starts flowing they violate their initial plans, for example, people need more space and may add another floor, or add and rent out apartments to pay their house loans.

> ***D.W.2.-35:*** *The violations are as a result of the bad codes of the baladia and public demands. How should they [people] live?... Who has the right to choose how to live and how you want your house to be. There is a big communication rift between the baladia and the public. People do not accept the codes as rules to follow strictly and as much as this is the way that we should live.*

Although with varying perceptions in regards to socio-cultural understandings and the built environment most designers recognized that the government needs to be more proactive in their role. The most highlighted discussions revolved around the need to update existing laws to reflect people's current needs to provide solutions for the decaying quality of the current domestic built environment.

8.7.2 Homeowners

The second group interview explored homeowners' perceptions of Kuwait's built environment and the potential of using traditional vernacular elements in their contemporary houses. The group interview took around 30 minutes concluding the workshop event on the 16th of September 2013 at a conference room in Dar AlAwadhi complex, Kuwait City. There were 14 homeowners who participated in the workshop, all of which attended the group interview. Within that group there was 7 men and 7 women. Moreover, there was a wide range of age, with the youngest homeowner 27 and the eldest 74. This difference in age provided insights in how the different generations of homeowners perceived their domestic built environment. The group interview was active and most homeowners engaged in the group discussions. In contrast with the designers, homeowners usually agreed on the issues with an overall consensus regarding some topics. There were many significant themes that emerged for homeowners in the interviews, which are presented below.

8.7.2.1 Issues facing Kuwait's domestic built environment

8.7.2.1.1 Environmental

A major problem identified by many participants was the lack of environmental sustainability. These discussions usually mentioned a specific issue within environmental sustainability that needs to be addressed with many participants proposing solutions. Some homeowners advocated a way to enhance environmental sustainability in today's houses by using traditional vernacular elements:

> ***H.W.3.+35:*** *Space should be given for a courtyard, with open space and green trees; it gives comfort and calmness for the people of the house. Secondly, it should bring the sun in the house but only its light not its heat whether open or closed. In addition one can use other elements like the bagdir and others to connect with the inside and outside (of the house).*

> ***H.W.2.+35:*** *They can use mud brick with colours. They can also use the courtyard in every house in the roof… They need to use mud brick again. The building expenses will be reduced. When I built my house there were a lot of things I didn't need. We should have not done them and used the money elsewhere.*

> ***H.W.1.+35:*** *For example we have the jelleb it should be that one uses it today, every house should have it. Also reducing electric consumption, to have the right insulations… the baladia has to have a role or even the Environmental protection agency… The courtyard can be used again in the roof…the house can have levels!?*

Another participant recognized the value behind mud bricks through an experience standing next to one of the few renovated traditional houses in Kuwait:

> ***H.W.12.-35:*** *I remember years ago it was hot and we stood near Dickson house and it was cool (weather). It was the mud brick.*

It is worth noting that most women homeowners in particular recognized the need for environmental sustainability and suggested that Kuwait's traditional vernacular elements may be a solution.

8.7.2.1.2 Spatial

Another theme that emerged from the homeowners group interview was many spatial issues especially highlighting problems in the contemporary Kuwaiti house. These problems were emphasized in some form by many interviewees. Many of these issues trace their origins back to the effects of transformation and modernization of Kuwait City's built environment. People's desire for space and especially more luxury requirements resulted with their house being as on homeowners puts it, *"like a box, not spacious... there should be harmony in style"* (*H.W.2.+35).* Another older homeowner reflects on the side effects of today's houses by saying, "*the problem today people want to put everything in the house and that's a big mistake"* (H.M.3.+35). This desire for luxury space has become a societal trend, the homeowner continues to stress how the misuse of space has in fact become a burden for people, "*the importance has been given to the guest receptions and open spaces, which are not much used…There are many problems. New technology products they need maintenance such as a.c., elevators, swimming pool, it causes high expenses for the citizen. In the past it wasn't like this."*

These problems were emphasized in some form by many interviewees which suggests an important acknowledgment by the participants of not only the disadvantages their current houses but also a willingness for change through proposing some solutions. These ideas emerged as the group interview discussions developed, which included different approaches to promote a more environmentally sustainable living such as; using courtyards, wells, and other traditional vernacular elements in their houses, and government incentives.

8.7.2.2 Resistance to Change

Another concept highlighted by the participants was how people are resistant to changing their general perceptions and understandings towards their domestic built

environment. Although traditional ways of living were known, the homeowners' comments suggested that it has become more difficult for people today to accept changing the way they live. One example of this is when one participant suggested the need for precedent; an example of how traditional vernacular elements may be assimilated in contemporary houses. While others feel that maybe using these elements does not reflect progress in fact it's going a step back:

> ***H.W.12.-35:*** *I think people are resistant to change and you need to introduce the idea of going back to old traditional houses- they think they're going a step back.*
>
> ***H.M.4.+35:*** *The problem is that we don't have an example of someone who did it so that people can say 'that's good'.*

By recognizing problems in the environment homeowners stressed people's attitudes are resistant to change. One participant explained the need for re-education to promote change while another argued that this resistance needs to be transformed to a push for change:

> ***H.W.1.+35:*** *The solutions are political - decision makers, even they need to be re educated in this regard*
>
> ***H.M.3.+35:*** *People's attitudes need to change. The Kuwaiti citizen should give first priority to economical concerns when thinking of their house. They should not imitate what other people what they did - do whatever you are comfortable with.*

It is clear that participants advocated new individual or institutional initiatives which are vital to foster new understandings, new ways of doing things, a new way of life. However, the assumed relationship between the use of traditional vernacular elements and 'going back to traditional houses' and development with a more luxury modern living suggests a potential clash of participant perceptions towards the vernacular and thus may be a potential barrier towards their reintroduction in contemporary domestic built environments.

8.7.2.3 Government's role

The final theme that emerged from the homeowners group interview was the importance of the government's role or lack of a role in shaping Kuwait's domestic built environment. This was mentioned by many participants and spoken of particularly negatively. According to the homeowners, people need to change their attitudes and the government through its institutions has a big role to play in that regards:

> ***H.W.2.+35:*** *The baladia needs to do something.*
>
> ***H.M.3.+35:*** *How will change occur laws need to be passed for change… In addition to realistically find a solution to the high real-estate prices*[12]*. It is rising in a crazy rate. So how can the citizen change his/her views and attitudes he/she has to have a place, a house to live in and have laws and codes to reflect change?*
>
> ***H.M.4.+35:*** *Another thing with high real-estate prices it will be risky for me to do something new. I need examples. It won't work.*

Many people concurred that the baladia or municipality is responsible in addressing these issues and needs to put forward new regulations and building codes. In addition, high real-estate prices have made it very difficult for people to buy land in Kuwait, as a result, for some they see this as a burden and view applying traditional vernacular elements as being another cost especially with growing spatial or user requirements.

Many participants, although recognized the government's inadequate role, suggested various ideas for the government to promote using traditional vernacular elements:

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[12] Real-estate in Kuwait is very expensive. There are many explanations for this mainly high demand with a low supply due to poor government management of the nation's housing welfare program. Article 14 of Law no.47 of 1993 concerning Housing Welfare stipulates the government to provide government housing or a plot of land for a Kuwaiti citizen after marriage (Public Authority for Housing Welfare: 2011). Today, there is over 100,000 citizens (Public Authority for Housing Welfare: 2014) that may wait for up to 15 years for a chance to build or own their house. It has become a huge public crisis in Kuwait with a current study conducted by Kuwait's National Assembly (KNA:2013) identifying this issue as the number one concern among Kuwaitis. Public uproar blames the government for inaction and corruption to limit the available land increasing the net worth of the already rich merchants and members of the ruling family. High real-estate prices with high demand and low supply is usually associated with the above understanding.

H.W.2.+35: *The government. Why doesn't the government use these elements in their projects. Baladia can put a code to have a roof courtyard and garden…At least when the government gives a person land they follow specific regulation to promote this. No permission to built and until they have done it.*

H.M.5.+35: *The government can use it in government housing. Through idea of giving incentives from Kuwait's credit and loan bank.*

H.W.1.+35: *You can also do something like the Lulu AlKhiran project*[13]*. Give a project for the private sector but with conditions to develop the land in a specific way. Imagine 10,000 houses all built in this way.*

H.M.3.+35: *Example in Oman. The codes reflect an Islamic Arabian design, even the colours. This comes from the top the decision makers… The government, the baladia council, the national assembly all are responsible. For example the new Madinat AlHarir or (Silk City)*[14] *if the government adopts this strategy they will implement it and people will understand and follow.*

These ideas become essential for the government to encourage private real-estate commercial projects with incentives to use these strategies as means to promote culturally and environmentally sustainable initiatives.

8.8 Group Interview Key Findings

The group interviews for designers and homeowners provided rich in-depth understandings and perceptions of the many issues that surround the move towards modernity and away from tradition in Kuwait's domestic built environment. It also added to discussions for the potential of use of traditional vernacular elements in today's houses. For designers, discussions had no clear overall direction, which sparked more questions than it did answers. In contrast, homeowners usually found consensus and advocated a better

[13] LuLu AlKhiran is a massive private real estate project located in the AlKhiran coastal area south of Kuwait. The government in very low prices allocated the land to be developed into a residential area for a private real estate company. Despite being a good idea at first the project has been criticized for its lack of sensitivity towards the natural environment.

[14] As previously mentioned *Madinat AlHarir* or Silk City is a conceptual project tentatively designed to be located in the north of Kuwait bay. This project if implemented has the potential to solve the housing crises. However, government mismanagement and bureaucracy makes this project still a dream yet to be achieved.

quality in their built environment and saw traditional vernacular elements may be a solution. Despite this difference, there are some themes that overlapped between the two group interviews.

8.8.1 Issues facing Kuwait's domestic built environment

Both designers and homeowners identified many similar problems that face Kuwait's current domestic built environment. The main issues include; different understandings within cultural and identity dimensions, the need for more unnecessary space, and lack of environmental sustainability. The discussions also indicated that both participant group - designers and homeowners gave priority to different topics which suggests a disconnect between the groups perceptions of the built environment. This finding reveals yet another layer of meaning.

In their discussions, homeowners gave importance for the lack of environmental sustainability. In fact they overwhelmingly supported the use of traditional vernacular elements and expressed in many forms how it may be a solution for the environmental problems facing the built environment. They also introduced ideas to incorporate them into their homes as well as proposed government initiatives to promote their use. Whereas designers' discussions gave priority to various cultural understandings and witnessed debates between the participants. In general, some questioned the idea of the traditional Kuwaiti house, and others the use of traditional vernacular elements. Moreover, designers did not see environmental sustainability as a motive for design. Why was there a disconnect between designers and homeowners perceptions regarding the problems facing Kuwait's houses? Despite designing for homeowners, why did designers not appreciate homeowners' value of environmental sustainability? And why did they not see traditional vernacular elements as an opportunity to explore cultural and environmental sustainability? These

questions will be further investigated in chapter 9 which will discuss the overall findings of the workshops.

8.8.2 Government's Role

The government's role or lack of role has been in general negatively discussed by designers and homeowners. Both groups acknowledged the key role that the various government institutions may have to promote a better quality of built environment in Kuwait's houses. Participants stressed that the baladia in particular needs to do much more to meet people's changing needs and requirements by proposing new regulations and building codes. There is a disconnect between existing laws and the reality of the design and built environment in Kuwait. Between the two groups, designers usually blamed the government but did not suggest ideas for reform, whereas homeowners acknowledged the problems and recommended several proposals to improve the current designs in the domestic built environment. This suggests that homeowners had a more optimistic outlook than did designers.

Chapter 9: Discussion of Findings

9.1 Introduction

"Findings from the different elements of a mixed method study are best combined like pieces of a jigsaw puzzle with the aim of gaining a more complex understanding of the social world" (Brannen:1992:297). This chapter aims to bring together the findings generated from the four workshop methods - questionnaire, cognitive maps, photo elicitation, and group interviews. The chapter will present discussions of the overall emerging patterns, themes, and relationships between the findings of each method. The themes intend to develop understandings, complement ideas, and triangulate concepts that have emerged consistently throughout the analysis of the methods. From this point theoretical observations and practical implications, where necessary, will reference on-going discussions in the literature from chapter 3. The chapter concludes with a line of inquiry that directs a follow-up study, which intends to check interpretations of the data and examine key themes/findings in more detail.

9.2 The Courtyard Returns

The findings from all the workshop methods reveal the courtyard as the most recognized traditional vernacular element. Participants consistently highlighted and identified the courtyard in their responses to many different types of questions. They valued and desired the courtyard for many different reasons. Some appreciated the courtyard's relationship to culture and tradition with a sense of nostalgia. Others, recognized the courtyard's many environmental attributes. It is perhaps the synthesis of many qualities that people admired about courtyards.

9.2.1 Courtyard as Traditional

The workshop participants not only selected the courtyard as the most likely traditional vernacular element they would use in their current house design but also the most culturally expressive vernacular element and most desired vernacular element. Why is the courtyard so vivid in people's minds? Does it remind them of Kuwait's old urban fabric where the courtyard was found in every house, or does it represent socio-cultural and environmental sustainable qualities rarely found in today's houses, or does it suggest a more intrinsic psychological attachment to this special space and place? Whatever the answer, the courtyard seems to have a profound impact on people's perceptions of the traditional; not only as it relates to the built and natural environments but also to their cultural identity.

Many participants discussed the courtyard alongside its socio-cultural qualities such as privacy and value of family. The traditional house was described as, *"both introverted and aware of its surroundings, welcoming and accommodating of extensive family"* (D.M.15.-35). Another designer also reflected this interrelationship, *"the Kuwaiti house followed a courtyard format…and had a layering of privacy from the entrance being very public to the very private family wing"* (D.M.2.+35). These descriptions reflect how participants' perceptions of Kuwait's traditional houses are very much associated with the courtyard. At the same time, it expresses how much they value the socio-cultural qualities of the courtyard. Perhaps it is this special meaning that suggests why, over and over again, they identified with this place throughout the workshop methods.

9.2.1.1 Nostalgia

For some older participants it brought back memories of life before oil, triggering nostalgia for a place that meant and still does so much for them. It was not just a space open to the sky, it had a social dynamic that brought together the entire family. Participants

constant emphasis on the courtyard revealed an inner expression - a feeling of what the courtyard embodied and what it symbolized - and suggests that it may be this that is missing in their houses today. This understanding was highlighted by several participants. One homeowner, described the courtyard as:

> **H.M.1.+35:** *A very important place because I lived there in a smaller house when I was a child. That was before the discovery of oil in Kuwait. So I feel very happy when I see this house.*

On the other hand, a designer described the courtyard as, *"a very pleasant space that we miss in our new house, the whole family comes together there, it is safe"*(D.F.4.-35).

9.2.2 Courtyard as Environment

The courtyard's environmental qualities have also come up in many of the participants' descriptions. However, what was interesting is that, it was usually discussed in adjacent to the courtyard's socio-cultural qualities. This may suggest that people expressed courtyards, to what they are, balancing between people's needs, culture, and the natural environment. One homeowner described the courtyard, saying, *"it was suitable for the environment and social life due to the fact that it united the entire family following local culture and traditional norms"* (H.W.8.+35). For some participants descriptions of the courtyard were central to the description of the traditional house as one designer writes, *"it used local materials, was a perfect match with the environment around it, and the courtyard worked as a gathering point at the center of the house"* (D.M.1.-35). Another designer related the different spaces, their functions and their environmental conditions, *"The open space is sunny and private. The shaded liwan looks cool and private. The tree provides a bit of nature into the house"* (*D.M.2.+35)*.

9.2.3 Potential use of Courtyards

The courtyard as a space was and still is crucial in how people understand Kuwait's traditional domestic built environments and, although it sparked many diverse understandings, almost all the participants acknowledged its importance and appreciated its value. This finding was further highlighted by the participants' willingness to use the courtyard in their current houses. When asked how likely would they be to use traditional vernacular elements in their current or future house, an overwhelming 81% of designers and homeowners ticked likely or very likely (mean=1.6). Similarly, the last of the diamond 9 questions asked the participants what elements would they use in their houses (if any). The courtyard again was perceived as being the most likely to be used, with the lowest mean score (mean=1.38). Furthermore, the courtyard was the most commonly included element in cognitive maps for both designers and homeowners in their proposed contemporary vernacular. It appeared in a total of 85% of all the cognitive maps.

The findings of this study show that the participants identified the courtyard as the most recognized and desired traditional vernacular element. Moreover, they valued the courtyard's qualities and capacities and indicated their potential use for its application in a contemporary domestic context. Therefore, if the courtyard is important for designers and homeowners alike, why are they not implementing it in their current houses? And what might be the main motive for its use? Is it to do with its cultural qualities or is it a means for environmental sustainability or both? Other findings reveal disconnects and contradictions in socio-cultural understandings between participant responses. This may suggest one reason why courtyards still struggle to take form in Kuwait's domestic built environment.

Figure 9.1: Diagram showing the frequency of traditional vernacular elements: It represents the number of times participants positively identified each element in response to seven questions used in the workshops. It clearly illustrates participant's consistent selection of the courtyard. **Source:** The Author, 2014.

9.3 Other Traditional Vernacular Elements

Although the courtyard was identified consistently as the most recognized and desired vernacular element, participants also highlighted several other elements throughout the workshop questions. The findings show that the participants also regularly recognized the liwan. It was the third most likely element (mean=2.3) participants would use in their current house design after the courtyard and diwaniya. Similarly, by using photographs participants identified the liwan as the second most culturally expressive traditional vernacular element (mean=2.04) and second most desired vernacular element (mean=1.83) after the courtyard. Moreover, it was identified in 70% of homeowners and around 30% of designers in their contemporary vernacular sketches. The liwan was an outside shaded space or walkway almost always adjacent to the courtyard which may explain why participants closely identified it with the courtyard in several questions.

Similarly, in different contexts the participants discussed adobe or mud bricks. The first was in the participants' rich descriptions of Kuwait's traditional courtyard house. Mud bricks have been used to characterize Kuwait's past houses in many ways. Furthermore, during the group interview discussions, some homeowners suggested proposals to promote contemporary application using mud bricks. Designers and homeowners almost all agreed that adobe or mud brick was the most environmentally sustainable traditional vernacular element (mean=1.92). It was described as a local material that provided the basic composition for almost all construction, also known for its heat resistance qualities in harsh desert climates, and therefore, it was very much associated with people's perceptions of old Kuwait city and house.

9.4 Different Socio-Cultural Understandings

The effects of modernization have not only reshaped once sustainable built environments but also continue to create barriers for sustainable developments by changing socio-cultural understandings. The study findings revealed different socio-cultural insights through various participant perceptions and understandings of tradition and modernity within Kuwait's domestic built environment. Socio-cultural understandings refer to an interaction of different social and cultural elements. The findings showed cultural identity as one such element. Specifically, people's various perceptions of cultural identity or lack of cultural identity may have also revealed their understandings of traditional vernacular elements. These discussions are part of an on-going regional and global debate that reacts to people's concerns over struggles to preserve their cultural identity in an increasingly globalized world.

9.4.1 Lack of Cultural Identity

Many participants recognized identity, or, to be precise, lack of identity in Kuwait's domestic built environment as an important socio-cultural issue. The definition of identity is closely linked to culture and tradition; it is an expression of the self. Rapid development and globalization has been blamed for the lack of identity in Kuwait's houses. This was clearly a concern for some designers. One states that today's houses, *"have no identity, each owner and designer is building a different design [style]"* (D.M.13.-35). Many participants have expressed these frustrations throughout the workshops. Another designer asserted that:

> **D.W.11.-35:** *Contemporary Kuwaiti houses are affected by foreign cultures. They lack the satisfaction of environmental and social needs, privacy is not maintained and they don't respond to the environment.*

Influence of foreign cultures via globalization has been evident in many participant responses, which sometimes strongly critiques Kuwait's current domestic built environment as one designer exclaims:

> **D.W.4.-35:** *The contemporary Kuwaiti house is simply non-existent. It's merely incorporating different styles and features of other cultures into one mess of a structure, rendering it aesthetically displeasing.*

To further understand people's perceptions of their architectural identities, question 3 of the photo elicitation intended to understand people's preference of house styles in Kuwait's contemporary domestic built environment. The findings showed that the majority of participants (43%) selected a form of a contemporary vernacular house. This may reveal that people value an architectural identity derived from their culture and traditional urban fabric. Yet despite this value, designers are still designing styles from all around the world with no local cultural reference. So why is there a disconnect with people's desire to express their identity through culture and an application that may suggest otherwise?

Did Kuwait's changing socio-cultural context produce a new cultural identity for Kuwait, and therefore, is the clash of styles in Kuwait's current architectural landscape only a manifestation of this changing culture and hence its new identity? The participants' responses suggested it is this clash of styles that has in fact produced an expression with no true cultural identity behind their architecture. Rapid economic, political, social and technological changes significantly altered people's perception of architecture. AlBahar explains one reason for this:

> The 1970s witnessed further economic affluence allowing the Kuwaitis to travel extensively around the world. Exposure to different cultures and a variety of building styles became a source of architectural inspiration as travellers brought home images of their future dream home. People began to perceive their houses as symbols of their status in society, and the

> individualistic statement of each residential form became of paramount importance (AlBahar:1990:132).

This resulted in, as she describes it, a "plethora of eclectic…. a carnival show, an architectural history showroom of copied styles and motifs" (Ibid: 133). The designs range from Neo Islamic, Neo Classical, Spanish, Cubist, Japanese and many others. AlBahar continues by saying that the 1980s brought with them a search for a "Kuwaiti architectural identity amidst the plethora of representational displays and following a general disenchantment with the so-called western forms of dwellings imposed on an Islamic culture, a different typology of Neo-Islamic elevation schemes has emerged" (Ibid: 133). Over time the new Kuwaiti House developed certain requirements and specific features, however, the overall house concept and design still has the 'anything goes attitude'.

9.4.2 Philosophical Differences

Discussions from the designer group interviews indicate major differences of opinion between the participants, which in itself may suggest that for this group there may be a theoretical barrier for introducing traditional solutions to domestic architecture in Kuwait. Designers' diverse backgrounds and array of philosophical design approaches tended to question more than accept the notion to use Kuwait's past as precedent to address present and future needs. Some designers did not completely understand the idea of using traditional Kuwaiti vernacular elements. In fact, one designer did not see it as precedent at all especially when she did not recognize the Kuwaiti courtyard house as Kuwaiti but rather a regional archetype. The counter argument was that although some architectural elements have been used regionally and globally in one form or another, the coming together of economic and socio-cultural dynamics such as local customs, trade, materials, and construction techniques etc. made it a uniquely Kuwaiti creation.

Architecture is a window to the past, a portal into time and space that bridges the gap between history and the future. From centres of religion to palaces to public plazas it is through the built environment and the use of social space that one begins to understand the beliefs and culture of a civilization. Like people, different examples of architecture share similar physical characteristics and have more in common than they think. But each person is also uniquely different with diverse backgrounds and personalities. This difference is also true for architecture, it is an expression of a culture in a given time and place. Many researchers have highlighted the importance of the role of culture. Rapoport sees the act of building a house as a "cultural phenomenon" and the socio-cultural forces are considered primary in shaping house form, whereas climate, construction materials, methods, and technologies are secondary (Rapoport:1969). Whereas, Abel explains that, "when we come to define the true and deeper functions of architecture, we will not be simply describing the production of a certain type of artifact, but explaining one of the original ways in which we know ourselves" (Abel:2000:150). Therefore, although architecture around the world shares similar physical features, every region, every city, and even every building is different.

9.4.3 Resistance to Change

Kuwait's urban transformation has resulted in various physical manifestations, changing spatial requirements, and social expressions. Cultural practices have adapted within Kuwait's changing domestic built environment. In fact, the persistence of social space (spaces with specific cultural functions) has been identified in previous studies (AlJassar:2009, AlBaqshi:2010, AlHaroun:2014). However, despite these forms of subtle cultural resistance the effects of globalization are far-reaching and have had a tremendous impact on people's perceptions in relation to the built environment. Tensions have been generated between people's urge to hold on to their culture, traditions, and identity and

their desire for development and modernization. Moreover, cities that witnessed rapid growth within the last decades are moving towards a model that attempts to balance forces of modernization and change while trying to preserve traditional elements within society (ElSheshtawy:2000). The findings of this study suggest that these forces have yet to emerge due to on-going discussions that may determine the extent of the role of tradition in the path to modernity. The challenge today is to find local solutions that encourage and promote culturally and environmentally sustainable developments.

The findings revealed many different levels of resistance to change. The perception that people associated with Kuwait traditional vernacular as something that although was significant *"reminded them with the past and the poorer days"* and how development and modernization was viewed as progress. As one homeowner clearly articulates this understanding, *"I think people are resistant to change and you need to introduce the idea of going back to old traditional houses- they think they're going a step back"* (H.W.12.-35).

Contradictions within participants' responses are evident throughout the workshop questions. They may agree with the principle behind using vernacular elements and may be willing to use them in their current houses. However, the findings indicate ambiguity behind the motives for using these elements, be it as a way to express local culture and identity in their houses or to promote environmentally sustainability. Disconnects between participant responses may suggest society's disconnect and on-going discourse with the larger issues of tradition versus modernity as it tries to find an identity sensitive to culture and responds to the environment.

9.5 Environmental Sustainability

9.5.1 Contradictions in Perceptions

When describing the traditional Kuwaiti house, participants associated the traditional house with being more environmentally sustainable. In contrast, when asked what are the problems facing today's domestic architecture, participants related contemporary houses as unfriendly and unsustainable with a waste of space and energy. This demonstrates how people perceived the traditional as being more sustainable than its modern counterpart. Moreover, an overwhelming 80% of participants agreed that traditional vernacular elements should be applied in contemporary houses in Kuwait. The main justification for their use was environmental sustainability identified by a total of 35% of the participants, followed by social and cultural reasons identified in a total of 29% of participant responses. All this data indicates that environmental sustainability may have an essential role to play in Kuwait's domestic built environment. However, when the participants were asked the importance of factors in designing their house, environmentally sustainable design ranked second to lowest after culture.

These findings revealed contradictions within participant responses that suggest although they acknowledged the importance of environmental sustainability they still may not feel it is an important factor in designing their house. In general participants appreciated traditional vernacular elements as they did environmental sustainability, they also indicated their potential willingness to employ these concepts in their current houses. But what do these apparent contradictions therefore imply?

9.5.2 Differences between Homeowners and Designers

Group interview discussions may illuminate some of this ambiguity, which exposed differences in homeowners' and designers' value of environmental sustainability.

Designers' discussions revolved around socio-cultural understandings and gave little concern to environmental sustainability issues. In contrast, homeowners clearly recognized the importance for environmental sustainability and viewed traditional vernacular elements as a possible solution. One homeowner explains how:

> **H.W.3.+35:** *Space should be given for a courtyard, with open space and green trees; it gives comfort and calmness for the people of the house… In addition one can use other elements like the bagdir [wind-catch] and others to connect with the inside and out [of the house]*.

While another concurred with these sentiments saying, "*We have the jelleb it should be that one uses it today, every house should have it"* (H.W.1.+35). Homeowners also proposed creative ideas using vernacular elements, "*They can use mud brick with colours. They can also use the courtyard in every house in the roof"* (H.W.2.+35). Surprisingly, these ideas came from homeowners and not designers, which reconfirms homeowners' fundamental acceptance of the potential application of traditional vernacular elements and may suggests environmental sustainability as one of if not the primary motive for their use.

The findings may suggest several reasons why homeowners justified the use of vernacular elements by valuing their environmental sustainability more than cultural qualities. First, many homeowners associated traditional vernacular elements with the traditional courtyard house, which was in turn perceived as environmentally sustainable, therefore, for some it was obvious that vernacular elements offered a solution for Kuwait's environmental problems. Second, globalization has changed people's perceptions of their culture with regards to their house for example, the courtyard was once a private sanctuary that united the entire family, but today participants' cognitive sketches of their current house clearly indicated this place has been replaced with the family living room. The push towards modernization resulted in the transformation of social space, which led to a different form of cultural expression and use of space in people's houses. Therefore, the

potential use of the courtyard today may not be valued as much for its cultural significance as it is for its environmental sustainability.

9.6 Space as Need or Desire

Traditional houses were *"based on needs"* according to many participant descriptions and space was used efficiently. As the nations' financial capabilities increased, so too did people's aspiration for a better future. People's perceptions of space are very much related to their contemporary standard of living. Many of today's houses have elaborate receptions halls, bedroom wings, swimming pools, elevators, large gardens, etc. and are usually seen as having inefficient use of spaces. However, despite concern about wasting space participants expressed their demand for these spaces in many questions throughout the workshops.

Around 84% of designers and homeowners believed there are problems, of which spatial and cultural aspects of the house were among the most frequent responses. Spatial problems usually reflected a waste of space, lack of leisure areas and society-imposed luxuries. Although different questions, participants responded similarly when they described the contemporary Kuwaiti house and when they described problems with the contemporary Kuwaiti house. This strongly indicates participants' overall negative associations towards their current domestic built environments.

9.6.1 A Sense of Insecurity of the Future.

Participants and especially designers stressed that people today demand more space and usually use all the allowable space by law: *"in building codes using the maximum space allowed"* (D.W.6.-35). The use of space in Kuwait's houses has evolved to adapt to various social, economic, and political changes over time. The following extracts depict designers' understandings of how these changes directed people's desire for more space. One designer described current houses as:

> ***D.W.6.-35:*** *An amalgamation of different representations of identity, the house is more of a sign [status] and less of a functional space for personal comfort. Great reception halls, home businesses, roof top for the maids, 2 floors for future kids when they get married, to be rented for now.*

There is the desire to not always express your needs and comfort, but rather to meet societal perceptions of what one should have in one's house i.e. to meet modern requirements and contemporary living standards. Another designer reflects on their experience designing houses:

> ***D.W.8.-35:*** *Based on my nine years of experience in designing contemporary Kuwaiti houses, the limited space available and very high cost of land is forcing a key addition to the Kuwaiti family house, which is 'apartments' sometimes 1,2 or even 3 apartments. Whether the family needs this feature at the time the house is built or not it is almost always demanded as a precaution because of the sense of insecurity of the future.*

Some participants indicated that people are building an extra floor of apartments to increase family income, but also being mindful of the future when they may serve to accommodate their children after marriage. This desire to secure a place for their children is in part parents' reaction to the government's inability to provide housing welfare required by law for every Kuwaiti citizen (Public Authority for Housing Welfare:2014). Kuwait's current domestic built environments have clearly been shaped by the various economic, socio-cultural, and political forces, resulting in a unique social dynamic that suggests people's demand for more space goes beyond their desires for luxury living and conforming to societal expectations, but, paradoxically, is an attempt to meet a basic human need, which is to secure present and future housing for their family.

It is evident the need for space to fulfil people's requirements has been discussed the most in regards to the contemporary Kuwaiti house. Also evident in the findings is that people's desire for more space is also viewed as a problem and that in fact this may become

a barrier for the application of vernacular elements in contemporary designs. People want more space through increasing requirements to maintain a higher standard of living and add space for future expansions. Therefore, is it possible to compromise people's aspiration by relinquishing their desire for more space? And is it necessary and if so why? And can that provide an opportunity to use traditional vernacular elements such as the courtyard in contemporary domestic architecture?

Specifically, people indicated a desire to have more internal space, and therefore, there may be no room for the external space of the courtyard. This may also suggest something about what kind of domestic space is valued by contemporary society. The courtyard is more space after all, but maybe not the kind of space that is desired? And to what extent are people willing to accept spaces without air-conditioning? The study's second follow-up stage intends to explore these relationships to further understand the possibility to incorporate vernacular elements within people's growing need and desire for more space.

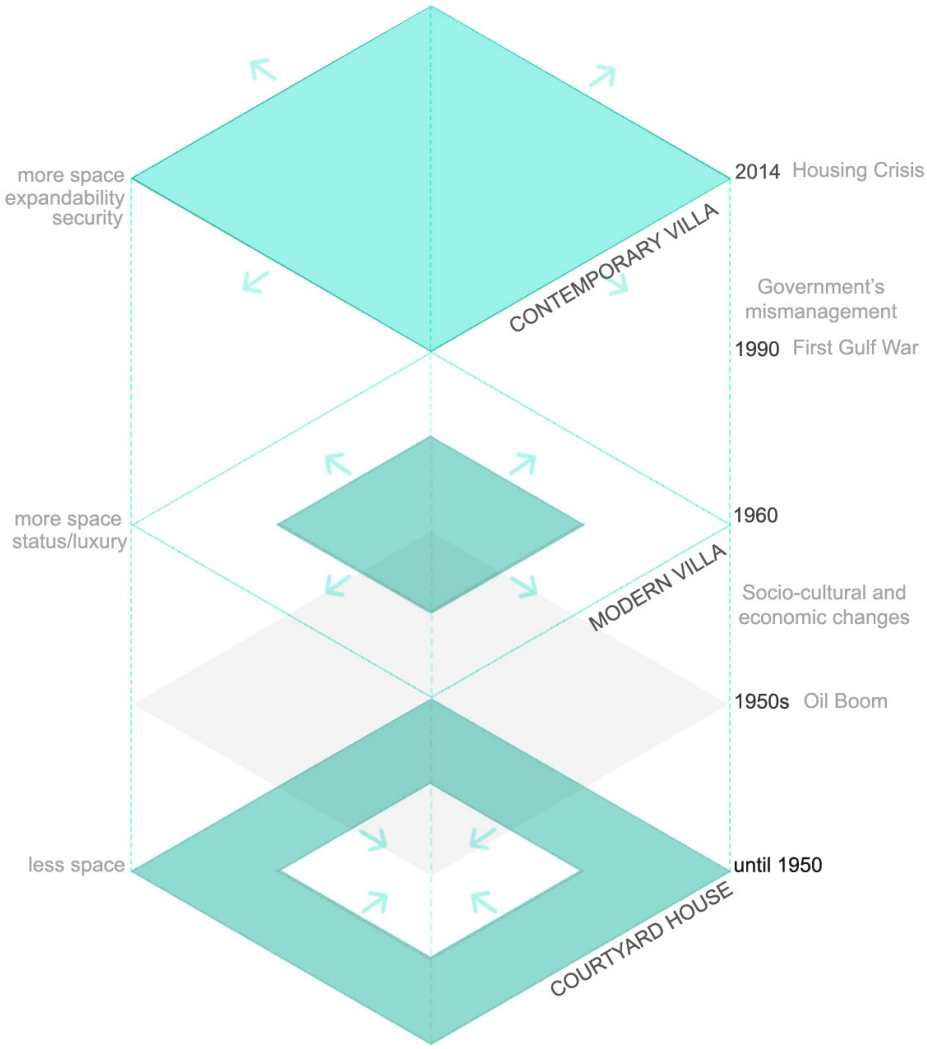


Figure 9.2: Diagram showing the relationship between spatial requirements, house form, and Kuwait's changing socio-cultural, economic, and political realities. The representation illustrates people's desire for more spatial requirements over time regardless of their size of land. **Source:** The Author, 2014.

9.7 Government - from Barrier to Bridge

In Kuwait, the bond between the government and the people was sealed in the 1962 constitution where article (8) states that the "State safeguards the pillars of society and ensures security, tranquility, and equal opportunities for citizens" (Distoor Dawlat AlKuwait:1962). Yet the right for housing has not been ensured by the government despite article 14 of Law number 47 of 1993, which stipulates the government should provide Housing Welfare for citizens (Public Authority of Housing Welfare:2014). The government

has demonstrated an inability to meet the growing public needs, leaving over 100,000 people waiting for their right for housing welfare. As a result, the nation has seen this issue among others ignite an intense political atmosphere in last 5 years, with the dissolution of the national assembly numerous times, two prime ministers, and many cabinet reshuffles. In 2013, in a study conducted by Kuwait's National Assembly aiming to rank issues that concern the public, the housing crisis was identified as the most important issue that people wanted resolved (KNA:2013).

This political context was expressed in different aspects of the data throughout the workshops. The discussions from group interviews presented participants' varying perceptions towards the government and its institutions - especially the baladia or municipality. Most participants identified many governmental issues from mismanagement, inability to enforce the law, and need for reform through new codes and regulations. The findings identified many barriers towards and a few opportunities that might support the use of traditional vernacular elements in the contemporary Kuwaiti house. One such barrier is the 'lack of vision' from the government and particularly the baladia to introduce regulations and building codes that promote more culturally and environmentally sustainable designs. In fact there is an apparent disconnect between current regulations and people's aspirations towards their house to meet their changing needs. Moreover, high real-estate prices make it more difficult to buy land, and this makes it even more difficult to use traditional vernacular elements especially with people's growing spatial requirements. One participant stated, "*With high real-estate prices it will be risky for me to do something new. I need examples. It won't work"* (H.M.4.+35). In addition, one designer explains how the high real-estate prices translates to more value for spaces which results in many people wanting to use all the allowable space defined by the law:

D.9.M.+35: *They are increasingly following the real estate market; meaning that the main drive for designers is to utilize the buildable area to increase profit. This often results in cubic box like giant concrete masses containing as much room as possible.*

Therefore, the high price of land makes it a challenge to use the courtyard or liwan in contemporary houses due to their spatial demands.

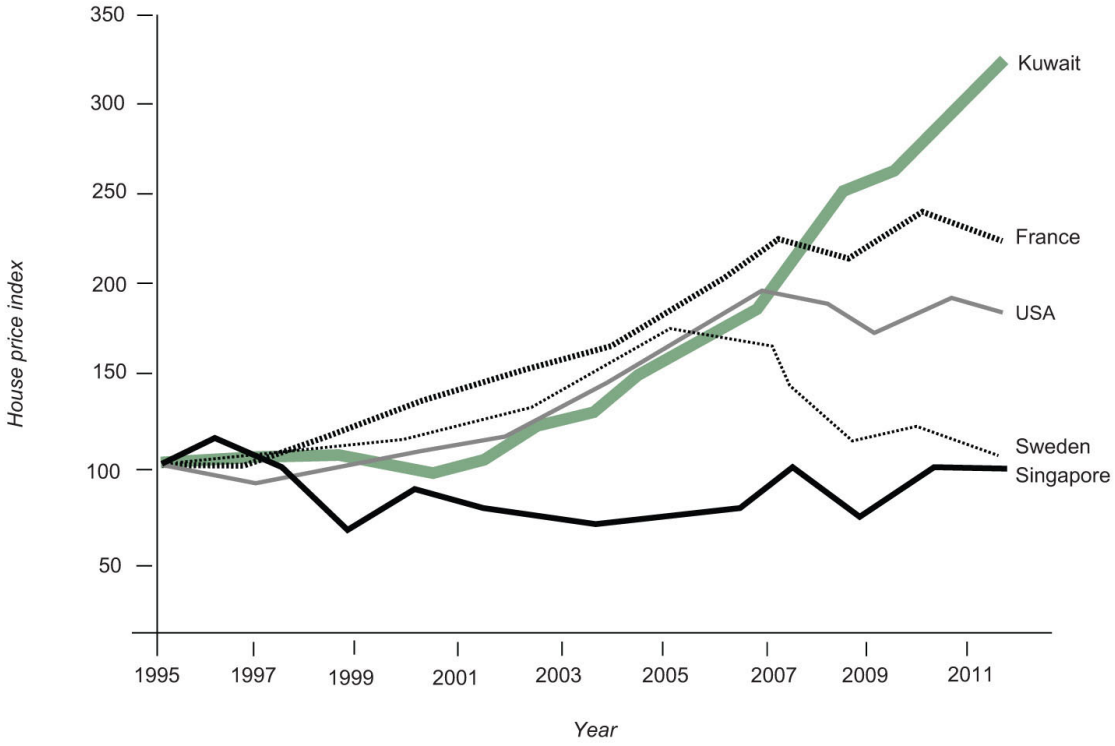


Figure 9.3: House price comparison by country (base 100) from 1995-2012: The data has been collected from various sources including: Kuwait Fund Home, Global Investment, and The Economist. Note: Due to lack of consistent data, the average prices of land of the following neighbourhoods in Kuwait were used: Yarmouk, Salwa, Mishref, Surra and Sabah AlSalem. **Source:** AlShalfan:2013.

The lack of adequate government response to satisfy public need for housing together with high real-estate prices has resulted in transforming how people design their current houses. People now demand more space to be used not only commercially, as apartments to repay their loans and mortgages, but also to secure a place for their children in the future. Sometimes in order to make these changes, homeowners violate the law by

adding another floor or making significant adjustments to their plans after they get electricity from the government. People's reactions suggest that it's their way to adapt within the problems generated from years of governmental neglect towards the housing issue. Therefore, this situation indicates people's current priorities towards their houses, which may have morphed as they adapt to the current political crisis in Kuwait.

However, despite these challenges some participants - particularly homeowners - see light in the end of the tunnel. Their discussions generated many creative proposals and ideas to encourage sustainable developments using vernacular elements that the government may adopt. One suggested idea was, *"The government can use [traditional vernacular elements] in government housing through the idea of giving incentives from Kuwait's credit and loan bank"* (*H.M.5.+35).* For example if a homeowner applies environmental sustainable strategies such as adding a courtyard space or uses green materials the bank may increase their loan by 10%. Another idea was to involve the more active private sector to solve the housing crisis as one homeowner suggests to, *"give a project for the private sector but with conditions to develop the land in a specific way. Imagine 10,000 houses all in this way" (H.W.1.+35).* In addition, many homeowners suggested ways to use vernacular elements in their houses and some argued, *"Why doesn't the government use these elements in their projects"* or advocate these ideas by requiring them by law*, "The baladia can put a code to have a roof courtyard"*(H.W.2.+35*).*

Although optimistic in their outlook providing these ideas, homeowners clearly understood that these decisions need to come from the government. Individual efforts are applauded and appreciated but more coordinated and organized programs need to be implemented in order to see a difference and this kind of authority is usually more effectively practiced by government enterprises as one participant points out, "*The solutions are political - decision makers, even they need to be re-educated in this regard"*

(H.W.1.+35). Another homeowner argues that almost all the government institutions are responsible, *"This comes from the top, the decision makers… The government, the baladia council, the national assembly are all responsible"* (H.M.3.+35). There seemed to be a consensus from homeowners and designers that the government should do much more to reform current regulation and realistically find solutions to the many problems that face Kuwait's domestic built environment.

Although initially commended for its progressive modernization campaign from the 1960s to 1980s, people have gradually recognized the side effects generated from the government's early policies creating an environment, which encourages unsustainable wealth-distribution methods. AlShalfan's study highlighted one such example - housing welfare distribution and questioned their role in promoting justice in an "environment of increasing housing application backlog, endless sprawl and continually rising housing property values" (AlShalfan:2013:1). She explains that the aspirations of citizens are a product of years of "state-induced rights" creating false desires, which rely on limited resources not sustainable for future generations. Instead argues that government policy should focus on immediate solutions to empower individuals to meet their needs and instill progressive desires (Ibid:2013).

Many private organizations have advocated for solutions to the housing crisis. One notable group of young Kuwaitis who developed *Thukhur* or National Project for Sustainable Development aims to encourage projects with a proactive approach to identifying and initiating ideas that stimulate the country's growth and development. They have recently conducted a nationwide survey to find priorities for the housing crisis in Kuwait. Their findings have revealed that from the state's various housing welfare options, 69% of people waiting for housing welfare desired a plot of land to build their house, 17% desired Government housing, 9% an increase for government housing loans, and 5% only

wanted apartments (NPSD:2014:2). From people who want a plot of land to build their future house, 38% indicated the importance of the location of the residential area while 25% identified the land spatial dimensions as vital (Ibid:23). Finally, the study found that 84% of the people surveyed indicated that limiting high real-estate prices as a possible solution to the current housing crisis (Ibid:27).

Another group started a public campaign calling itself *Nuter Bait* or Waiting for a House has encouraged public rallies and called on the government to resolve the crisis. Today, public pressure on the National Assembly and the government have seen increased efforts to build new neighbourhood units and housing cities. One such proposal is to move towards vertical housing where people could live in apartments instead of waiting for a house. In fact the Public Authority for Housing Welfare is currently building apartment buildings in several locations around the far-reaching suburbs of Kuwait City. Some estimates show that if not solved the current housing crisis will see 174,000 applications within 6 years and waiting times exceeding 15 years (AlQabas:2014). However, past government experiments such as *AlSawaber* Complex[15] proved unsuccessful, and therefore, similar proposals if not studied and carefully planned may also end in failure. Some academics argue that society does not accept communal living and justify this claim by culture of privacy that originated from Kuwait's traditional courtyard house (AlBaqshi:2010, Mahgoub:2002). AlShalfan on the other hand points out that in fact Kuwait's past urban fabric is, "one where community was closer, the street was the public gathering space and the walls of the houses were shared between neighbours" (AlShalfan:2013:24). In fact many social practices in old Kuwait respected privacy yet

[15] *AlSawaber* complex was an experimental multi-storey residential housing model located in the heart of present day Kuwait City. Due to poor maintenance and the lack of regulation brought unwanted commercial ventures, which resulted in the failure of the project. Today, the government has plans to buy the apartments from their owners and demolish the buildings.

demonstrated many forms of community living. Therefore, despite current discussions that give preference for privacy, the practice in reality proves otherwise (Ibid:2013).

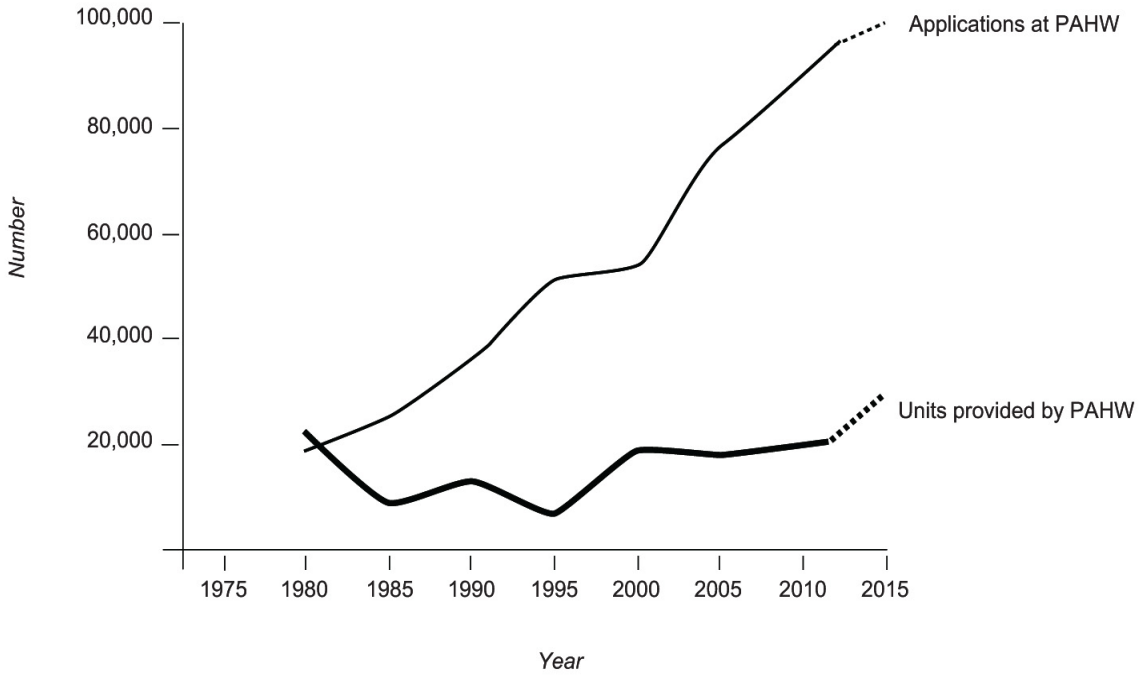


Figure 9.4: Demand and Supply for Kuwait's housing welfare. Source: Public Authority for Housing Welfare, 2014.

Today many young Kuwaitis currently live in low-density apartment units scattered within residential suburbs. Although illegal to have commercial apartment units in residential districts, this phenomenon has provided some people with temporary housing and may suggest possible solutions for the housing crisis. But are these realistic solutions that solve the root of the problem or will it only further encourage unsustainable residential developments? Many designers and academics assert that new progressive sustainable solutions and reform is vital, taking into account not only people's present needs but foreseeable future challenges.

Ghabra, an active political science professor in Kuwait University, argues that without true political reform in the nation, attempts to resolve on-going issues that concern the public will only be temporary. A genuine effort to build the individual is essential; to invest in people is an investment for progress. He asserts that:

> The future of urban development in the Gulf lies in human development. Over-dependence on oil and belief that modernity equals infrastructure development have distracted attention from human development which requires social, political, cultural, and academic restructuring (Ghabra:2010:109).

Ghabra advocates for change by reforming the current political structure, which has created stagnation in a country with one of the highest GDPs per capita in the world. "Modernity cannot flourish in the absence of freedom of expression and the right to differ with power and authority over the direction and policy" (Ibid:2010).

The government - although responsible for creating many of the problems that face Kuwait's built environment – is still perceived as potentially providing many of its solutions. As one homeowner puts it, *"The Kuwaitis need only someone to guide them in that direction and they will follow"* (H.W.2.+35). But can the government move from being a barrier to a bridge in leading the way for empowering people, while improving their quality of life in their domestic built environments?

9.8 Conclusion

The findings from this study revealed participants' conflicting aspirations and understandings of their houses within Kuwait's 'post oil' socio-cultural, economic, and political dynamic. The findings also indicated to what extent may traditional vernacular elements have a potential role in today's houses within the context of cultural and environmental sustainability. Although the courtyard was identified as the most desired element, questions still remain around the potential for its contemporary application and the

motives for its use. Moreover, to what extent Kuwait's housing crisis and high real-estate prices have affected people in relations to their domestic built environments? And may that prevent people from using traditional vernacular elements? The findings from the initial workshops study provided more questions than answers, and therefore, a follow-up study becomes necessary to explore the emerging themes in more detail.

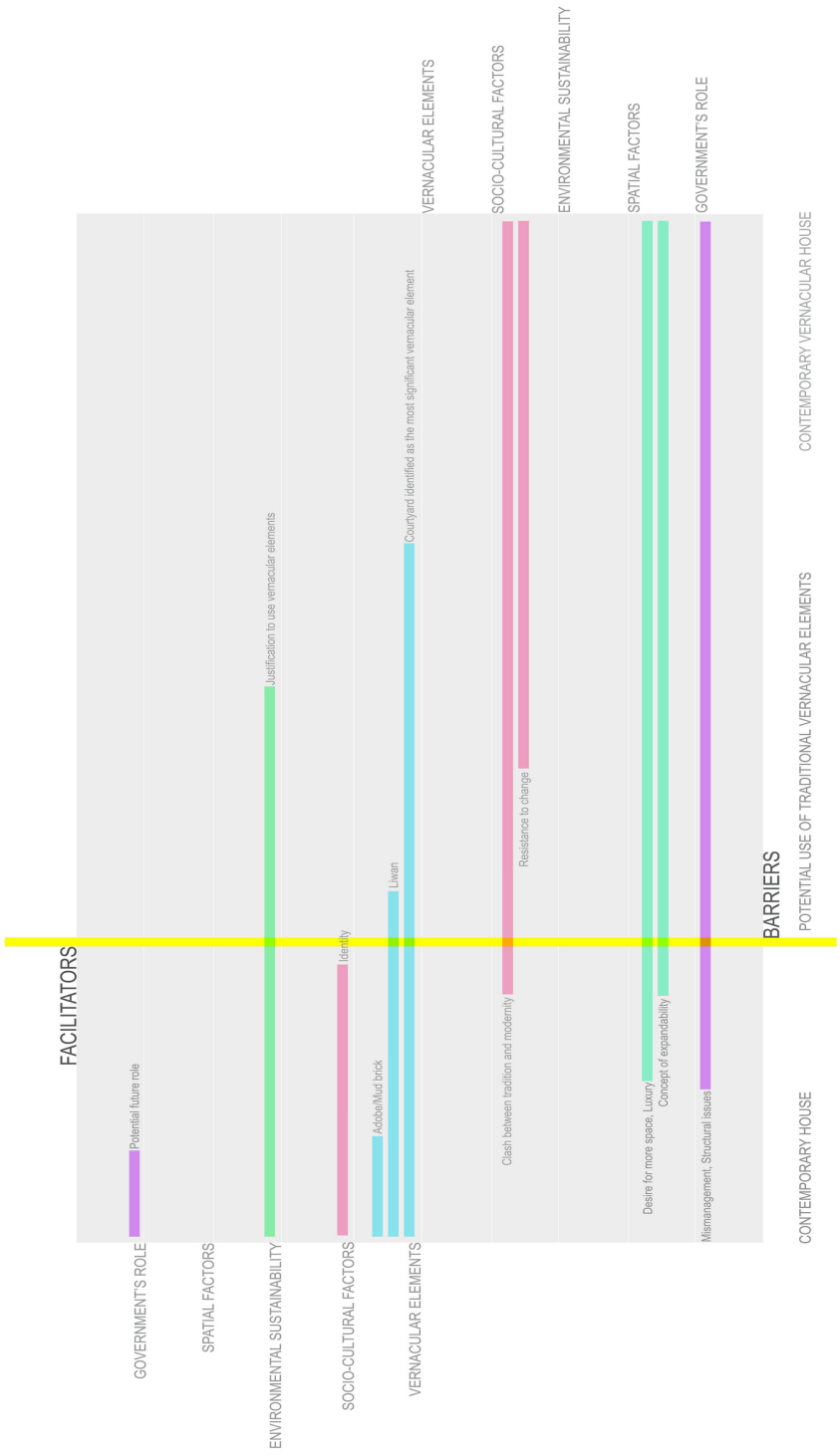


Figure 9.5: Conceptualized map of the study findings: Showing the main themes translated as facilitators and barriers for the potential use of traditional vernacular elements. **Source:** The Author, 2014.

Chapter 10: Follow-up Study: The Courtyard Revisited

10.1 Introduction

The courtyard was the most important socio-cultural and environmental element of Kuwait's traditional courtyard houses, which shaped old Kuwait City's organic form. Today, the courtyard disappeared from Kuwait's contemporary domestic built environment and is rarely found in the new city's urban fabric. Yet the study's initial workshops findings revealed that people still recognize the courtyard as a significant element and find it desirable to use in their current houses. Why this disconnect between what people say they want to do and what they actually will do? Although this may be a common phenomenon in social science research, this follow-up study intends to investigate this finding in more detail while answering questions that remained unanswered from the workshops. It will start by presenting the rationale for the follow-up study with some background information. This will lead to a discussion of the new mixed method design using a questionnaire and cognitive maps followed by descriptions of the sampling strategy and data analysis methods. Finally, the chapter will conclude with a presentation of the results/findings and a discussion of the key findings.

10.2 Rationale and Background

10.2.1 Why Study Courtyards?

In the first empirical study the courtyard was the most frequent element associated with the traditional house and was consistently citied positively across the methods and various questions. Yet the findings also highlighted a crucial tension with the desire and perceived need for more space, therefore, exploring further people's attitudes towards and perceptions of the courtyard may provide an opportunity to explore further the relationship

between modernity and tradition. Specifically, the courtyard will be used as a vehicle to further examine socio-cultural, economic and political issues surrounding the move towards modernity in the domestic built environment and away from the vernacular and sustainability. By investigating some questions that have been raised from the prior workshop findings the follow-up study allows a further exploration of the study's objectives, which is to identify the qualities and capacities of traditional vernacular elements and now of courtyards that people might value and use in the contemporary house. To do this the second study intends to provide quantitative data to potentially support and complement the qualitative findings of the first stage.

The following lines of inquiry are derived from the initial workshop findings and have been used as a guide that framed the methods and questions for the follow-up study:

1. In general the study participants identified the courtyard as the most recognized and desired vernacular element and indicated the potential to use it in their contemporary house. Therefore, the follow-up study intends to not only confirm this finding but examine what is the main motive for the courtyard's use: environmental sustainability, cultural identity, or both?

2. The study findings also highlighted people's aspiration for their house expressed in their desires for more spatial requirements. Does this prevent or support the potential use of traditional vernacular elements and especially courtyards in contemporary houses?

3. The demand for space has been associated with Kuwait's changing socio-cultural dynamic and especially the government's inability to provide housing welfare and control high real-estate prices. Does this atmosphere prevent or support solutions to address problems that face Kuwait's built environment one of which this study examines the potential use of traditional vernacular elements and courtyards in contemporary houses?

4. And finally although the majority of study participants indicated their willingness to use traditional vernacular elements and specifically courtyards why do we not see this desire expressed in many of their current houses? To what extent to do perceptions of the traditional and understandings of modernity play a role in the disconnect of what participants say they want to do and what they actually will do?

10.3 Follow-up Study Design

The follow-up study design conducted a series of workshops each with around 20-30 participants to collect data using two methods; first a quantitative questionnaire, and second a cognitive mapping activity. The questionnaire intended to provide accurate data more representative of the population. The cognitive maps intended to gain detailed understandings of people's perceptions of the courtyard. The two sections come together to form a 3 page sheet, which consisted of 9 personal questions followed by 7 main closed questions of which one Likert question has 8 sub-questions, and one cognitive mapping question.

10.3.1 Questionnaire

More than one type of question structure has been employed for the questionnaire (Please refer to appendix A for more detail). The following are the questions asked for the follow-up study: The first question aimed to identify what house type; traditional courtyard house, modern villa, or other was the most appropriate for Kuwait. **1.** Which do you think is the most appropriate house type for Kuwait? The second and third questions aimed at finding relationships between the courtyard and Kuwait's traditional courtyard houses and if that makes them more or less likely to use them in their current house. The intention for these questions was to understand if traditional associations may promote or not contemporary understandings and applications. **2:** Do you associate the courtyard with

Kuwait's traditional house? **3:** Do associations (if any) with the traditional courtyard house make you less likely or more likely to use the courtyard in your current or future house?

Question four intends to ask if people would use the courtyard in their current or future house. The main objective behind this question is to take the findings from the first stage of study and examine with a higher sample size representative of the population. **4:** Assuming there were no practical or financial barriers, would you like to have a courtyard in your current or future house? Question five also intends to follow-up on the findings of the earlier workshops and determine what are the main motives that drive people to want courtyards (if any). **5:** If yes what is your primary motive for adding a courtyard? Question six continues to investigate people's associations with the courtyard and asks the participants to select from a list of 11 values and qualities. **6:** Please tick the most appealing and valued qualities that you associate with the courtyard.

Finally, the last question type are Likert scale questions, where a respondent is asked to what extent they agree or disagree with the statements (Please refer to chapter 5 for more detail). The question asks: **7:** To what extent would you agree or not with the following issues that may prevent you from adding a courtyard in your current or future house? The issues have been derived from the first workshop findings and are as follows: increasing user requirements, having a small plot of land, it reminds you of traditional houses, cultural changes from Kuwait's transformation, lack of government regulation to promote courtyards, high real-estate prices, scarcity of residential land, Kuwait's housing crisis. The last section of the questionnaire asked the participants if they had any comments. **8:** If you have any further comments about any aspect of this topic, please add them here.

10.3.2 Cognitive Maps

Only one question has been asked using cognitive maps, which aimed to gain rich insights into the many perceptions and understandings of the courtyard. It was the intention to leave the question open as a means to elicit positive, negative, or neutral interpretations. The question asked the participants to label their drawings for clarification, which in turn helped during content analysis of the sketches. The question asked the following: **1:** Please draw what a courtyard means for you. It is an expression of your understanding of what is a courtyard.

10.4 Follow-up Sampling Approach

10.4.1 Sampling Approach

The approach employed workshops as a means to collect data using the questionnaire and cognitive maps. This has been done in order to increase participation and the response rate and to encourage drawing the sketches for the cognitive mapping part of the study. In addition, the decision was taken to have face-to-face contact with the participants and be directly involved with the data collection rather than sending the questionnaires by mail or using online surveys. In order do this, an easily accessible closed environment was required, and therefore, various governmental and private institutions were approached and asked if it was possible to conduct a brief workshop session with their employees. Although the institutions were selected based on accessibility the selection of the departments and participants within the institutions was random to limit bias. It is important to note that the approach to use working populations may have limited data from other groups. The researcher contacted the institution's public relations office and introduced the topic and asked if it was possible to conduct the workshops in their premises. If the organization agreed, a schedule and date was confirmed before

commencement of the workshop activities. The number of workshops ranged from 1 to 8 depending on the size of the institution, which usually meant that the more employees they had the more workshops were conducted. Each workshop group had around 20-30 participants. Workshops were conducted in the following eight institutions: Kuwait National Petroleum Company, Central Bank of Kuwait, Ministry of Finance, Ministry of Social Affairs, Kuwait Institute for Scientific Research, Kuwait News Agency, Kuwait Audit Bureau, Kuwait Fund for Economic Development.

The workshops took place in an open office space usually with cubicles and some side and corner offices. This was done for convenience and to reduce the amount of workshop time spent during office working hours. The workshop started with a brief introduction on the topic and asked the employees if they would like to participate in the workshop. Subsequently, the questionnaire and cognitive mapping exercise would be distributed to the participants. The researcher was available throughout the workshop for any clarifications and to answer any questions.

10.4.2 Sample size

Unlike the initial stage, the follow-up intended to provide more quantitative data that may support generalizations about the phenomenon under study. Therefore, the aim was to collect data from a larger sample to be statistically significant and more representative of the population. A total of 370 questionnaires were distributed throughout a series of open workshops from various offices. 320 surveys were returned, which gave a total response rate of 86%, 262 were found valid for the analysis, which resulted in a valid response rate of 71%.

10.5 Participant Selection

10.5.1 Why Homeowners and Potential Homeowners

The findings from the first stage of the study suggested various structural and policy issues that created Kuwait's housing crisis, which resulted for many people waiting for housing welfare. The crisis contributed to increasing people's demand for spatial requirements, which reshaped the form and sometimes function of Kuwait's domestic built environments. This atmosphere has and will affect young couples and families considered to be potential future homeowners. Therefore, essential alongside understanding homeowners' contemporary attitudes and perceptions of vernacular architecture are potential homeowners who do not currently own a house and are waiting for the state's housing welfare for a plot of land or government housing. It is the intention that by investigating potential homeowners the follow-up study will add another layer of understanding. The follow-up study has focused on these groups during data analysis and discussion of findings.

10.5.2 Participants

From the 262 confirmed questionnaires only 173 participants identified their age of which 116 were below 35 years and 57 above 35 years. This suggests that the data reflects Kuwait's overall demographic of which the majority of population is under 25 years of age, which may indicate that more potential homeowners than homeowners have contributed to the study. 261 participants stated their gender of which they were evenly divided with 129 males and 132 females. This is also representative of Kuwait's larger population of which females are slightly more than males. A more detailed breakdown of the follow-up study's participants demographic descriptive analysis may be found in appendix B.

10.6 Follow-up Data Analysis

With the exception of the cognitive maps activity the follow-up study was a closed quantitative questionnaire. Therefore, the data analysis method employed a different analysis approach from the first stage of the study. The statistical tools used with this study's descriptive statistics are frequency analysis and cross-tabulation. In addition, tests have been conducted for significance, reliability, and correlation analysis for the Likert scale questions. As with the first stage data analysis, Excel and SPSS (Statistical Package for Social Sciences) software was used to enter data and apply advanced statistical tests. Please refer to chapter 5 for further explanation on other quantitative data analysis and testing and chapter 6 for content analysis used for cognitive maps.

10.6.1 Kolmogorov-Smirnov Normality Test

In contrast to the analysis of the quantitative sections of the initial workshops where the Shapiro-Wilk test of normality was conducted, the follow-up study used the Kolmogorov-Smirnov Test. This follows the normality test guidelines, which suggest using the Kolmogorov-Smirnov test for sample sizes over 50.

10.7 Follow-up Data Results/Finding

10.7.2 Questionnaire

10.7.2.1 Question 1

Out of the 256 participants who answered this question 70.7% identified the modern villa as the most appropriate house type for Kuwait compared to 25.4% for the traditional courtyard house and only around 4% for other. Table 10.1 below presents the frequency and percentage breakdown while Figure 10.1 illustrates the percentages visually.

Most appropriate house type for Kuwait

	Frequency	%
-Modern villa	181	70.7
-Traditional courtyard house	65	25.4
-Other	10	3.9
Total	256	100.0

Table 10.1:Most appropriate house type for Kuwait.

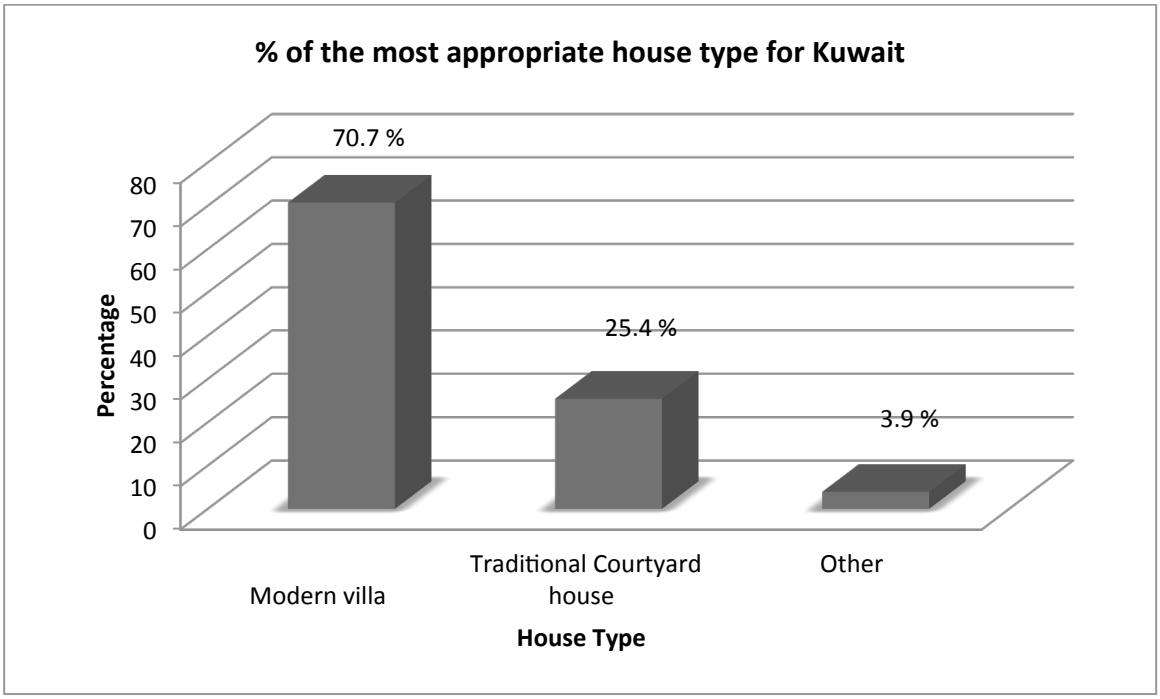


Figure 10.1: Percentage of the most appropriate house type for Kuwait.

10.7.2.2 Question 2

The second follow-up question attempted to identify if any association exists between people's understanding of the courtyard and the traditional Kuwaiti courtyard house. In another words when people think of a courtyard do they recall Kuwait's traditional domestic vernacular. The results below show that they do, with 64.5% of the participants associating the courtyard with Kuwait's traditional courtyard house compared to 35.5% who do not. This reconfirms findings from the first study and indicates that people still recognize the courtyard as a key component in Kuwait's tradition urban fabric, and thus, associate the two with each other.

Association of courtyard with Kuwait's traditional courtyard house

	Frequency	%
Yes	167	64.5
No	92	35.5
Total	259	100.0

Table 10.2: Association of courtyard with Kuwait's traditional courtyard house.

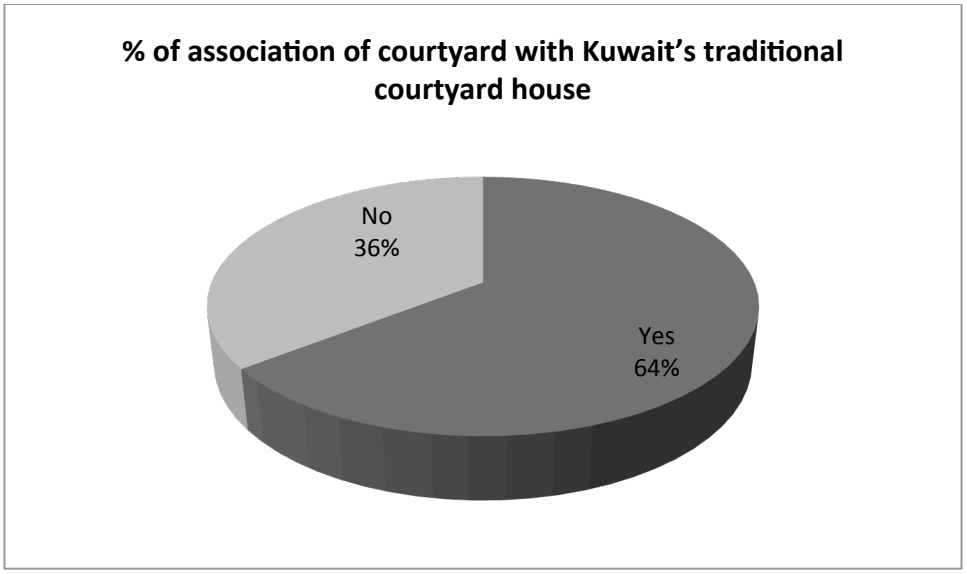


Figure 10.2: Percentage of association of courtyard with Kuwait's traditional courtyard house.

10.7.2.3 Question 3

The third question attempted to take question two further by seeing if that association would make people more or less likely to use the courtyard in their current and future house. The results presented in Table 10.3 below show that most of the participants 53.4% stated none, which suggests a more neutral standpoint, 40.8% were more likely, and 5.7% were less likely. Therefore, the results indicate that despite people's association of the courtyard with the vernacular architecture from the previous question it may not be enough a motive to use it in their current or future house. This understanding also may relate back

to the results of the first question, which reconfirms people's recognition of the modern villa as being the more appropriate house type for Kuwait.

Likelihood to associate the courtyard with the traditional.

Likelihood	Frequency	%
None	140	53.4
More likely	107	40.8
Less likely	15	5.7
Total	262	100.0

Table 10.3: Likelihood to associate the courtyard with the traditional.

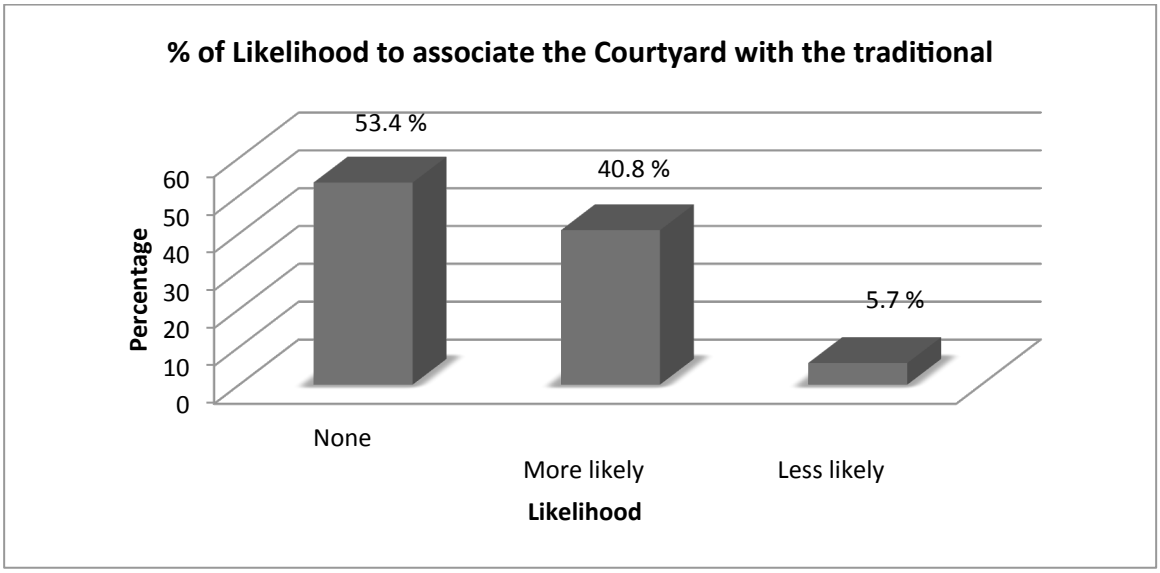


Figure 10.3: Percentage of likelihood to associate the courtyard with the traditional.

10.7.2.4 Question 4

This question was intended to see how representative recognition and desire for the courtyard was in the first stage of the study. Table 10.4 below shows that an overwhelming majority of the participants, 76.6%, want a courtyard in their current or future house. The upcoming questions will examine in more detail what exactly about the courtyard is valued and appreciated and what are perceived barriers in its contemporary application.

Courtyard in current or future house			
		Frequency	%
Yes		200	76.6
No		61	23.4
	Total	261	100.0

Table 10.4: People that want a courtyard in their current or future house.

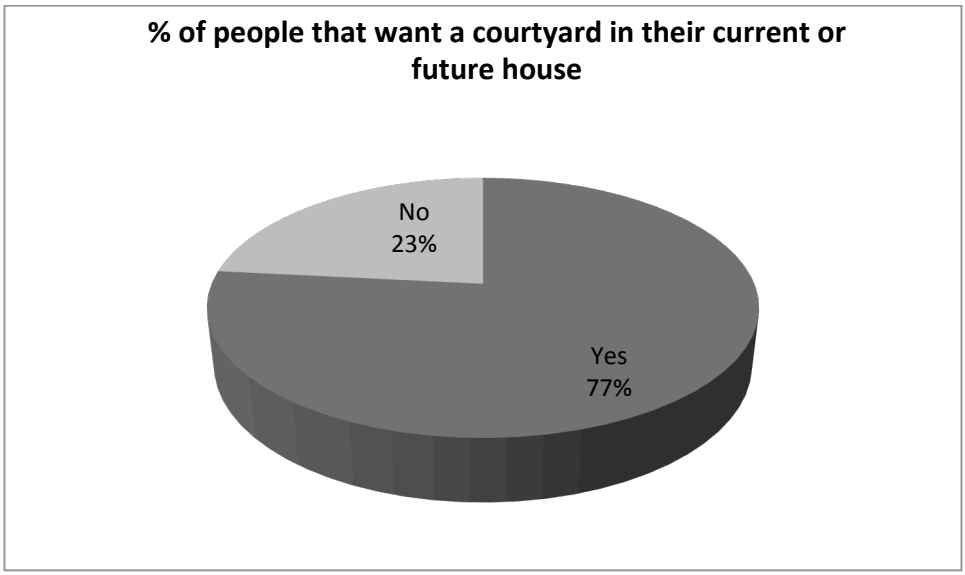


Figure 10.4: Percentage of people that want a courtyard in their current or future house.

10.7.2.5 Question 5

The results from this question did not highlight one distinct primary motive for using a courtyard. Instead it shows an interesting combination of environmental and cultural priorities that have been almost evenly identified by the participants. As shown in Table 10.5 below, the most common motive was environmental sustainability identified by 23%, (none of them) came next with 20.4%, expresses culture and identity was third, with 19.1%, environmental psychology fourth with 18.2%, aesthetic qualities with 11.1%, and other unidentified responses account for 8% of responses.

Primary Motive for adding a Courtyard

Rank	Primary Motive for adding a Courtyard	Frequency	%
1	Environmental sustainability	52	23.1
2	None	46	20.4
3	Expresses culture/identity	43	19.1
4	Environmental psychology	41	18.2
5	Aesthetic qualities	25	11.1
6	Other	18	8.0
	Total	225	100.0

Table 10.5: Primary motive for adding a courtyard.

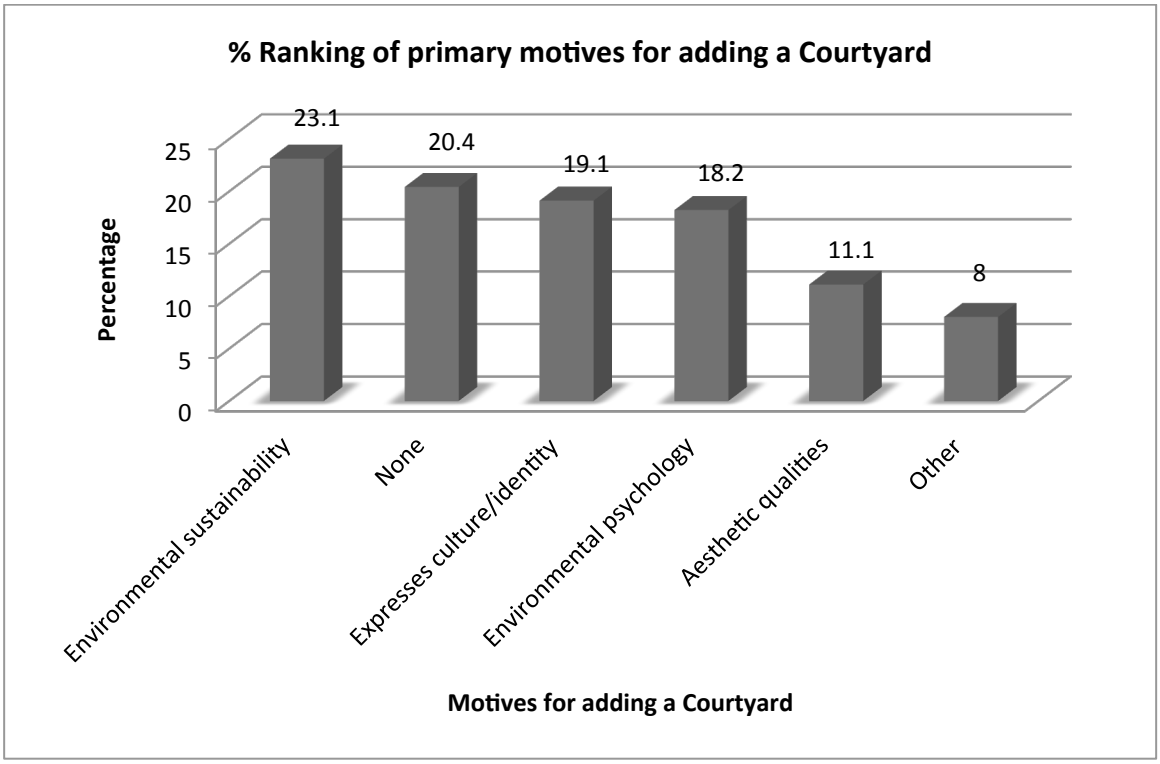


Figure 10.5: Percentage of primary motive for adding a courtyard.

10.7.2.6 Question 6

This question was an extension of question 5 in that it also attempted to further understand people's motives for adding a courtyard by examining the qualities that they value in the courtyard. Results here align with the results of question 5, suggesting that the courtyard's cultural and environmental qualities are both important for people. The participants identified social space/stronger family bonds as the most valued quality in the

courtyard with 40.5%, followed by use of green space with 35%, privacy with 32.4%, spaciousness/open to the sky with 29.8%, tranquility, calm, and relaxing with 27.5%, natural sunlight with 24.8%, security/protection from street with 20.6%, natural ventilation and cooling 18.3%, other qualities with 16.8%, and finally identity/self expression with 6.9%. Table 10.6 shows the frequency vs. percentage breakdown while Figure 10.6 illustrates visually how the participants valued many qualities similarly.

Ranking of Valued Qualities in the Courtyard

Rank	Valued Qualities in the Courtyard	Frequency	% Total Sample
1	Social space- stronger family bonds	106	40.5
2	Use of Green space- trees, shrubs, etc.	92	35.1
3	Privacy	85	32.4
4	Spaciousness, open to the sky	78	29.8
5	Tranquility- calm, quite and relaxing	72	27.5
6	Natural Sunlight	65	24.8
7	Security, protection from the street	54	20.6
8	Natural Ventilation and Cooling	48	18.3
9	Other	44	16.8
10	Identity- expression of the self	18	6.9

Table 10.6: Ranking of the most valued qualities in the courtyard.

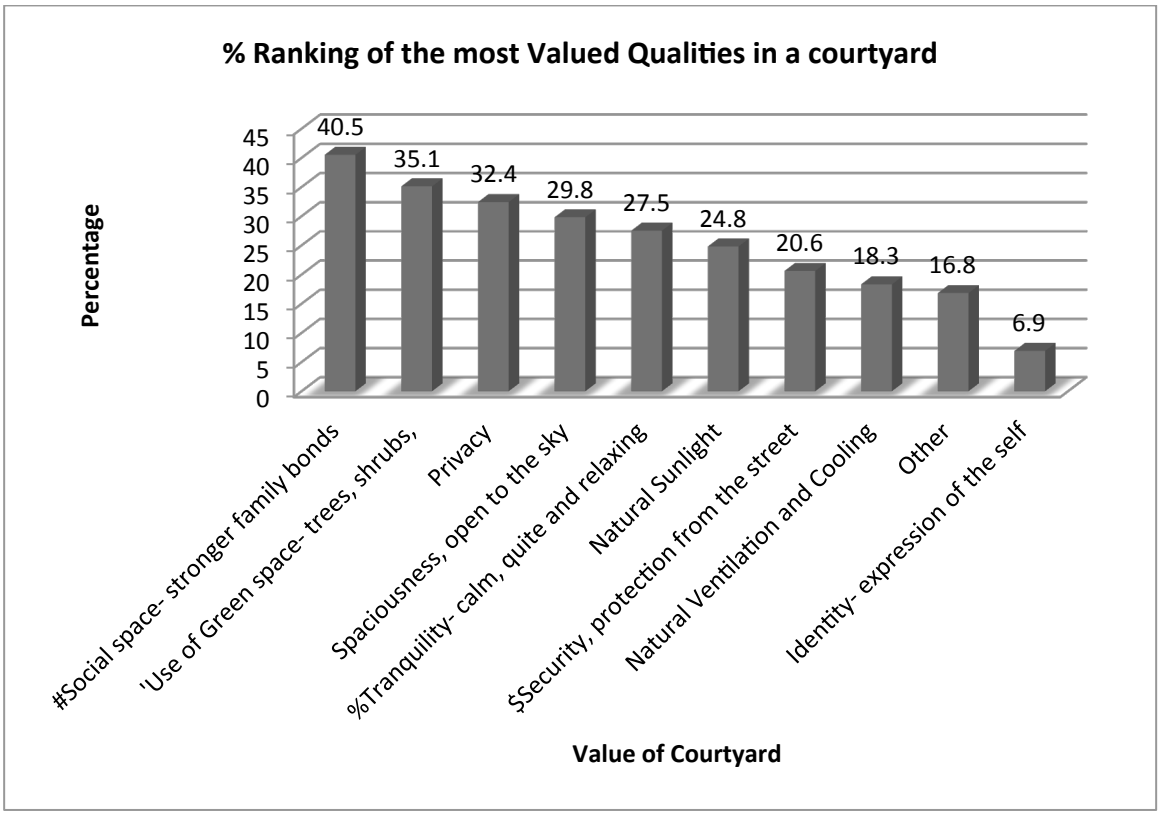


Figure 10.6: Percentage ranking of the most valued qualities in the courtyard.

10.7.2.7 Question 7

The last of the quantitative follow-up questions used Likert scales, which intended to identify the most agreed upon issues that prevent people from using a courtyard in their current or future house. The Likert scale was 1 to 5, where 1=strongly agree and 5=strongly disagree. The mean Likert score and standard deviation is presented in Table 10.7, while Figure 10.7 ranks the mean score through a bar chart.

The top four issues selected by the participants that prevent them from using courtyards in their current or future house all revolve around Kuwait's housing crisis. The results strongly highlight most potential homeowners' concerns. High real-estate prices were perceived to be most likely to prevent use of courtyards (mean=1.57), followed by a small plot of land (mean=1.85), Kuwait's housing crisis (mean=1.88), and scarcity of residential land (mean=1.94). These issues all have a mean score of below 2, which means

that most of the participants tended to strongly agree that these issues prevent them from using courtyards. The higher the standard deviation number the wider the variation between the responses and the lower the number the more consensus among the participants. The lowest standard deviation number was for high real-estate prices (sa=.886), and therefore, the statistical analysis shows that not only did most people strongly agreed that high real-estate prices is a main issue that prevents using courtyards, but also there was little disagreement among the group of respondents.

Descriptive statistics/mean Likert score of issues perceived to prevent courtyard use.

	N	Minimum	Maximum	Mean	Std. Deviation
High real-estate prices	257	1	5	1.57	.886
Having a small plot of land	259	1	5	1.85	1.046
Kuwait's housing crisis	255	1	5	1.88	1.047
Scarcity of residential land	250	1	5	1.94	.992
Increasing user requirements	254	1	5	2.13	.999
Lack of government regulation to promote courtyards	250	1	5	2.54	1.155
Cultural changes from Kuwait's transformation	256	1	5	2.84	1.202
It reminds you of traditional house	258	1	5	3.25	1.336
Valid N (list wise)	235				

Table 10.7: Descriptive statistics of issues perceived to prevent people from using courtyards according to mean Likert score.

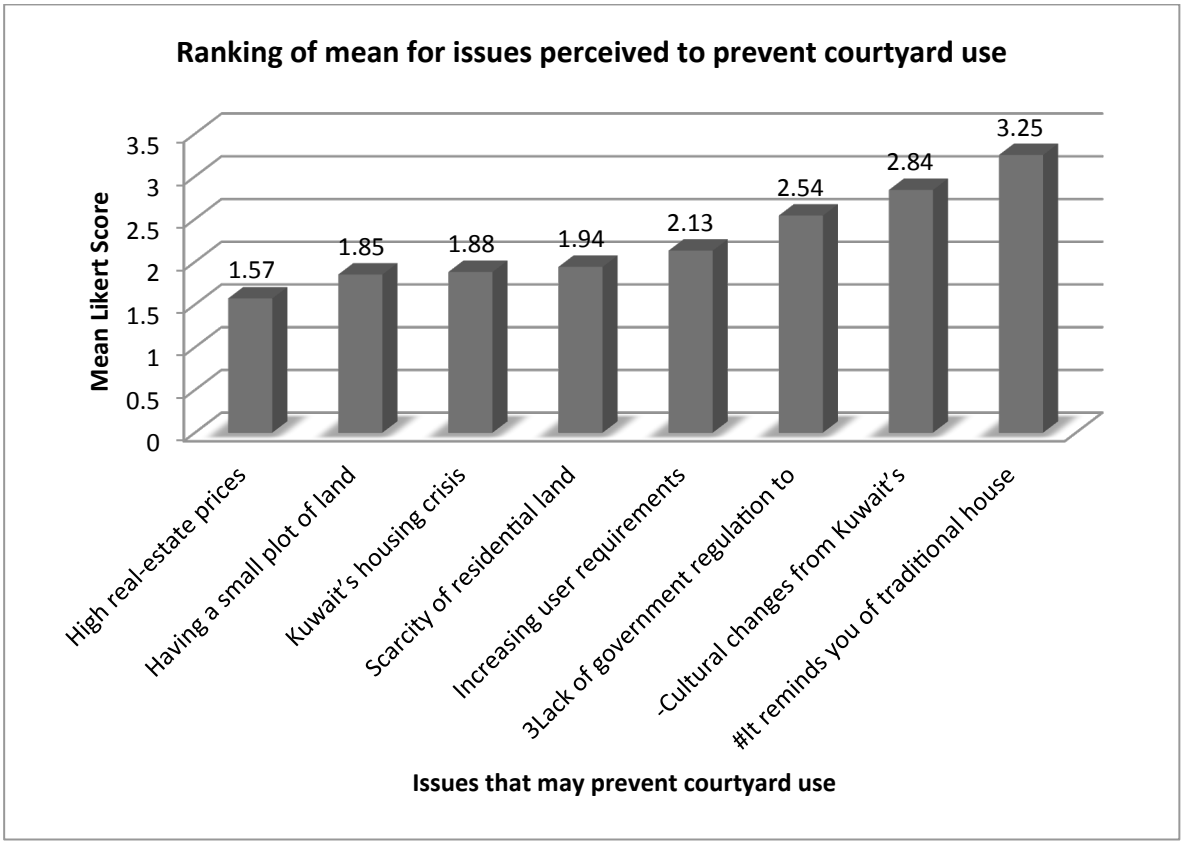


Figure 10.7: Ranking of issues perceived to prevent people from using courtyards according to mean Likert score

Cronbach's Alpha Reliability Test:

Reliability Statistics

Cronbach's Alpha	N of Items
.708	8

Table 10.8: Cronbach's Alpha Reliability Test for Question 7.

The first test conducted was the Cronbach's alpha to test for the reliability of the data for Likert scale questions. The outcome of the test was .708 for all 8 of the Likert questions, which means that the internal consistency of the data is good.

Kolmogorov-Smirnov Normality Test:

The second test conducted was the Kolmogorov-Smirnov normality test. If the significance value of the test is above .05 then the data is normal, which means parametric testing will be used. However, if the significance value of the test were below .05 then the data is not normal, which means non-parametric tests would be required. Table 10.9 shows all the significant values below .000, which mean that the data is not normal, and as a result, the final tests will be for non-parametric data.

Tests of Normality

	Kolmogorov-Smirnov[a]		
	Statistic	**Df**	**Sig.**
Increasing user requirements	.259	235	.000
Having a small plot of land	.268	235	.000
It reminds you of traditional house	.189	235	.000
Cultural changes from Kuwait's transformation	.179	235	.000
Lack of government regulation to promote courtyards	.179	235	.000
High real-estate prices	.363	235	.000
Scarcity of residential land	.245	235	.000
Kuwait's housing crisis	.274	235	.000

a. Lilliefors Significance Correction

Table 10.9: Kolmogorov-Smirnov Normality Test for Question 7.

Spearman Correlation Test:

The third test is the Spearman Correlation test, which plays an important role in identifying significant relationships from the data. There are two numbers in table 10.10 below that together indicate if the Spearman correlation is significant. The first is the correlation coefficient at the 0.01 level which if the significance value is below .05 that means that there is a significant relationship between the two variables and if the significance value is above .05 that means there is no significant relationship between the two variables. The second is at the 0.05 level between +1, 0, -1 and if the correlation coefficient is above 0.5 the relationship between the two variables is above average and if it's below 0.5 it is below average. Therefore, any relationship between the two variables has a below 0.01 in the first and above 0.05 in the second is significant. The data below reveals that there is a significant and above average relationship between responses to items 'Kuwait's housing crisis' and 'high real-estate prices' and 'scarcity of residential land'.

Correlations										
			Increasing user requirements	Having a small plot of land	It reminds you of traditional house	Cultural changes from Kuwait's transformation	Lack of government regulation to promote courtyards	High real-estate prices	Scarcity of residential land	Kuwait's housing crisis
Spearman's rho	Increasing user requirements	Correlation Coefficient	1.000	.434**	.091	.176**	.220**	.204**	.303**	.219**
		Sig. (2-tailed)		.000	.149	.005	.001	.001	.000	.001
		N	254	253	252	250	244	251	245	249
	Having a small plot of land	Correlation Coefficient	.434**	1.000	-.075	.105	.215**	.380**	.269**	.264**
		Sig. (2-tailed)	.000		.234	.093	.001	.000	.000	.000
		N	253	259	257	255	250	257	250	255
	It reminds you of traditional house	Correlation Coefficient	.091	-.075	1.000	.517**	.287**	.031	.017	.026
		Sig. (2-tailed)	.149	.234		.000	.000	.624	.785	.683
		N	252	257	258	255	249	255	249	254
	Cultural changes from Kuwait's transformati	Correlation Coefficient	.176**	.105	.517**	1.000	.343**	.186**	.131*	.087
		Sig. (2-tailed)	.005	.093	.000		.000	.003	.039	.167
		N	250	255	255	256	249	254	248	253
	Lack of government regulation to promote courtyards	Correlation Coefficient	.220**	.215**	.287**	.343**	1.000	.381**	.276**	.292**
		Sig. (2-tailed)	.001	.001	.000	.000		.000	.000	.000
		N	244	250	249	249	250	248	242	247
	High real-estate prices	Correlation Coefficient	.204**	.380**	.031	.186**	.381**	1.000	.507**	.589**
		Sig. (2-tailed)	.001	.000	.624	.003	.000		.000	.000
		N	251	257	255	254	248	257	249	254
	Scarcity of residential land	Correlation Coefficient	.303**	.269**	.017	.131*	.276**	.507**	1.000	.664**
		Sig. (2-tailed)	.000	.000	.785	.039	.000	.000		.000
		N	245	250	249	248	242	249	250	250
	Kuwait's housing crisis	Correlation Coefficient	.219**	.264**	.026	.087	.292**	.589**	.664**	1.000
		Sig. (2-tailed)	.001	.000	.683	.167	.000	.000	.000	
		N	249	255	254	253	247	254	250	255

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 10.10: Spearman Correlation Test for Question 7.

Mann-Whitney U Test

The final non-parametric test for significance used the Mann-Whitney U statistic. This test has been conducted to see if there is any significant difference between responses by homeowners and potential homeowners (which is also closely linked to the below and above 35 years of age groups), and male and female. Table 10.11 below presents the test

results between potential homeowners and homeowners and Table 10.12 presents the test results between genders. A significance value of above .05 indicates that there is no significant relationship between the groups and below .05 indicates a significant difference. The test results presented in Table 10.12 shows that there is a significant difference between the potential or future homeowners and homeowners in 'high real-estate prices' and no significant difference between responses according to gender. This may suggest the obvious; that high real-estate prices are more of an issue with younger people and potential homeowners than they are with older participants that already own their own house.

Test Statistics between Potential Homeowners and Homeowners-Question7

	Increasing user requirements	Having a small plot of land	It reminds you of traditional house	Cultural changes from Kuwait's transformation	Lack of government regulation to promote courtyards	High real-estate prices	Scarcity of residential land	Kuwait's housing crisis
Mann-Whitney U	2761.000	2842.000	3236.500	3187.000	2793.000	2620.500	2670.500	2794.000
Wilcoxon W	4357.000	4495.000	4889.500	4840.000	9121.000	4273.500	4266.500	4447.000
Z	-1.335-	-1.538-	-.042-	-.114-	-1.190-	-2.302-	-1.490-	-1.545-
Asymp. Sig. (2-tailed)	.182	.124	.966	.909	.234	.021	.136	.122

a. Grouping Variable: Age2

Table 10.11: Mann-Whitney U Test between potential homeowners and homeowners for Question 7.

Test Statistics between Genders-Question 7

	Increasing user requirements	Having a small plot of land	It reminds you of traditional house	Cultural changes from Kuwait's transformation	Lack of government regulation to promote courtyards	High real-estate prices	Scarcity of residential land	Kuwait's housing crisis
Mann-Whitney U	7705.500	8052.500	8239.000	7208.000	7749.000	7604.500	7125.000	7999.000
Wilcoxon W	15961.500	16567.500	16367.000	15336.000	15624.000	15860.500	15126.000	16127.000
Z	-.534-	-.482-	-.027-	-1.608-	-.002-	-1.150-	-1.165-	-.120-
Asymp. Sig. (2-tailed)	.593	.630	.978	.108	.999	.250	.244	.904

a. Grouping Variable: Gender

Table 10.12: Mann-Whitney U Test between genders for Question 7.

10.7.3 Cognitive Maps

10.7.3.1 Question 1

The sketches revealed fascinating insights in how participants perceived courtyards. Although a more detailed description of content analysis using cognitive maps was covered in chapter 6, this section will briefly describe the specific content analysis for this question and discuss the results. The sketches provided data that generated three main groups. The first content analysis was conducted to understand how people sketched the courtyard and was broken down into the following 5 sub-categories (shown on table 10.13): 1. With the House (81%), 2. As a Space (8%), 3. As an Artwork (7.6%), 4. Two Courtyards (2.8%), 5. Three Courtyards (0.4%). The second content analysis focused on how people perceived the courtyard space and was broken down into 13 sub-categories. The final content analysis focused on specific elements and was broken down in 3 sub-categories: 1. House Elements, 2. Green Elements, 3. Other Elements. This analysis strategy intended to examine the sketches in more than one level and gain rich insights into people's different perceptions of

the courtyard. From the distributed questionnaires only 256 participants filled out the sketch maps of which 9 were unreadable making the final sketches used for analysis 247. Within this group the detailed breakdown is presented in Table 10.13 while a summary overview of the second content analysis group is shown in Table 10.14.

COURTYARD			
GROUP	NAME OF ELEMENT	NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS	% OF MAPS IN WHICH ELEMENT APPEARS
1	***The Sketch***		
	With the House: *Drawing the Courtyard as part of the house as a 2D OR 3D sketch.*	*200*	*80.9%*
	As a Space: *Drawing the Courtyard as a free standing object.*	*20*	*8.0%*
	As an Artwork: *Drawing the Courtyard as an artistic expression.*	*19*	*7.6%*
	Two Courtyards: *Drawing two different courtyards often a traditional and contemporary version.*	*7*	*2.8%*
	Three Courtyards: *Drawing three variations of courtyards.*	*1*	*0.4%*
2	***The Courtyard***		
	Space in the Centre of the House*: As a traditional courtyard house.*	*56*	*22.6%*
	Space in front of the house: *As a front yard.*	*42*	*17.0%*
	Space around the house: *As house in centre surrounded by open spaces.*	*31*	*12.5%*
	Space in between 'U shape' house: *Variations of a courtyard creating a 'U shape' enclosure.*	*27*	*10.9%*
	Space in Corner of the house: *Variations of a courtyard by creating an "L shape" house.*	*15*	*6.0%*
	Space as 'L shape' surrounding the house: *A version of house surrounded by open spaces in two sides.*	*14*	*5.6%*
	Space as interior*: As an Interior courtyard.*	*6*	*2.4%*
	Space by half*: Half house and half courtyard.*	*5*	*2.0%*

	Space in back of the house: *As a back yard.*	*5*	*2.0%*
	Space around the house as a 'U shape': *Another version of house in the centre surrounded by open spaces in three sides.*	*4*	*1.6%*
	Space in Centre with Shape: *Courtyard in centre with different shaped houses- circles or stars.*	*4*	*1.6%*
	Spaces around the house: *Small courtyards in different locations around the house.*	*2*	*0.8%*
	Space sunken: *Sunken Courtyard*	*1*	*0.4%*
3	***House Elements***		
	Front House Door/Entrance	*72*	*29%*
	Outside House Door/Gate	*55*	*22%*
	House Rooms	*54*	*21.8%*
	Outdoor Seating	*40*	*16%*
	Swimming Pool	*35*	*14%*
	Windows	*34*	*13.7%*
	Garage/Parking	*21*	*8.5%*
	Path/Walkway	*18*	*7.2%*
	Children playground	*18*	*7.2%*
	Water Fountain	*16*	*6.4%*
	Kitchen	*15*	*6.0%*
	Diwaniya	*14*	*5.6%*
	Fence	*12*	*4.8%*
	Liwan/Corridor	*8*	*3.2%*
	Jelleb/Well	*5*	*2.0%*
	Stairs/Steps	*4*	*1.6%*
	Back Door	*1*	*0.4%*
	Fire place	*1*	*0.4%*
	Chimney	*1*	*0.4%*
	Bircha	*1*	*0.4%*
	Shaded Seating	*1*	*0.4%*

4	***Green Elements***		
	Garden	*61*	*24.6%*
	Tree	*41*	*61.5%*
	Palm Tree	*20*	*8.0%*
	Flowers	*20*	*8.0%*
	Grass	*19*	*7.6%*
	Other Plants	*18*	*7.2%*
	Green House	*1*	*0.4%*
5	***Other Elements***		
	Street	*17*	*6.8%*
	People	*10*	*4.0%*
	Outside Kitchen/B.Q station	*5*	*2.0%*
	Cars	*5*	*2.0%*
	Football space	*3*	*1.2%*
	Animal space	*3*	*1.2%*
	Exterior fixed umbrella	*3*	*1.2%*
	Sun rays	*2*	*0.8%*
	Outdoor lights	*2*	*0.8%*
	Rocks	*1*	*0.4%*
	Chandelier	*1*	*0.4%*
	Hammock	*1*	*0.4%*
	Bird Cage	*1*	*0.4%*
	Bird	*1*	*0.4%*
	Lake/Waterfall	*1*	*0.4%*
	Closed Eyes	*1*	*0.4%*
	Clouds	*1*	*0.4%*

Table 10.13: Data analysis table of participant courtyard sketches.

Understanding Courtyards as a Plan Sketches

Location of Courtyard Space	Frequency	%
Space around the house, front yard, back yard	93	46.5
Space in centre of house	57	28.5
Space in different L or U shape variations	39	19.5
Other	11	5.5
Total	200	100.0

Table 10.14: Understanding courtyards as a plan sketches.

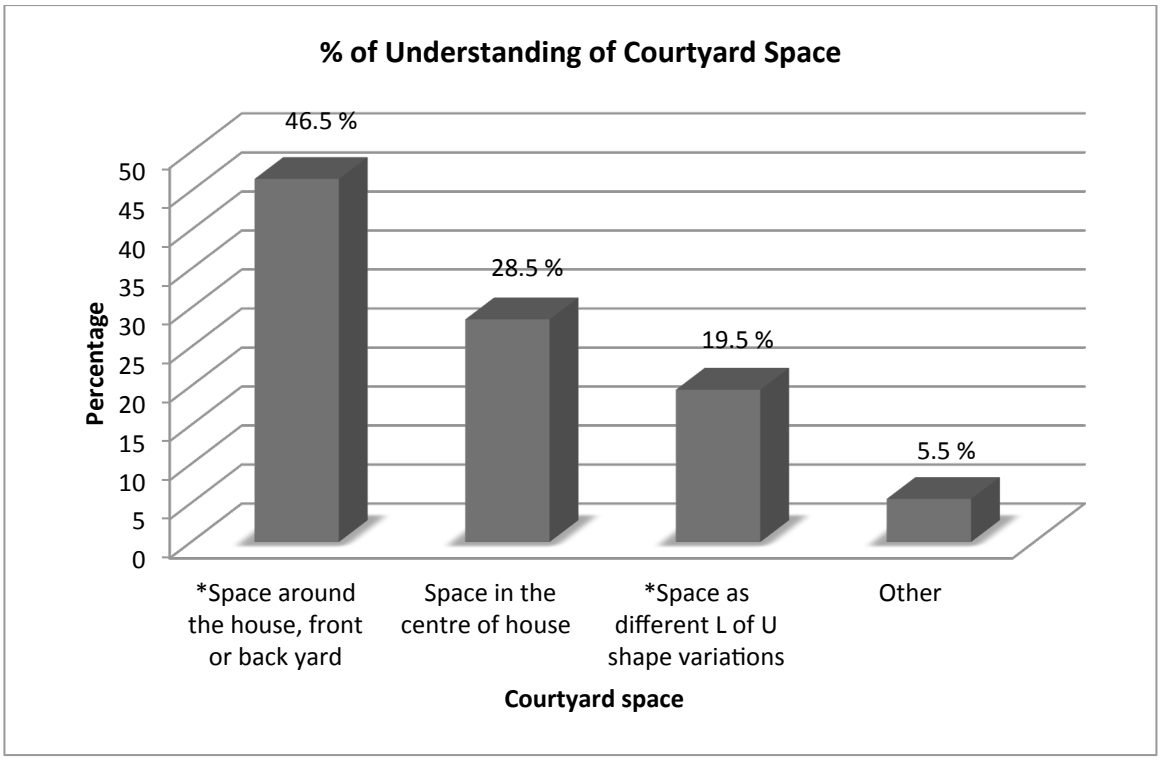


Figure 10.8: Percentage of understanding the courtyard as plan sketches.

Table 10.14 above shows the summary of the content analysis findings. The courtyard categories are: the first group (46.5%) drew the courtyard as a space around, in front or back of the house, which may suggest the effects of modernity. The second group (28.5%) drew the courtyard in the centre of the house, which reflects associations with Kuwait's traditional courtyard house. The third group (19.5%) drew the space as different 'L' or 'U' shape variations, which may mean a hybrid understanding of the courtyard

between the traditional and modern. This group may also suggest potential applications for a contemporary vernacular. Finally, the last group (6%) drew different expressions of the courtyard.

The final analysis conducted on the cognitive maps was cross tabulation of the above groups with all the questionnaire questions to find any relationships between how people responded to certain questions and their perceptions of the courtyard. The relationship to questions 1 and 4 of the questionnaire showed interesting results that are presented below. In addition to descriptive analysis, Pearson Chi-Squared tests have been conducted to check for any significantly different responses from the courtyard groups. The results are significantly different between the courtyard groups and participants' responses for question 1, which asked them if they would like to have a courtyard in their current or future house. Table 10.16 highlights that 80.9% of the participants who drew the courtyard as being around the house also said yes for adding a courtyard to their houses. Similarly, table 10.15 shows that that 81.8% of the participants who drew the courtyard as being around the house identified the modern villa as the most appropriate house type for Kuwait.

Cross tabulation between Courtyard groups and Question 1

			Which do you think is the most appropriate house type for Kuwait			Total
			Traditional courtyard house	Modern villa	Other	
Understanding of Courtyards	Space in centre of house	Count	14	28	1	43
		%	32.6%	65.1%	2.3%	100.0%
	Space around, front or back of house	Count	12	54	0	66
		%	18.2%	81.8%	0.0%	100.0%
	Space as L or U shapes and their variations	Count	12	29	2	43
		%	27.9%	67.4%	4.7%	100.0%
	Other	Count	13	13	4	30
		%	43.3%	43.3%	13.3%	100.0%
	Not Clear	Count	5	13	0	18
		%	27.8%	72.2%	0.0%	100.0%
Total		Count	56	137	7	200
		%	28.0%	68.5%	3.5%	100.0%

Table 10.15: Cross tabulation between Courtyard groups and Question 1.

Cross tabulation between the Courtyard groups and Question 4

			Would you like to have a courtyard in your current or future house		Total
			Yes	No	
Understanding of Courtyards	Space in centre of house	Count	29	14	43
		%	67.4%	32.6%	100.0%
	Space around, front or back of house	Count	55	13	68
		%	80.9%	19.1%	100.0%
	Space as L or U shapes and their variations	Count	38	7	45
		%	84.4%	15.6%	100.0%
	Other	Count	24	6	30
		%	80.0%	20.0%	100.0%
	Not Clear	Count	13	5	18
		%	72.2%	27.8%	100.0%
Total		Count	159	45	204
		%	77.9%	22.1%	100.0%

Table 10.16: Cross tabulation between Courtyard groups and Question 4

Pearson Chi-Square Tests Between Courtyard groups and Question 1

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.269[a]	8	.006
Likelihood Ratio	20.993	8	.007
Linear-by-Linear Association	.055	1	.814
N of Valid Cases	200		

a. 5 cells (33.3%) have expected count less than 5. The minimum expected count is .63.

Table 10.17: Pearson Chi-Square Tests between Courtyard groups and Question 1

Pearson Chi-Square Tests between Courtyard groups and Question 4.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.622[a]	4	.328
Likelihood Ratio	4.463	4	.347
Linear-by-Linear Association	.594	1	.441
N of Valid Cases	204		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.97.

Table 10.18: Pearson Chi-Square Tests between Courtyard groups and Question 4

10.8 Follow-up Discussion of Key Findings

10.8.1 The Courtyard - between Past and Present

The findings from the follow-up study reconfirmed people's recognition of and desire to use the courtyard. An overwhelming 76% of the participants said they would like to have a courtyard in their current or future house. Nevertheless, the findings from the cognitive maps revealed fascinating insights into people's perceptions of the courtyard. One significant finding was participants' misconception or misunderstanding of the meaning of a 'courtyard'. Around 46% of the participants indicated that the courtyard is the space

around, in front (front yard) or behind (back yard) the house. This may suggest the effects of modernity on people's perceptions of Kuwait's domestic built environment and specifically how traditional concepts have been transformed into modern understandings of space.

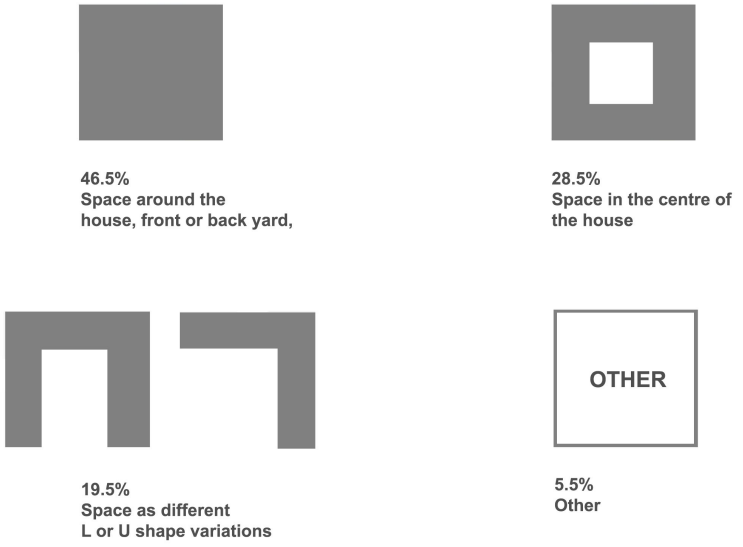


Figure 10.9: Illustration showing different expressions of the courtyard as a space.

One reason for this misconception may be explained in how people adapted from moving to courtyard houses to modern villas. In Kuwait, the Arabic word that expressed the traditional courtyard was called *AlHosh* and after the oil boom people continued to utilize the word, however, this time for the spaces around and in front of their modern villas. This may have been a way people understood this space in their new houses. Today, a substantial number of the younger generation who grew up in modern villas, and who are not familiar with old Kuwait used the term to identify this space without reflecting on its

origins and true meaning. The finding suggests that people do not fully understand what *AlHosh* or courtyard means, and therefore, one reason why people may not apply it in reality is that although they indicated their desire to use it they do not actually understand it. Moreover, it shows how the discontinuity between Kuwait's past and present built environments has manifested into a morphed perception of people's social and physical space.

Although 64% of the participants associated the courtyard with Kuwait's traditional courtyard house many did not necessarily relate that association with wanting a courtyard or visualizing the courtyard as a central inward looking space, instead almost half of the participants saw it as spaces around the house and related it more with the modern villa. This explains how 70.7% of the participants identified the modern villa as the most appropriate house type for Kuwait compared to 25.4% for the traditional courtyard house and only around 4% for other. This further reveals the extent to which Kuwait's transformation and consequent modernization has affected people's perception of their domestic built environment. Although the traditional courtyard house was more environmentally and culturally appropriate for Kuwait, it is interesting that the participants viewed the modern villa as an answer for Kuwait's housing. Yet the first stage's workshops findings revealed how participants highlighted many problems facing the contemporary Kuwaiti villa ranging from inefficient use of space to lack of local cultural identity. However, despite these challenges the participants in the follow-up by far see the modern villa as the most appropriate house type for Kuwait.

The more the study gains insights into people's perceptions of their domestic built environments the more contradictions arise. It is perhaps these irregularities in responses that magnifies the great impact in the discontinuity between the past and present and highlights the struggles of tradition in the push towards modernity. What is people's

definition of modern? Is it that they view it as departing from the past or perhaps it is their perception of progress and development? And is it possible that for some modern may also imply other contemporary variations in design? 19.8% of the participants drew the courtyard as different variations of 'L' or 'U' shapes, which may point towards the potential ideas for a new contemporary house type.

10.8.2 Motives, Values and Qualities

The primary motive for adding a courtyard was environmental sustainability identified by 23.1% of the participants, whereas 20% said they had no motive, 19.1% said it expresses culture/identity, and 18.1% recognized environmental psychology. The results do not indicate one major primary motive that may support the use of courtyards in contemporary applications. On the other hand, when asked participants what qualities of the courtyard they value, social space/stronger family bonds was the most identified with 40.5%, followed by use of green space with 35%, privacy 32%, spaciousness/open to the sky with 29.8%, and tranquility with 27.5%. People's valuing of the qualities of courtyard is evenly distributed. There is no clear explanation for this finding. Maybe different questions needed to be asked to pinpoint the exact qualities people value in the courtyard or perhaps people expressed what they thought the courtyard represents for them, the feeling of *Sakina,* which means peace and purity that emerges from a combinations of many cultural, environmental, and psychological conditions. Therefore, the finding shows how the courtyard as an element synthesis a response to many design challenges and conditions.

10.8.3 Kuwait's Housing Crisis

The follow-up study identified Kuwait's current housing crisis and its effects as a perceived main reason, which prevents people from adding a courtyard in their current or future house. The results from the Likert scale question highlighted high real-estate prices, having a small plot of land, and scarcity of residential land as the main issues that prevent

contemporary courtyard applications, followed closely by increasing user requirements. These issues are all side effects of Kuwait's housing crisis. High real-estate prices have been a direct response to the scarcity of residential land and high demand for residential units, from over 100,000 people waiting for the state's housing welfare. This situation has seen the government allocate small plots of land to increase the number of distributed units. As a result, the small plot of land barely provides for people's increasing user requirements, and therefore, often no space is left for a courtyard.

The findings also show that there is a significant and above average relationship between potential homeowners and homeowners in high real-estate prices. Specifically that potential homeowners who tend to be younger in age tend to acknowledge that high real-estate prices is a main issue preventing them from using a courtyard than homeowners. This indicates how important the issue is for people who are waiting for housing welfare compared to older participants that already own their house. If real-estate prices are reduced, more people would have an opportunity to purchase a larger plot of land to meet their growing requirements, and therefore, perhaps using courtyards as a means for more creative environmental design solutions may be seriously considered as an alternative to the status quo.

Chapter 11: Conclusion

11.1 Introduction

Understanding people's perceptions of and attitudes towards Kuwait's past and present domestic built environments has not only been essential in highlighting the challenges associated with modernization but also necessary to explore the potential for future sustainable developments. The study has used Kuwait's traditional vernacular elements in the first stage and the courtyard in the second stage as a vehicle for exploring the broader socio-cultural, economic and political issues surrounding the move towards modernity in the domestic built environment and away from the vernacular and sustainability. The discussions presented in this chapter will explore the main findings from the research within this context. It will highlight the most important themes that have emerged from the data across all the methods and stages of the study. From that point an overview of the study's limitations will be discussed followed by suggested recommendations for future studies and a final note will conclude the thesis.

11.2 Contribution to Knowledge

11.2.1 Summary of Research Findings

The variety of methods employed for the study has revealed rich insights into people's perceptions of and attitudes towards vernacular elements in Kuwait's domestic architecture. Each piece of data, number, or word, has enhanced understandings of Kuwait's built environments in the context of cultural and environmental sustainability. Although in the initial workshop participants consistently recognized the value and potential willingness of vernacular elements and repeatedly identified the courtyard as their most desired element, the same group also indicated many barriers for their contemporary applications. These include people's desire for more spatial requirements, which is a direct

consequence of high real-estate prices and scarcity of residential land, which in turn created the current housing crisis. Moreover, it seems that the 15 year plus wait time for housing welfare has forced people to think of alternative solutions to secure housing for their children. This situation has made the apartment an addition to many houses in Kuwait. People's priorities tended to focus on a basic human need, which is to secure housing and unfortunately neglect other factors such as environmental sustainability. As a result, this dynamic may explain how courtyards, which although desired are not a priority for the Kuwaiti household.

Participants stressed in the group interviews the need to revive the government's lost role through the baladia and other institutions to not only solve the housing crisis but also provide mechanisms to support cultural and environmental sustainable development. Some suggested proposals that advocate the use of traditional vernacular elements in housing. Others had ideas on how incentives may motivate the private sector for sustainable developments. Government policy has been slow to meet people's growing needs and new regulations are urgently required to reform building codes. Therefore, the government's inadequacy to solve the many challenges that face Kuwait's built environment highlights Kuwait's greater political crisis. Many in Kuwait blame government mismanagement and rising corruption as the root cause for the nation's stagnation in development despite record surpluses from oil revenues. Consequently, further research becomes imperative to investigate how government policy or lack of policy has affected people in relation to their built environments.

Beyond this political environment, the study findings revealed yet another significant barrier that may prevent people from using traditional vernacular elements in their houses. Consistent contradictions and disconnects in socio-cultural understandings in both the first and second stage of the study may suggest a larger issue at play. The effects

of modernity are evident in the disunity between Kuwait's past and present built environments, which may explain the disconnects in participants' responses. The findings revealed how Kuwait's oil boom and consequent urban development has altered people's spatial perceptions. Participants expressed their appreciation and valuing of vernacular elements, but inconsistencies in their responses suggest that they do not see them as appropriate in the context of modernization. In fact when asked if vernacular elements should be applied in contemporary houses 82% of designers and 79% of homeowners said yes. However, when asked if there are vernacular elements currently in their house 65% of designers and 64% of homeowners said no. If people desire the applications of these elements why are they not used more in their current houses?

The follow-up study discovered fascinating insights of how the effects of modernity changed people's perceptions of their domestic built environment and may explain why courtyards are not as used today. This has been highlighted by the participants' cognitive maps, which revealed a misconception in how people perceive courtyards. Almost half of the participants understood the courtyard as the space around, in the front or back of the house, which suggests how their perception of the courtyard is closely linked to the characteristics of the modern villa. Therefore, the finding highlights how the effects of modernity have altered people's perception of the courtyard space, and as a result, if they do not understand it, this means it may in fact prevent them from actually adding a courtyard in their house. This finding may also reveal another level of understanding. "The knowledge of space (cognitive maps) is critical to attitudes toward, decision making about and behavior within places" (MacEachern:1992:245). Perhaps the misconception also shows how people may associate the meaning of the courtyard with some of its functions and not with its physical space. In this regards it might display how this group values the outdoor qualities of the 'courtyard'.

Furthermore, around 81% of this group also indicated they would like to add a courtyard in their current or future house. Therefore, if one disregards the responses of the group who misunderstood the courtyard, instead of 78%, only 51% of the participants would actually like to add a "courtyard" in their houses compared to 22% who would not like to add a courtyard. This finding significantly decreases the number of people who actually would like a courtyard in their house. It also may explain how people's perceptions of the traditional courtyard space has been morphed into their understandings of the modern villa/modernity, which resulted in a disconnect of what participants say they want to do and what they actually will do. They cannot apply something they do not understand. In addition, this understanding may also explain the inconclusive results that intended to identify people's motives behind using traditional vernacular elements and courtyards, which remain unclear for both the first and second stages of the study. Participants' very evenly valued potential qualities of the courtyard related to cultural identity and environmental sustainability. Again their understandings of the meaning of a courtyard may also have played a role in identifying or misidentifying their motives behind and values of the space. What is interesting, that even after eliminating this group's (participants who misunderstood the courtyard space) responses, still no clear motive is apparent, which means further research needs to be conducted to pinpoint what might be the main reason people would like to add a courtyard in their contemporary houses.

On the other hand, 20.4% of the participants said they do not have any motives for adding a courtyard. Some comments in the questionnaires stated that one reason they would not like to use courtyards in their houses is due to Kuwait's harsh hot climate. Some participants argued it is too hot to stay outdoors while others stressed that courtyards require high maintenance from frequent dust storms. Ironically, the courtyard worked as a microclimate and emerged as a solution to reduce heat and protect against harsh climatic

conditions. Although participants briefly expressed these issues, it does show how modernization and particularly through the introduction of technology changed people's lifestyles. Kuwait's dramatic transformation has caused a, "complete rupture with the past" (Fathy:1986:1). So did people's changing lifestyles and dependency on technology make some fail to realize the important cultural and environmental values behind courtyards? And can they give up the comforts of air conditioning for courtyards? Or maybe they did not experience living in these spaces, and therefore, may not completely appreciate their qualities.

11.2.1.1 Key Research Findings

Although a summary of the research findings have been discussed above, the outline below presents the study's key research findings:

- The courtyard has been the most consistently recognized and desired traditional vernacular element by the participants throughout the methods and stages of the study. This finding may suggest a significant potential for people to use courtyards in their houses today.
- Evident in the findings are contradictions and disconnects in socio-cultural understandings between participants, which reflect the disunity between past and present built environments and further highlights the larger effects of modernization. This has been revealed by people's appreciation of the vernacular, yet still preference of the modern villa.
- The core of the empirical work contributes to understandings of people's attitudes and perceptions of traditional vernacular elements in Kuwait's domestic built environments. Specifically it shows how changed perceptions of what is important for them in their house and their relationship with social practices. Knowledge

gained was understanding how people dealt with and adapted with the collision between traditional concepts and modernity. For example, how the courtyard has been replaced by the family living room. And how people's misunderstanding of the courtyard may in fact show how they valued outside space.

- People's desire for more space in their houses is not only to accommodate their high standard of living but a need to secure housing for their children for the future by adding an apartment. This is a direct consequence of the government's mismanagement of its housing welfare programme, which resulted in the scarcity of residential land, high real-estate prices and eventually led to Kuwait's current housing crisis. This situation has directly reshaped house form into heterogeneous box like structures, and as a result, no space may be left for a traditional vernacular elements such as the courtyard.

11.2.2 What this research adds to current understandings

This study is the first to examine contemporary attitudes to vernacular elements in Kuwait's domestic built environments. It makes a contribution to knowledge in a number of ways. The first is theoretical as it relates to the literature, second is methodological as a unique mixed method approach, and third is practical directing practitioners in the field.

11.2.2.1 Theoretical

The findings have shed light on the effects of modernity in Kuwait. Specifically how Kuwait's 'post oil' modernization process has transformed people's understandings of and relationships to their built environment. By examining people's contemporary attitudes towards and perceptions of traditional vernacular elements in Kuwait's domestic architecture, the study enhanced understanding of people/environment relationships. This understanding was vital in conceptualising the way in which people perceive 'space' more broadly. The misunderstanding of the courtyard space represented a shift in socio-cultural

practices in the home, which provided evidence of the struggles of tradition within modernity.

The present study shows how the disappearance of traditional forms and emergence of modern ideas have transformed socio-cultural relationships and perceptions of space. Specifically, how the modern villa transformed people's perception of the courtyard from an enclosed space in the centre of the house to open spaces around the house. Similarly, the courtyard once a social space where the entire family would gather has been replaced by the family living room. This suggests how people adapted after the transformation of the Kuwaiti house. Despite the reconfiguration of the space, some certain socio-cultural functions of the space persisted. In turn this affected people's perceptions of that space. This process is repeating itself, however, this time via Kuwait's housing crisis and the addition of new house requirements such as the apartment.

11.2.2.2 Methodological

The study also contributed on a methodological level. It presented a hybrid approach for mixed method research one that integrates two types of designs; the sequential exploratory approach, which provided data collection in two stages while the concurrent nested approach employed workshops as the main vehicle to simultaneously collect data using different methods. As a result, the mixed method approach gave a rich picture of how people understand and perceive the traditional within modernity in Kuwait's domestic built environments. For that reason, the overall design may be replicated and used in other studies with different methods and techniques.

It is important to note that the study's follow-up employed a unique data collection approach rarely done by researchers today. Instead of standard self-administered questionnaires conducted by mail or email, this study used a form of open workshops for the questionnaires. It was conducted in various governmental institutions where the

researcher was almost always present to clarify and answer any questions. This was especially helpful for the cognitive map question, where some participants were hesitant to draw, the researcher would be available to try to ease any concerns if possible. This strategy provided a high response rate in a short amount of time and may suggest an alternative more efficient method for collecting data.

11.2.2.3 Practical

Finally, the study findings and consequent discussions also provided a platform to examine the potential for a contemporary vernacular in Kuwait in the context of current socio-cultural and political conditions. These findings also contributed to the larger discussions towards a contemporary vernacular building on an architectural approach and design ethos embodied in the work of architects such as Hassan Fathy (1986) and Charles Correa (1991) and other contemporary vernacular movements. By providing designers insights into people's attitudes towards and perceptions of the vernacular and contemporary applications it may give them direction for their use in domestic built environments.

Although contemporary vernacular designers are commended for their efforts, the findings of this study suggest that without a political and policy framework, sustainable initiatives towards a contemporary vernacular may not be possible. This has been illustrated by the Kuwaiti government mismanagement of many issues, which resulted in Kuwait's housing crisis. Furthermore, the group interview with designers pointed out that not all architects share similar theoretical positions, therefore, required is a guideline by regulating bodies to unify a shared vision; one that meets the needs of the present taking into account aesthetic, cultural and environmental factors. Also vital is the recognition of society's cultural role as means to promote sustainability. New approaches in design are therefore necessary to not only reassess the role of tradition in the modern built environment but also perhaps use past techniques as means to confront present environmental challenges such as

increased rates of pollution, dense urban sprawl and the urban heat island effect. One such solution, which this study highlighted, is the courtyard, which may potentially resolve the unstable dichotomy between traditional and modern approaches.

11.2.3 Addressing the Research Questions

At this stage it becomes necessary to discuss how the findings address the research questions. Although this has been referred to at various times throughout the discussion, it will be directly responded to here. The main research question asked, "What is the potential to use traditional vernacular elements to inform a more sustainable approach for Kuwait's domestic architecture?" The study did not set out to answer the technical aspects of this question, but rather it set - out to address the socio-cultural aspects pertinent to the question. The findings of the first stage showed how the participants expressed appreciation of and even desire to use traditional vernacular elements in their houses. Out of all the proposed elements the courtyard was the most highlighted and the second follow-up stage reconfirmed participants' desire for using it. Therefore, the study findings clearly show that designers and homeowners perceive the potential to use traditional vernacular elements and specifically the courtyard in contemporary domestic architecture. One might therefore argue that such perceptions, coupled with the right political and structural conditions, might offer an opportunity to revive sustainable design in Kuwait. However, due to various socio-cultural and political barriers this potential may not prove to be enough to inform a more sustainable approach for Kuwait's domestic architecture. The study's research sub-questions examine understandings of these and other issues in more detail.

The first sub-question asked, "How has Kuwait's 'post-oil' transformation affected people's understandings of the Kuwaiti house?" To answer this question, the study reviewed literature on modernization and development of Kuwait City and the Kuwaiti house. It specifically examined the transformation from the introverted traditional courtyard

house to the extroverted modern villa. In addition, participants in the initial workshops provided in-depth understandings of the traditional house and its modern counterpart. In their descriptions and subsequent discussions they revealed insights to the extent of the effects of modernization on the domestic built environment. These include changing lifestyles, luxury living, inefficient use of space, and the fact that today's modern houses often do not represent Kuwait's cultural identity and are not environmentally sustainable. How people understood their house gave some direction to the potential to use traditional vernacular elements, whereas the upcoming questions intended to gain deeper meanings into this line of inquiry.

The second sub-question asked, "What are people's attitudes towards and perceptions of traditional vernacular elements and their contemporary applications in Kuwait's domestic architecture?" By asking this question the study intended to specifically identify the qualities and capacities of traditional vernacular elements that designers, homeowners, and potential homeowners might value and use in the contemporary Kuwaiti house. As previously discussed, the participants expressed a willingness and desire to use these elements and especially the courtyard. However, it is still unclear what are people's most important values and qualities of courtyards. The findings of both the first stage and follow-up show people evenly selecting both cultural and environmental motives. However, other findings may suggest how participants valued elements differently. For example, participants perceived mud bricks as being the most environmentally sustainable element. In addition, participants' misconception of the courtyard space may suggest how they value outside space.

Finally, the last sub-questions intended to examine various facilitators and barriers for, "designers, homeowners, and potential homeowners to use traditional vernacular elements in the contemporary Kuwaiti House?" The barriers may be divided into three

main categories: the first is contradictions in people's socio-cultural understandings, the second is the effects of modernity on people's attitudes towards and perceptions of their houses, and third is the combination of inter-related issues caused by government mismanagement such as the need for more space, high real-estate prices, and Kuwait's housing crisis.

On the other hand, the findings did not show many factors that facilitated using traditional vernacular elements in today's houses. They did reveal people's appreciation of these elements and even potential application and that the government may have a crucial role in this regards. Therefore, although desirable the study concludes there are many barriers that prevent using traditional vernacular elements in Kuwait's current domestic built environments.

11.4 Limitations of the Study

A study's limitations are usually factors of "design or methodology that impacted or influenced the application or interpretation of the results" (USC:2013). Therefore, it becomes crucial to acknowledge the constraints of a given study to not only identify issues that may have affected the research findings but also may provide an opportunity to direct future research. Presented below are the design and methodological limitations of the current study.

11.3.1 Study Limitations

11.3.1.1 Traditional Vernacular Elements

The selection of the specific traditional vernacular elements has been derived from the study's initial exploratory study (AlHaroun:2014). Although they reflected the most identified elements, in retrospect more elements of, spaces, and qualities associated with the traditional courtyard house should have been included. These include; the *Dahress*

(corridor after the main entrance), the *Diwaniya* (men's social gathering space), *AlKhandel - AlBaskeel* (wooden beams that make up the interior ceiling of the rooms), *AlDaressha* (window), *AlAreeish* (simple shaded structure placed sometimes in the courtyard), *AlSaateah* (flat and open roof space), and the fact the house was usually a one storey building.

The study findings have shown participants identifying the courtyard by far as the most recognized and desired element throughout the methods and in both stages of the study. Moreover, the follow-up study focused on the courtyard and its qualities, which suggests it may be the element with the most potential for contemporary applications, however it does not mean other vernacular elements have no place in today's houses. In the first study participants also regularly gave reference to the *Liwan* perhaps due to its close functional role with the courtyard. This also indicates that the potential use for similar elements may also be possible. Therefore, by adding the above elements the study may have gained deeper insights as to not only their associations with the courtyard but potential use in current domestic built environments.

11.3.1.2 Language Effects

Due to time constraints there was no translation from Arabic to English for both the workshop booklet in the two stages of the study. Kuwait has high education levels and among the highest literacy rates in the world. Many Kuwaitis also have a good command of the English language, and therefore, the study did not have difficulties recruiting volunteers with good English. In general most people did not have any problems with answering the questions and the researcher was always available during the workshops to clarify any misunderstandings. However, they may have been participants who for some reason did not articulate their lack of comprehension, which may have resulted in not answering the question or with contradictions in their responses.

In addition the group interviews in the workshops have been conducted bilingually in both Arabic and English. This atmosphere has occurred naturally and during discussions participants often would articulate in the language they were most comfortable with. English was the most spoken language in the designers' workshop, while Arabic for the homeowners' workshop. Both Arabic and English have been used almost equally in the follow-up study. This situation has resulted for the researcher translating the extracts in the recordings from Arabic to English. Due to differences between the two languages forms and their literal expressions, some words or phrases may have been translated with minor differences in meaning, which may or may not have impacted interpretations of the results.

11.3.2 Methodological Limitations

This section will discuss the limitations using mixed methods. Although the proposed mixed methods strategy served to answer the questions and objectives for this study it is important to be aware of the technique's limitations. Creswell identified eleven controversies being raised in mixed methods research (Creswell:2011:270). He points out that the controversies as a group reflect Kuhn's remarks in 1970, "The proliferation of competing articulations, the willingness to try anything, the expression of explicit discontent, the recourse to philosophy, and to debate over fundamentals, all these are symptoms of a transition from normal to extraordinary research" (Kuhn:1970:91).

Among the controversies are, "the changing and expanding definitions of mixed methods research, the questionable use of qualitative and quantitative descriptors, and are they too many confusing design possibilities for mixed method procedures" (Creswell:2011:270). Creswell does not appear to be an advocate for mixed methods nor challenges the fundamental concept of mixed methods, however, he asserts that the mixed method community needs to recognize and discuss these controversies as they move forward (Ibid:281). Therefore, for this study the limitations on mixed methods have

seriously been considered throughout the data collection, analysis and discussion of findings.

11.3.2.1 The Methods

Although the mixed method approach has been very useful in understanding people's perceptions of and attitudes towards traditional vernacular elements and their role in a contemporary domestic context, there have been a few issues in retrospect that could have been done differently. First, the study used different data collection methods via workshops during the first stage of the study, which were questionnaires, cognitive maps, photo elicitation, and group interviews. Three rather than four methods may have been enough for this particular mixed method study. There does not seem to be a huge difference in the study's overall findings if one would have removed the results of the photo elicitation. In contrast, the questionnaires were an important tool that easily gauged participants' responses, the cognitive maps provided rich insights and contributed to one of the study's key findings, and group interviews were essential that gave the participants an opportunity to reflect on their thoughts and debate ideas in an open discussion. Despite providing the study with more rigour, using three instead of four methods would have achieved similar results.

Another possible limitation may be the thematic nature of the initial workshops. The introduction (power point presentation) may have inspired a certain critical position, and therefore, had an impact or such encouraging positive responses about traditional vernacular elements and environmental sustainability. However, an open-ended inductive mixed method approach significantly helped to reduce and limit any bias. This has been evident when comparing the data with the findings of the follow-up study (which did not use the same introduction) there was nothing to suggest that the presentation given at the

first workshops could have influenced people's expressed views about traditional vernacular elements.

Finally, blanket terms like environmental sustainability and cultural identity have been used for the questions instead of breaking these down into things more meaningful to people in their everyday lives. It could be argued that no one is likely to contradict or see these big concepts as negative so the findings will not be particularly nuanced or complex. An alternative approach would have been to ask about many potential factors related to attitudes and behaviours and then do a factor analysis on the findings, for example interpreting the emerging groups for commonality, which might have revealed themes around environmental sustainability and cultural identity. However, most of the questions were open-ended and generated themes around these topics, therefore, this limitation did not influence the overall findings. Moreover, the researcher was present to check individual understandings of these concepts.

11.3.2.2 Sample Size

Sample size plays a crucial role for any empirical study, which is usually dictated by the research under investigation. If the sample size were too small it would be a challenge to find significant relationships. Statistical tests often need larger sizes to ensure a representative distribution of the population (USC:2013). Sample sizes are usually smaller for qualitative studies because obtaining more data does not always lead to more information (Huberman:1994). However, "sample sizes that are too small cannot adequately support claims of having achieved valid conclusions and sample sizes that are too large do not permit the deep, naturalistic, and inductive analysis that defines qualitative inquiry" (Ibid:428). For this study the mixed method approach have resulted in the use for both qualitative and quantitative methods, and therefore, a number of 15 participants may

be enough for a qualitative driven workshop, it may not provide significant statistical data in the quantitative sections used in the questionnaire and photo elicitation methods.

As a result, the sampling strategy intended to strike a balance between the number of participants and the qualitative and quantitative dominated stages of the study. The first stage employed two qualitatively driven workshop; the first for designers in which 17 designers participated and the second for homeowners in which 14 homeowners participated making the total 31 who attended the workshops. For the initial workshops the sampling approach was not enough to gain statistical measures representative of the general population. The sample size (31) may be too small for the first stage of the study to find significant relationships from the data that could be representative of the population. Therefore, tests for significance have been used primarily to enhance the findings of the quantitative sections of the study and secondary to support and complement qualitative findings. It is important to acknowledge that these software packages only provide various tools for testing the data and may only imply assumptions.

Selecting a snowball strategy with family and friends may have limited the sample to certain circles, education, and experiences, which may have left out people with different backgrounds. However, the principle limitation for the first stage of workshops was the lack of generalizability for the quantitative findings. Therefore, the second stage of the study was a quantitatively driven follow-up where a total of 320 people participated in the study. As previously indicated using offices may have also limited the sample to only working population groups, excluding other groups such as the unemployed. It was the intention for the second follow-up stage to examine the findings of the first stage in more detail while obtaining results that are more representative of the population. If the study were replicated, it would be more advantageous to have the first study completely qualitative workshops and the second a completely quantitative follow-up study rather than

mixing methodological approaches within each stage. This strategy would have also allowed sample sizes that reflect the specific methodology behind each stage.

11.4 Key Recommendations

At this stage it becomes necessary to present the study's key recommendations and their implications for policy, practice, and research. The following recommendations have been derived from the study's key findings:

- The study recommends homeowners and potential homeowners to consider using the courtyard in their houses. It also suggests for designers to reintroduce this element in their designs. The courtyard has been the most highlighted traditional vernacular element, which may suggest a significant potential for its contemporary application. Future research into how and in what form the courtyard may emerge in Kuwait's domestic context will be discussed in the next section.
- The study recommends researchers to further explore the tension between tradition and modernity in Kuwait's domestic built environment. Specifically, how people's passive and active adaptation may be learned from to direct future sustainable living environments? And to what extent does government policy affect people's relationship with their built environment? These future research initiatives will also be discussed in the next section.
- The study recommends for lawmakers and government officials to seriously work towards finding fast solutions to meet people's demand for public housing welfare. If more land was distributed among citizens, it may decrease real-estate prices and perhaps solve Kuwait's current housing crisis. This positive environment will reduce people's insecurity of the future and maybe stop adding apartments in their

houses, and perhaps allow space for traditional vernacular elements such as the courtyard.

- The study recommends for lawmakers and government officials to provide successful frameworks to promote cultural and environmental sustainability. This has been stressed by many participants in the initial workshops and especially by homeowners. For example new regulations may be introduced to provide incentives for individuals or the private sector to employ traditional vernacular elements. Another example, may be reintroducing the courtyard in government housing projects.

11.5 Future Studies

The study has presented the socio-cultural potential for using traditional vernacular elements and specifically the courtyard in current domestic built environments. Yet there are still questions that remain unanswered. The findings also revealed contradictions within participants' responses, and discussed some explanations for this. However, further investigations into this phenomenon will be crucial to further understanding in how people were affected by the discontinuity between past and present, tradition and modernity in relation to their built environments.

Emerging strongly were people's reactions to the on-going social, economic, and political atmosphere, which has played a significant role in shaping today's current houses. Therefore, one direction for future research may be to investigate relevant government policy. Years of initial government planning and later lack of planning has created an unusual urban landscape, which has produced a chaotic built environment without harmony in styles, expression of local culture, and sensitivity towards the natural environment. Therefore, it is clear that government policy has played a significant role in shaping

housing, which necessitates future research explorations into the extent of which government policy affected people in relation to their domestic built environments. How has 'post oil' government decision-making produced culturally and environmentally unsustainable built environments? And can the current political climate facilitate vital reforms?

Finally, yet another revisit for the courtyard may be another exploration, however, this time through research by design. The idea would be to investigate to what variations of courtyard designs are possible and suitable within the socio-spatial constraints of contemporary Kuwaiti houses? The rupture between past and present built environments has created a discontinuity of traditional solutions and a rise in modern design approaches. Traditional courtyard houses are usually compact, which encourage pedestrian walking and community living in contrast to the modern villa, which is usually free standing and is dependent on the car. The traditional house uses the courtyard as outside gathering spaces for the family, while the modern villa uses its social spaces for the TV, computer, and other electric appliances. Therefore, how can the courtyard be used to meet modern needs yet still achieve cultural and environmental sustainability? More research is essential to further explore how traditional forms may be used as precedent for contemporary designs, and perhaps these understandings may provide catalysts for change to promote sustainable initiatives.

The research findings presented more questions than provided answers, and future research must try to advance understandings of the contradictions and disconnects behind this complex social phenomenon. Understanding the past and present of Kuwait's built environments is a key starting point to identify the challenges associated with rapid transformation, thus suggesting potential developments for its future. It is the hope that these efforts may one day direct a more sustainable approach to architecture in Kuwait.

11.6 Conclusion

11.6.1 Final Thoughts

People's perceptions of and attitudes towards traditional vernacular elements and their contemporary applications revealed the effects of modernity in Kuwait's domestic built environment. It highlighted the collision between traditional concepts and modern practices, how people found ways to adapt in their houses and continue to do so within an ever changing socio-cultural, economic, and political environment. The discontinuity between past and present built environments has led to people adapting to a new way of life by holding on to their culture and traditions in a modern context. This may explain the many contradictions and disconnects between participants' responses.

In the initial workshops participants expressed many concerns over issues that faced their houses, which were a reflection of the larger problems of modernization and development. However, in the follow-up study the participants thought the modern villa is more appropriate for Kuwait than its vernacular counterpart. This contradiction suggests that although there are issues with today's houses they still prefer them to their vernacular counterpart. The disunity between the past and present built environments has created a barrier that prevents people from fully understanding and appreciating the value of traditional spaces and the principles behind their designs, which makes it difficult for newer generations to visualize using vernaculars in their contemporary lifestyles. As some participants pointed out, people are resistant to change and perhaps it is, what they do not completely understand, what was demolished from old Kuwait City, what was lost during the transformation years that makes it more difficult to accept today.

Nevertheless, the present study findings suggests that despite all the socio-cultural and political barriers that prevent using traditional vernacular elements, people's

willingness and desire to use the elements is enough to signal that change is possible and what is needed is a social and policy framework to support sustainable developments.

Fathy contends that, "civilization is measured by what one contributes to culture, not by what one takes from others" (Fathy:1986:xxi). Therefore, societies must understand and analyse elements of change, "applying modern techniques to modify the valid methods established by our ancestors, and then developing new solutions that satisfy modern needs" (Ibid:xxiii). Like Fathy, many designers and researchers acknowledge the paramount importance of culture as means to learn from and build society. The present study also highlighted the potential to use culture (through traditional vernacular elements) as means to promote sustainable design, however, it also pointed out that without fundamental social and political changes, a contemporary vernacular may not be possible.

Some nations in the Gulf have already begun putting cultural and environmental sustainability frameworks in place and time has come for Kuwait to also act in this regards. In rushing towards modernity as one designer puts it, *"its a shame that Kuwaitis feel the need to look to other cultures for inspiration and neglect their own"* (D.F.8.-35). The vision is not to nostalgically recreate the past, but to carry relevant aspects of its identity forward that expresses a contemporary sensitivity towards culture and the natural environment. A new architectural language is therefore necessary to gain inspiration from the principles and essence of the past, and to address the functional needs of the present, and to aspire to create built forms for a more sustainable future.

References

Abdo, M. (1988). *The Urbanization of Kuwait since 1950: Planning, Progress and Issues.* PhD thesis. University of Durham.

Abel, C. (2000). *Architecture and Identity: responses to cultural and technological change,* 2nd Edition. Oxford, UK: Architectural Press.

Abel, C. (2000). Localization versus globalization. *The Architectural Review*, Sept. 1994, pp.190–197.

Abu Hakima, A. (1983). *The Modern History of Kuwait.* London, UK: Luzac and Co.

AlAjmi, M. (2009). *History of Architecture in Kuwait: The Evolution of Kuwaiti Traditional Architecture Prior to the Discovery of Oil.* PhD thesis. University of Nebraska.

AlAtar, F. (1997). *The Formulation and Implementation of Sustainable Development Strategies-General Approaches and a Case Study of Kuwait.* PhD thesis. University of Aberdeen.

AlAzmi. K. (2000). *Dwellings in Desert Environments.* Kuwait City, Kuwait: Center of Research and Studies on Kuwait.

AlBahar, H. (1990). *The Evolution of Kuwaiti Domestic Architecture: An Empirical and Theoretical Study.* PhD thesis. University College London.

AlBaqshi, M. (2010). *The Social Production of Space: Kuwait's Spatial History.* PhD Thesis. Illinois Institute of Technology.

AlBukhari, A. (2003). *Al Bukhari's Sahih: The Correct Traditions of Al Bukari.* Beirut, Lebanon: Dar Ihya Alkutub Alilmiyah.

Alexander, C. Hirshen, S. Ishikawa, C. Coffin and S. Angel. (1969). *Houses Generated by Patterns.* Berkeley, CA: Center for Environmental Structure.

AlFaruqi, I. and AlFaruqi, L. (1982). *The Cultural Atlas of Islam.* New York, NY: McMillan.

AlGhunaim, H. (Ed.). (2008). *The Kuwaiti Heritage in the Paintings of Ayoub Hussein AlAyoub.*3rd Edition. Kuwait City, Kuwait: Centre for Research and Studies on Kuwait.

AlHaroun, Y. (2014). *Perceptions of Space in Kuwait.* Kuwait City, Kuwait: Kuwait University Press.

AlHemaidi, W. (2001). The metamorphosis of the urban fabric in an Arab – Muslim city: Riyadh, Saudi Arabia. *Journal of Housing and the Built Environment.* Vol.16, pp. 179-201

AlJassar, M. (2009). *Constancy and change in contemporary Kuwait City: The socio-cultural dimensions of the Kuwaiti courtyard and Diwaniyya.* PhD thesis. University of Wisconsin.

AlNaim, M. (2005). *Architecture and Culture: Critical Studies on Arab Architecture.* Al Riyadh, Saudi Arabia: AlYamama Publishing Inc.

AlMunayies. W. (1985). *Socio-economic factors bearing on houses in Kuwait.* Kuwait City, Kuwait: Kuwait University.

AlMumin, A. (1995). *Thermal Performance Prediction of Shaded Sunken Courtyard buildings in a Hot and Arid Climate.* PhD Thesis. Texas A&M University.

AlMutawa, S. (1994). *Socio-economic controls influencing houses in Kuwait.* Kuwait City, Kuwait: Kuwait University.

AlNakib. F. (2011). *Kuwait City: Urbanization, the Built Environment, and the Urban Experience Before and After Oil (1716-1986).* PhD thesis. SOAS, University of London.

AlQabas. (2014, May 25). Vertical housing…A forced decision. *AlQabas*. Retrieved from http://www.alqabas.com.kw/node/867601 on 25/5/2014

AlQenaei, Y. (1968). *Pages from the History of Kuwait.* Kuwait City, Kuwait: Kuwait Government Printing Press.

AlRagam, A. (2008). *Towards a Critique of an Architectural Nahda: A Kuwaiti Example.* PhD thesis. University of Pennsylvania.

AlSallal, K. AlRais, L. Bin Dalmouk, M. (2012). Designing a sustainable house in the desert of Abu Dhabi. *Renewable Energy*. Vol.49, pp.80-84.

AlSanafi. N. (2001). *The influence of socio-economic changes on house design in Kuwait.* PhD thesis. Manchester Metropolitan University.

AlShalfan, S. (2013). *The Right to Housing in Kuwait: An urban injustice in a socially just system.* Kuwait Programme on Development, Governance and Globalization in the Gulf States,The London School of Economics and Political Science.

AlWatan. (2013, May 14). Kuwait: the first in world in water and electric consumption. *AlWatan.* Retrieved from http://www.alwatan.kuwait.tt/homepage on 14/5/2013

Appleyard, D. (1976). *Planning a pluralistic city.* Cambridge, M.A.: M.I.T. Press.

Appleyard, D. (1979). Home. *Architectural Association Quarterly*, Vol.2(3).pp.4-20.

Arab Forum on Environment and Development. (2012). *Survival Options: Ecological Footprint of Arab Countries.* Global Footprint Network.

Atkinson.P and Silverman.D. (1997). Kundera's Immortality: The interview society and the invention of the self. *Qualitative Inquiry*, Vol.3, pp.304-325.

Banks, M. (2001). *Visual method in social research.* Thousand Oaks: Sage.

Banister, P., Bruman, E., Parker, I., Taylor, M., Tindall, C. (1994). *Qualitative Methods in Psychology: A Research Guide.* Buckingham, UK: Open University.

Barton, H. (2000). *Sustainable Communities: The potential for eco-neighbourhoods.* UK: Earthscan Pub.

Bazeley, P. (2007). *Qualitative Data Analysis with NVIVO,* 2nd Edition. London, UK: Sage Pub.

Bonine, M. (1981). *The Urbanization of the Persian Gulf Nations in The Persian Gulf States*. (pp.225-278). Baltimore and London: The John Hopkins University Press.

Beck, U. (1992). *Risk Society: Towards a New Modernity.* English translation in 1992 by Sage Pub. London, UK: Sage Pub.

Blaser, W. (1985). *Atrium: Five Thousand Years of Open Courtyards.* New York, NY: Wepf & Co.

Brannen, J. (1992). *Mixing Methods: Qualitative and Quantitative Research*. Aldershot: Ashgate.

Bryman, A. (1992). Quantitative and qualitative research: further reflections on their integration. In Brannen, J. *Mixing Methods: Qualitative and Quantitative Research.* Aldershot: Ashgate.

Bryman, A. (2004). *Social Research Methods.* 2nd Edition. Oxford, UK: Oxford University Press.

Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done?. *Qualitative Research*, Vol.6(1), pp.97-113.

Burke, R. Onwuegbuzie, A. Turner, L. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research,* Vol.1, pp.112.

Campbell, D. and Fiske, D. (1959). Convergent and discriminant validation by the multitrait - multimethod matrix. *Psychological Bulletin,* Vol.56, pp.81–105.

Canter, D. and Larkin, P. (1993). The environmental range of serial rapists. *Journal of Environmental Psychology,* Vol.13, pp.63-70.

Carley, M. (1994). *Policy Management Systems and Methods of Analysis for Sustainable Agriculture and Rural Development.* Rome: IIED/FAO.

Case, E. (1952). Boom Time in Kuwait. *The National Geographic Magazine*, Vol.102(6), pp.783-802.

Casey, M. (2007). *The History of Kuwait.* The Greenwood Histories of the Modern Nations. Westport, Conn: Greenwood Press.

Charmaz, K. (2006). *Constructing Grounded Theory.* London, UK: Sage Pub.

Cicourel, A. (1974). *Interviewing and memory. In Colin Cherry Pragmatic aspects of human communications.* (pp.51-82). Dordrecht: Reidel.

Civicarts. (2012). Madinat AlHarir (City of Silk), *Civicarts.* Retrieved from http://www.civicarts.com/madinat -al-hareer.php on 1/7/2012

Cognition. (2012). *Merriam-Webster Dictionary, 2012.* Retrieved from www.merriam-webster.com on 15/10/2012

Collier, J. (1957). Photography in anthropology: a report on two experiments. *American Anthropologist.* Vol.59, pp.843–859.

Collier, J. (1987). Visual anthropology's contributions to the field of anthropology. *Visual Anthropology,* Vol.1, pp.37-46.

Collins, P. (1965). *Changing Ideals in Modern Architecture.* London, UK: Faber and Faber.

Connolly, P. (1998). Dancing to the wrong tune: Ethnography generalization and research on racism in schools. In Connolly, P and Troyna, B. (Eds.). *Researching racism in education: Politics, theory, and practice*. (pp.122-139). Buckingham, U.K: Open University Press.

Correa, C. (1983). Quest for Identity. In Powell, R. (Eds). *Architecture and Identity.* Singapore: Concept Media/The Aga Khan Award for Architecture.

Correa, C. (1989). The public, the private and the scared. *Journal of the American Academy of Arts and Sciences.*

Creswell, J. (1998). *Qualitative Inquiry and Research Design: Choosing among the five traditions.* CA: Thousand Oaks/Sage.

Creswell, J. (2002). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Approaches to Research.* Upper Saddle River, NJ: Pearson Education.

Creswell, J. (2003). *Research design: qualitative, quantitative, and mixed methods approaches,* 2nd Edition. CA: Thousand Oaks/Sage.

Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches,* 3rd Edition. CA: Thousand Oaks/Sage.

Creswell J. (2011). Controversies in mixed methods research. In the *Handbook of Qualitative Research.*4th Edition. Denzin, N. and Lincoln Y. (Eds.). pp. 269-284.

Creswell, J., Shope, R.L.V., Clark, P. Green, D. (2006). How Interpretive Qualitative Research Extends Mixed Methods Research. *Research in the Schools*, Vol.13(1), pp.1-11.

Creswell, J. and Plano, C.V. (2007). *Designing and conducting mixed methods research.* London, UK: Sage Pub.

Dandekar, C. (1998). Global space meets local space in the twenty-first century. Proceedings of an international symposium called *City Space + Globalization: an International Perspective*, College of Architecture and Urban Planning, The University of Michigan.

Denscombe. M. (1998). *The Good Research Guide: For small scale research projects.* Buckingham, UK: Oxford University Press.

Denzin, N. and Lincoln, Y. (Eds.). (2000). *The Handbook of Qualitative Research.* 2nd Edition. London, UK: Sage Pub.

DETR. (2000). *Local Government Act.* London, UK: DETR.

De Vaus, D. (1993). *Surveys in Social Research,* 3rd Edition. London, UK: UCL Press.

Dickson, H. (1956). *Kuwait and Her Neighbours.* London, UK: George Allen and Unwin Ltd.

Dickson, H. (1971). *Forty Years in Kuwait.* London, UK: Allen and Unwin Ltd.

Downs, R. and Stea, D. (Eds.). (1973). Theory. In Downs, R.M. and Stea, D. (Eds.), *Image and Environment.* Chicago, IL: Aldine.

Downing, F. (1992). Image banks-dialogues between the past and the future. *Environment and Behavior,* Vol.24(4), pp.441-470.

Dubai Municipality. (2014). Green Building Regulations and Specification. *Dubai Municipality.* Retrieved from www.dewa.gov.ae/images/greenbuildings.eng.pdf in 1/7/2014

Duxbury, N. and Gillette, E. (2007). *Culture as a key dimension of sustainability.* Creative city network of Canada, Centre for expertise of culture and community.

Ebrahim, A. (1982). *Kuwait: A study in urban geography.* Kuwait City, Kuwait: Kuwait University.

ECSSR. (2008). *Globalization in the 21st Century: How interconnected is the World?* Abu Dhabi, U.A.E: Emirates Center for Strategic Studies and Research.

ElSheshtawy.Y. et al. (2000). *Sustainable Urban Development in an Age of Globalization: Towards a co-existence model in Dubai U.A.E.* Paris: IAPS.

Facey, W. and Grant, G. (1998). *Kuwait by the First Photographers.* London, UK: The London Center of Arab Studies.

Fathy, H. (1973). *Architecture for the Poor: An Experiment in Rural Egypt. (1969).* 3rd Edition. Chicago, IL: University of Chicago Press.

Fathy, H. (1986). *Natural Energy and Vernacular Architecture: Principles and Examples with Reference to Hot Arid Climates.* Chicago, IL: University of Chicago Press.

Frampton, K. (1995). *Studies in Tectonic Culture.* Cambridge MA: MIT Press.

Forman, R. (1995). Some general principles of landscape and regional ecology. *Landscape Ecology*. Vol.10(3), pp.133-142.

Fullerton, A. and Fehervari, G. (1995). *Kuwait: Arts and Architecture: A Collection of Essays.* Kuwait City, Kuwait: Oriental Press.

Gardiner, S. and Cook, I. (1983). *Kuwait, the Making of a City.* New York, NY: Longman, Harlow, Essex.

George, D. and Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update,* 4th Edition. Boston, MA: Allyn & Bacon.

Ghabra, S. (2010). Modern Gulf Cities. In Koolhaas. R et al. (Eds.), *Al Manakh*. (pp.106-109). Rotterdam: Archis.

Glaser, G. and Strauss, F. (1967). *The Discovery of Grounded Theory.* New Jersey, NJ: Aldine Trans.

Glassie, H. (1975). *Folk Housing in Middle Virginia: A Structural Analysis of Historic Artifacts.* Knoxville, TN: The University of Tennessee Press.

Gleeson, B. and Low, N. (2000). *'Cities as consumers of the world's environment' Consuming Cities.* (pp.6.). London, UK: Routledge.

Giddens, A. (1991). *Modernity and Self-idenitiy.* Cambridge: Polity Press.

Giddens, A. (1990). *The Consequences of Modernity.* Stanford, CA: Stanford University Press.

Giuliani, M. and Scopelliti, M. (2009). Empirical research in environmental psychology: Past, present, and future. *Journal of Environmental Psychology.* Vol. 29, pp. 375-386.

Greene, J., Caracelli, V., Graham, W. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, Vol.11, pp.255-274.

Green, J. and Thorogood, N. (2004). *Qualitative Methods in Health Research.* London, UK: Sage Pub.

Grogan, D. and Mercer, C. (1995). *The Cultural Planning Handbook: An essential Australian guide.* (pp.12). St. Leonards: Allen & Unwin.

Hakim, C. (1997). *Research Design: Strategies and Choices in the Design of Social Research.* London, UK: Routledge.

Hair, J., Black, W., Babin, B., Anderson, R. (2006). *Multivariate Data Analysis,* 7th Edition. Upper Saddler River, New Jersey: Pearson Education Inc.

Hammersley, M. (1992). Deconstructing the qualitative-quantitative divide. In Brannen, J. *Mixing Methods: qualitative and quantitative research.* Aldershot: Ashgate.

Hammersley M. (1992). *What's wrong with Ethnography?: Methodological Explorations.* London, UK: Routledge.

Harper, D. (2002). Talking About Pictures: A case for photo elicitation. *Visual Studies*. Vol.17(1), pp.13-26.

Hawkes, J. (2005). *Culture as a fourth pillar of sustainability.* Melbourne: Common ground.

Hazel, N. (1996). *Eliciting techniques with young people.* University of Surrey Press.

Hennink, M. (2007). *International Focus Group Research: A Handbook for the Health and Social Sciences.* Cambridge: Cambridge University Press.

Hirichs, C. (1989). The Courtyard Housing Form as Traditional Dwelling". *Traditional Dwellings and Settlements. Working Paper Series 6 The Courtyard as Dwelling*, pp.1-38.

Howe, K. (2004). A critique of experimentalism. *Qualitative Inquiry,* Vol.10(1), pp. 42-61.

Huberman, A. and Miles, M. (1994). Data Management and Analysis Methods. In the *Handbook of Qualitative Research.* Norman K. Denzin and Yvonna S. Lincoln, (Eds.) (pp.428-444).Thousand Oaks/Sage.

Johnson, R. and Christensen, L. (2004). *Educational research: Quantitative, qualitative, and mixed approaches.* Boston, MA: Allyn and Bacon.

Khattab, O. (2001). Globalization versus localization: Contemporary architecture and the Arab city. *CTBUH Review,* Vol.1(3), pp. 56–68.

Khuraibet, A. (1990). *Towards achieving sustainable development in Kuwait: The potential role of Environment Impact Assessment (E.I.A) at the project and policy levels.* PhD thesis. University of Aberdeen.

Kitchin, R. (1994). Cognitive maps: What they are and why study them?. *Journal of Environmental Psychology*, Vol.14. pp.1-19.

Kitzinger, J. (2005). Focus Group Research: using group dynamics to explore perceptions, experiences and understandings. In Holloway's *Qualitative Research in Health Care*. Maidenhead: Open University Press.

Krueger, R. (1994). *Focus Groups: A practical Guide for applied research.* CA: Thousand Oaks/Sage Pub.

Krueger, R. and Casey, M. (2000). *Focus Groups: A practical guide for applied research,* 3rd Edition. CA: Thousand Oaks/Sage Pub.

KNA. (2013). *Survey: Priorities that concern the Public*. Kuwait City, Kuwait: Kuwait National Assembly.

Kuhn, T. (1970). *The structure of scientific revolutions,* 2nd Edition. Chicago, IL: University of Chicago Press.

Kvale, S. and Brinkmann, S. (2009). *InterViews: Learning the Craft of Qualitative Research Interviewing.* London, UK: Sage Pub.

LeCorbusier. (1947). *The Four Routes.* London, UK: Dennis Dobson Ltd. pp.135-6.

Lefaivre, L., Tzonis, A., Stagno, B. (Eds). (2001). *Tropical Architecture: Critical Regionalism in the Age of Globalization.* Wiley-Academy.

Liamputtong, P. (2009). *Qualitative Research Methods,* 3rd Edition. Oxford, UK: Oxford University Press.

Liangyoun, W. (2000). Architecture in the new millennium. *The Journal of Architecture*, pp.9-19.

Lim, W. (2004). Architecture, Art, Identity: Is There Life in Singapore After Tabula Rasa?. In *Identity Research/Research Papers: Architecture and Identity.* Volkswagen Stiftung and Berlin University Technology.

Lynch, K. (1960). *The Image of the City.* Cambridge, MA: M.I.T Press.

MacEachren, A. (1992). Application of environmental learning theory to spatial knowledge acquisition from maps. *Annals of the Association of American Geographers*, Vol. 82(2), pp.245-274.

Macnaghten, P. and Myers, G. (2004). Focus Groups. In Seale et al's *Qualitative Research Practice.* London, UK: Sage Pub.

Madison, G. (1998). Globalization: Challenges and Opportunities. *Globalization Institute on Globalization and the Human Condition, Working Papers 98/1*, McMaster University.

Mahgoub, Y. (2002). The Development of Private Housing in Kuwait: The impact on building regulations. *Open House International*, Vol.27(2), pp.47-63.

Mahgoub, Y. (2004). Globalization and the built environment in Kuwait. *Habitat International.* Vol.28, pp.505-519.

Mahgoub, Y. (2007). Architecture and the expression of cultural identity in Kuwait. *The Journal of Architecture.* Vol.12(2), pp.165-182.

Monsour, Y. (1980). *Growth and Urban Planning in the Arabian Gulf.* Kuwait City, Kuwait: Press Agency.

Mason, J. (2002). *Qualitative Researching*, 2nd Edition*,* London, UK: Sage Pub.

Mason, J. (2006). Mixing methods in a qualitatively driven way. *Qualitative Research,* Vol.6, pp.9-25.

Mason, J. (2006). *Working Paper: Six Strategies for mixing methods and linking data in social science research.* Manchester, UK: ESRC.

Mason, J. and Dale, A. (2011). *Understanding Social Research: Thinking Creatively about Method.* London, UK: Sage Pub.

May, V. (2007). Use of mixed methods in a study of residence and contact disputes between divorced and separated parents, *International Journal of Social Research Methodology,* Vol.10(4), pp.295-306.

MOI. (1992). Kuwait: Facts and Figures. *Ministry of Information*. Kuwait City, Kuwait.

Morse, J. (1991). Approaches to qualitative-quantitative methodological triangulation, *Nursing Research*, Vol.40, pp.120–123.

Municipality of Kuwait. (1980). *Planning and Urban Development in Kuwait:* Municipality of Kuwait, Kuwait City, Kuwait.

NCCAL. (2009). *History, Heritage, Architecture: 1837-1950.* Architectural and Engineering Division, National Council of Culture, Arts and Letters. Kuwait City, Kuwait: AlKhat Printing Press

Newman, I. and Benz, C. (1998). *Qualitative-quantitative research methodology: Exploring the interactive continuum.* Carbondale: Southern Illinois University Press.

Noor, M. (1991). The function and form of the courtyard house. *The Arab House Conference Proceedings,* Sept.16-18, 1991, University of Newcastle Upon Tyne.

Norberg-Schulz, C. (1980). *Genius loci: towards a phenomenology of architecture.* Rizzoli, New York, NY: Rizzoli.

O'Cathain, A., Murphy, E., Nicholl, J. (2007). Why, and how, mixed methods research is undertaken in health services research in England: a mixed methods study, *BMC Health Services Research*, Vol.7(85).

O'Cathain, A. (2009). Reporting mixed methods projects. In *Mixed Method Research for Nursing and Health Sciences*. Andrew, S. and Halcomb, E. (Eds). London, UK: Blackwell.

Oliver, P. (1969). *Shelter and Society*. London, UK: Barrie and Jenkins Ltd.

Oliver, P. (1990). Vernacular Know-How. In *Vernacular Architecture: Ethnoscapes: Current Challenges in the Environmental Social Sciences.* Turan, M. (Eds.).(pp.147-160). Aldershot.

Oliver. P. (1997) and (2003). *Encyclopedia of Vernacular Architecture of the World. Theories and Principles,* Vol.1.

Oliver. P. (2006). *Built to Meet Needs: Cultural Issues in Vernacular Architecture.* Oxford, UK: Elsevier.

O'Neil, M. (1991). Evaluation of a conceptual model of architectural legibility, *Environment and Behavior*, Vol. 23(3), pp.259-284.

Onwuegbuzie, A. and Leech, N. (2006). Linking research questions to mixed methods data analysis procedures. *The Qualitative Report*, Vol.11(3), pp.474-498.

Palys, T. (1992). *Research decisions: Quantitative and qualitative perspectives,* 3rd Edition. Toronto, Canada: Thompson.

Pearson, D. (1994). *Earth to Spirit - In search for natural architecture, Vernacular Wisdom.* Gaia Books, p.96.

Pile, S. (1990). *The Private Farmer: Transformation and Legitimation in Advanced Capitalist Agriculture.* Sage, Aldershot.

Priemus, H. (1986). Housing as a social Adaptation process: a conceptual scheme. *Environment and Behaviour*, Vol.18,1,pp.31-52.

Public Authority for Housing Welfare. (2014). Facts and Figures. *PAHW Online*. Retrieved from http://www.housing.gov.kw/AboutPHW.aspx on 24/5/2014

Public Authority for Housing Welfare. (2014). Statistics of Number of Applicants. *PAHW Online.* Retrieved from http://www.housing.gov.kw/Attachments/Talabat_Stat_dec_2012.pdf on 25/52014

Public Authority for Housing Welfare. (2014). Public Authority of Housing Welfare Laws 2011. *PAHW Online.* Retrieved from http://www.housing.gov.kw/Attachments/PAHW%20Rules%20Modified%202011.pdf on 24/5/2014

Quattrone, G. (2006). *Climate, Place, People, History: Determinants of form in environmentally and culturally appropriate contemporary Australian Architecture.* Italy: Mediterranean University of Reggio Calabria.

Rabiee, F. and Thompson, D. (2000). *Widening Participation-increasing access to higher education for Muslim Women.* Birmingham, UK: University of Central England and Birmingham University.

Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the Nutrition Society.* Vol.63,pp.655-660.

Rapley, T. (2004). Interviews. In *Qualitative Research Practice*. Seale et al. London, UK: Sage Pub.

Rapoport, A. (1969). *House Form and Culture.* New Jersey, NJ: Prentice-Hall Inc.

Rapoport, A. (1982). *The Meaning of the Built Environment: A Non-Verbal Communication Approach*. University of Arizona Press.

Rasmussen, K. (2004). Places for children—Children's places. *Childhood,* Vol.11(2), pp.155-173.

Reid, D. (1995). *Sustainable Development: An introduction guide.* London, UK: Earthscan Publications.

Reynolds, J. (2002). *Courtyards: Aesthetic, social, and thermal delight.* John Wiley and Sons Inc.

Richards, S. (2012). 'Vernacular' Accommodations: Wordplay in Contemporary-traditional Architecture Theory. *Architectural Research Quarterly*, Vol. 16(1), pp. 37–48.

Richardson, V. (2001). *New Vernacular Architecture*. New York, NY: Watson Guptill Publications.

Ritchie, J. and Spencer, L. (1994). Qualitative data analysis for applied policy research. In *Analysing Qualitative Data*, pp.173-194, London.

Roodman and Lenessen. *Built environment: Frequently asked questions.* Retrieved from-http://maven.gtri.gatech.edu/sfi/bes/faq.html

Rogers, R. (1997). *Cities for a Small Planet.* Westview Press.

Rudofsky, B. (1964). *Architecture Without Architects.* Museum of Modem Art, New York.

Saleh, M. (1998). The integration of tradition and modernity: A search for an urban and architectural identity in Arriyadh, the capital of Saudi Arabia. *Habitat International,* Vol.22(4), pp.571-589.

Satler, G. (1999). The architecture of Frank Lloyd Wright: A global view. *Journal of Architectural Education*, Vol.53(1), pp.15–24.

Shiber, S. (1964). *The Kuwaiti Urbanization; Documentation, Analysis, Critique. Al Madianah Al Kuwaitiyyah.* Kuwait City, Kuwait: Kuwait Government Printing Press.

Shiber, S. (1969). *Recent Arab City Growth*. Kuwait City, Kuwait: Kuwait Government Printing Press.

Shuaib, H. (1999). *Towards modern Kuwaiti architecture developed from tradition.* AMAR. Kuwait City, Kuwait.

Silverman, D. (2001). *Interpreting Qualitative Data*. 2nd Edition. London, UK: Sage Pub.

Silverman, D. (1993). *Interpreting Qualitative Data: Strategies for analyzing talk, text, and interaction.* London, UK: Sage Publications.

Slot, B. (1991). *The Origins of Kuwait.* New York, NY: E.J. Brill, Leiden.

Slot, B. (2003). *Kuwait the Growth of a Historic Identity.* Kuwait City, Kuwait: The Gulf Museum Consultancy Company.

Smith, F. and Barker, J. (2004). Spaces: Children's experiences of out of school care in England and Wales, *Childhood,* Vol.7(3), pp.315-333.

Sosu, E., McWilliam, A., Gray, D. (2008). 'The complexities of teachers' commitment to environmental education: A mixed method approach. *Journal of Mixed Methods Research*, Vol.2, pp.169-189.

Steele, J. (1997). *An Architecture for People: The complete works of Hassan Fathy.* London, UK: Thames and Hudson Ltd.

Strauss, A. and Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory, Procedures and Techniques.* London, UK: Sage Pub.

Stroh, M. (1999). *Social Constructions of Green: Accessing Popular Attitudes Towards the Environment.* PhD thesis. University of Sheffield.

Tashakkori, A. and Teddlie, C. (1998). Mixed methodology: Combining qualitative and quantitative approaches, *Applied Social Research Methods Series*, Vol. 46.

Tashakkori, A. and Teddlie, C. (2003). Major issues and controversies in the use of mixed methods in the social and behavioural science. In Tashakkori, A and Teddlie, C. (Eds.) *Handbook of Mixed Methods in Social and Behavioural Research*. London, UK. Sage Pub.

Tashakkori, A. and Teddlie, C. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences.* CA: Thousand Oaks/Sage.

Taylor, T., Nikolopoulou, M., Mahdjoubi, L. and Cullen, N. (2009). Vernacular architecture and contemporary design in Oman: Challenges in a changing climate. In: *Detail Design in Architecture, Translating sustainable design into sustainable construction*, Cardiff.

The State of Kuwait. (1962). *Distoor Dawlat Al Kuwait* (Constitution of the State of Kuwait), The State of Kuwait. Kuwait City, Kuwait: Kuwait Printing Press.

Thomas, L., MacMillian, J., McColl, E., Hale, C., Bond, S. (1995). Comparison of focus group and individual interview methodology in examining patient satisfaction with nursing care. *Social Sciences in Health,* Vol.1, pp.206-219.

Throsby, D. (2008). Linking cultural and ecological sustainability. *The International Journal of Diversity in Organizations, Communities and Nations*, Vol.8(1), pp.15–20.

Thukur. (2014). *Kuwait Housing Survey.* National Project for Sustainable Development. Retrieved from http://www.thukhur.com on 23/6/2014

Tognoli, J. (1987). Residential Environments. In the *Handbook of Environmental Psychology*. Altman and Stokols (Eds.). pp.665-690. New York.

Turan, M. (1990). *Vernacular Architecture: Ethnoscapes: Current Challenges in the Environmental Social Sciences.* Aldershot.

Turner, J. (1977). *Housing by People: Towards Autonomy in the building environments.* New York, NY: Pantheon Books.

Tzonis, A. and Lefaivre, L. (2003). *Critical Regionalism. Architecture and Identity in a Globalized World.* New York.

UCL. (2013). Public Engagement Unit. *University College London Online.* Retrieved from http://www.ucl.ac.uk/public-engagement/research/toolkits/Methods on 6/4/2013

UNESCO. (1996). *Declaration of Cultural Identity.* U.N.

UNEP. (1976). *Eco-development.* UNEP/GC/80 United Nations Environment Programme.

USC. (2013). *Library Guide*. University of Southern California Online. Retrieved from http://libguides.usc.edu on 2/27/2013

Warren, J. (1982). *The Courtyard Houses of Baghdad: A rich Heritage in The Arab Cultural Scene*. pp.86-94. London, UK: Namara Press.

Watts, M. and Ebbutt, D. (1987). More than the sum of parts: research methods in group interviewing, *British Educational Research Journal*, Vol.13(1), pp.25-34.

Wengraf, T. (2001). *Qualitative Research Interviewing: Biographic Narrative and Semi-Structured Methods*. London, UK: Sage Pub.

Welke, A. and Harris, P. *Tope End design.* Video produced by Hyatt and Associates for Public Affairs Department BHP Steel Melbourne

WCED. (1987). *The Bruntland Report.* World Commission on Environment and Development. Our Common Future. pp.43.

Wheeldon, J. (2010). Mapping mixed methods research: Methods, measures, and meaning. *Journal of Mixed Methods Research*, Vol.4(2), pp87–102.

Wright. F. (1941). *Introduction.* Quoted in Frank Lloyd Wright on Architecture (ed.Frederick Gutheim). pp.62. New York, NY: Grosset and Dunlap.

Yeang, K. (1995).*Designing With Nature*. New York, NY: McGraw-Hill Inc.

Za'za', B. (2002). Arab speakers see threat to culture by globalization*. Gulf News.*

Zeisel, J. (1981). *Inquiry by Design: Tools for Environment-Behaviour research.* Belmont, CA: Wadsworth Inc.

Appendix A

1. Initial Workshop Booklet

2. Follow Up Questionnaire

3. Ethical Approval Letter

Remaking the Kuwaiti House

a n e m p i r i c a l s t u d y

PhD Study Workshop Booklet version:1.4
Researcher: Yousef A.M Al Haroun
Date: Sept.- Oct. 2013

Table of Contents

.. Note: The researcher will facilitate all workshop activities and introduce each stage with clear instructions

Remaking the Kuwaiti House

a n e m p i r i c a l s t u d y

Research Information Sheet

What is the project?

The study is an empirical investigation that intends to develop an understanding of the many issues surrounding the transformation of the Kuwaiti House. Specifically, the research aims to use Kuwait's traditional vernacular elements as a vehicle for exploring the broader socio-cultural,economic and political issues surrounding the move towards modernity and away from the vernacular and sustainability. From this point the study intends to find direction for the revival of the once sustainable Kuwaiti house.

Who is it for?

My name is Yousef Al Haroun. I am a Kuwaiti architect and researcher seeking to understand the Kuwaiti built environment. I am currently a PhD student at the University of Sheffield in the U.K.. The findings of the research will hopefully be used as part of my PhD thesis.

Whats your role?

The research is an investigation of how people understand Kuwait's traditional vernacular elements such as the courtyard or bajdir(wind catch). It is the hope that by understanding their disappearance it may inform ways to make the contemporary Kuwaiti House more cultural expressive and environmentally sustainable.Therefore people, the public that means "you" are important in our understanding of this complex relationship. Your responses will hopefully provide valuable data. A tool for designers to use to help reshape the future Kuwaiti house and it is the hope to elevate the quality of life for its people.

How its done?

The workshop will have four short segments. First a questionnaire, second a sketching activity, third a photo exercise, and finally a group interview.The overall time needed is around one to one and half hours.

The data collected for the study will be through this booklet. The interviews will be recorded and transcribed for analysis. All the participants will be anonymous and their information will be stored securely. It is intended that the data used in this study be presented in a PhD study at the University of Sheffield and will be available through the University's library.

Thank you for your invaluable time and feedback.

Remaking the Kuwaiti House

a n e m p i r i c a l s t u d y

PhD study consent form

Title of research project: Remaking the Kuwaiti House
Name of Researcher : Yousef A.M. Al Haroun

1. I confirm that I have read and understand the information sheet/letter explaining the above research project and I have had the opportunity to ask questions about the project.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline.

3. I understand that my responses will be kept strictly confidential.I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.

4. I agree for the data collected from me to be used in future research

5. I agree to take part in the above research project.

Name of Participant (or legal representative)	Date	Signature
Name of Researcher	Date	Signature

Remaking the Kuwaiti House

an empirical study

Personal Information

Please answer the following questions as accurately as possible. Follow the instructions for every question type. For the multiple choice questions please tick only one answer in the a ppropriate boxes. All information given will be strictly confidential. Thank you again for your feedback.

Personal Information

1: Age *(Please write your age in years as of June.1.2013* below)

2: Gender

1 ☐ Male
2 ☐ Female

3: Educational level

1 ☐ University M.A/PhD
2 ☐ University B.A
3 ☐ High School
4 ☐ Middle School
5 ☐ Primary School
6 ☐ Trade Training
7 ☐ Home/Self Education
8 ☐ No Education

5: Occupation (*Please write your current place of un/employment)*

6: Country of origin

1 ☐ Kuwait
2 ☐ Other, specify

7: Where do you live today?

1 ☐ Kuwait City, if so write area
2 ☐ Other, specify what city

8: What type of house hold you live in ?

1 ☐ House
2 ☐ Apt. in a house
3 ☐ Apt. in an apt. building
4 ☐ Other - specify type

9: How long have you lived there?

1 ☐ Under (1) year
2 ☐ From (1-5) years
3 ☐ (6-10) years
4 ☐ Over (10) years

Remaking the Kuwaiti House

a n e m p i r i c a l s t u d y

Questionnaire

The questionaaire is divided into two parts: for designers and home owners. Please answer the following questions as accurately as possible. Follow the instructions for every question type. For the multiple choice questions please tick only one answer in the appropriate boxes. All information given will be strictly confidential and used only for this study. Thank you again for you time and feedback.

Questionnaire- For designers

1: How would you describe the traditional Kuwaiti house? What are its key features?
(Please write your answer below)

2: How would you describe the contemporary Kuwaiti house? What are its key features?
(Please write your answer below)

3: Which of the following factors do you aspire to have significance in your house:
(Please tick one or more of the boxes below)

1 ☐ Culture

2 ☐ Identity

3 ☐ Modernity

4 ☐ Environmental Sustainability

5 ☐ Other, specify _____

Now please rank the factors you choose according to importance.

_____

_____

_____

4: Do you believe there are problems facing the contemporary Kuwaiti house?
(Please tick the appropriate box)

1 ☐ No. Go to question 5

2 ☐ Yes. Please state the problem/s below;

_____

_____

_____

_____

5: When you design new houses what are the general requirements/ design elements/styles your clients usually ask for?
(Please write your answer below)

_____

_____

_____

_____

_____

_____

6: When you think of Kuwait's traditional vernacular elements what is the first element you visualize?
(Please write your answer below)

_____

_____

7: Do you think that traditional vernacular elements should be used in the contemporary Kuwaiti house?
(Please tick the appropriate box)

1 ☐ No, if so please state why?

_____

_____

2 ☐ Yes, if so please state why?

_____

_____

8: In your current house do you have any traditional vernacular elements?
(Please tick the appropriate box)

1 ☐ No, if so please state why?

_____

_____

2 ☐ Yes, if so please state them and why you used each element?

_____

_____

9:Do you include traditional Kuwaiti vernacular elements in your house designs (in any way)?
(Please tick the appropriate box)

1 ☐ No, if so please state why?

_____

_____

2 ☐ Yes, if so please state them and why you used each element?

_____

_____

Questionnaire- For homeowners

1: How would you describe the traditional Kuwaiti house? What are its key features?
(Please write your answer below)

_____

_____

_____

_____

_____

_____

2: How would you describe the contemporary Kuwaiti house? What are its key features?
(Please write your answer below)

_____

_____

_____

_____

_____

_____

_____

_____

3: Which of the following factors do you aspire to have significance in your house:
(Please tick one or more of the boxes below)

1 ☐ Culture

2 ☐ Identity

3 ☐ Modernity

4 ☐ Environmental Sustainability

5 ☐ Other, specify _____

Now please rank the factors you choose according to importance.

_____

_____

_____

4: Do you believe there are problems facing the contemporary Kuwaiti house?
(Please tick the appropriate box)

1 ☐ No. Go to question 5.
2 ☐ Yes. Please state the problem/s below;

_____

_____

_____

_____

_____

_____

5: If you had the opportunity to build a new house what user requirements would you give your architect/designer? And What design elements do you think should be in your new house?
(Please write your answer below)

_____

_____

_____

_____

_____

_____

_____

_____

_____

6: When you think of Kuwait's traditional vernacular elements what is the first element you visualize?
(Please write your answer below)

_____

_____

7: Do you think that traditional vernacular elements should be used in the contemporary Kuwaiti house?
(Please tick the appropriate box)

1 ☐ No, if so please state why?

_____

_____

2 ☐ Yes, if so please state why?

_____

_____

8: In your current house do you have any traditional vernacular elements?
(Please tick the appropriate box)

1 ☐ No, if so please state why?

_____

_____

2 ☐ Yes, if so please state them and why you used each element?

_____

_____

Questionnaire- For designers and homeowners

10: How likely would you use the following traditional vernacular elements in your own current house or future house design for yourself?
(Please tick the appropriate box)

	very likely	likely	neutral	not likely	not at all likely
Courtyard	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Traditional door and Khoka (small opening)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Dahress (corridor after the main door)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Liwan (a covered area usually in the courtyard)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Ferya (passage btw two houses)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Al Jelleb (well)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Al Bircha (a tank for collecting rain water)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Diwaniya (social gathering space for men)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Bagdir (wind catch)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Merzam (water gutter)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Mud Brick (adobe)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Other elements, specify below:

_____	1☐	2☐	3☐	4☐	5☐
_____	1☐	2☐	3☐	4☐	5☐

11: In choosing or designing your house how important were each of the following factors?
(Please tick the appropriate box)

	very important	important	neutral	not important	not at all important
Cultural identity and expression	1☐	2☐	3☐	4☐	5☐
Environmentally sustainable design	1☐	2☐	3☐	4☐	5☐
Meeting all your spatial requirements	1☐	2☐	3☐	4☐	5☐
Privacy	1☐	2☐	3☐	4☐	5☐
Orientation	1☐	2☐	3☐	4☐	5☐
Circulation	1☐	2☐	3☐	4☐	5☐
Exterior façade	1☐	2☐	3☐	4☐	5☐
Interior design	1☐	2☐	3☐	4☐	5☐
Greenery/landscaping	1☐	2☐	3☐	4☐	5☐
Within a specific budget	1☐	2☐	3☐	4☐	5☐
Other factors, specify below:					
_____	1☐	2☐	3☐	4☐	5☐
_____	1☐	2☐	3☐	4☐	5☐

Remaking the Kuwaiti House

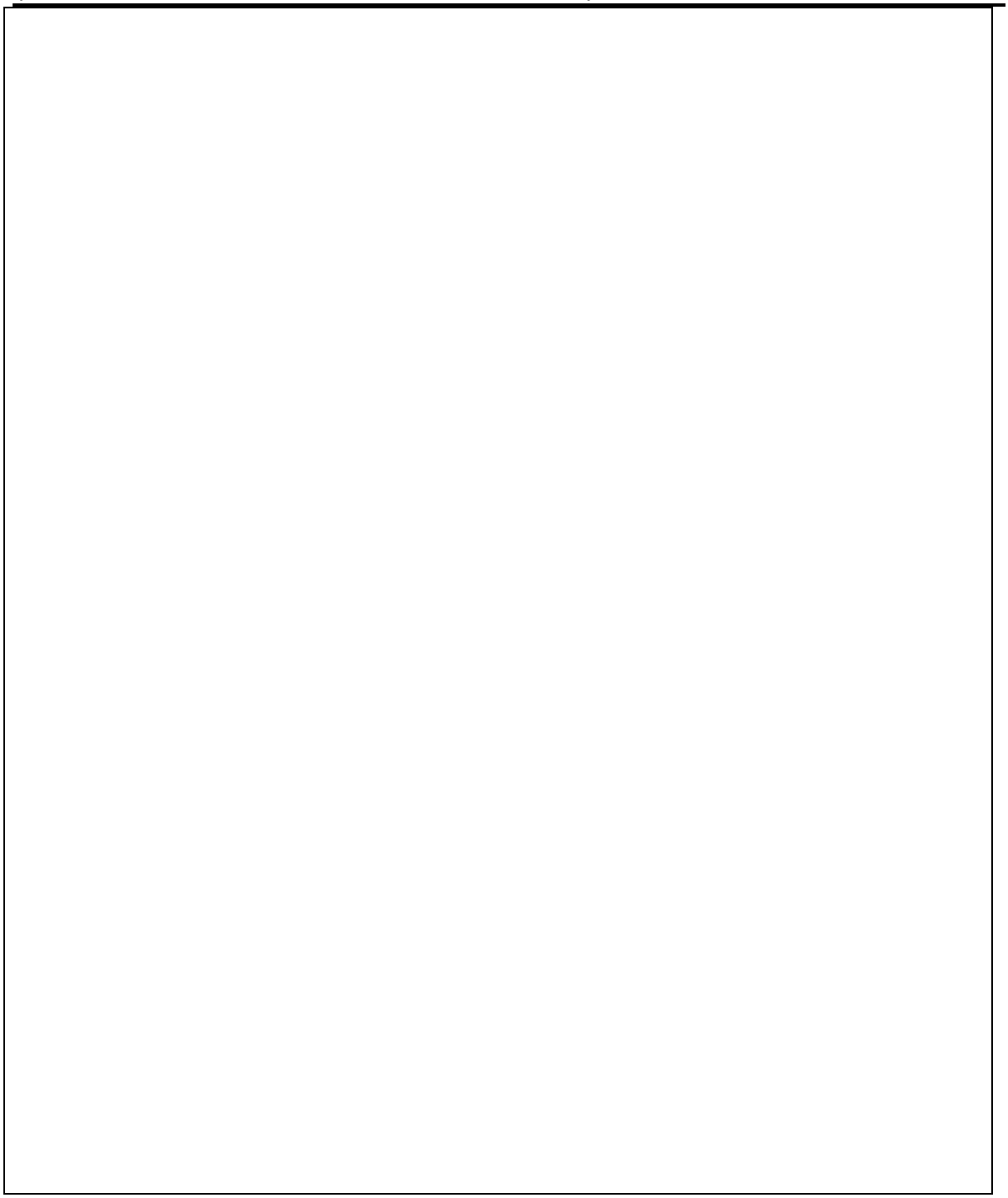
an empirical study

Sketch Maps

Please answer the following questions as accurately as possible. Follow the instructions for every question type. For the multiple choice questions please tick only one answer in the a ppropriate boxes. All information given will be strictly confidential. Thank you again for your feedback.

Sketch Maps

1: The House: Please draw the plan of your house. It is the place that you live now but it is not your dream home. The sketch is only a rough plan that you may want to use for the future.
(Please name each room and show all the floors)



2: A New Vernacular House: Now please draw your house plan again, however, if you had the opportunity to include traditional vernacular elements how would you redesign your house. (If you feel you do not want to use any traditional elements do not respond to this question).
(Please name each room and show all the floors if needed.)

Remaking the Kuwaiti House

an empirical study

Photo Elicitation

Please answer the following questions as accurately as possible. Follow the instructions for every question type. For the multiple choice questions please tick only one answer in the a ppropriate boxes. All information given will be strictly confidential. Thank you again for your feedback.

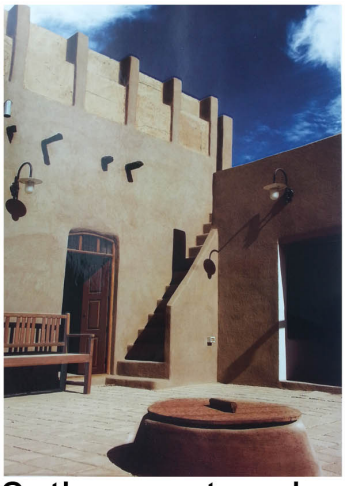
Photo Elicitation

1: In a short paragraph describe the following picture. Also express what meaning it holds for you and how does it make you feel.
(Please write your answer below)

2: From the pictures of Kuwait's traditional vernacular elements below please answer the following questions:

(Please write your answer below)

1. the liwan



2. the courtyard

3. the door

4. the well

5. the bagdir

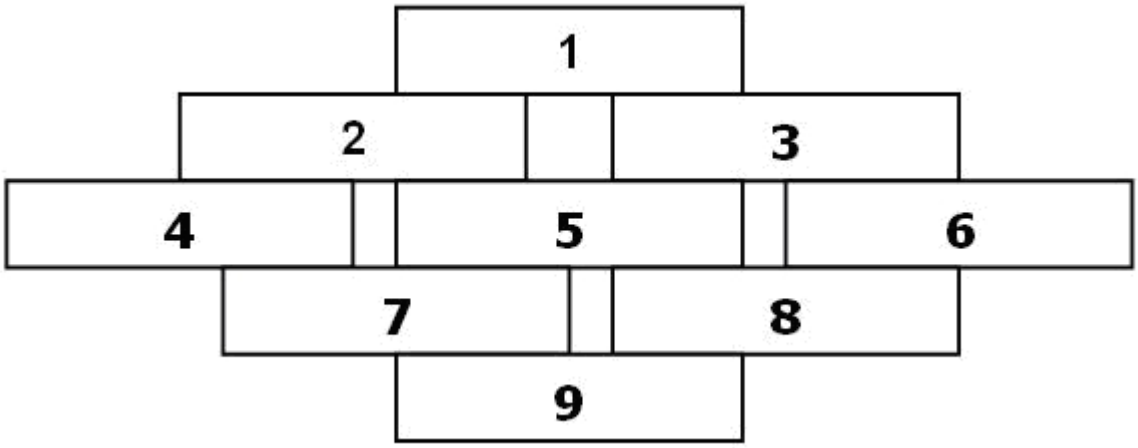
6. the merzam

7. the bercha

8. adobe or mud brick

2. For the following questions please break up into small groups and after a brief discussion rank the elements individually in a diamond 9.

2.1: What do you think is the most culturally expressive element? Please rank and explain why?

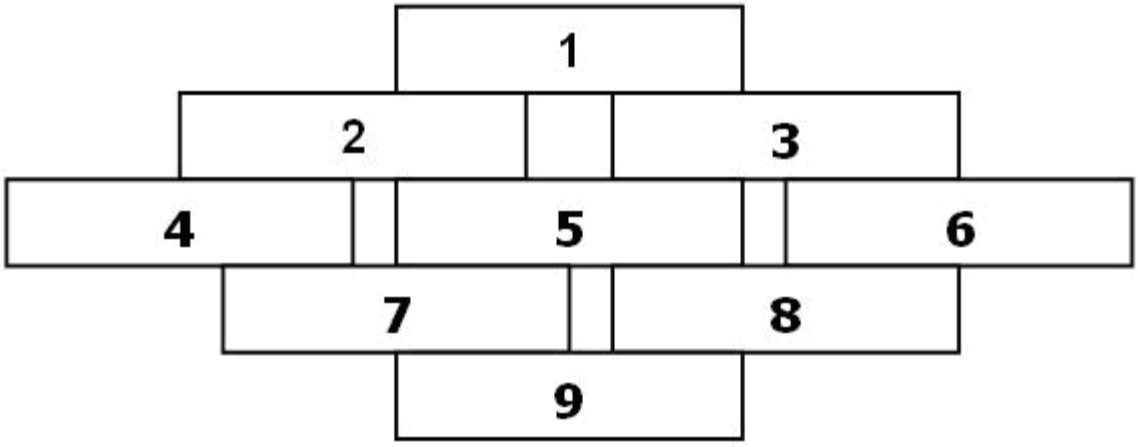


_____

_____

_____

2.2: What is the most environmentally sustainable element? Please rank and explain why?

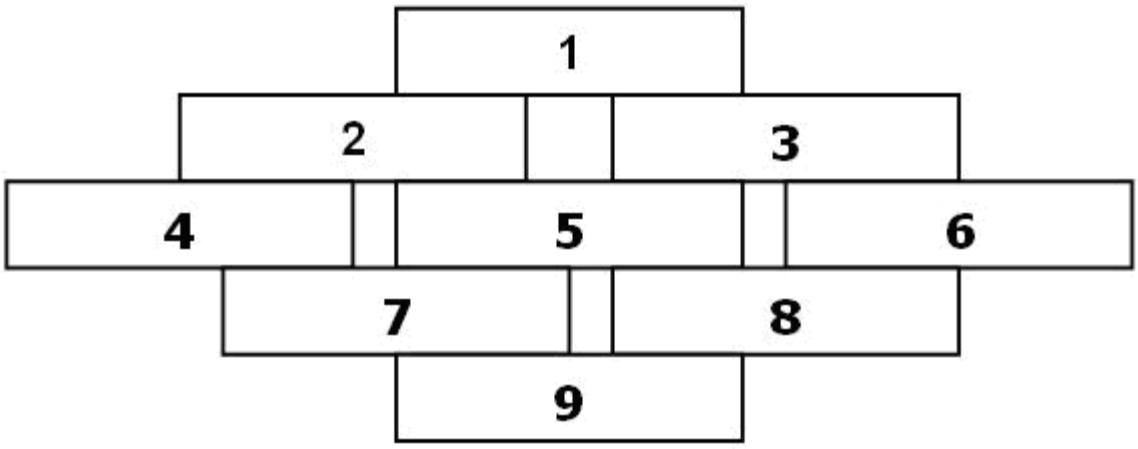


_____

_____

_____

2.3: What elements would you use in your house design (if any)? Please rank and explain why?



3: The below pictures are from current houses in Kuwait. Please select the house or style that expresses what you think a house in Kuwait should be today. Also describe why you choose that house or style. If your idea of a Kuwaiti house is not represented below please indicate and describe it.

(Please select and write your answer below)

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

_____

_____

_____

_____

_____

Thank you again for your time and feedback!

Remaking the Kuwaiti House

a n e m p i r i c a l s t u d y

Group interviews

The following is a guide that outlines the main structure of the group interview. Please follow the facilitator's instructions. All information given will be strictly confidential and used only for this study. Thank you again for your time and feedback.

Group Interview

1: Main Questions

1. Which of the following factors do you aspire to have significance in your house: Culture, Identity, Modernity, Environmental Sustainability or any other? And Why?

2. Do you think there are problems facing the contemporary Kuwaiti house?

3. What do you think are the solutions to the current problems facing the contemporary Kuwaiti House?

4. Do you think that traditional vernacular elements should be used in the contemporary Kuwaiti house? If so what are the most significant elements?

5. Do you think there are any barriers to drawing on traditional vernacular elements in contemporary house design?

6. What do you think can be done to re-introduce traditional vernacular elements in the contemporary Kuwaiti house?

2: Conclusion

1. Are there any specific directions/consensus?

2. Do you have any comments, concerns and questions?

3. Thank you for your time and participation and have a nice day!

Remaking the Kuwaiti House

a n e m p i r i c a l s t u d y

PhD Follow Up Study Version 1.6
Researcher: Yousef A.M Al Haroun
Date: June-July 2014

Research Information Sheet

What is the project?

The study is an empirical investigation that intends to develop an understanding of the many issues surrounding the transformation of the Kuwaiti House. Specifically, the research aims to use Kuwait's traditional vernacular elements as a vehicle for exploring the broader socio-cultural,economic and political issues surrounding the move towards modernity and away from the vernacular and sustainability. From this point the study intends to find direction for the revival of the once sustainable Kuwaiti house.

Who is it for?

My name is Yousef Al Haroun. I am a Kuwaiti architect and researcher seeking to understand the Kuwaiti built environment. I am currently a PhD student at the University of Sheffield in the U.K.. The findings of the research will hopefully be used as part of my PhD thesis.

Whats your role?

The research is an investigation of how people understand Kuwait's traditional vernacular elements such as the courtyard or bajdir(wind catch). It is the hope that by understanding their disappearance it may inform ways to make the contemporary Kuwaiti House more cultural expressive and environmentally sustainable.Therefore people, the public that means "you" are important in our understanding of this complex relationship. Your responses will hopefully provide valuable data. A tool for designers to use to help reshape the future Kuwaiti house and it is the hope to elevate the quality of life for its people.

How its done?

You will be asked to complete a questionnaire with a short sketch map activity. All participants will be anonymous and their information will be stored securely . It is intended that the data used in this study be presented in a PhD study at the University of Sheffield and will be available through the University's Library

Thank you for your invaluable time and feedback.

Remaking the Kuwaiti House

a n e m p i r i c a l s t u d y

PhD study consent form

Title of research project: Remaking the Kuwaiti House
Name of Researcher : Yousef A.M. Al Haroun

1. I confirm that I have read and understand the information sheet/letter explaining the above research project and I have had the opportunity to ask questions about the project.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline.

3. I understand that my responses will be kept strictly confidential.I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.

4. I agree for the data collected from me to be used in future research

5. I agree to take part in the above research project.

Name of Participant (or legal representative)	Date	Signature
Name of Researcher	Date	Signature

Remaking the Kuwaiti House
an empirical study

Remaking the Kuwaiti House Follow up Study Version 1.6

Personal Information

1: Age *(Please write your age in years as of June.1.2014* below)

2: Gender

1 ☐ Male
2 ☐ Female

3: Educational level

1 ☐ University M.A/PhD
2 ☐ University B.A
3 ☐ High School
4 ☐ Middle School
5 ☐ Primary School
6 ☐ Trade Training
7 ☐ Home/Self Education
8 ☐ No Education

5: Occupation (*Please write your current place of un/employment)*

6: Country of origin

1 ☐ Kuwait
2 ☐ Other, specify

7: Where do you live today?

1 ☐ Kuwait City, if so write area
2 ☐ Other, specify what city

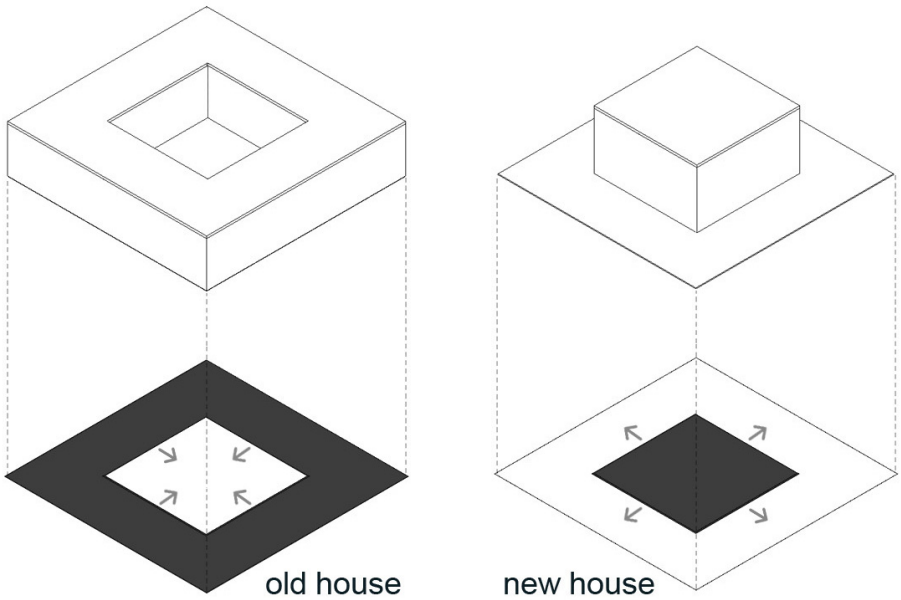
8: What type of house hold you live in ?

1 ☐ House
2 ☐ Apt. in a house
3 ☐ Apt. in an apt. building
4 ☐ Other - specify type

9: How long have you lived there?

1 ☐ Under (1) year
2 ☐ From (1-5) years
3 ☐ (6-10) years
4 ☐ Over (10) years

Questionnaire



1: Which do you think is the most appropriate house type for Kuwait?
(Please tick the appropriate box)

1 ☐ Traditional courtyard house
2 ☐ Modern villa
3 ☐ Other

2: Do you associate the courtyard with Kuwait's traditional house?
(Please tick the appropriate box)

1 ☐ Yes
2 ☐ No

3: Do associations (if any) with the traditional courtyard house make you less likely or more likely to use the courtyard in your current or future house?
(Please tick the appropriate box)

1 ☐ Less likely
2 ☐ More likely
3 ☐ None

4: Assuming there were no practical or financial barriers, would you like to have a courtyard in your current or future house?
(Please tick the appropriate box)

1 ☐ Yes
2 ☐ No

5: If yes what is your primary motive for adding a courtyard?
(Please tick the appropriate box)

1 ☐ Expresses culture/identity
2 ☐ Environmental sustainability
3 ☐ Environmental psychology
4 ☐ Aesthetic qualities
5 ☐ Other
6 ☐ None

6. Please tick the most appealing and valued qualities that you associate with the courtyard.
(Please tick the appropriate box)

1 ☐ Privacy
2 ☐ Identity- expression of the self
3 ☐ Social space-stronger family bonds
4 ☐ More natural sunlight in the house
5 ☐ Natural ventilation and cooling
6 ☐ More, trees, shrubs, plants, etc.
7 ☐ Security, protection from the street
8 ☐ Spaciousness, open to the sky
9 ☐ Tranquility, calm, quite and relaxing
10 ☐ Its form and shape
11 ☐ Other please specify:

7: To what extent would you agree or not with the following issues that may prevent you from adding a courtyard in your current or future house?
(Please tick the appropriate box)

	strongly agree	agree	neutral	do not agree	strongly do not agree
Increasing user requirements	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Having a small plot of land	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
It reminds you of traditional houses	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Cultural changes from Kuwait's transformation	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Lack of government regulation to promote courtyards	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
High real-estate prices	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Scarcity of residential Land	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Kuwait's housing crisis	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Additions: If you have any other factors please write them below and state the level of their importance:

---

8. If you have any further comments about any aspect of this topic, please add them here:

Sketch Map

1: The Courtyard: Please draw what a courtyard means for you. It is an expression of your understanding of what is a courtyard.
(Please label or name items in your sketch for clarification)

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21st June 2013

Mr Yousef Al Haroun
School of Architecture

Dear *Yousef*

PROJECT TITLE: Remaking the Kuwaiti House

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 21st June 2013 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following document that you submitted for ethics review:

- University research ethics application form (*5.6.2013)*
- PhD Study Workshop Booklet (version 1.4 - including information and consent form)

However, the ethics reviewers have suggested that you consider the following amendments, which you can choose to follow or to ignore:

(i) In the booklet, relating to the quantitative section, Q 11 and Q 12: these are category rating scales, and have 5 response options with the middle labelled neutral. It is suggested that these be changed to 4 point scales to avoid response contraction (see EC Poulton).

(ii) Two groups of 15 test participants are proposed: why is this number targeted? It is suggested that the sample should be larger in order to produce robust data (especially with regard to the quantitative data).

If during the course of the project you need to deviate from the above-approved document please inform me. Written approval will be required for significant deviations from or significant changes to the above-approved document. Please also inform me should you decide to terminate the project prematurely.

Yours sincerely

Stephen Walker
Ethics Reviewer on behalf of Rosie Parnell

Appendix B

1. Initial Workshops - Demographic Analysis

2. Follow Up Study Questionnaire - Demograhic Analysis

3. Initial Workshops/Follow Up Study - Further Group Statistics for Likert Questions and Diamond 9

Demographic Analysis

This section presents the statistical sample distribution with regard to the variables such as, age, gender, educational level, area of residence, and house type. The first part presents the general information analysis from the initial workshops while the second presents the data from the follow up questionnaire.

Initial Workshops - Demographic Analysis

Age

Age Group	Homeowners		Designers		Total	
	Frequency	%	Frequency	%	Frequency	%
Below 35	3	25	10	71.4	**13**	**50**
Above 35	9	75	4	28.6	**13**	**50**
Total	12	100	14	100	**26**	**100**

Table A.1: Initial Workshops – Age

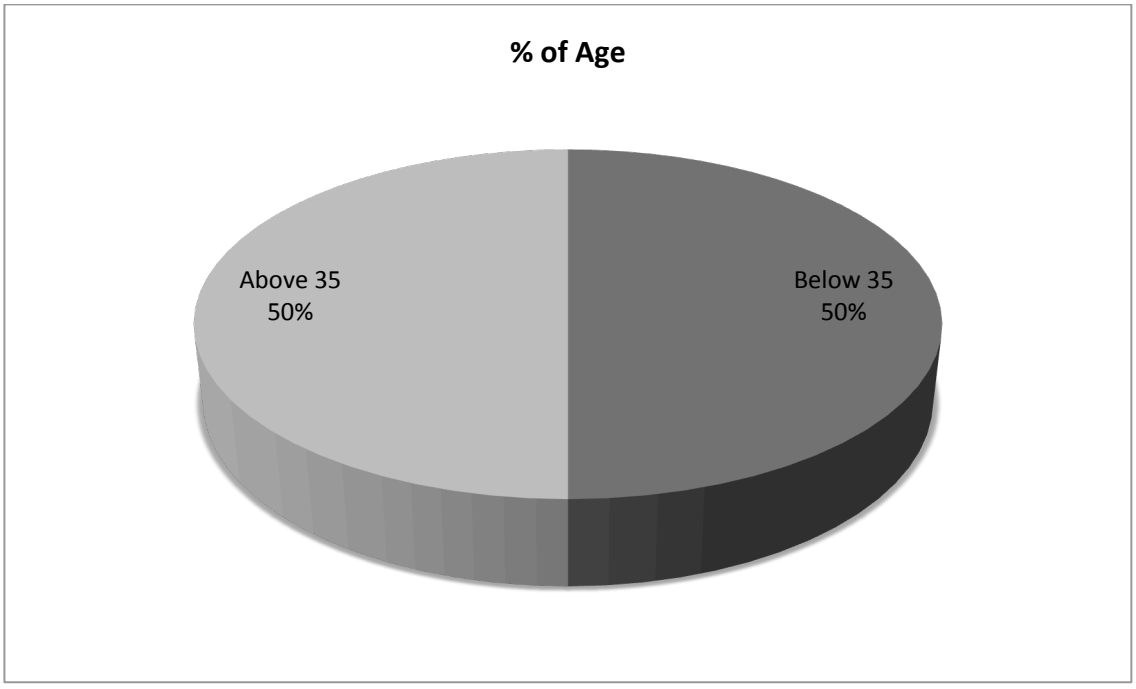


Figure A.1: Initial Workshops – % of Age

Gender

Gender	Homeowners		Designers		Total	
	Frequency	%	Frequency	%	Frequency	%
Male	7	50	11	68.7	**18**	**60**
Female	7	50	5	31.3	**12**	**40**
Total	14	100	16	100	**30**	**100**

Table A.2: Initial Workshops – Gender

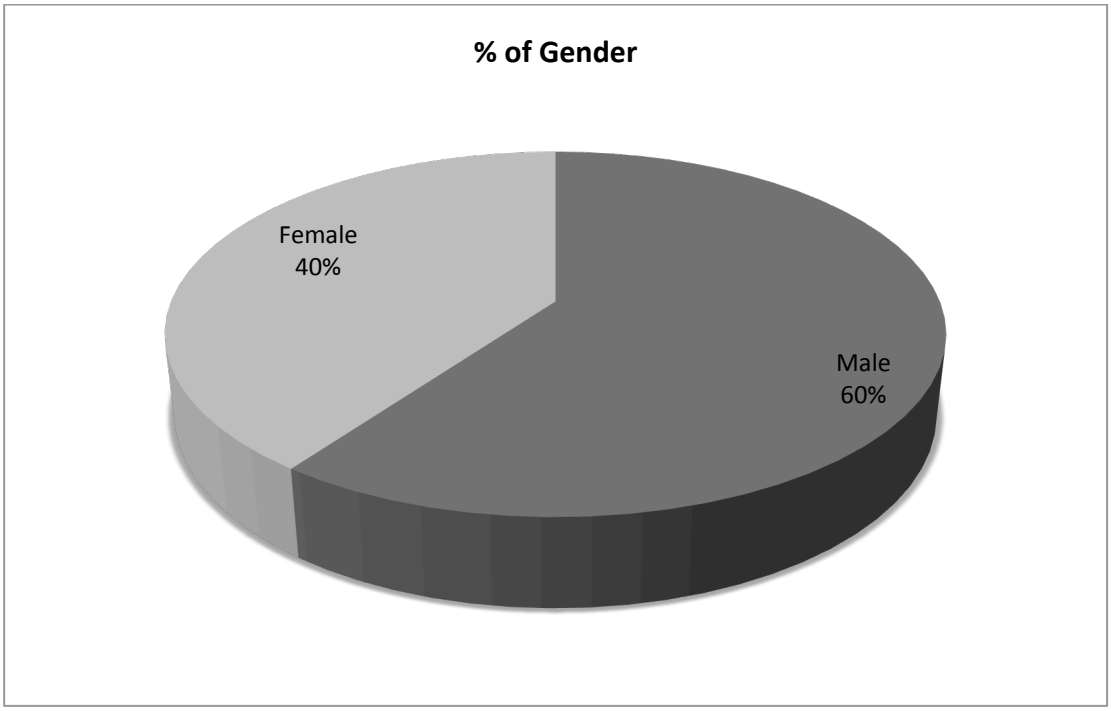


Figure A.2: Initial Workshops – % of Gender

Educational Level

Education	Homeowners		Designers		Total	
	Frequency	%	Frequency	%	Frequency	%
University M.A/PhD	1	7	4	25	**5**	**16.7**
University B.A	13	93	12	75	**25**	**83.3**
High School	0	0	0	0	**0**	**0**
Trade Training	0	0	0	0	**0**	**0**
Home/Self Education	0	0	0	0	**0**	**0**
Total	14	100	16	100	**30**	**100**

Table A.3: Initial Workshops – Educational Level

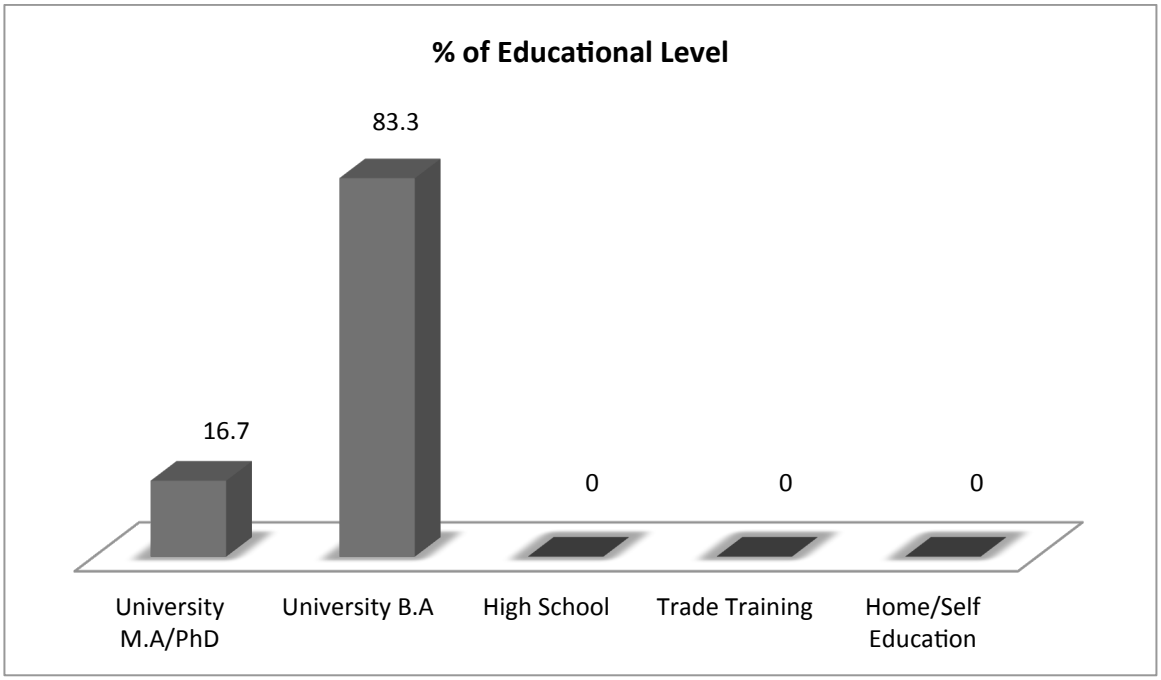


Figure A.3: Initial Workshops – % of Educational Level

Area of Residence

Area	Homeowners		Designers		Total	
	Frequency	%	Frequency	%	Frequency	%
Kuwait City/Suburbs	14	100	15	93.7	**29**	**96.6**
Other	0	0	1	6.3	**1**	**3.4**
Total	14	100	16	100	**30**	**100**

Table A.4: Initial Workshops – Area of Residence

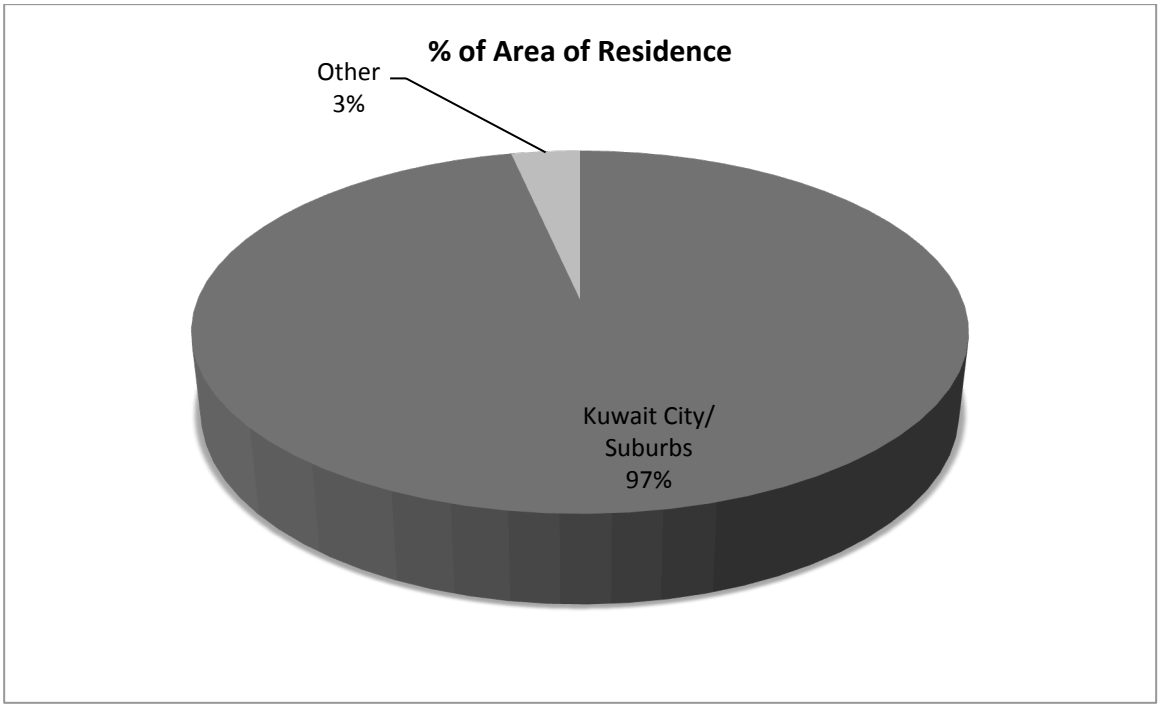


Figure A.4: Initial Workshops – % of Area of Residence

Type of House

Type	Homeowners		Designers		Total	
	Frequency	%	Frequency	%	Frequency	%
House	8	61.5	13	81.2	**21**	**72.4**
Apt. in House	5	38.5	3	18.8	**8**	**27.6**
Apt. in apt. building	0	0	0	0	**0**	**0**
Total	13	100	16	100	**29**	**100**

Table A.5: Initial Workshops – Type of House

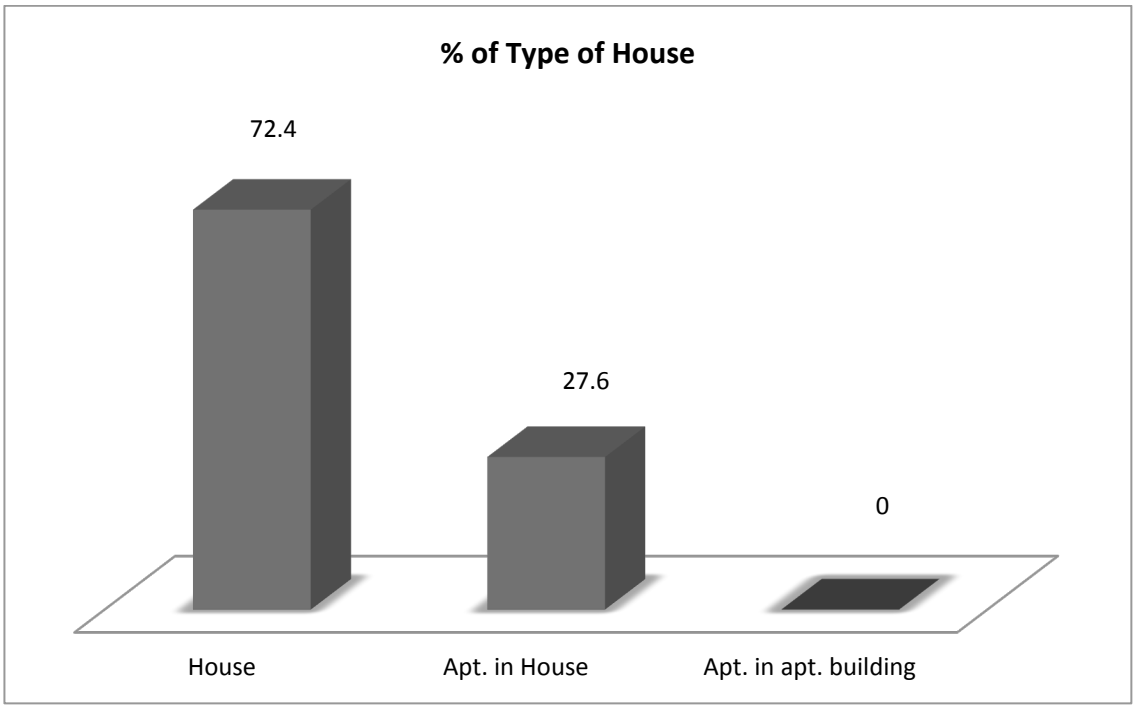


Figure A.5: Initial Workshops – % of Type of House

Follow Up Study Questionnaire - Demographic Analysis

Age

Age Group	Frequency	%
Below 35	116	67.1
Above 35	57	32.9
Total	173	100.0

Table A.6: Follow Up Study Questionaire – Age

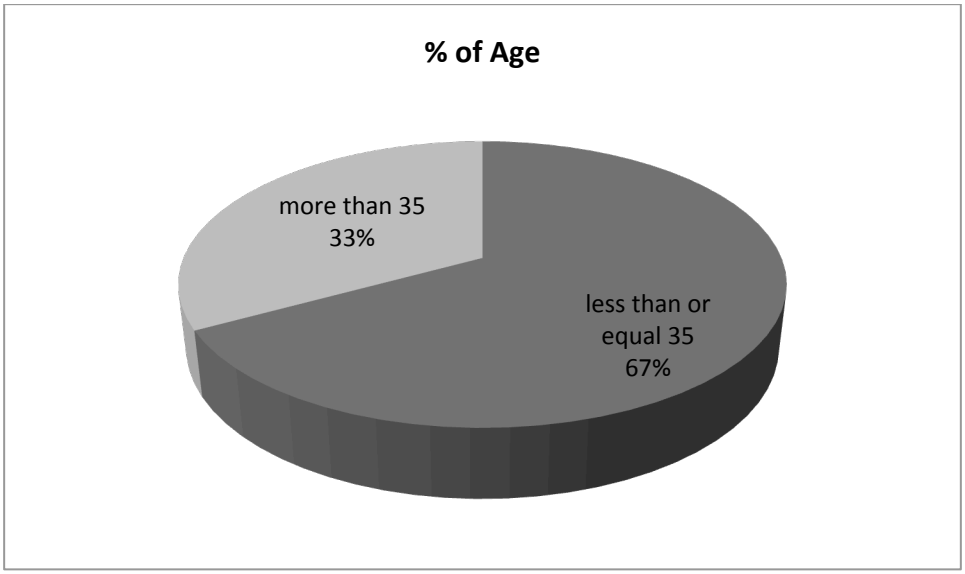


Figure A.6: Follow Up Study Questionaire – Age

Gender		
Gender Group	**Frequency**	**%**
Male	129	49.4
Female	132	50.6
Total	261	100.0

Table A.7: Follow Up Study Questionaire – Gender

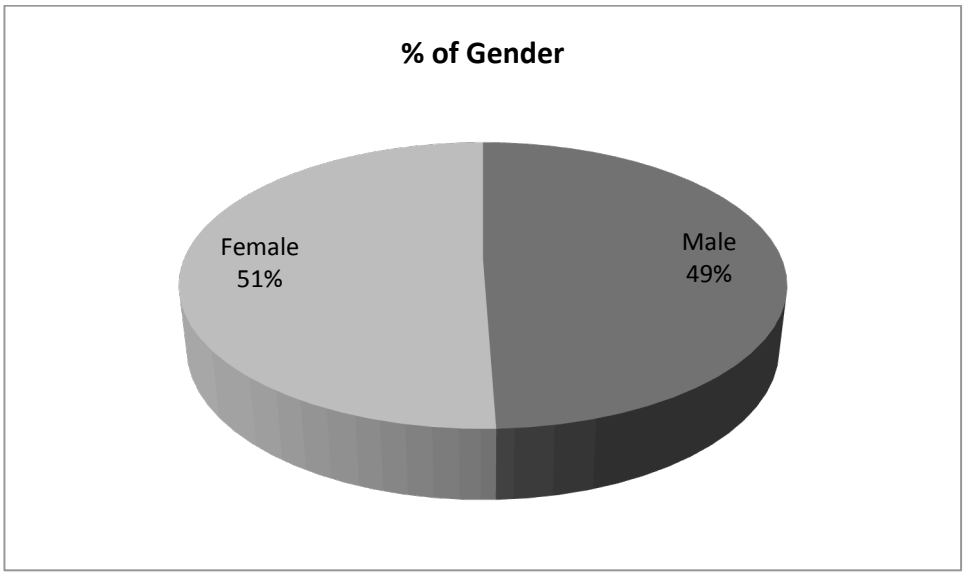


Figure A.7: Follow Up Study Questionaire – Gender

Educational level

Education Level	Frequency	%
University M.A/PhD	52	21.1
University B.A	186	75.6
High School	4	1.6
Trade Training	2	.8
Home/Self Education	2	.8
Total	246	100.0

Table A.8: Follow Up Study Questionaire – Education Level

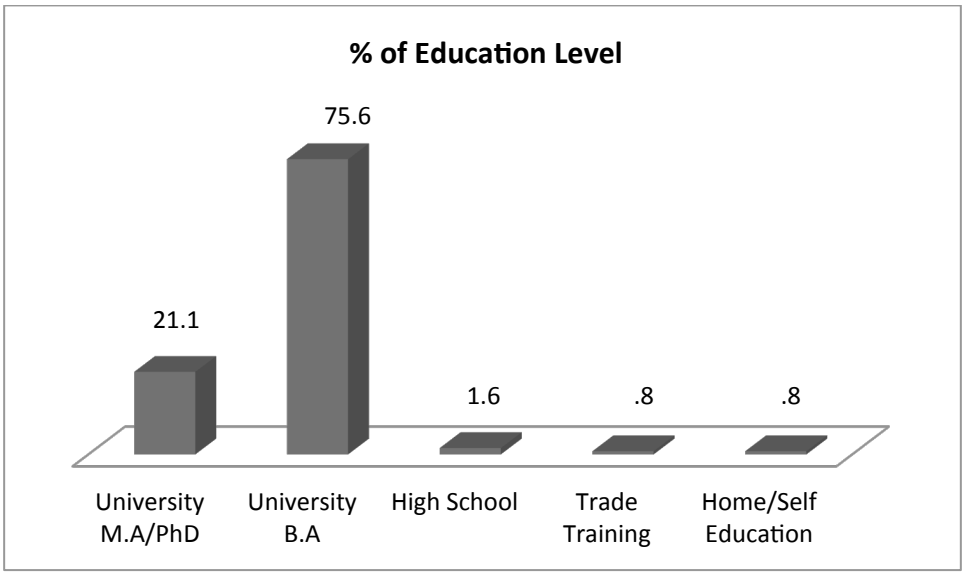


Figure A.8: Follow Up Study Questionaire – % of Educational Level

Area of Residence

Area	Frequency	%
Kuwait City/Suburbs	144	72.7
Other	54	27.3
Total	198	100.0

Table A.9: Follow Up Study Questionaire – Area of Residence

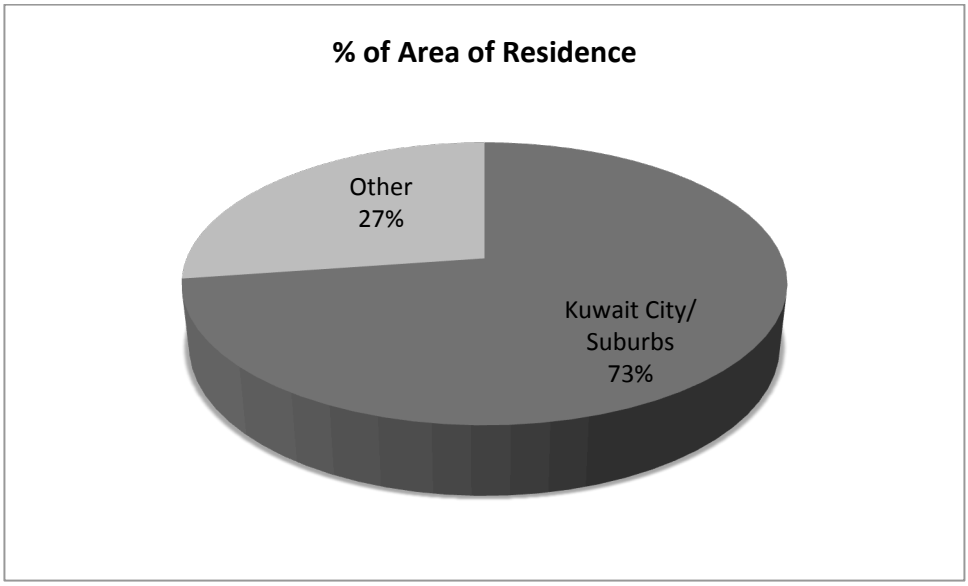


Figure A.9: Follow Up Study Questionaire – % of Area of Residence

Type of House

Type of House	Frequency	%
House	203	78.1
Apt. in a house	49	18.8
Apt. in an apt. building	8	3.1
Total	260	100.0

Table A.10: Follow Up Study Questionaire – Type of House

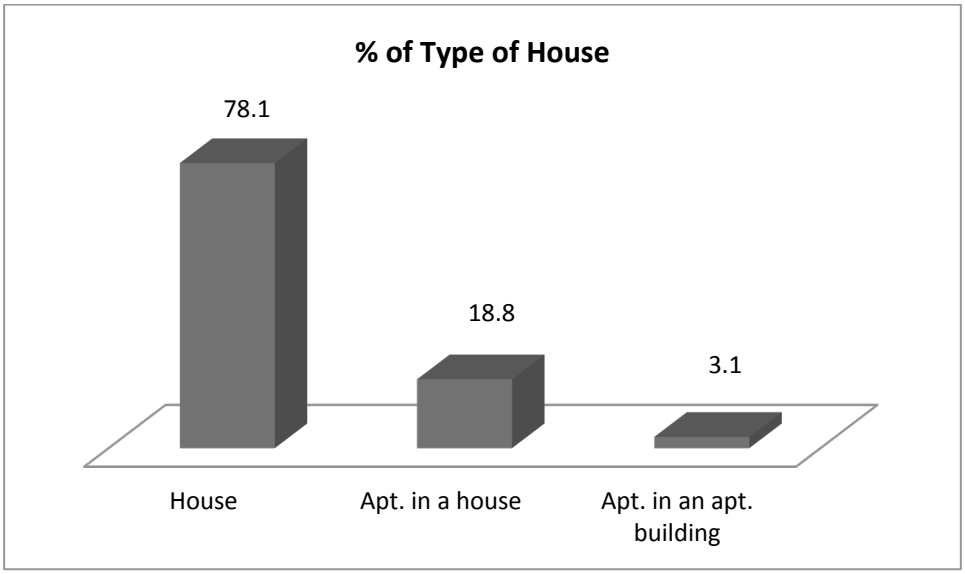


Figure A.10: Follow Up Study Questionaire – % of Type of House

Initial Workshops - Questionnaire - Further Group Statistics: Likert Question 10

Designers and Homeowners

Group Statistics between Designers and Homeowners-Question 10

	Respondent	N	Mean	Std. Deviation	Std. Error Mean
Courtyard	Designer	17	1.47	.800	.194
	Homeowner	14	1.79	1.311	.350
Khokha	Designer	17	3.18	1.131	.274
	Homeowner	14	3.29	1.490	.398
Dahrees	Designer	17	2.71	.849	.206
	Homeowner	14	3.43	1.158	.309
Liwan	Designer	17	2.00	.866	.210
	Homeowner	14	2.36	1.082	.289
Ferya	Designer	17	3.59	1.004	.243
	Homeowner	14	3.64	.842	.225
Jelleb	Designer	17	4.18	1.185	.287
	Homeowner	14	4.00	1.359	.363
Bircha	Designer	17	3.71	1.312	.318
	Homeowner	14	3.50	1.653	.442
Diwaniya	Designer	17	1.82	1.185	.287
	Homeowner	14	1.79	.893	.239
Bagdir	Designer	17	3.41	1.064	.258
	Homeowner	14	3.86	1.099	.294
Merzam	Designer	17	2.71	1.448	.351
	Homeowner	14	2.57	1.453	.388
Mud Brick	Designer	17	3.41	1.372	.333
	Homeowner	14	3.71	1.490	.398

Table A.11: Group Statistics between Designers and Homeowners-Question 10

Genders

Group Statistics between Genders- Question 10

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Courtyard	Male	19	1.58	.838	.192
	Female	12	1.67	1.371	.396
Khokha	Male	19	3.26	1.240	.285
	Female	12	3.17	1.403	.405
Dahrees	Male	19	2.89	.875	.201
	Female	12	3.25	1.288	.372
Liwan	Male	19	2.26	.933	.214
	Female	12	2.00	1.044	.302
Ferya	Male	19	3.47	.964	.221
	Female	12	3.83	.835	.241
Jelleb	Male	19	4.05	1.224	.281
	Female	12	4.17	1.337	.386
Bircha	Male	19	3.47	1.264	.290
	Female	12	3.83	1.749	.505
Diwaniya	Male	19	1.74	1.098	.252
	Female	12	1.92	.996	.288
Bagdir	Male	19	3.47	.964	.221
	Female	12	3.83	1.267	.366
Merzam	Male	19	2.95	1.433	.329
	Female	12	2.17	1.337	.386
Mud Brick	Male	19	3.37	1.461	.335
	Female	12	3.83	1.337	.386

Table A.12: Group Statistics between Genders-Question 10

Initial Workshops – Questionnaire - Further Group Statistics: Likert Question 11

Designers and Homeowners

Group Statistics between Designers and Homeowners-Question 11

	Respondent	N	Mean	Std. Deviation	Std. Error Mean
Cultural	Designer	17	2.12	.781	.189
	Homeowner	14	1.93	.997	.267
Environment	Designer	17	1.65	.862	.209
	Homeowner	14	1.93	1.207	.322
Requirements	Designer	17	1.18	.393	.095
	Homeowner	14	1.57	.514	.137
Privacy	Designer	17	1.53	.624	.151
	Homeowner	14	1.29	.469	.125
Orientation	Designer	17	1.41	.618	.150
	Homeowner	14	2.07	1.072	.286
Circulation	Designer	17	1.24	.562	.136
	Homeowner	14	1.79	.699	.187
Façade	Designer	17	1.71	.985	.239
	Homeowner	14	1.64	.745	.199
Interior	Designer	17	1.53	.717	.174
	Homeowner	14	1.50	.650	.174
Greenery	Designer	17	1.47	.624	.151
	Homeowner	14	1.57	.646	.173
Budget	Designer	17	1.76	.903	.219
	Homeowner	14	1.57	.646	.173

Table A.13: Group Statistics between Designers and Homeowners-Question 11

Genders

Group Statistics between Genders-Question 11

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Cultural	Male	19	2.05	.911	.209
	Female	12	2.00	.853	.246
Environment	Male	19	1.89	1.197	.275
	Female	12	1.58	.669	.193
Requirements	Male	19	1.42	.507	.116
	Female	12	1.25	.452	.131
Privacy	Male	19	1.47	.612	.140
	Female	12	1.33	.492	.142
Orientation	Male	19	1.74	.872	.200
	Female	12	1.67	.985	.284
Circulation	Male	19	1.58	.692	.159
	Female	12	1.33	.651	.188
Façade	Male	19	1.63	.831	.191
	Female	12	1.75	.965	.279
Interior	Male	19	1.53	.697	.160
	Female	12	1.50	.674	.195
Greenery	Male	19	1.63	.684	.157
	Female	12	1.33	.492	.142
Budget	Male	19	1.53	.772	.177
	Female	12	1.92	.793	.229

Table A.14: Group Statistics between Genders-Question 11

Initial Workshops – Questionnaire - Further Group Statistics: Diamond 9 Questions

Question 2.1

Designers and Homeowners

Group Statistics between Designers and Homeowners-Question2.1

	Status	N	Mean	Std. Deviation	Std. Error Mean
Liwan	Homeowner	13	2.00	.816	.226
	Designer	15	2.07	.594	.153
Courtyard	Homeowner	13	1.77	.832	.231
	Designer	17	1.18	.529	.128
Door	Homeowner	10	2.40	.843	.267
	Designer	14	2.57	.646	.173
Jelleb	Homeowner	12	3.08	.793	.229
	Designer	13	3.62	.506	.140
Bagdir	Homeowner	13	2.77	1.166	.323
	Designer	13	3.15	.555	.154
Merzam	Homeowner	11	3.00	.632	.191
	Designer	14	2.71	.611	.163
Bercha	Homeowner	11	3.09	.831	.251
	Designer	13	3.38	.650	.180
Mud Brick	Homeowner	12	3.25	.866	.250
	Designer	13	3.15	.987	.274

Table A.15: Group Statistics between Designer and Homeowner-Question 2.1

Genders

Group Statistics between genders-Question 2.1

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Liwan	Male	15	2.07	.704	.182
	Female	11	2.00	.775	.234
Courtyard	Male	17	1.53	.800	.194
	Female	11	1.36	.674	.203
Door	Male	15	2.40	.737	.190
	Female	8	2.75	.707	.250
Jelleb	Male	14	3.21	.699	.187
	Female	10	3.60	.699	.221
Bagdir	Male	14	2.93	.997	.267
	Female	11	2.91	.831	.251
Merzam	Male	14	3.00	.679	.182
	Female	9	2.67	.500	.167
Bercha	Male	13	3.54	.519	.144
	Female	10	2.90	.876	.277
Mud Brick	Male	14	3.14	.949	.254
	Female	9	3.22	.972	.324

Table A.16: Group Statistics between Genders-Question 2.1

Question 2.2

Designers and Homeowners

Group Statistics between Designers and Homeowners-Question 2.2

	Status	N	Mean	Std. Deviation	Std. Error Mean
Liwan	Homeowner	9	3.00	.866	.289
	Designer	12	2.42	.793	.229
Courtyard	Homeowner	9	2.33	1.118	.373
	Designer	12	2.17	.835	.241
Door	Homeowner	7	3.43	.787	.297
	Designer	10	4.00	.000	.000
Jelleb	Homeowner	8	2.50	.756	.267
	Designer	11	2.82	.751	.226
Bagdir	Homeowner	10	2.20	1.033	.327
	Designer	12	2.08	.996	.288
Merzam	Homeowner	10	2.60	.843	.267
	Designer	11	3.55	.522	.157
Bercha	Homeowner	10	2.80	.919	.291
	Designer	11	2.36	.924	.279
Mud Brick	Homeowner	10	1.80	.919	.291
	Designer	16	2.00	.966	.242

Table A.17: Group Statistics between Designer and Homeowner-Question 2.2

Genders

Group Statistics between Genders-Question 2.2

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Liwan	Male	14	2.64	.842	.225
	Female	5	3.00	1.000	.447
Courtyard	Male	14	2.43	.938	.251
	Female	5	2.00	1.000	.447
Door	Male	11	3.64	.674	.203
	Female	4	4.00	.000	.000
Jelleb	Male	12	2.58	.793	.229
	Female	5	2.60	.548	.245
Bagdir	Male	14	2.07	1.141	.305
	Female	6	2.00	.632	.258
Merzam	Male	13	3.23	.725	.201
	Female	6	2.67	1.033	.422
Bercha	Male	12	2.83	.718	.207
	Female	7	2.14	1.215	.459
Mud Brick	Male	16	1.94	.929	.232
	Female	8	1.88	.991	.350

Table A.18: Group Statistics between Genders-Question 2.2

Question 2.3
Designers and Homeowners

Group Statistics between Designers and Homeowners-Question 2.3

	Status	N	Mean	Std. Deviation	Std. Error Mean
Liwan	Homeowner	11	1.82	.405	.122
	Designer	12	1.83	.389	.112
Courtyard	Homeowner	10	1.60	.699	.221
	Designer	16	1.25	.577	.144
Door	Homeowner	9	2.78	.833	.278
	Designer	8	2.38	.744	.263
Jelleb	Homeowner	7	3.00	1.000	.378
	Designer	9	3.67	.707	.236
Bagdir	Homeowner	7	2.43	.976	.369
	Designer	8	2.75	.463	.164
Merzam	Homeowner	8	3.00	.756	.267
	Designer	9	2.89	.601	.200
Bercha	Homeowner	7	2.86	.690	.261
	Designer	8	3.13	.835	.295
Mud Brick	Homeowner	6	2.83	.983	.401
	Designer	8	3.38	.518	.183

Table A.19: Group Statistics between Designer and Homeowner-Question 2.3

Genders

Group Statistics between Genders-Question 2.3

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Liwan	Male	13	1.69	.480	.133
	Female	8	2.00	.000	.000
Courtyard	Male	14	1.71	.726	.194
	Female	10	1.00	.000	.000
Door	Male	10	2.30	.949	.300
	Female	7	3.00	.000	.000
Jelleb	Male	11	3.18	.982	.296
	Female	5	3.80	.447	.200
Bagdir	Male	9	2.44	.726	.242
	Female	5	2.80	.837	.374
Merzam	Male	10	3.10	.568	.180
	Female	6	2.83	.753	.307
Bercha	Male	8	3.38	.744	.263
	Female	6	2.50	.548	.224
Mud Brick	Male	9	3.00	.866	.289
	Female	5	3.40	.548	.245

Table A.20: Group Statistics between Genders-Question 2.3

Follow Up Study - Questionnaire - Further Group Statistics: Likert Question 7

Potential Homeowners and Homeowners

Group Statistics-Potential Homeowners and Homeowners-Question 7

	House Hold	N	Mean	Std. Deviation	Std. Error Mean
Increasing user requirements	Potential	112	2.18	.988	.093
	Owner	56	2.04	1.095	.146
Having a small plot of land	Potential	115	1.86	.990	.092
	Owner	57	1.70	1.052	.139
It reminds you of traditional house	Potential	114	3.36	1.256	.118
	Owner	57	3.32	1.466	.194
Cultural changes from Kuwait's transformation	Potential	113	2.90	1.118	.105
	Owner	57	2.89	1.372	.182
Lack of government regulation to promote courtyards	Potential	112	2.53	1.057	.100
	Owner	56	2.77	1.279	.171
High real-estate prices	Potential	113	1.65	.886	.083
	Owner	57	1.42	.905	.120
Scarcity of residential land	Potential	110	1.99	1.000	.095
	Owner	56	1.79	1.004	.134
Kuwait's housing crisis	Potential	113	1.85	1.028	.097
	Owner	57	1.68	1.136	.151

Table A.21: Group statistics between potential homeowners and homeowners Question 7.

Gender

Group Statistics between Genders Question 7

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Increasing user requirements	Male	125	2.18	1.055	.094
	Female	128	2.09	.948	.084
Having a small plot of land	Male	128	1.91	1.111	.098
	Female	130	1.81	.981	.086
It reminds you of traditional house	Male	127	3.25	1.333	.118
	Female	130	3.25	1.349	.118
Cultural changes from Kuwait's transformation	Male	127	2.72	1.206	.107
	Female	128	2.97	1.183	.105
Lack of government regulation to promote courtyards	Male	125	2.54	1.188	.106
	Female	124	2.55	1.122	.101
High real-estate prices	Male	128	1.52	.878	.078
	Female	128	1.63	.896	.079
Scarcity of residential land	Male	126	1.89	1.006	.090
	Female	123	2.01	.979	.088
Kuwait's housing crisis	Male	127	1.91	1.094	.097
	Female	127	1.86	1.006	.089

Table A.22: Group statistics between genders Question 7.

Appendix C

1. Initial Workshops Cognitive Maps

2. Follow-Up Study Cognitive Maps

*Note: Each page consists of two sketches. They have been formatted to fit in half an A4 page and converted to black and white.

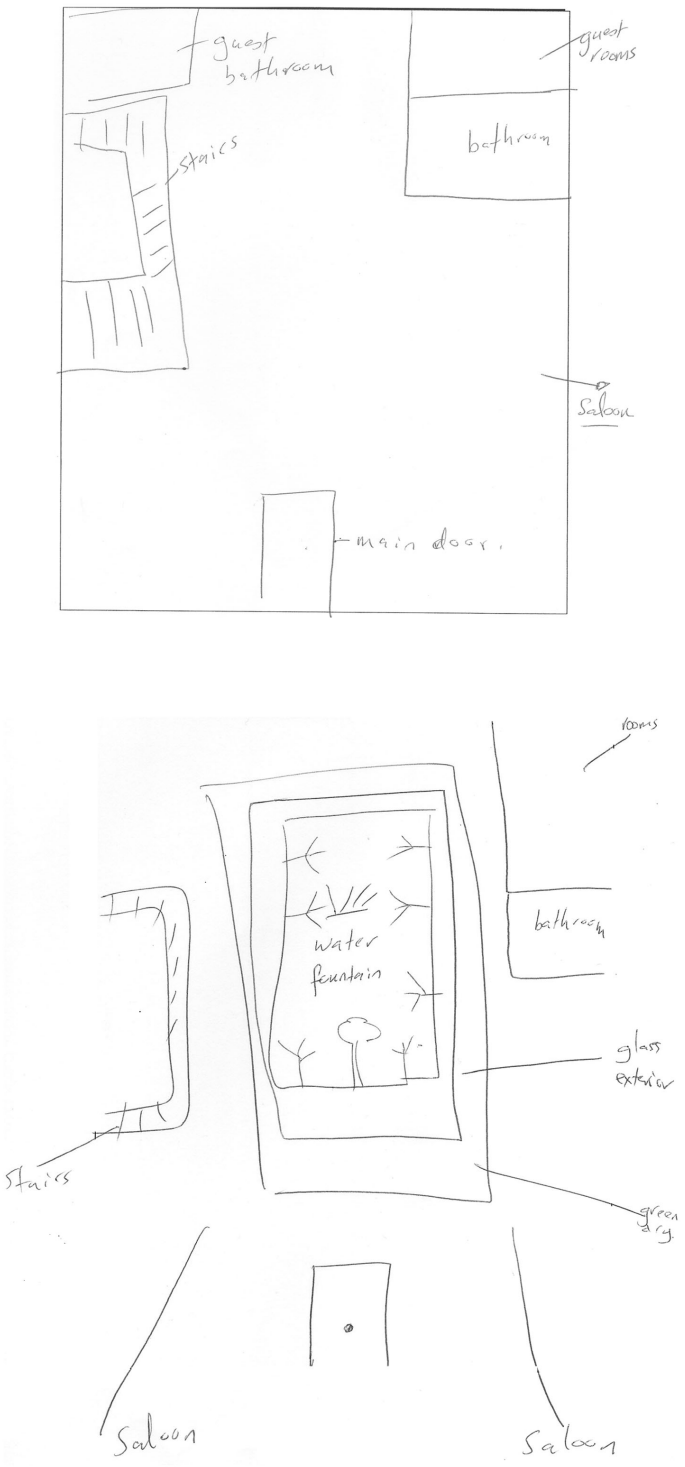


Figure A.11: Initial Workshop Cognitive Maps: Homeowner: Male: The above sketch is of the homeowner's current house and below is a sketch of their proposed new vernacular house.

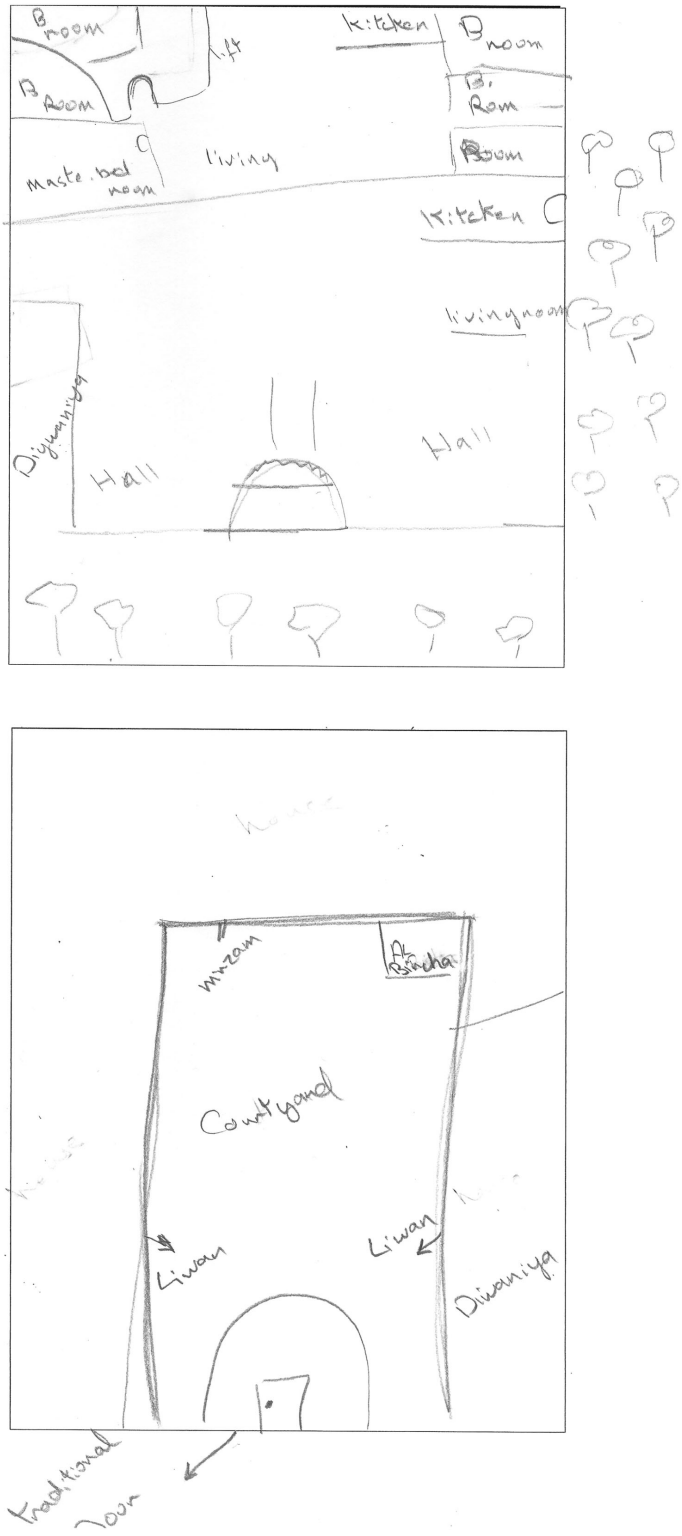


Figure A.12: Initial Workshop Cognitive Maps: Homeowner: Female: The above sketch is of the homeowner's current house and below is a sketch of their proposed new vernacular house.

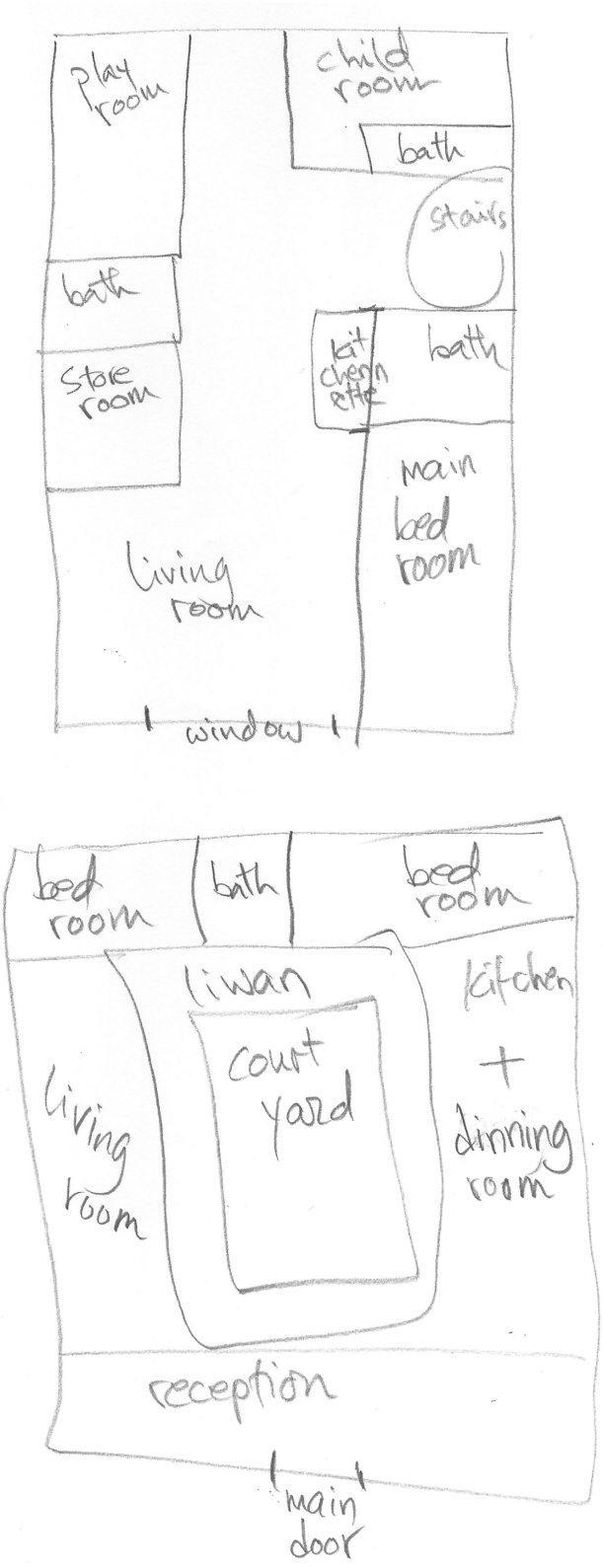


Figure A.13: Initial Workshop Cognitive Maps: Homeowner: Female: The above sketch is of the homeowner's current house and below is a sketch of their proposed new vernacular house.

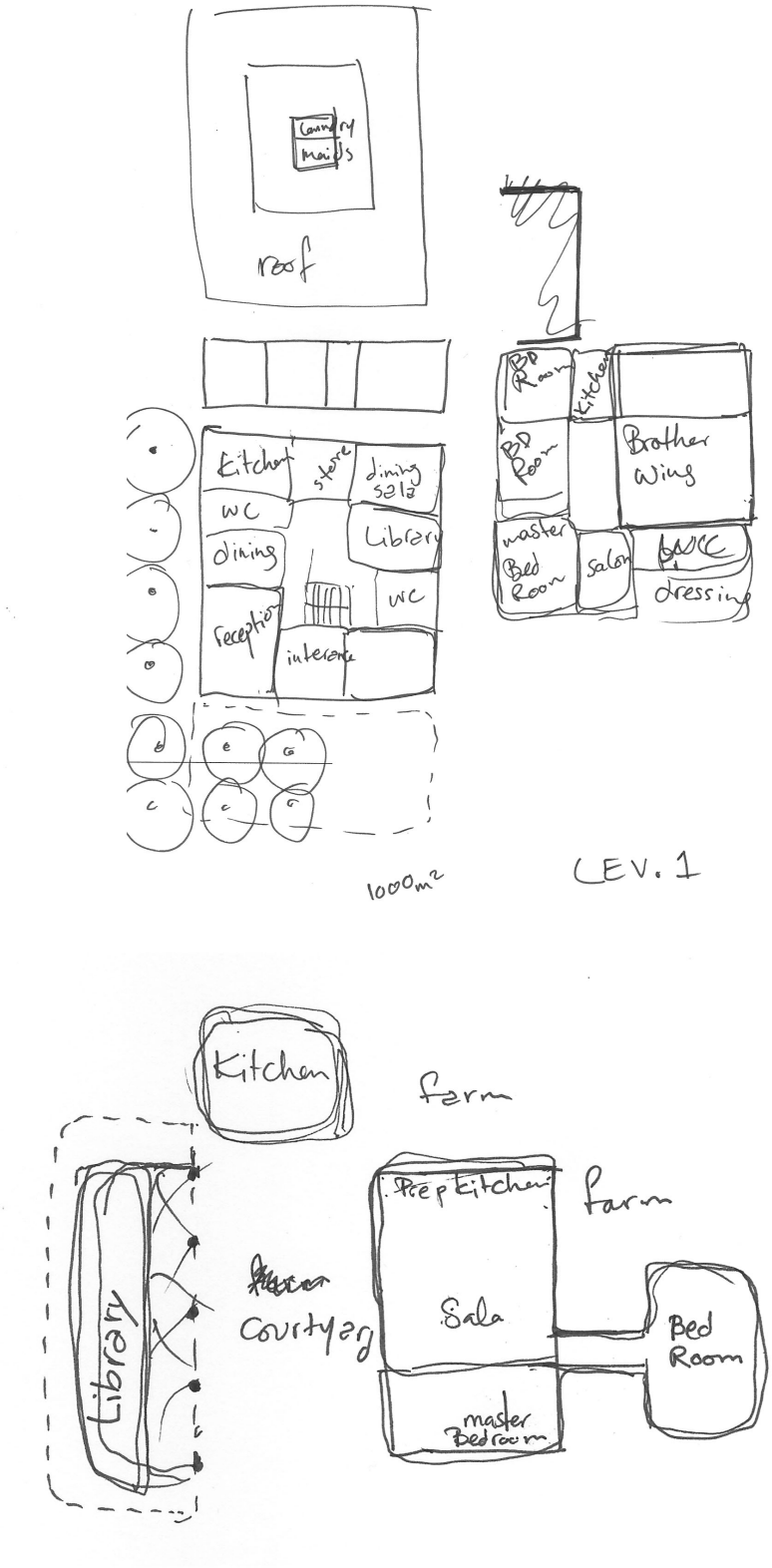


Figure A.14: Initial Workshop Cognitive Maps: Designer: Female: The above sketch is of the homeowner's current house and below is a sketch of their proposed new vernacular house.

Figure A.15: Initial Workshop Cognitive Maps: Designer: Male: The above sketch is of the homeowner's current house and below is a sketch of their proposed new vernacular house.

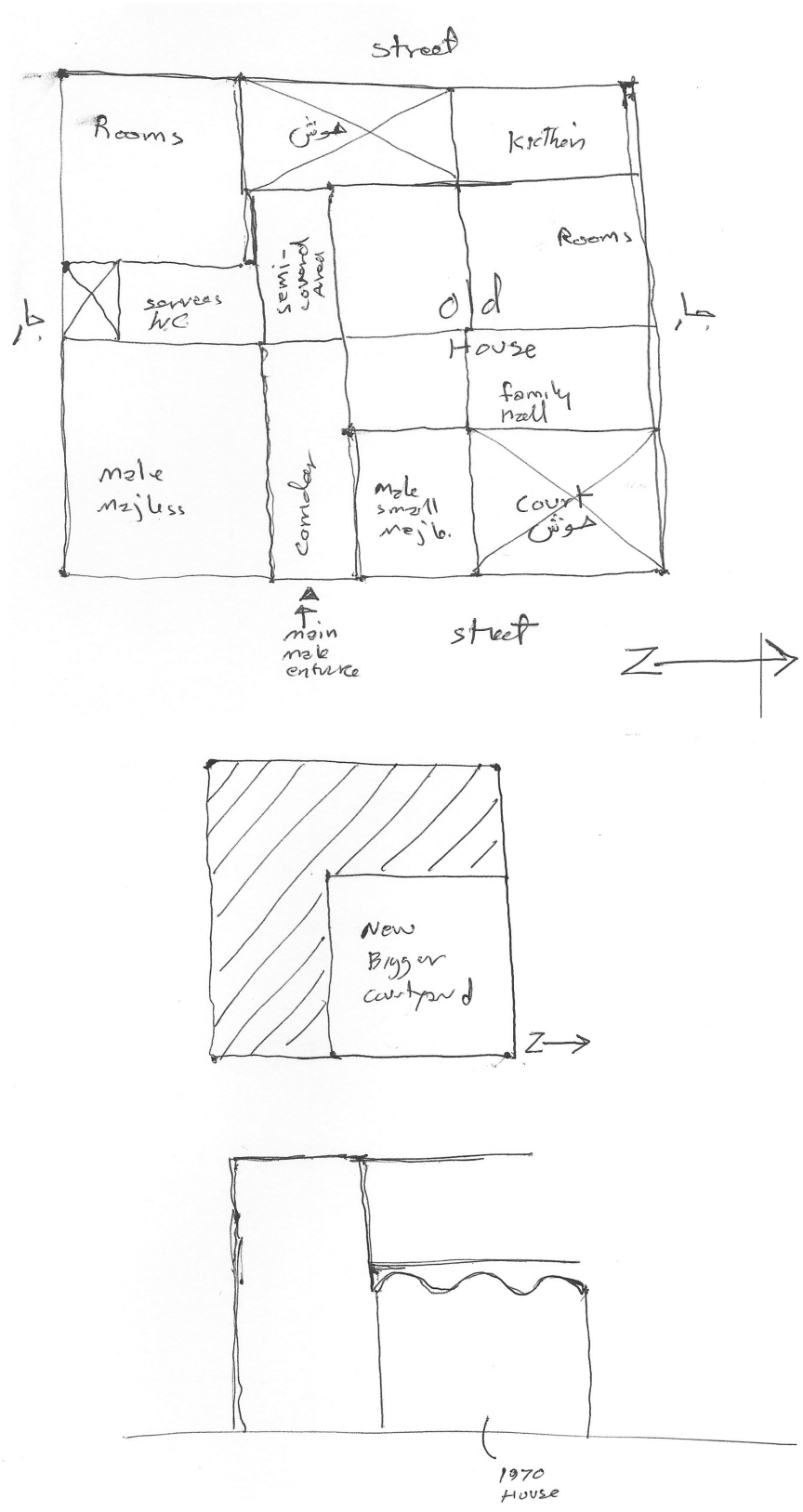


Figure A.16: Initial Workshop Cognitive Maps: Designer: Male: The above sketch is of the homeowner's current house and below is a sketch of their proposed new vernacular house.

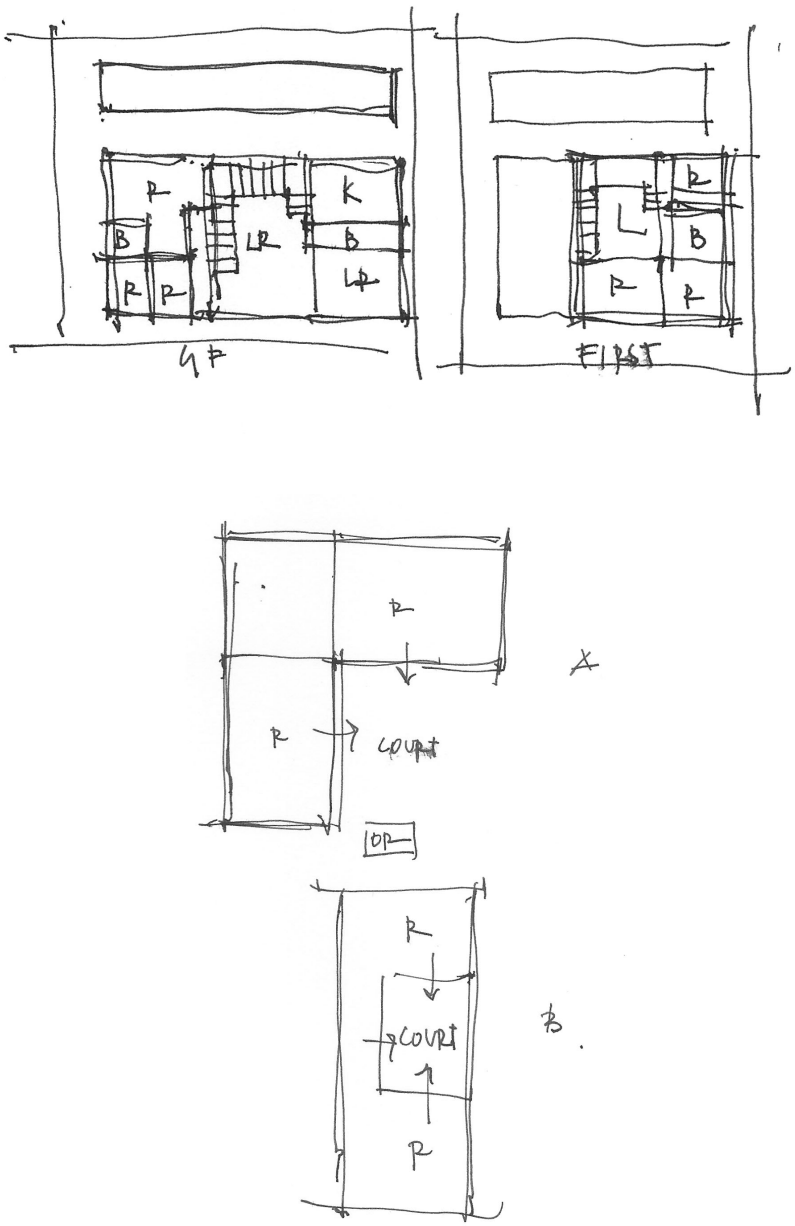
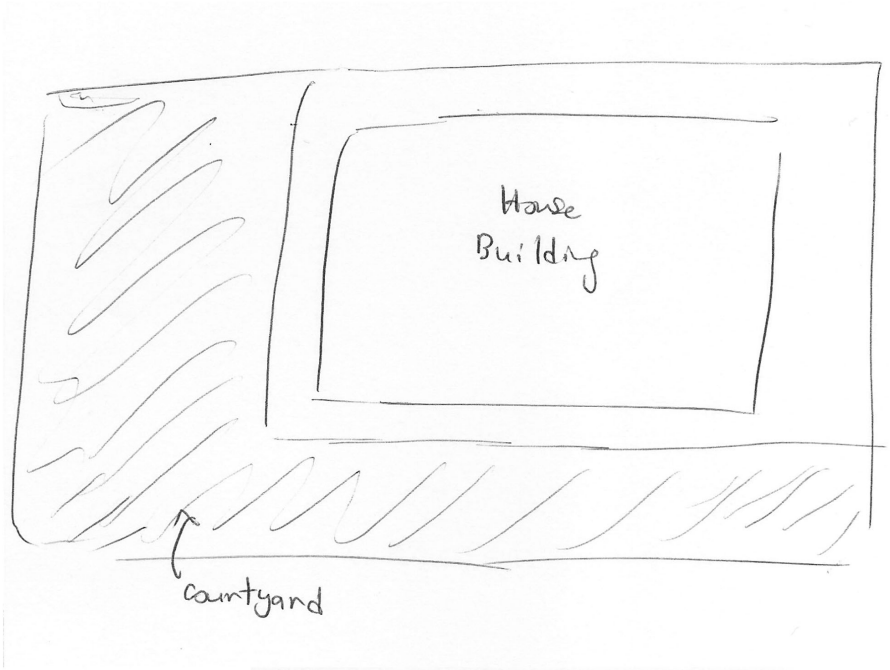


Figure A.17: Initial Workshop Cognitive Maps: Designer: Male: The above sketch is of the homeowner's current house and below is a sketch of their proposed new vernacular house.



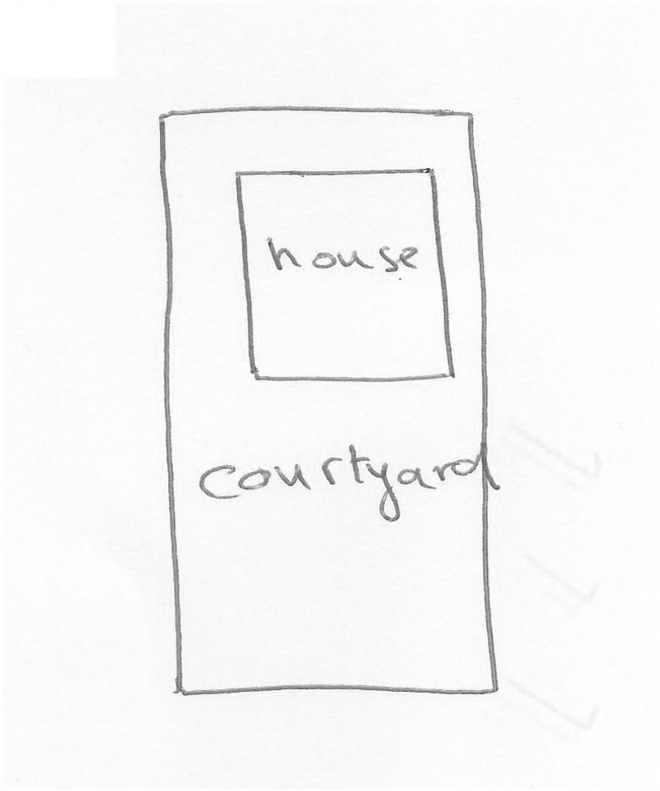
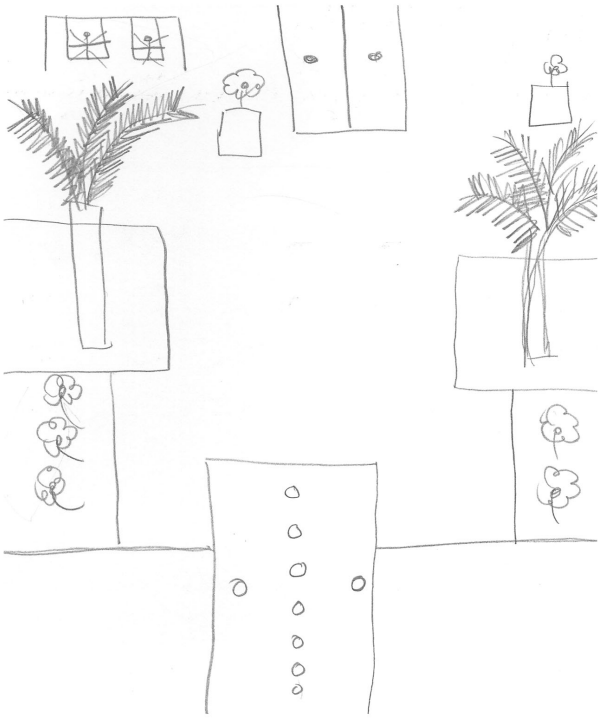


Figure A.18: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space in the front, back, or around the house.



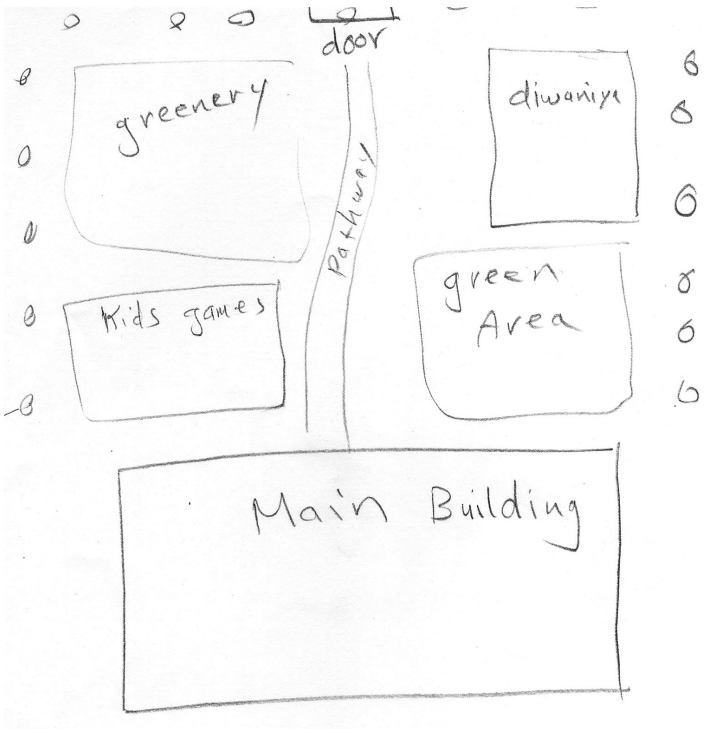
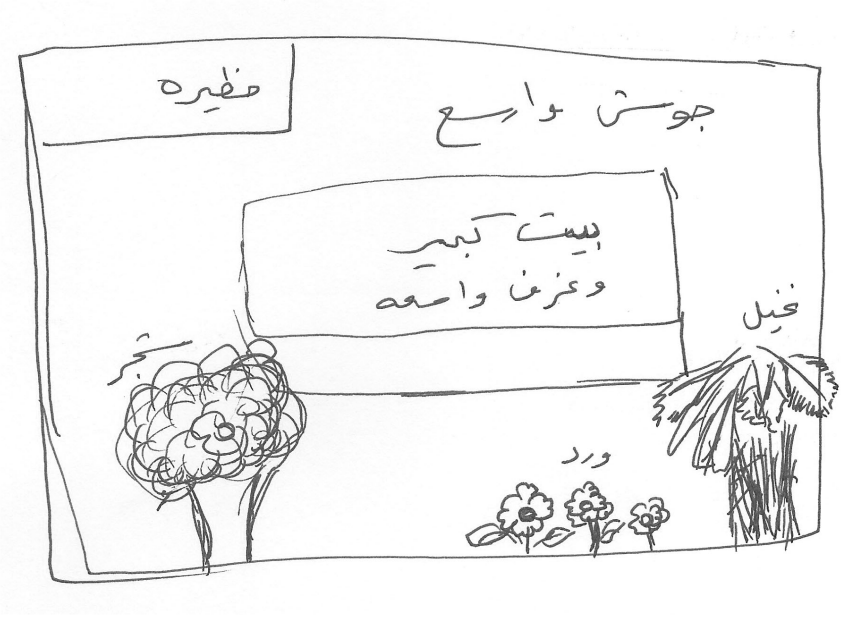


Figure A.19: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space in the front, back, or around the house.



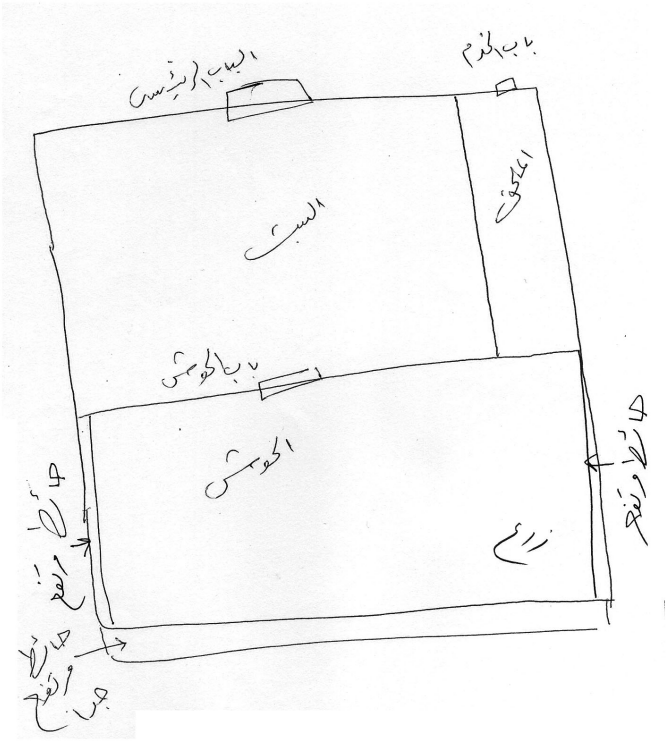
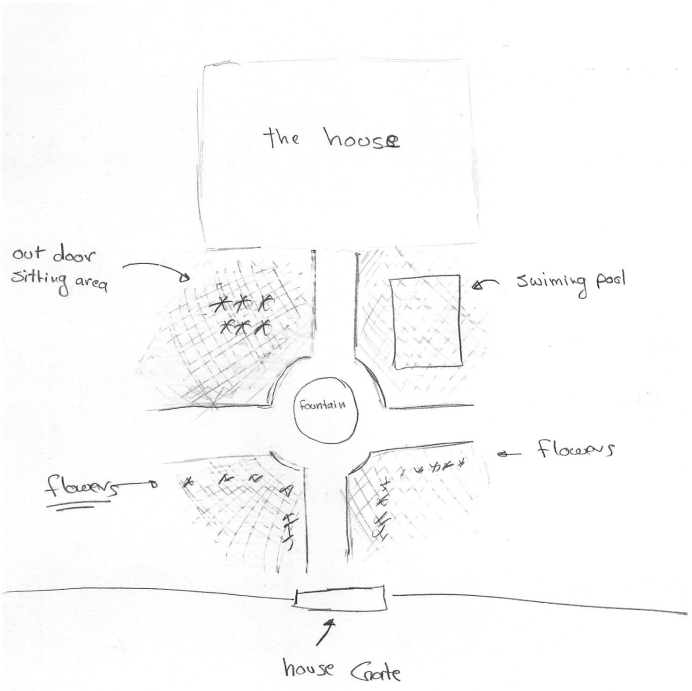


Figure A.20: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space in the front, back, or around the house.



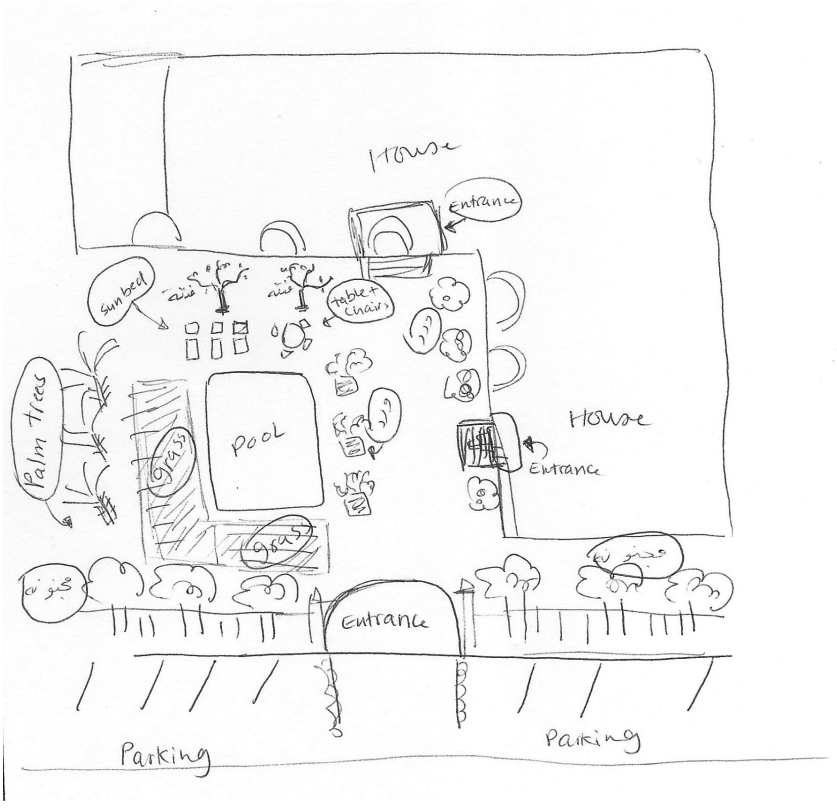
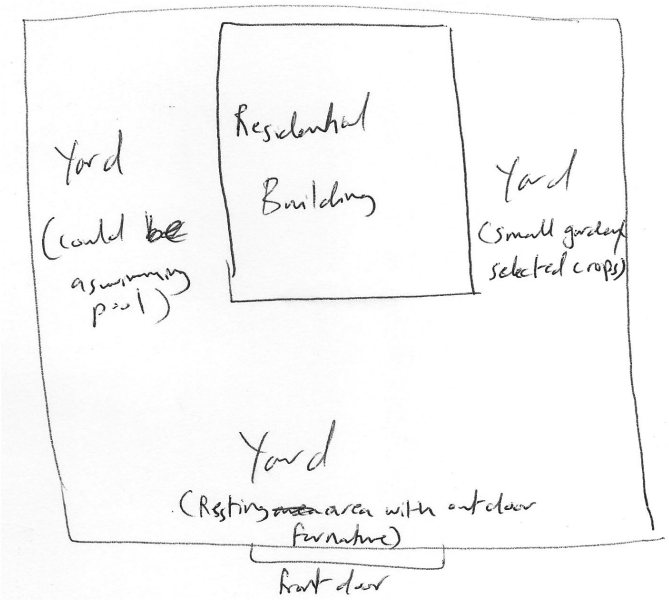


Figure A.21: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space in the front, back, or around the house.



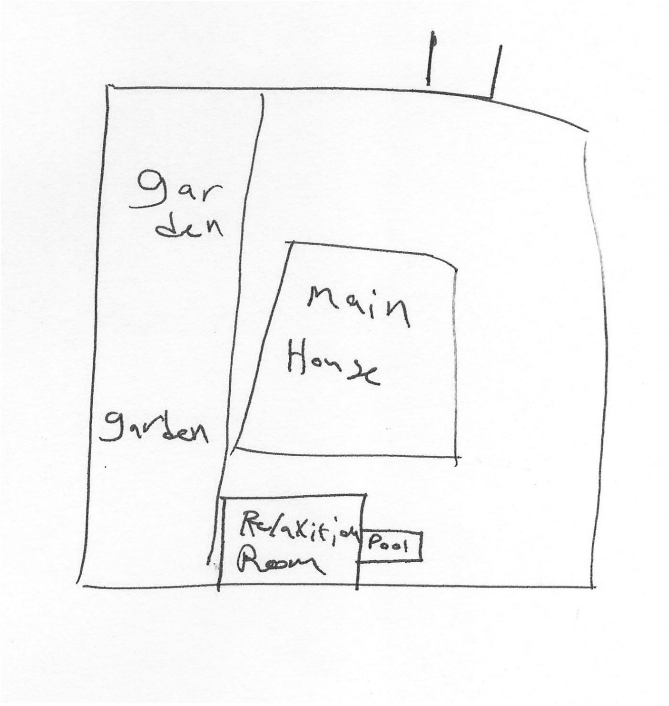
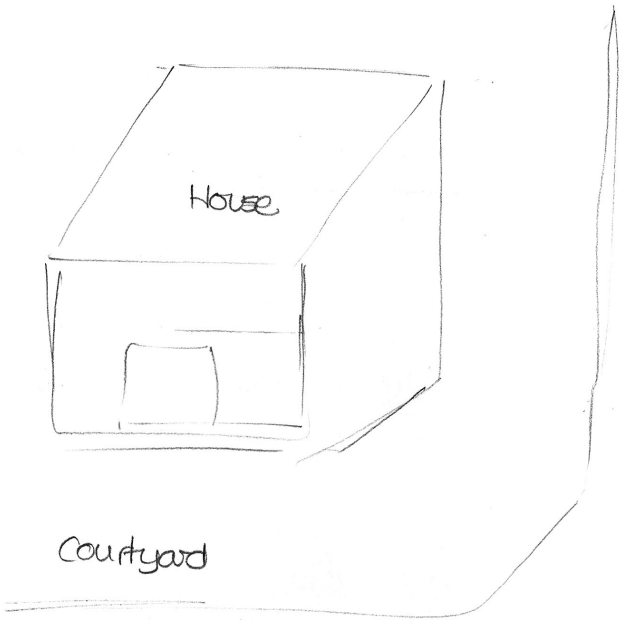


Figure A.22: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space in the front, back, or around the house.



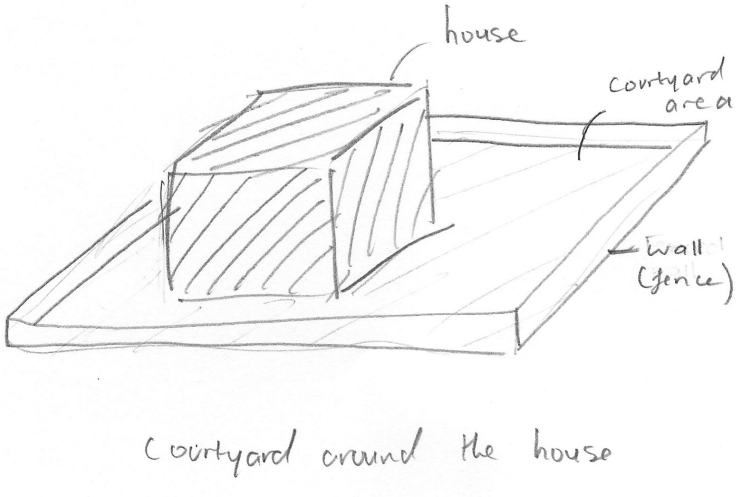


Figure A.23: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space in the front, back, or around the house.

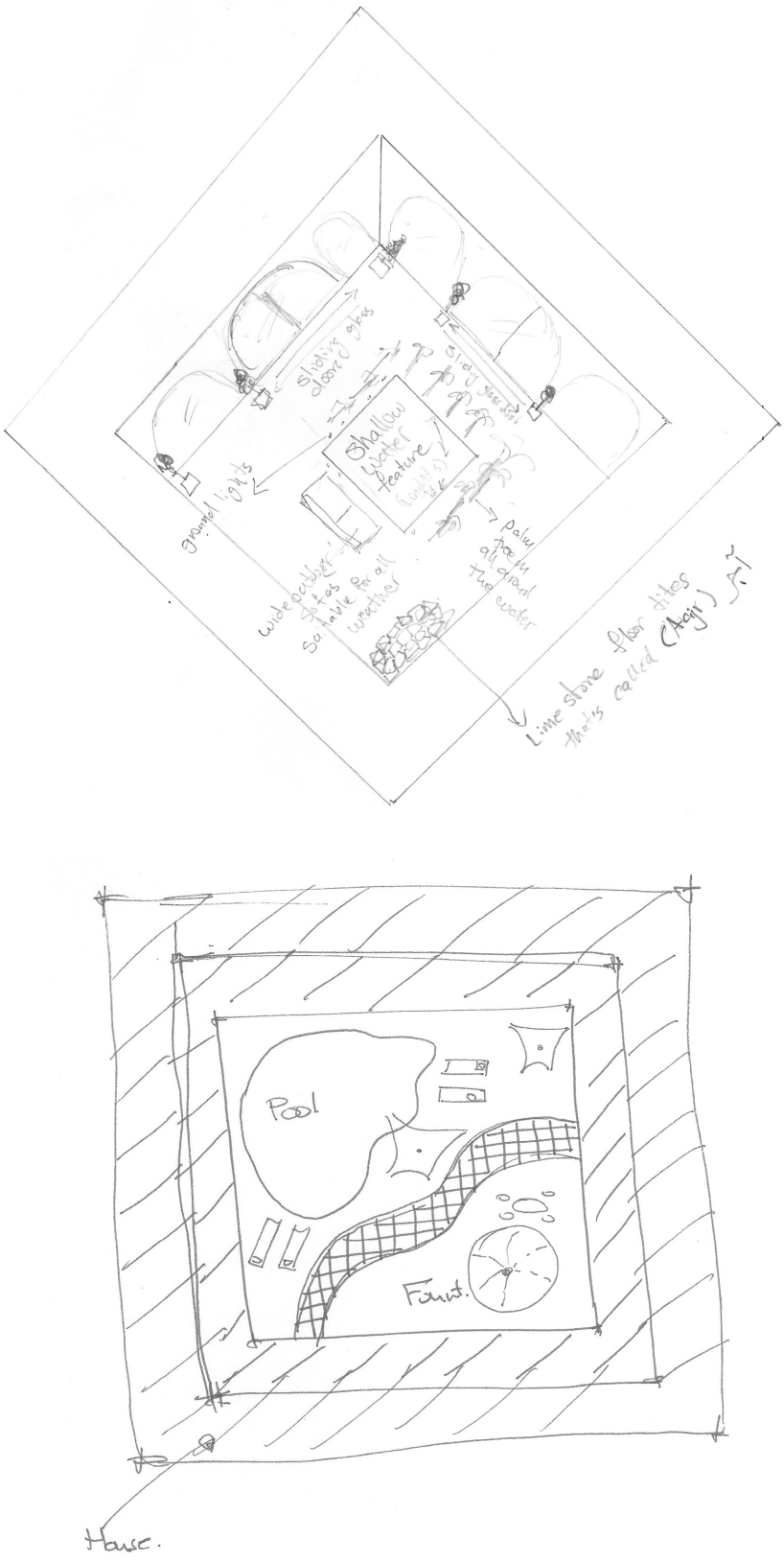


Figure A.24: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space in the centre of the house.

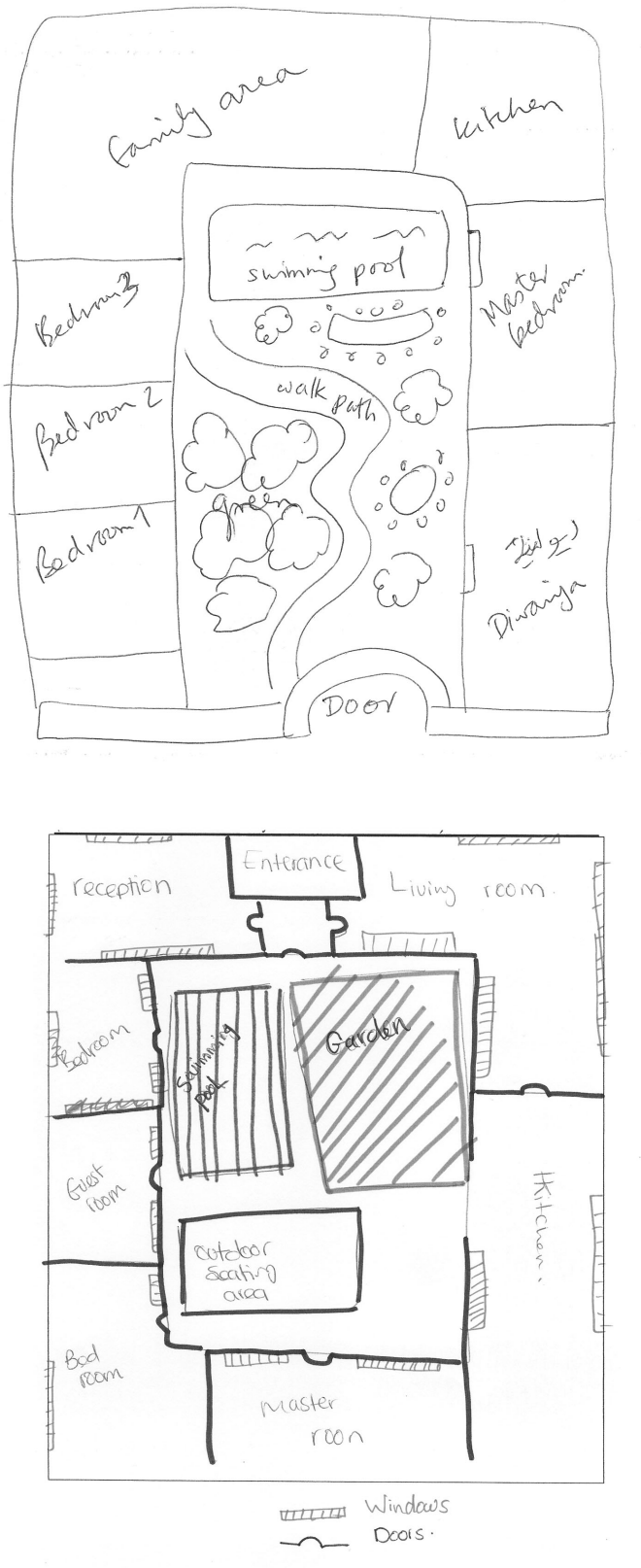


Figure A.25: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space in the centre of the house.

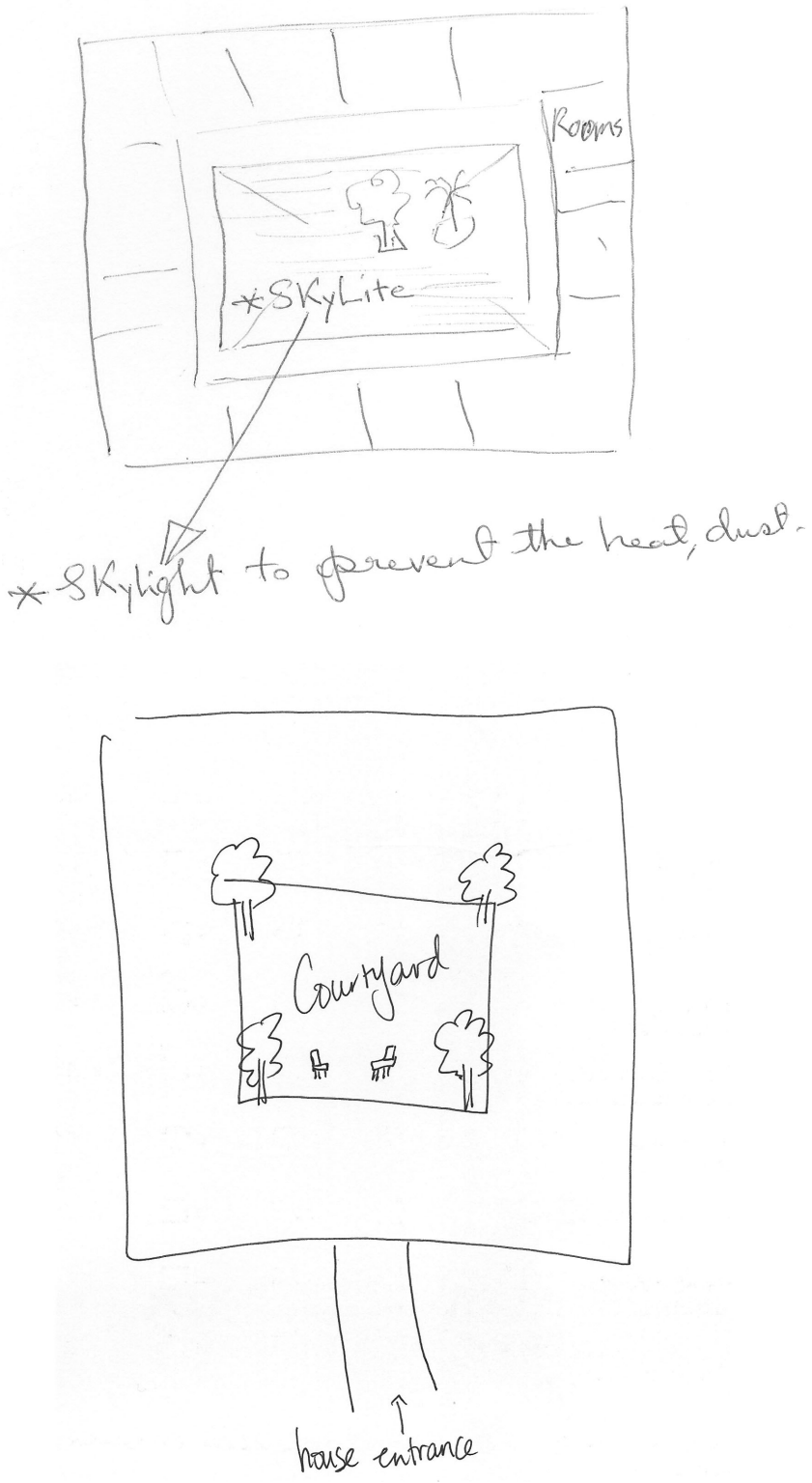


Figure A.26: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space in the centre of the house.

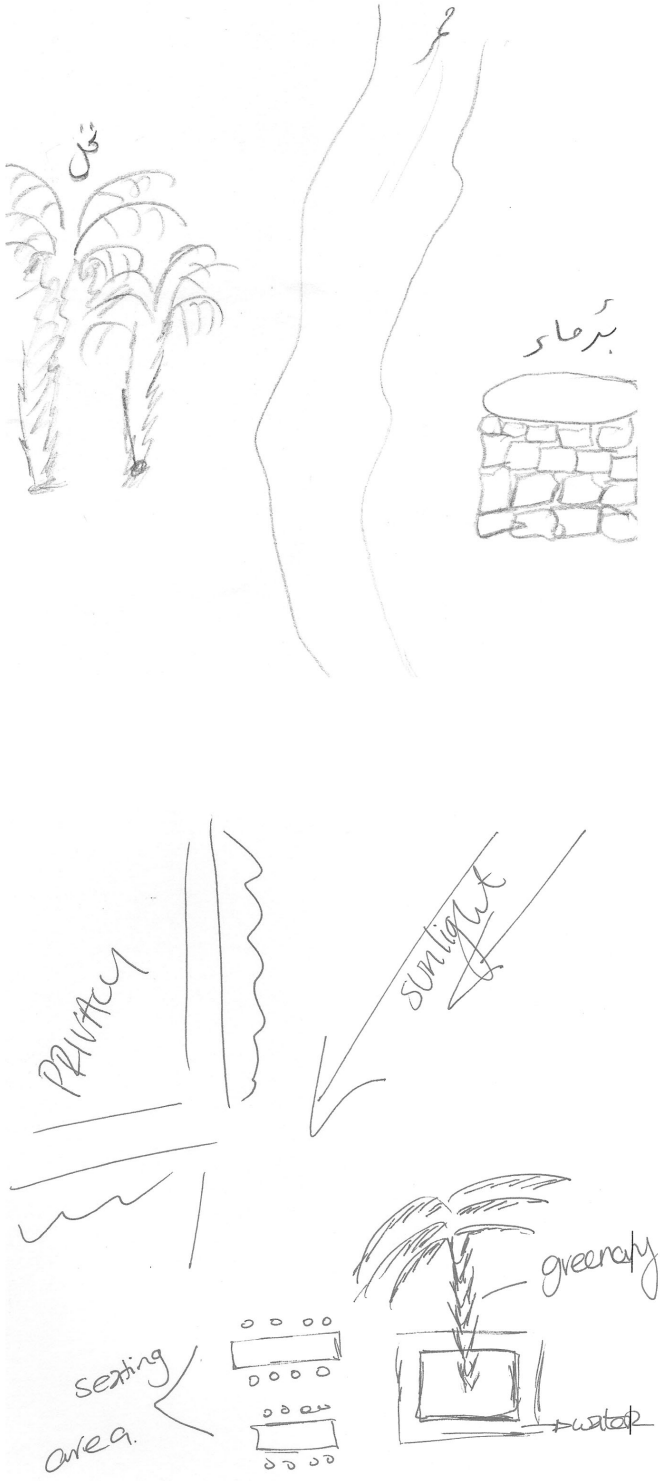
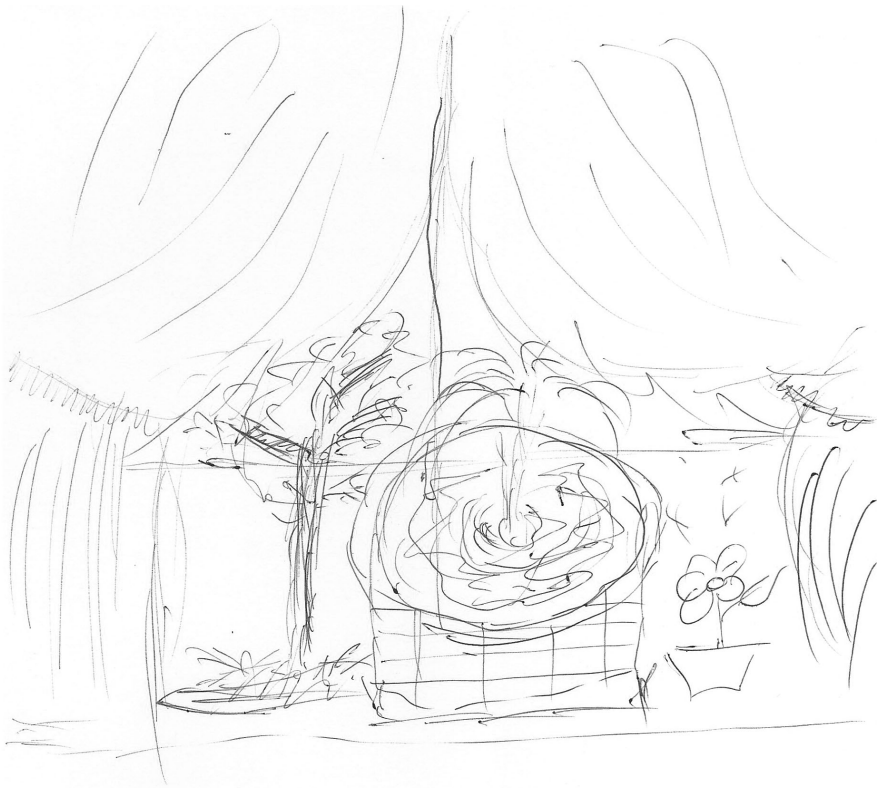


Figure A.27: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space as an artwork.



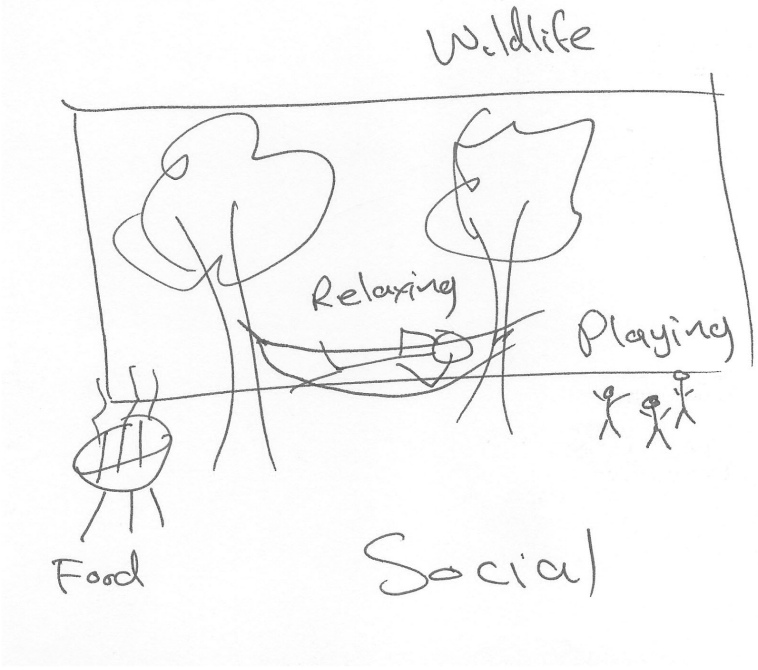


Figure A.28: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space as an artwork.

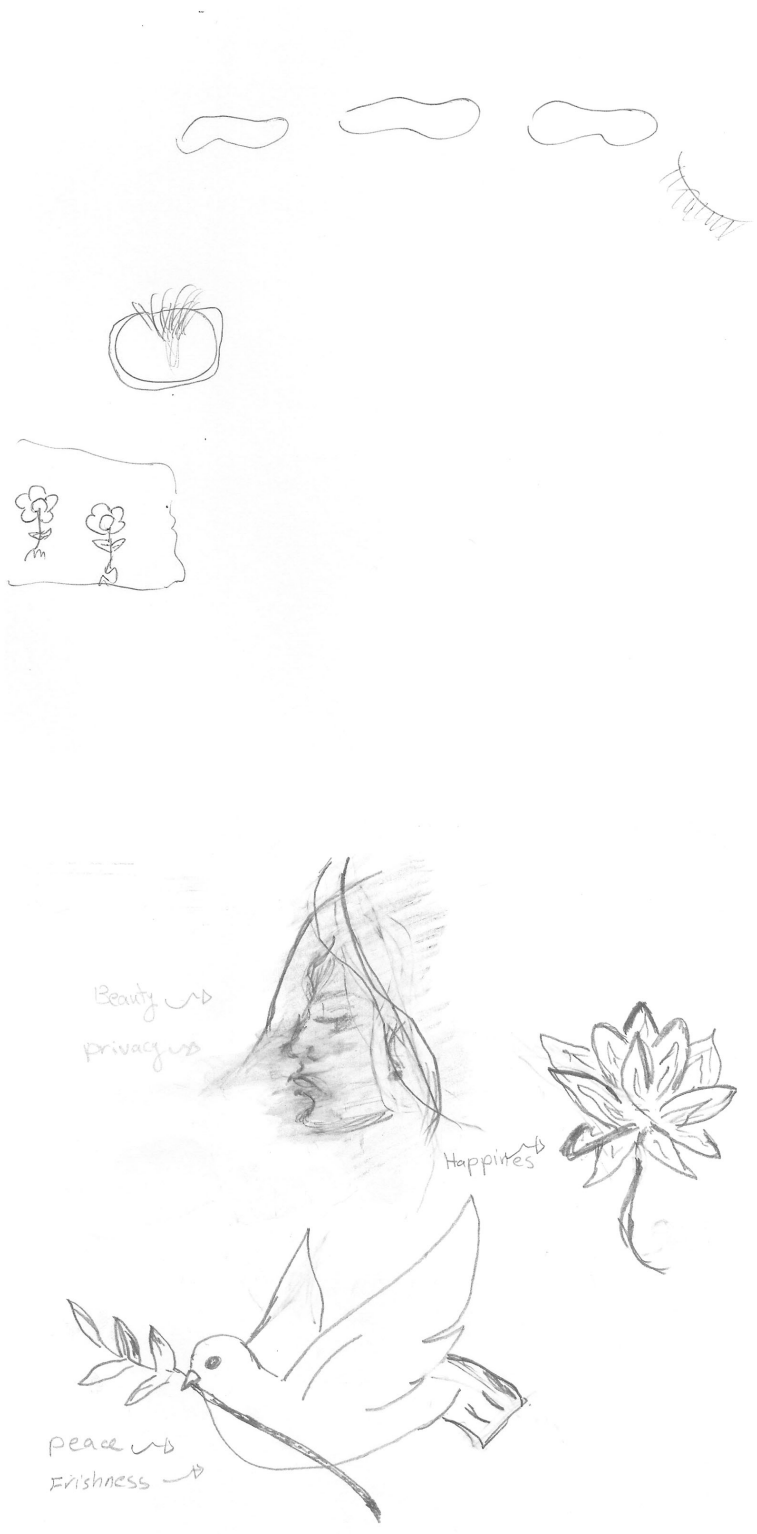


Figure A.29: Follow-Up Study Cognitive Maps: The above and below sketches depict the courtyard space as an artwork.

Appendix D

1. Perceptions of Space in Kuwait: An Exploratory Study

2. Ethical Approval Letter

Perceptions of Space in Kuwait: An Exploratory Study

Note: The present paper is a condensed version of the study; the full report may be accessed by the publisher Kuwait University.

Summary of Study

Introduction

The objective for the exploratory study was to find lines of inquiry that would direct the main research study. By examining perceptions of space in Kuwait one may be able to understand the affects of change on Kuwait's older and newer generations in relation to their built environments. To do this the exploratory study used cognitive maps as the main data collection tool to provide deeper knowledge of how people were affected by the transformation of Kuwait City and the Kuwaiti house. It is the first known study of Kuwait City and the Kuwaiti House that uses cognitive maps as a research method.

By capturing the essence of resident's memories of built environments through sketches, cognitive maps revealed deeper meanings of individual perceptions of space. Thus, this study used cognitive maps rather than only interviews to explore Kuwait's past and present built environments. The research direction was initiated in April 2012, and ethical approval from the Department of Architecture at the University of Sheffield was given on June 2012. Fieldwork was conducted on July, August, and early September 2012. The final paper was published by Kuwait University on May 2014. The research was divided into two studies; the first investigated Kuwait's older generation, while the second focused on the younger generation. The first study was a short, semi-structured interview that asked the participants to sketch their old houses and old Kuwait City and to sketch their new houses and new Kuwait City. The second study used a questionnaire that started by

asking the participants to sketch new Kuwait City and its suburbs and another to sketch their current house.

Objectives and Method

Using cognitive mapping, this study offers a new perspective on how people were affected by Kuwait's urbanization. The main objectives are to identify emerging patterns, contrasts, and similarities across perceptions of Kuwait's past and present built environments. By gathering and analysing perceptions of the people who lived in old and new Kuwait City, the intention is to direct future research in addressing current challenges. The sections below will describe study one and two.

Study One

The first study was a short, semi-structured interview that asked the participants to sketch their old houses and old Kuwait City and to sketch their new houses and new Kuwait City. Originally the questions for the sketch maps were gathered together in a prepared form. However, for more space and to limit any distractions, the interviewees were given four blank A4 pages (one page for each sketch) and were presented with the following instructions:

> **The City:** I would like you to draw two maps of Kuwait City and its suburbs. The first is how you remember old Kuwait City and the second is how you perceive new Kuwait City. Imagine that the purpose of your map is for another person to understand the place. Your drawing will also serve as a guide for navigating around the city. Your map is only a rough sketch, so do not worry about how it will turn out.
> **The House:** Now please sketch the plan of your house in old Kuwait City and new Kuwait City. It is the place that you lived/live now but it is not your dream home. The sketch is only a rough plan that you may want to use in the future.

Of the 20 interviewed participants, 3 were women and 18 are men. They all live in Kuwait City or its newer suburbs, with the youngest being a 52-year-old principal and the eldest a 91- year-old astronomer. The strategy was to approach Kuwaitis who lived in both old and new Kuwait City and witnessed the great transformation and experienced great social and economic changes in their lifestyles. Specifically, the study aimed to approach individuals over 60 years of age, which allowed for an individual to be at least 10 years or above when they left old Kuwait City for the newer suburbs. However, the demolition of old Kuwait City was gradual, spanning around 10 years, and people left at different intervals throughout this time. As a result there was no age limit, and individuals were asked if they lived in or remembered old Kuwait City; if so, they were subsequently asked to participate in the study.

Kuwait is a highly social and family-oriented society. The research for this study had to be conducted in this milieu using a snowball sampling strategy, thus the study started with the researcher's family and friends who lived in both cities. Prospective participants were contacted by phone and given an overall summary of the study. If the individual accepted, an appointment was made in the person's office, house, or *Diwaniyas*. In turn, some interviewees suggested other potential and willing participants, consequently taking the research to a seafront café that usually caters to the retired and elderly.

In the café, potential participants were asked if it was possible to conduct a short interview with a brief description of the research project. If they accepted, a short semi-structured interview was conducted. After collecting background information, the first question asked was to describe the participant's old house, and after a few minutes the interviewee was asked to sketch the space. This approach was also used for the new house, old and new city sketches. Alongside extracting information from the drawing, the short interviews provided a clearer image of the participant's experience. Also recorded were

verbal quotes and specific city or house elements that they were not able to represent on paper. These interviews were also used as a vehicle to gradually ask the participants to draw the sketches.

Study Two

The second study used a questionnaire that started by asking the participants to sketch new Kuwait City and its suburbs and another to sketch their house as follows:

> **The City:** I would like you to draw a map of Kuwait City and its suburbs. Imagine that the purpose of your map is for another person to understand the place. Your map will also serve as a guide to navigate around the city. Your map is only a rough sketch, so do not worry about how it will turn out.
>
> **The House:** Now please sketch the plan of your home. It is the place that you live now but it is not your dream home. The sketch is only a rough plan that you may want to use for the future.

In contrast with the first study, the target individuals were university students and the recently employed. The newer generation had 73 participants of which 21 were men and 52 were women; only 69 sketched the city and 68 the house. Within this group, 14 individuals were employed and 57 were students, and 1 did not indicate their status. The ages ranged from 17 to 36 with the mean age of 22.6.

The first group was collected from family and friends of the researcher from various employment sectors mostly engineers or designers working in Kuwait's Civil Aviation sector or bankers encountered at a seminar given by the Institute of Banking Studies. The second group was collected from students in various departments in Kuwait University. The researcher is an instructor at Kuwait University and had asked colleagues to survey three classes. The first class was a group of young women taking an art elective in the College of Women; the second class, also young women, was taking a Diet and Nutrition elective in the College for Women. The last group was architecture students taking an

elective in the College of Architecture and Design. The survey was optional, but in an attempt to encourage participation, extra credit was given upon completion. All students who attended the classes completed the questionnaire.

Analysis Method

For Study One, each participant's cognitive map was carefully examined, and data were divided and recorded into four lists; the old city, the old house, the new city, and the new house. The second step was to analyse the data from all of the participants, ranking the most identified city element in the old and new city and the most identified house element in the old and new house. For Study Two, a similar analysis was implemented without a short interview. The data from the new generation were also ranked with the most identified new city elements and new house elements

The data from the first study show the comparison between the old and new city (Table 1) and between the old and new house (Table 2). Likewise, the second study's data are shown in (Table 3) which ranks the most identified new city elements, (Table 4) ranks the most identified new house element from the new generation. Contrasts, similarities and emerging patterns were gleaned from the data, which provided the themes used to structure the discussion presented below.

Results and Discussion

The findings reflect how the participants mentally represented their city and their houses through time. The examination and analysis of the data indicate major elements and emerging patterns in how Kuwaitis perceive the old and new in Kuwait. The results and discussion are divided into two parts: the first covers Study One and the second Study Two.

Study One

All participants answered the interview questions, however, not all participants were able to draw the sketch maps. With various backgrounds and experiences, each participant's ability and cognitive expression was different reflecting varying levels of perceptions.

Changes in Perception

After the oil boom and the subsequent transformations that reshaped Kuwait's built environment there have been clear changes in people's perceptions of space. Their city and house all have been moulded by the various social and economic realities of the country. Almost all participants were able to perceive and draw their old houses and new houses, yet 3 were unable to sketch old Kuwait City and 6 were unable to sketch new Kuwait City. This verifies the obvious point that people have a better, more expansive and memorable, understanding and perception of their house than their city. Of the 14 participants who drew new Kuwait City, 6 drew either the main areas of the city centre or zoomed into a specific district, 4 drew the city as it grew with its ring roads; 3 provided very simple line drawings; and one - the youngest of the group - drew the boundaries of Kuwait as a country, indicating the City and the Kuwaiti Towers.

The City

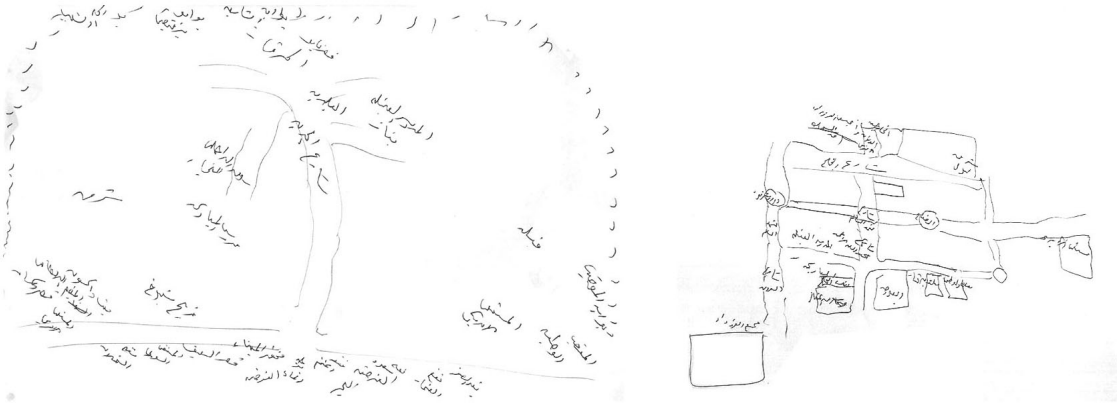
When comparing the old and new cities, the drawings suggest that old Kuwait City was easier to comprehend than new Kuwait City. It was more defined by its simple and compact structure within *AlSoor* (The Wall of Kuwait) in contrast with the later overwhelming and vast metropolis. In the drawings of the old city, the semi-ring of *AlSoor* was clear encircling the maze of organic structure.

The city's residential districts were vivid in the minds of the participants as they drew the old town; however, most drawings of new Kuwait City did not have that instant clear image, with the participants mostly portraying different areas of the city from one

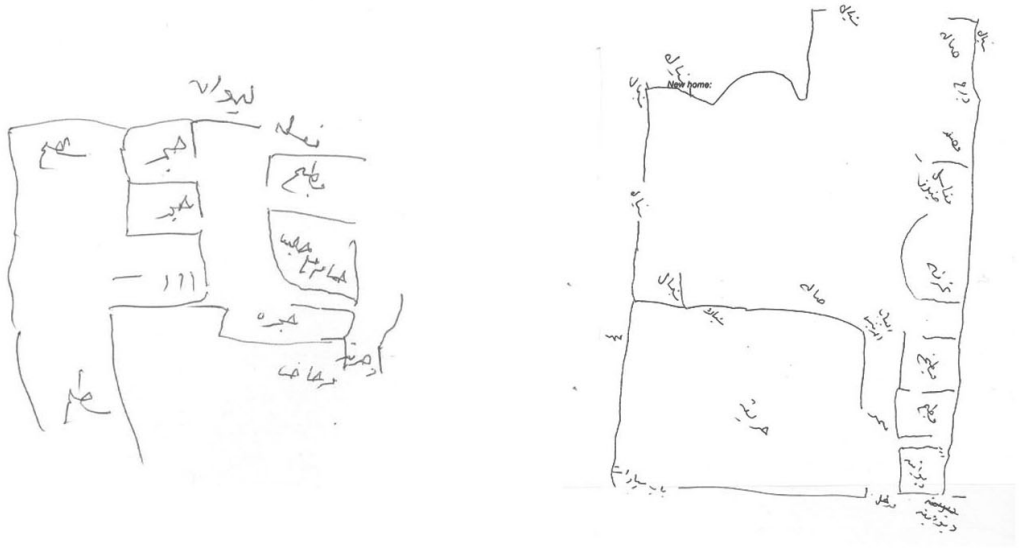
another. Despite these differences, the prevailing element in the new city sketches was the recognition of the ring roads and major highways. For the people who lived through the transformation their interpretations distinctly represent early master planning. Also, in drawing the new city the study participants always linked it to old Kuwait City, either by naming specific preserved structures or labelling old residential districts.

Living Places

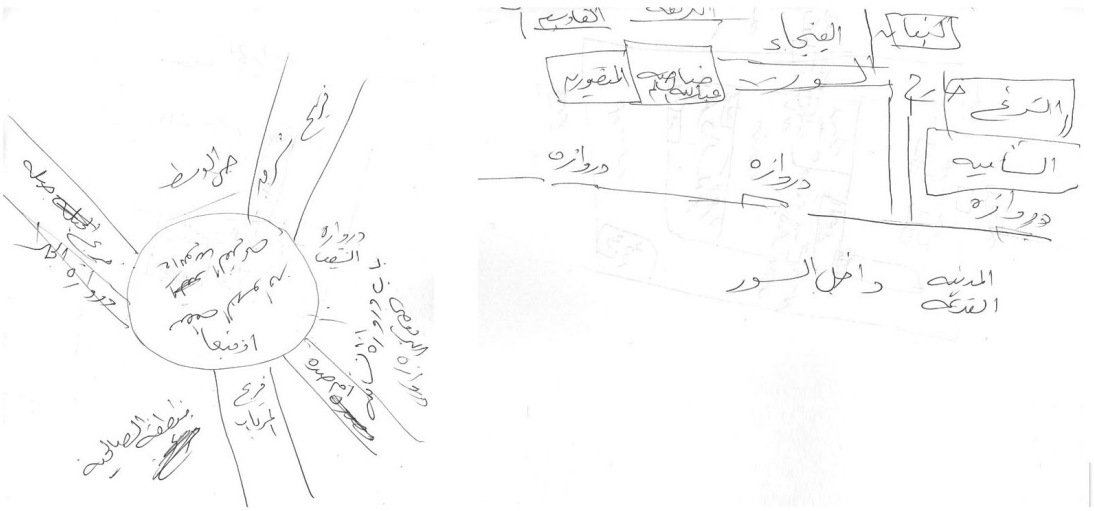
Despite a dramatic change in Kuwait's urban landscape, the study findings showed a few elements that bridged the transition. The most apparent element was the residential areas and districts that are still of great importance to citizens. These areas not only marked spaces but are also places that characterize Kuwait, and for its people hold memories of the country's past and the resettlement into new suburbs. In drawing both old and new Kuwait City, the participants identified the residential districts as the most recognized city element.



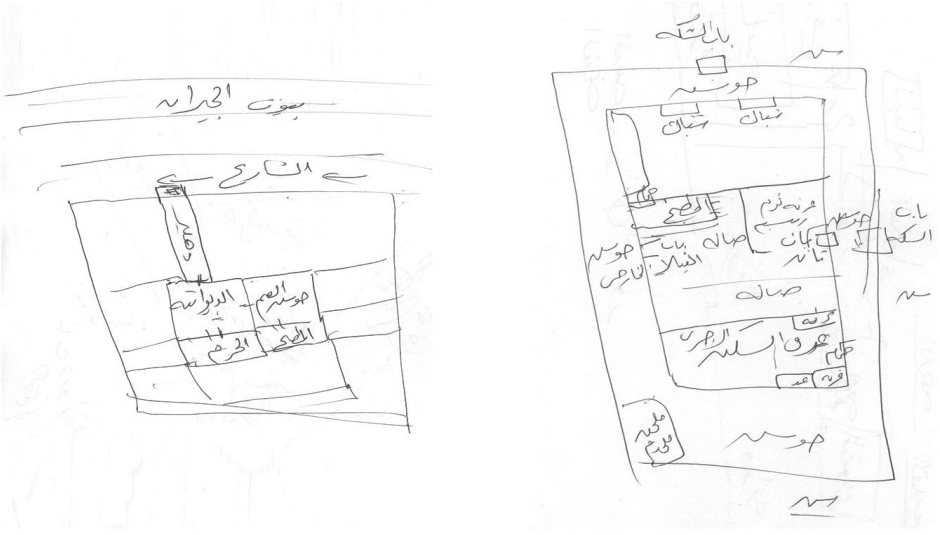
Sketch 1: The first sketches are done by a 70 year old Ambassador who lived in both old and new Kuwait City. In the top left he starts with the sea and then the new street taking one to Safat Square and ending with the ring of AlSoor or Wall of Kuwait. It looks like a tree with its roots from the sea branching out towards Kuwait's old main residential areas. In contrast, his new city detail sketch on the top left reveals a grid like structure with its many roundabouts. **Note:** The sketches have been formatted to fit this page and converted to Black and white.



Sketch 2: With the same participant these drawings are great examples comparing the old traditional courtyard house and the contemporary villa. The top left is the vernacular showing the Dahress leading to the main courtyard. In the top right one enters the new house through a shaded corridor overlooking a garden to the left. **Note:** The sketches have been formatted to fit this page and converted to Black and white.



Sketch 3: A high ranking official in the Amiri Diwan remembers the souq as the centre of old Kuwait City as a circle and various paths lead to different residential areas. In his sketch of new Kuwait City he draws a line to show AlSoor and than indicates blocks to represent the newer suburbs. **Note:** The sketches have been formatted to fit this page and converted to Black and white.



Sketch 4: He continues to draw the old house as a block with four divided courtyards in the centre. However, in the top right the new house reflects the block in the centre of the plot surrounded by open spaces. **Note:** The sketches have been formatted to fit this page and converted to Black and white.

The Sea

The sea was a major source of living and vitality for old Kuwait and still serves as the primary trade route. Kuwait's history so connected to the sea, has a respected maritime tradition of trade and pearl diving. The sea was a way for Kuwaitis to express their economic freedom, and thus is inextricably linked to its development. In the sketches of the old city, 8 individuals depicted the sea (compared to only one of the sketches of new Kuwait City). This shows how residents until today associate old Kuwait with the sea and recognize the value in that relationship.

The Courtyard Disappears

The courtyard was the most dominant element in the old Kuwaiti House. Every participant who sketched his or her old home recognized it; 10 out of 19 had one courtyard, and 9 out of 19 had two, three, or four courtyards. These courtyards had many design variations, as one participant described; "We had one large courtyard that was divided into four smaller courtyards." In addition, each courtyard had a specific function, such as the main courtyard, the *Haram* (female court), the *Diwaniya* (men's court), the kitchen courtyard, and the livestock courtyard. The larger the family, sometimes the larger the house and in larger houses more courtyards were required to accommodate the family's needs. The courtyard served as a private sanctuary and the heart of the house, giving it form and serving most of its functions. All rooms overlooked the courtyard, which was open to the sky. Although usually small in size, the courtyard was often perceived to be wide and the largest room in the house, expressing its spacious qualities.

Today, the courtyard has disappeared from the contemporary Kuwaiti house. Most elements of the old house indicate a culturally significant and sustainable lifestyle. This is in sharp contrast with the new house, which suggests a more luxurious built environment. Only 9 out of 18 participants indicated an open space or garden in their new house in

comparison with its predecessor. However, even the open space was not necessarily a courtyard, but more often represented an outside space, usually on one or more sides of the house.

The House

Most members of the older generation recognized that the new house - with all its technology and convenience - is a more comfortable living space. In describing the change, one participant said, “Today people are not building houses they are building palaces”, while another remarked, “The new house is like a cage…the courtyard was open to the sky and was small but spacious”. In talking about the transformation, some people recalled that new houses were built with balconies. This feature was new for Kuwait’s hot weather, and after years of collecting dust many were closed and are now used as additions inside the house. These statements indicate that despite acknowledging the benefits of new houses, the participants still had close attachments to the old courtyard house. Also, individuals repeatedly stressed how the old house would bring the family together as one said, “you can see everything in front of you”. Having a visual connection was essential for maintaining close family relationships. Another individual described why houses in old Kuwait had very low parapet walls, stating that in pearl diving season men would sometimes leave their homes for sometimes six months at a time. During this period, the low wall was a way for neighbours, and especially women, to socialize and interact from the confines of their own homes.

Gender Differences

As the participants drew their sketches some distinctions arose between genders. The importance of privacy was and still is paramount in Kuwaiti society. In old Kuwait, the courtyard was the private preserve of the family, and especially women, to the extent that larger families would have a *Haram*. Kuwaitis saw this as a celebration of a woman's

dignity, respecting her privacy and maintaining the social fabric of their culture. In this study, the majority of men would start with the *Dahress* (a narrow corridor after the door) and describe the mud brick material of the house. On the other hand, 2 out of the 3 women would start talking about the courtyard. This may suggest how different perceptions are associated with gender roles in old Kuwaiti society. In the past, men would work outside the house while women congregated mainly in the courtyard.

Study Two

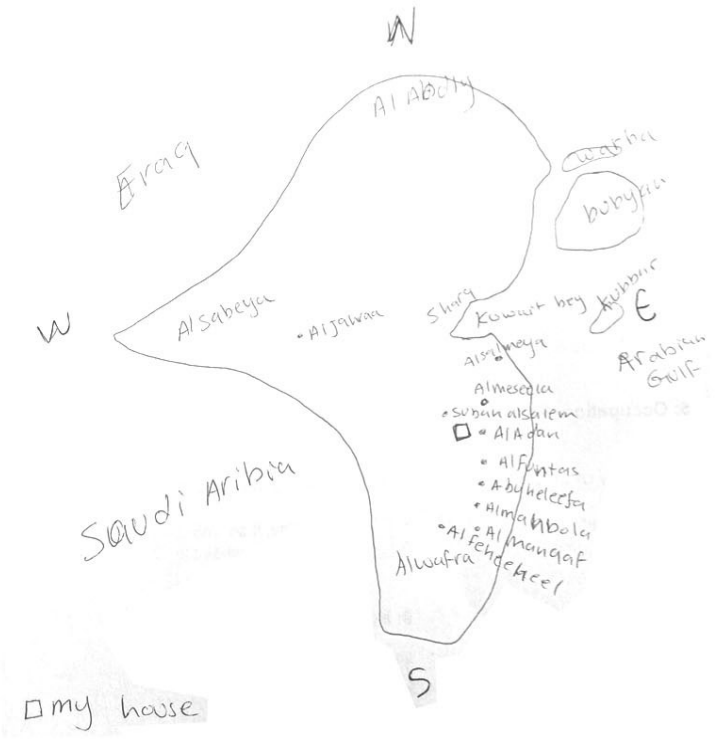
Almost all of the 73 participants sketched the new city and their home; here, however, the study will focus on the data associated with the city sketches. The sketches revealed three different maps or sketch types. The first was an outline of Kuwait as a country, with 41 out of 69 participants all giving varying information of this kind; the second was Kuwait City or a drawing that zoomed in on a city district, which 14 out of 69 participants sketched; the third was an art drawing of the city showing some of its major elements, which 12 out of 69 participants sketched. There were 2 sketches that had both an outline of the country and a detail of the city/city area. These findings indicate the various perceptions of the city from Kuwait's younger generation.

State as City

The image of Kuwait as a state is apparently so dominant in people's minds that it represented Kuwait City for more than 60% of the participants. Why did the participants draw the outline of Kuwait instead of Kuwait City? There are many explanations for this, it may suggest that imagery of Kuwait as a country was widely used in education, marketing and media productions. Perhaps for these participants it was the fastest and easiest perception of Kuwait and, therefore, of Kuwait City. Another reason is that Kuwait is a small country, and with its sprawling development people no longer live close to the centre; thus, they expressed expansion in a way that portrayed the city as the country. Finally,

another factor is that in contrast with other developed nations, most Kuwaitis use the car as their primary mode of transportation, with almost no engagement with public transit. They are not used to seeing maps or visual depictions of their city in order to find their way around or search for routes for metro systems. Therefore, it may be that some participants did not comprehend Kuwait City and expressed it as what they knew of Kuwait as a state. Regardless of there being distinct clear paths and landmarks in new Kuwait City, this does not appear to have improved the spatial cognition of some of its inhabitants.

All of the above interpretations are possible. However, the most viable may have to do with how each gender perceived new Kuwait City. Of the 73 participants contributing to the study, 21 were men and 52 women, and only 69 sketched the city in total. Within this total, 41 people drew Kuwait City as Kuwait the country, of which 83% were women and 17% were men. This suggests that women had more a tendency to draw Kuwait City as Kuwait the state. In turn, this may indicate that young women in Kuwait have different perceptions and perhaps less spatial cognition of their city environment than young men. However, there was overall higher participation from women than men in the study; thus more research into perceptions of Kuwait City from the new generation is required. Perhaps a new approach may provide further insight and determine the underlying cause behind why people drew Kuwait City as Kuwait the state.



Sketch 5: This type of sketch map outlining Kuwait as a country was the most expressed form of representation of new Kuwait City by the newer generation. Also with the outline is the labeling of areas in Kuwait and the indication of the location of the house of this 22 year old female participant. **Note:** The sketches have been formatted to fit this page and converted to Black and white.

Traces of History

The demolition of old Kuwait City not only erased its organic urban fabric but also cut off links for future generations to appreciate it's built environment. Today, there are only a few preserved structures and one semi-preserved old *souq* area of AlMubarikya. Of the 69 sketches, only 3 indicated the names of old Kuwait City, 3 drew AlSeif Palace, 2 mentioned the old traditional *souq*, and 1 recognized Safat Square and *AlSoor* (The Wall of Kuwait). Instead, the participants mostly identified elements of new Kuwait City such as the ring road system, major highways, and new residential areas and districts. At the same time, importance was given to the landmarks such as the Kuwait Towers, the Grand Mosque, and Liberation Tower.

More Space

Another significant change after the transformation was the expansion of space, literally in every direction. The houses became multi-leveled with wide-open guest receptions areas and entire suites and wings as bedrooms. Sketches of the new house showed each family member having his or her own room or even a suite. In addition, this standard of luxury living demanded specific workers such as chefs, chauffeurs, and maids to maintain the house resulting in a service zone to accommodate the staff. The contemporary Kuwaiti house is not only evidence of the nation's transformation but also portrays how people live today. It is a living artefact, recording an image in time that reflects the evolution of the Kuwaiti house and built environments.

Comparing the Studies

Before concluding this investigation, a comparative between the mental maps of both generations is essential. The emerging elements foremost in people's minds in both generations represent cultural continuity, and therefore are imperative for understanding Kuwait's present and future spatial patterns. Examining these relationships may provide insight into how people were affected by the rapid changes to their built environments. A comparison of the two studies should not only reveal the changes to the physical built environment but should also shed light on how the people of old Kuwait adapted through the transformation.

Emerging Patterns

Religion, culture and tradition are all vital components of Kuwaiti society, none of which changed and regardless of the ever changing built environments. However, the effects of modernity have resulted in a lack of local cultural meaning in Kuwait's architectural forms, and the once environmentally sustainable vernacular disappeared in the wake of rapid urbanization. This study suggests that despite these changes in the built

environment, key social functions of space endured. This is most evident in the persistence of traditional Kuwaiti culture through social space most represented in the Kuwaiti house.

Persistence of Social Space

It is important to note that upon further study of the new house sketches, there seemed to be the persistence of certain elements and social structures from Kuwait's traditional vernacular. In the past the courtyard served as the centre providing an essential family gathering space. Today, the role of the courtyard has been replaced by the family living room- a significant place in the Kuwaiti household. In Study One, this room was depicted in 77% of the maps generated by the older generation, with 14 out of 18 of the participants identifying this element. Similarly, in Study Two, over 75% of the maps showed this element. This suggests that despite all the dramatic changes in Kuwait's built environments, the shared living space was still significant for the majority of people in the study revealing how family unit is still important. In addition, the *Diwaniya* still plays a central role in the contemporary Kuwaiti house. Both Study One and Two show mental representations of this space. The *Diwaniya* was and still is so part of the social fabric of the Kuwaiti lifestyle that it endured Kuwait's urban revolution. In Study One, 31.5% of the participants identified the *Diwaniya* in their old house, increasing to 50% in their new houses. In Study Two the new generation identified this element in 28.7% of their sketch maps. Participants in both studies clearly labelled this space, indicating its importance in the Kuwaiti home environment.

The Door and Entrance

In parallel, another element was the door or entrance, which may sound typical but in reality is an expression of culture. In old Kuwait, there were two main house entry elements that reflected a clear separation between the public and private realms. The door was the public image of the house and usually symbolized family status. It had an opening

called the *Khoka* and was the most used form of entry. One would bow as he or she entered the house as a first shield of privacy, limiting direct eye contact. The *Dahress* (a usually narrow corridor after the door) was the second shield, primarily used to provide more protection for the exclusive and private domain of the courtyard. In Study One, 15 out of 19 indicated the *Dahress*, while 7 showed the door itself. For their new houses, all of the participants identified their house entrance or door. In study two, 49 out of 66 identified the entrance or door of their house. Again, the door may be an obvious element for the participants to draw, but the majority of sketches reveal the importance of the door in separating the private and public spaces.

A New Landmark

This study reveals a major element in new Kuwait City identified by both the old and new generations. As Kuwait experienced great development, so came the rise of its contemporary landmarks. Although the most highlighted landmark of new Kuwait City was the Kuwaiti Towers, it was not always the most visible when comparing the two studies. In fact, this new landmark was not represented through architecture but by city planning; most exemplified through its many highways and especially its ring road system. By highlighting the main transportation arteries of the city, the participants recognized the significance of this city element. The highway system might not be a landmark like the Kuwaiti Towers, but it is most definitely a dominant feature in people's mental maps of Kuwait's urban landscape. In Study One, the participants identified the ring roads as the second most city element appearing in 42.8% of the drawings. In Study Two, the ring road system ranked fourth appearing in 18.8% of the sketches. This finding illustrates the impact of master planning by not only on shaping cities but also on inhabitants' perceptions of the built environment.

Reflections on Method and Limitations

Using cognitive mapping as a research method has revealed fascinating insights on people's perceptions of space through time. This study attempted to analyse the dynamics and dimensions of these sketches in order to reveal understandings of how change affects people within their built environments. A short interview before or after the sketches was important to further reinforce the meanings of the drawings. In Study One, this strategy worked; however, in retrospect a similar approach should have been used for Study Two. Although not all participants were able to produce a sketch and some sketches were very basic line representations, the majority of individuals gave rich descriptive drawings. These data provide emerging themes and can inform potential future research.

The study had several limitations that must be noted; first, the study only represents a small sample and was not representative of the wider population- both in terms of gender and other variables. The study included participants mostly from the inner-city or close suburbs; thus, it does not fully represent Bedouin tribes that may have lived in old Kuwait. For Study One, it was difficult to obtain female contributors for the research. In general, Kuwait is an open-minded, moderate society that regards highly its culture and traditions. It was a challenge to recruit both genders from the older generations, but it was even more difficult to find female participants who lived in both old and new Kuwait City. The second limitations was that the administration method was different for each study. In Study One, the researcher had direct contact with the participants. For Study Two, however, the sketched maps were solicited through a questionnaire. Direct contact between interviewer and interviewee provided more detail and insight for Study One in contrast with Study Two.

The second study, in which the majority of the participants drew the new city as country, may have yet another explanation. An observation that may have contributed to

this outcome was that perhaps the participants did not fully comprehend the question. Although, it the instructions clearly indicated ‘to sketch Kuwait City and its suburbs’ some participants may have perceived this instruction to mean all of Kuwait. Finally, it is very important to note that this was an exploratory study, and its primary aim was to raise important questions and reveal possible directions for future research.

Conclusion

The findings revealed that the older generation has been affected by the transformation, and the new generation continues to witness changes in Kuwait's built environment, which only magnifies the side effects of modernity. The older generation recalled 35% of old city names in drawing the new city, compared to only 4% from the new generation. The demolition of old Kuwait City diminished its architectural heritage and broke the link for newer generations to appreciate its built forms. As a result, the new generation lacks the overall recognition of the significant historical spaces of old Kuwait as they expressed in the new city. It is true that younger citizens did not experience the old city, and perhaps it is less meaningful for them, but they acknowledged signs of the heritage that remains in the new city. These findings raise many questions, why is there a disconnect between the new generation and appreciation of traditional architectural heritage? How can designers and others promote awareness of cultural sustainability by preservation of Kuwait's remaining historical structures?

Also in comparing old and new Kuwaiti houses, more elements are different than similar. People moved from mud brick courtyard houses to contemporary concrete villas. Lifestyles changes are clearly shown by the transformed house type, which reflected obvious variations in size and amenities. In study one, the participants recognized the courtyard as the most important old house element, as it appeared in all 19 sketches. The central open space, which played a significant role in local culture and domestic life within

the house, has disappeared to open areas overlooking the street. Why did the courtyard and other traditional vernacular elements disappear from Kuwait's urban fabric? What is the impact of their disappearance? And to what extent may it and other traditional vernacular elements still be used in Kuwait's contemporary residential built environments?

Cognitive maps as a research method has revealed fascinating insights on people's perceptions of space through time by not only interpreting their built spaces in Kuwait but how they express perceptions of a changing reality. The emerging themes of the study only began to examine the various levels in which people were affected by the oil boom and the subsequent massive urbanization. The drawings revealed changes in people's perception of space in Kuwait's built environments and the analysis presented how these changes uncovered deeper understandings of the multi-faceted impacts of modernity and change.

OLD KUWAIT CITY				NEW KUWAIT CITY			
RANK	NAME OF CITY ELEMENT	NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS	% OF MAPS IN WHICH ELEMENT APPEARS	RANK	NAME OF CITY ELEMENT	NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS	% OF MAPS IN WHICH ELEMENT APPEARS
1	Area of Al Jebla	12	66.6	1	Residential Areas	6	42.8
2	Area of Al Sharq	10	55.5	2	Ring Roads (from 1-6)	6	42.8
3	Area of Al Mirgab	10	55.5	3	Identified "Old City" by names	5	35.7
4	The Sea	8	44.4	4	Major Highways	4	28.5
5	Area of Al Salhiya	7	38.8	5	Arabian Gulf Road	4	28.5
6	Naif Palace	7	38.8	6	Seif Palace/Council Ministers	4	28.5
7	Al Soor (The City Wall)	6	33.3	7	Amiri Hospital	4	28.5
8	Safat Square	5	27.7	8	Kuwaiti Towers	3	21.4
9	Souqs (one or all of them)	5	27.7	9	Main City Streets	3	21.4
10	Sharea Al Jadeed (New St.)	5	27.7	10	Old Souq (Al Mubarikiya)	3	21.4
11	Al Shamiya Gate	5	27.7	11	Al Soor Street	2	14.2
12	Salhiya Cemetery	5	27.7	12	Grand Mosque	2	14.2
13	Area of Al Wasat	4	22.2	13	Preserved Old City Gates	2	14.2
14	Seif Palace	4	22.2	14	Dasman Palace	2	14.2
15	Own House or Neighbourhood	4	22.2	15	Al Baladia (Municipality)	2	14.2
16	Al Mugsab Gate	3	16.6	16	Souq Sharq (Shopping mall)	2	14.2
17	Al Jahra Gate	3	16.6	17	Youm AlBahar (Heritage Area)	2	14.2
18	Baladia (Municipality)	3	16.6	18	Qasr Al Adel (Justice Palace)	1	7.1
19	General Alleys or Houses	3	16.6	19	Chamber of Trade Commerce	1	7.1
20	Al Shaeb Gate	2	11.1	20	Arab Development Fund	1	7.1
21	Area of Al Watia	2	11.1	21	Al Jebliya School	1	7.1
22	Al Mugsab (Butchery)	2	11.1	22	Major Round Abouts	1	7.1
23	American Hospital	2	11.1	23	Ministries Complex	1	7.1
24	Al Fertha (Harbour market)	2	11.1	24	The Sea or Kuwait Bay	1	7.1
25	Main Negas(Harbours)	2	11.1	25	Kuwait Oil Company Complex	1	7.1
26	Amen Al Um (Police Station)	2	11.1	26	National Assembly	1	7.1
27	Dasman Palace	1	5.5	27	Safat Square	1	7.1
28	Local Mosque	1	5.5	28	Stock Exchange	1	7.1
29	Dasman Gate	1	5.5	29	Old Police Station	1	7.1
30	Ahmed Al Jaber Street	1	5.5	30	Dickson House (Museum)	1	7.1
31	Fahad Al Salem Street	1	5.5	31	Community Centres	1	7.1
32	Al Jebla School for Girls	1	5.5	32	Sheraton Hotel	1	7.1
33	Dickson House(British Agent)	1	5.5	33	National Museum	1	7.1
34	FrejSkuwaikh(Shuwaikh Alley)	1	5.5	34	Car Parking Area	1	7.1

Table 1: Comparative data table between sketches of Old and New Kuwait City.

OLD KUWAITI HOUSE				NEW KUWAITI HOUSE			
RANK	**NAME OF HOUSE ELEMENT**	**NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS**	**% OF MAPS IN WHICH ELEMENT APPEARS**	**RANK**	**NAME OF HOUSE ELEMENT**	**NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS**	**% OF MAPS IN WHICH ELEMENT APPEARS**
1	Courtyard Courtyard (one only) Courtyard (two, three or four)	*19* *10* *9*	*100*	1	Entrance of the House (one or more entrances)	*18*	*100*
2	One storey	*19*	*100*	2	Multi Levels	*16*	*88.8*
3	Bedrooms	*18*	*94.7*	3	Bedrooms or Wings	*14*	*77.7*
4	Dahress (Corridor after door)	*15*	*78.9*	4	Guest Reception	*14*	*77.7*
5	Kitchen	*13*	*68.4*	5	Family Living room	*14*	*77.7*
6	Al Jelleb (Well)	*9*	*47.3*	6	Kitchen	*13*	*72.2*
7	Bathroom	*8*	*42.1*	7	Service Area	*12*	*66.6*
8	The Door (including Khoka)	*7*	*36.8*	8	The Main Door	*10*	*55.5*
9	Diwaniya(social gathering room)	*6*	*31.5*	9	Outside space(paved or garden)	*9*	*50*
10	Liwan (covered walkway)	*6*	*31.5*	10	Diwaniya	*9*	*50*
11	Al Bircha (water collection tank)	*6*	*31.5*	11	Outside boundary wall	*9*	*50*
12	Stairs	*5*	*26.3*	12	Bathroom	*9*	*50*
13	Al Shael room (Food Storage)	*3*	*15.7*	13	Stairs	*8*	*42.1*
14	Ferya (passage btw 2 houses)	*2*	*10.5*	14	Corridors	*7*	*38.8*
15	Roof	*1*	*5.2*	15	Elevator	*3*	*16.6*
16	Greenery a tree or shrub	*1*	*5.2*	16	Car park/garage	*3*	*16.6*
17	Mulala (Food Holder)	*1*	*5.2*	17	Windows	*2*	*11.1*
				18	Library	*1*	*5.5*

Table 2: Comparative data between sketches of the Old and New Kuwaiti House.

NEW KUWAIT CITY

RANK	NAME OF CITY ELEMENT	NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS	% OF MAPS IN WHICH ELEMENT APPEARS	RANK	NAME OF CITY ELEMENT	NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS	% OF MAPS IN WHICH ELEMENT APPEARS
1	Outline of Kuwait as a Country	*43*	62.3	21	Stock Exchange	*2*	2.8
2	Residential/District/Governate Areas	*42*	60.8	22	Al Mubarqia (Old Souqs)	*2*	2.8
3	Kuwaiti Towers	*19*	27.5	23	Aqua Park	*2*	2.8
4	Ring Road System (from 1- 6)	*13*	18.8	24	Dar Salwa (Amir Residence)	2	2.8
5	Arabian Gulf	*11*	15.9	25	Local Mosque	1	1.4
6	Major highways/streets	*8*	11.5	26	Skuwaikh Port	1	1.4
7	Arabian Gulf Road	*8*	11.5	27	General House/Buildings	1	1.4
8	Grand Mosque	*7*	10.1	28	Chalets(Beach Houses)	1	1.4
9	Liberation Tower	*7*	10.1	29	Major Oil Fields	1	1.4
10	Kuwait Bay	*3*	4.3	30	Al Safat Square	1	1.4
11	Airport	*3*	4.3	31	Diwan Al Amiri (Amir's Office)	1	1.4
12	Souq Sharq (Shopping mall)	*3*	4.3	32	Al Raya shopping mall	1	1.4
13	National Assembly	*3*	4.3	33	Salhiya Shopping mall	1	1.4
14	Al Seif Palace	*3*	4.3	34	Church	1	1.4
15	Names of Old Kuwait districts	*3*	4.3	35	Marriot Hotel	1	1.4
16	Main Round Abouts	*3*	4.3	36	Their House	1	1.4
17	Al Hamra Tower	*3*	4.3	37	Amusement Park	1	1.4
18	Ministry of Foreign Affairs	*2*	2.8	38	Scientific Centre	1	1.4
19	Dasman Palace	*2*	2.8	39	Al Soor	1	1.4
20	Avenues shopping mall	*2*	2.8	40			

Table 3: Kuwait's new generation's most identified City elements.

RANK	NAME OF HOUSE ELEMENT	NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS	% OF MAPS IN WHICH ELEMENT APPEARS	RANK	NAME OF HOUSE ELEMENT	NUMBER OF PARTICPANTS IDENTIFYING ELEMENTS	% OF MAPS IN WHICH ELEMENT APPEARS
1	Multi level	*58*	87.7	21	Children Play Room	*3*	4.5
2	Bed Rooms(one or more)	*52*	78.7	22	Office Room	*3*	4.5
3	Family living room	*50*	75.7	23	Swimming Pool	*2*	3.0
4	Guest Reception	*49*	74.2	24	Library	2	3.0
5	House Entrance/Door	*49*	74.2	25	Studio Room	1	1.5
6	Kitchen(one or more)	*48*	72.7	26	Entertainment Room	1	1.5
7	Bathrooms(one or more)	*46*	69.6	27	Computer Room	1	1.5
8	Stairs	*39*	59.0	28	Gym	1	1.5
9	Diwaniya	*19*	28.7	29	Roof	1	1.5
10	Service Area	*18*	27.2	30			
11	Corridors (one or more)	*15*	22.7	31			
12	Outside Space: Pavement/Garden	*12*	18.1	32			
13	House Boundary Wall	*11*	16.6	33			
14	Elevator	*10*	15.1	34			
15	Outside Gate	*8*	12.1	35			
16	Windows	*8*	12.1	36			
17	Storage Room	*7*	10.6	37			
18	Balcony	*6*	9.0	38			
19	Guest Room	*5*	7.5	39			
20	Garage/ Car Park	*5*	7.5	40			

Table 4: Kuwait's new generations most identified House elements.

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Dear Yousef

PROJECT TITLE: '*Kuwait: People and the Environment*'

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 08.05.12 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following document that you submitted for ethics review:

- University research ethics application form (03.05.2012)
- Fieldwork Information Sheets, Interview structures, Questions, Departmental Visit Sheet and Consent Forms

If during the course of the project you need to deviate significantly from the above-approved document please inform me since written approval will be required. Please also inform me should you decide to terminate the project prematurely.

Yours sincerely

Stephen Walker
Ethics Administrator