

THE ROLE OF GENDER IN KUWAIT'S ARCHITECTURE

by

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Submitted in partial fulfilment of the requirements
for the degree of Master of Architecture

at

Dalhousie University
Halifax, Nova Scotia
March 2014

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TABLE OF CONTENTS

Abstract.....	iv
Acknowledgments.....	v
Chapter 1: Introduction.....	1
Geolocation.....	1
Land Tenure and Property.....	1
Architecture.....	1
Domestic Unit.....	2
Climate.....	2
Kuwait Annual Climate Table.....	2
Courtyard.....	3
Musharabiya.....	4
Chapter 2: Private Sphere.....	5
Site.....	7
Chapter 3: Current Issues in the Functionality of the House.....	10
Excessive Programs.....	10
Parking.....	11
Servants Rooms.....	12
Property Value.....	12
Chapter 4: Gender Zones.....	14
Female Zone.....	14
Female and Male Zone.....	15
Male Zone.....	16
Chapter 5: Characters that Currently Define the Gender of the Space.....	18
Natural Light.....	18
Size.....	19
Location.....	20
Chapter 6: Public Sphere.....	24
Gender Spaces In The Mosques.....	24
Mixed Use Commercial Architecture.....	26
Chapter 7: Design Proposal for a House.....	28

View Planes.....	36
Examples and Guidelines for a Kuwaiti Home.....	39
Chapter 8: Conclusion.....	43
Bibliography.....	44

ABSTRACT

This thesis explores the different methods of gender segregation in both the home and public realm in Kuwait. The main forms of segregation exist both physically, in the form of a wall barrier, and mentally, in the way people are raised in Middle Eastern traditional and cultural norms. The goal of this thesis is to analyze the living patterns in terms of age, clan, and gender and to create a new design method for a home where it incorporates old traditional Middle Eastern home architectural styles. The new design method enhances the living environment, increases access to outdoor spaces, and improves living conditions of the servants living and working in the home.

ACKNOWLEDGEMENTS

I wish to thank Sarah Bonnemaïson for the valuable supervision I received throughout this year, Christine Macy for helpful remarks, all faculty members, my family and friends for their continuous love and support.

CHAPTER 1: INTRODUCTION

Geolocation

Kuwait is a small country located in the Middle East on the Persian Gulf, between Iraq and Saudi Arabia. It is a desert country with intensely hot summers and short, cool winters. The terrain varies minimally, between flat and slightly undulating desert plains.



Map of Kuwait

Land Tenure and Property

Many people live in urban areas because of the necessity of sharing scarce resources in the desert. This factor also influences the price of available property: prices are high and the general population has limited ability to actually own property.

Architecture

Social, religious and tribal factors inform the culture. The architecture especially reflect the peoples times, values and traditions, habits and climate.¹

¹ Jama. *Countries and Their Cultures, Culture of Kuwait*, accessed March 22, 2014, <http://www.everyculture.com/Ja-Ma/Kuwait.html#b>.

Domestic Unit

Family forms the basis of Kuwaiti society. Extended families live together, partly out of necessity caused by limited housing space, but also for all family members to be involved in the socialization of future generations and maintain cultural traditions.²

Climate

To address the climatic issues that affect the house, it is important to understand how the issues were addressed in old Kuwaiti house designs. Over time in the past, Kuwait's architecture adapted to the climate in several ways. The construction of an old buildings had thick walls to insulate against the heat. Each house had a shaded courtyard with plants and trees to add shade to the courtyard, and a musharabiya, a wooden screen used to cover the window. In the recent Kuwaiti homes designs, the courtyard and musharabiya have been eliminated from the design, making the family living in the home to avoid the outdoors and constantly having the curtains covering the window blocking natural light to enter in the house.

Kuwait Annual Climate Table

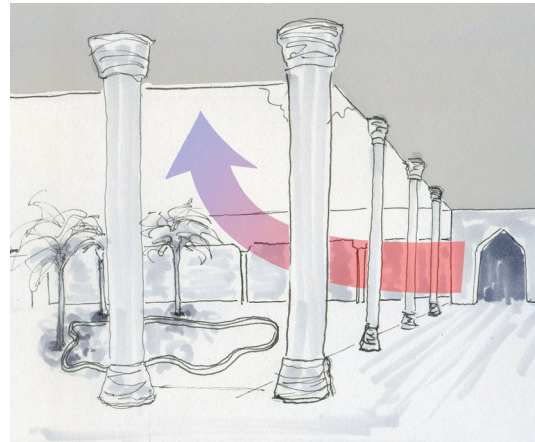
Prevailing wind direction is NW

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Temperature (°C)	18	21	26	32	39	44	44	45	42	35	27	20	33
Average Precipitation (mm)	26	16	13	15	4	0	0	0	0	3	14	17	107
Wet Days	3	1	2	2	1	0	0	0	0	0	3	6	18
Average Sunlight (hours/day)	8	9	9	8	10	10	10	11	10	10	8	7	9
Average Daylight (hours/day)	10	11	12	13	14	14	14	13	12	11	11	10	12

² Ibid.

Courtyard

The courtyard acts as a sink for the cooler air on the roof, cooling lower rooms that are facing the courtyard. The courtyard heats up quickly during the day, creating a chimney effect, whereby, hot air rises, pulling the hot air from the lower floor. In the past the upper floor of the house was occupied during the summer months as it was exposed to greater wind movement. The bedrooms are located in the upper level around the courtyard oriented for view and ventilation.³



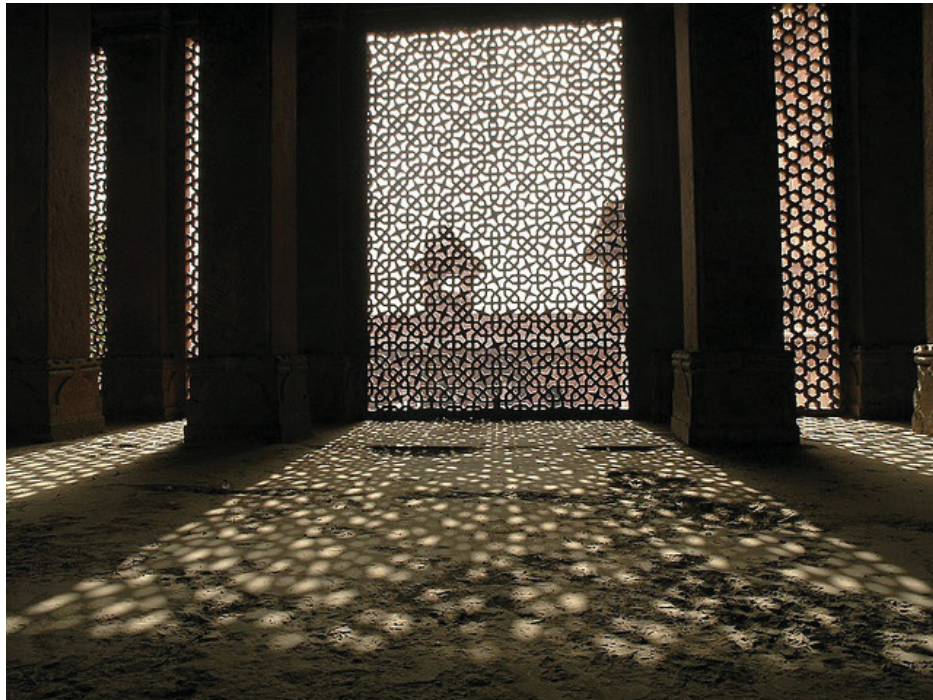
Syrian House Courtyard, 2012; photograph by Jhshannon, from *Hiikayat Shamiyya*.



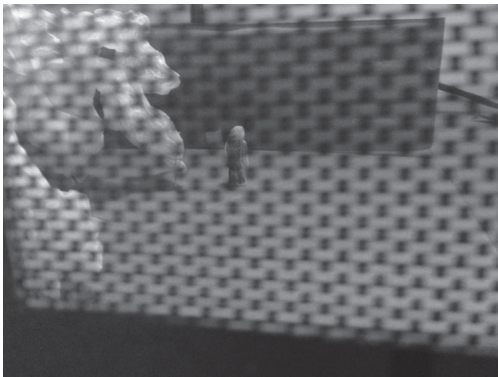
3 James Steel and Hassan Fathy, *An Architecture for People: The Complete Works of Hassan Fathy*. (New York: Whitney Library of Design, 1997), 44.

Musharabiya

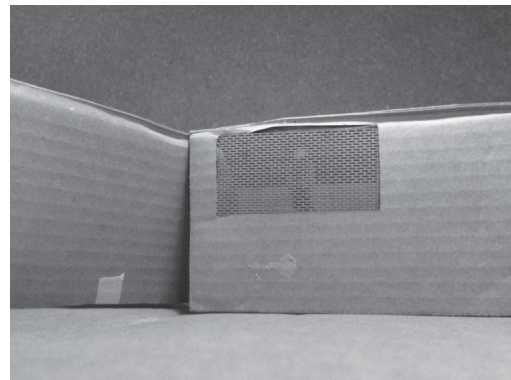
Typically in an old home, a musharabiya is placed over the window. The musharabiya reduces the reflected heat and solar radiation. It allows air to pass through freely. The wood absorbs moisture from the hot humid air in the summer, creating a cooling effect as air passes through. The window balusters diffuse light and shade to prevent glare. The screen also reduced the exposure to the public and maintained the privacy of the household.



Wood Screen Window in India, 2012; photograph by Lama Zibdeh, from Pinterest.



Study showing the view out from the musharabiya as seen from the upper floor.



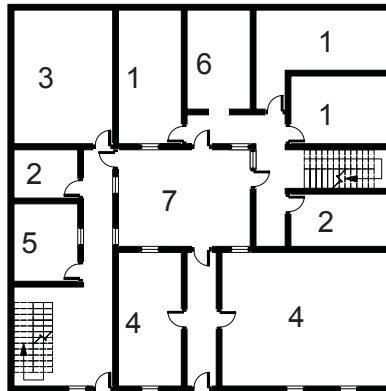
Study showing the view towards the musharabiya as seen from the lower floor.

CHAPTER 2: PRIVATE SPHERE

Domestic Architecture

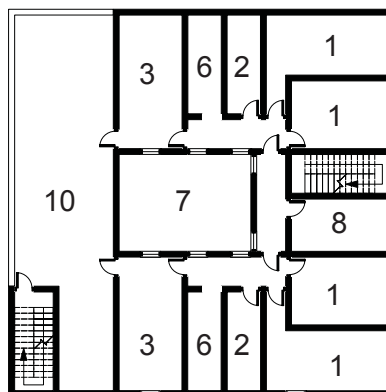
Over the span of just two hundred years, the people of Kuwait shifted from a nomadic population to an urban population. The development of the urban environment has largely been influenced by Islam, and homes reflect the tenets of Islam as clearly as they reflect the influence of desert life and culture. Most homes are rectangular in shape and are organized around an inner courtyard. This courtyard allows for an enclosed yet open environment, and at the same time protects from the wind and direct sunlight in the desert climate. Generally several homes are clustered to serve the needs of an extended family. As family size increases, more rooms are built on to accommodate the new members.⁴

Ground floor plan showing the placement of programs around the courtyard.



1. Bedroom
2. Bathroom
3. Sala
4. Duwania
5. Maids room
6. Kitchen
7. Courtyard
8. Storage room
9. Roof

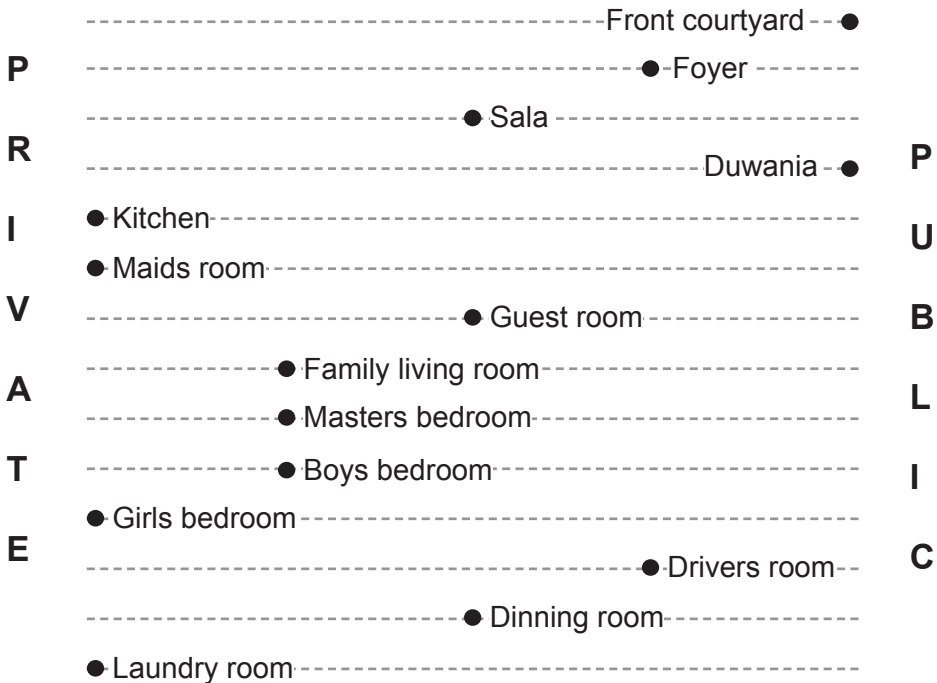
Upper floor plan showing the clustered extension for the extended family.



⁴ Jama. *Countries and Their Cultures, Culture of Kuwait.*

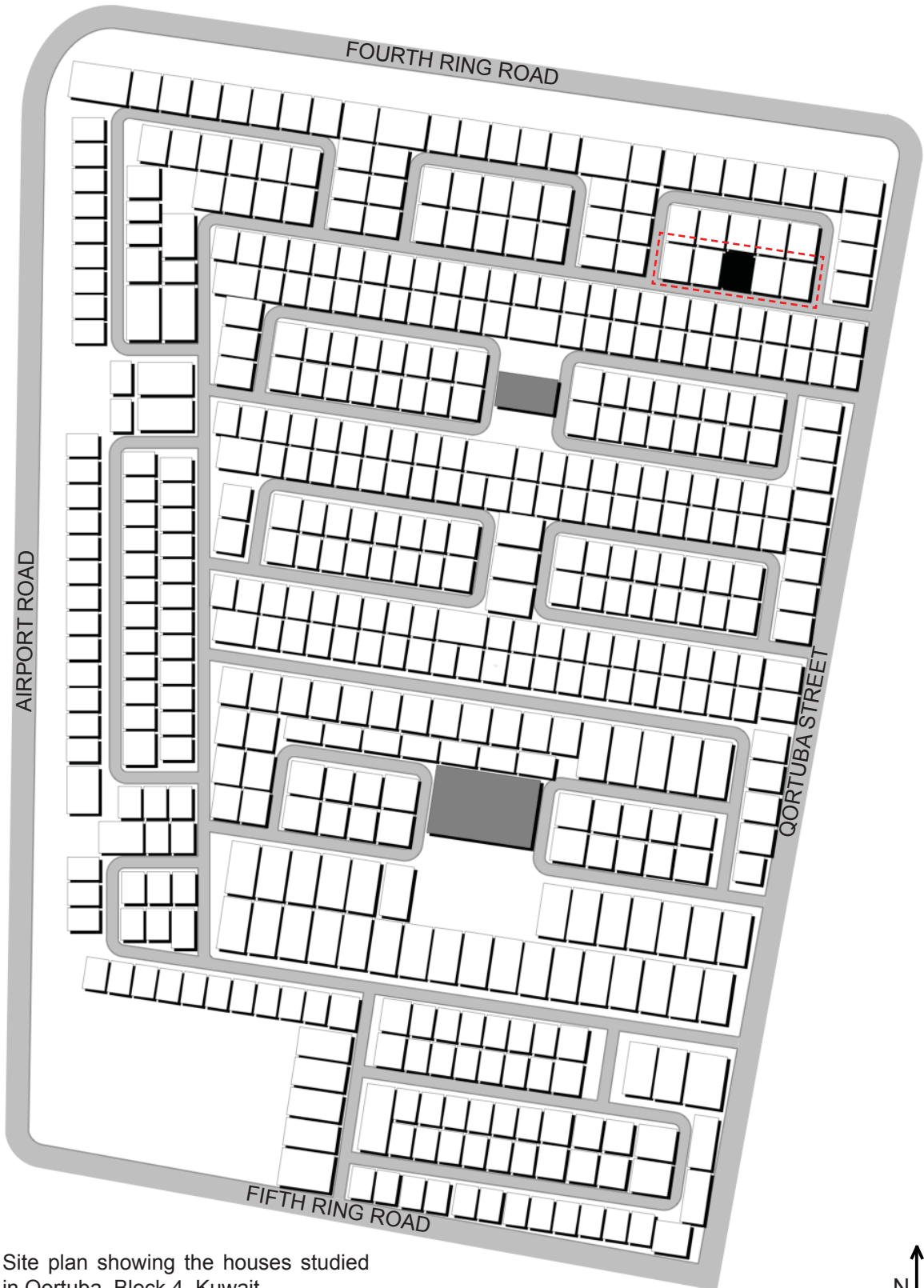
The manner in which space is used reflects the traditional relationship between men and women. In nomadic times, tents would be separated by screens or a cloth, so that men could entertain unrelated men, as is their custom, without having the guests come into contact with women kin. With the advent of urban living, homes were built with what is known as a “double circulation system” so that men and women could avoid contact with one another, and most importantly so that women were not in contact with strange men.⁵

Duwania (living room), is generally where the men in the house gather with other men. Sala (living room as well) however it is more informal and is commonly used as a place for the whole family to gather or in a more formal situation a place where women gather.



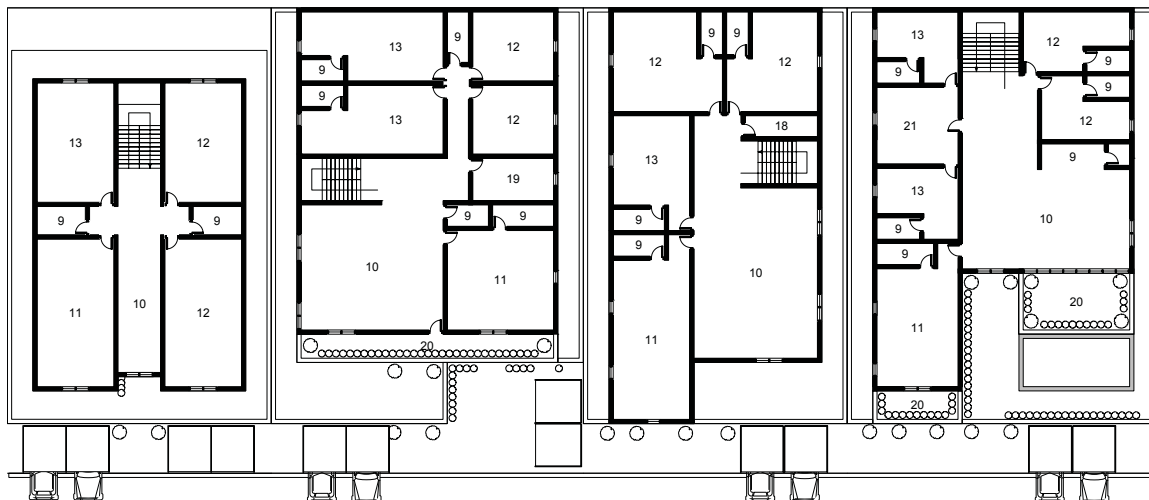
⁵ Ibid.

Site

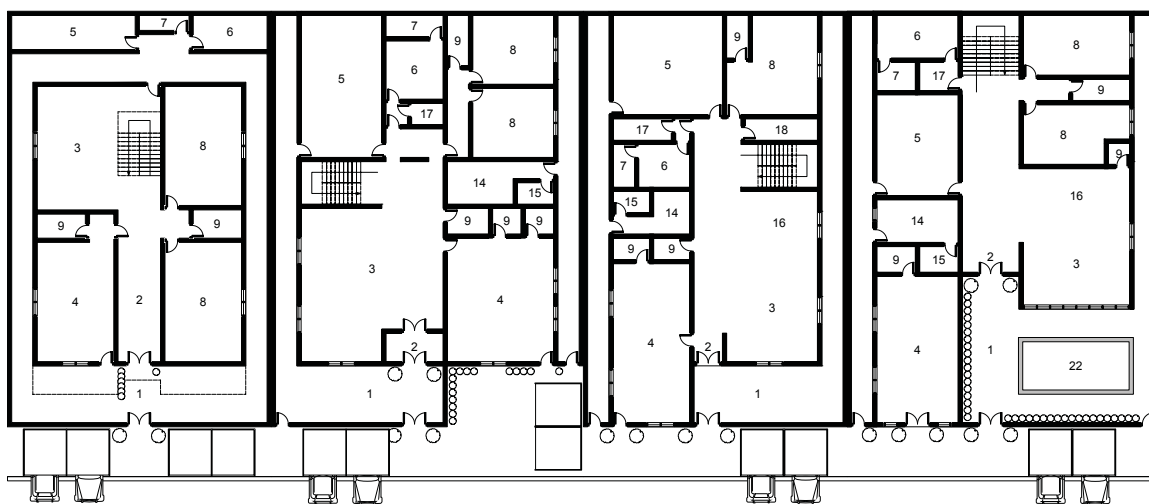


Site plan showing the houses studied in Qortuba, Block 4, Kuwait.

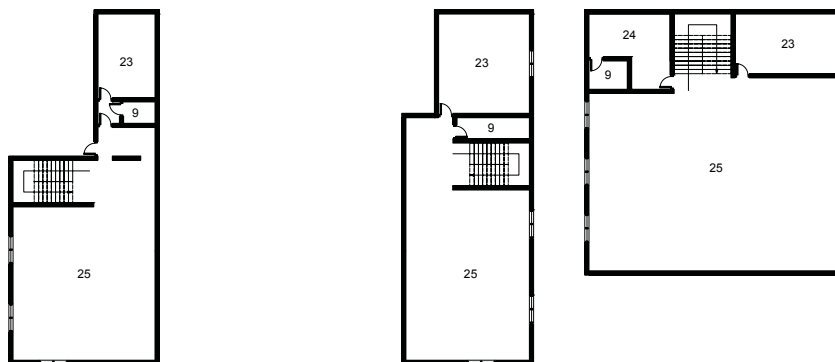




Upper floor plan

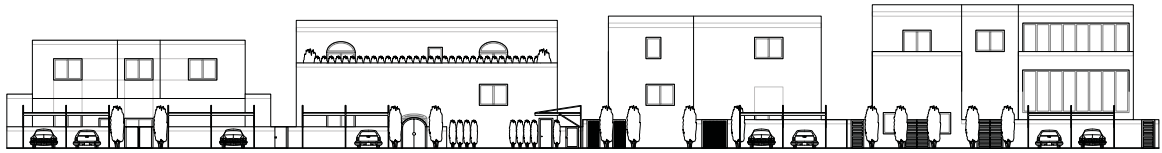


Ground floor plan

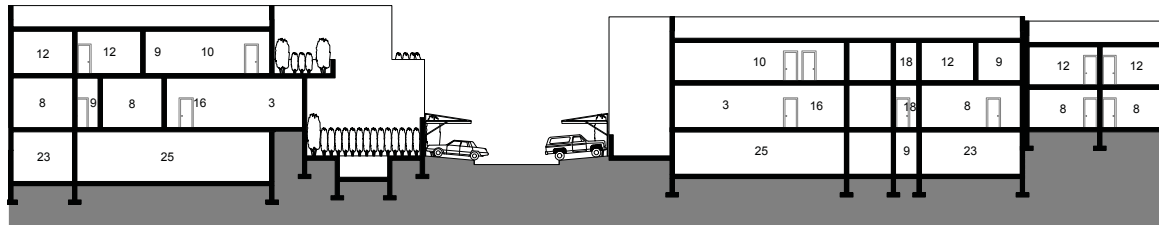


Underground floor plan

Strip of existing homes in Kuwait City on the same street.



Elevation



Longitudinal section

Program of typical domestic architecture

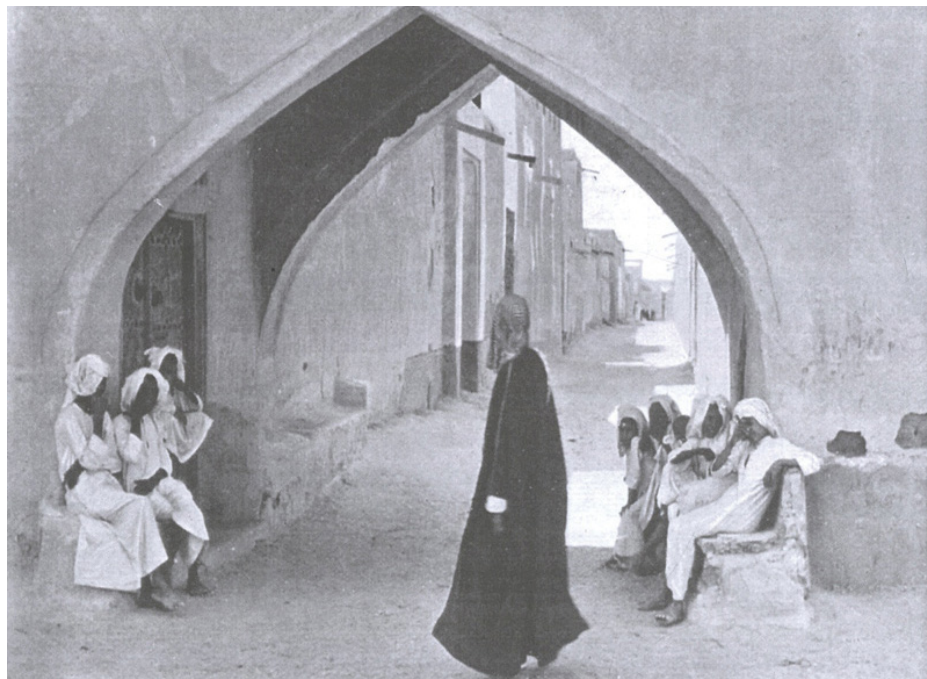
- | | | |
|--------------------|------------------------|-----------------------|
| 1. Front courtyard | 10. Family living room | 19. Office |
| 2. Foyer | 11. Masters bedroom | 20. Terrace |
| 3. Sala | 12. Boys bedroom | 21. Girls Living room |
| 4. Duwania | 13. Girls bedroom | 22. Swimming pool |
| 5. Kitchen | 14. Drivers room | 23. Storage |
| 6. Maids room | 15. Drivers bathroom | 24. Prepping room |
| 7. Maids bathroom | 16. Dinning room | 25. Event room |
| 8. Guest room | 17. Laundry room | |
| 9. Bathroom | 18. Storage | |

PROGRAM	SIZE (M2)	QUANTITY	NUMBER OF OCCUPANCY
CLOSET	4-6	5	1-2
BATHROOM	4-6	10	1
GIRLS BEDROOM	30	2	1
BOYS BEDROOM	24	2	1
MASTER BEDROOM	35	1	2
GUST ROOM	20	1	1-2
MAIDS ROOM	30	1	2
DRIVERS ROOM	30	1	1-2
LAUNDRY ROOM	4	1	1
KITCHEN	28	1	2-6
DRIVERS KITCHEN	8	1	1-2
DINNING ROOM	28	1	10
FAMILY LIVING ROOM	90	1	10
SALA	90	1	20
DUWAIA	56	1	15
FOYER	8	1	2-4
PARKING	12	3	3

CHAPTER 3: CURRENT ISSUES IN THE FUNCTIONALITY OF THE HOUSE:

Excessive Programs

Land property value has been in the past decades increasing in Kuwait. Recently, a 500m² was equally valued to a mansion in Beverly Hills is three times the size. With the prices of the land increasing, the owner is forced to make the best of the house that also it leads to an increase of unnecessary programs in the house. The new programs include a large event room with a large dining space for special occasions such as engagement or birthday parties. The bedrooms have been enlarged to accommodate their own bathroom and closet space. The Western influences have lead to loss of tradition in the functionality of the house. The traditional layout avoided the unnecessary programs element. Very few architects in Kuwait have introduced solutions to keep up with the excessive programs, yet maintaining the traditional functionality of the house. Most architects have surrendered and adhered to what the client desires. Each new generation in the Kuwaiti family is raised in a different house forcing them to adapt to the new functionality of the house and not learning from architectural side of tradition and culture.⁶



Old Neighborhood Street in Ahmedi, Kuwait, 1940; Photographed by Kuwait411; from Flickr.

6 Barrak Al Babtain, *Re:kuwait, Urban Analysis and Solutions*, accessed March 22, 2014, <http://rekuwait.wordpress.com/>.

Parking

Due to the excessive programs in the house, there is a lack of space for parking. On average, a home would consist of two to three cars. Currently, the home owners park their cars in front of the house on the sidewalk. This is a major problem. Even when a sidewalk pavement exists, it is usually filled entirely with cars. This forces people to walk on the road, which either makes them decide not to walk or exposes them to danger. The cars are shaded by a shading structure that covers all the space in front of the house. Previously traditional houses had benches outside the house where the owner of the house can meet with neighbors and socialize while watching the children play. Today the houses give no invitation to linger and stroll. Neighbors have become anonymous to each other as there is no shared space for them to meet and for their children to play. Climatically, during the day the street heats up very quickly making the temperature around the house increase. Studies have shown that the use of plants and trees help reduce the temperature, yet there is no space for that because the home owner would rather use the space to park their car.⁷



Current Neighborhood Street in Ahmedi, Kuwait, 2011; Photographed by Jamal; from Re:kuwait.



Section through of a recent neighborhood street in Ahmedi, Kuwait, showing the lack of space for a side walk and the car shading structure.

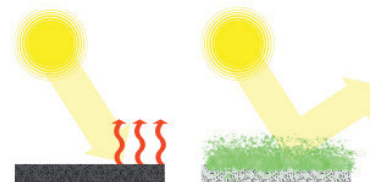
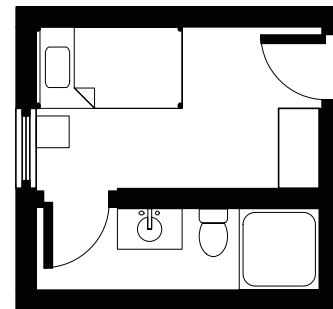
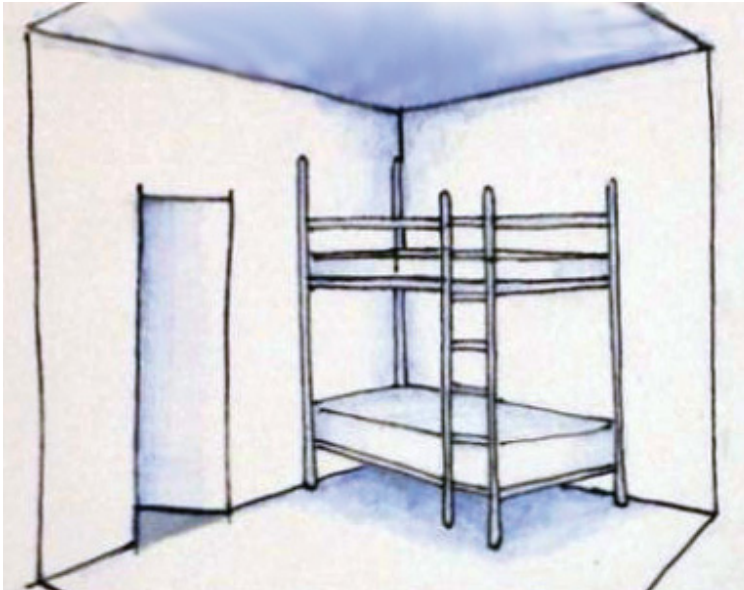


Diagram showing how different surfaces deal with the sun exposure.

⁷ Ibid.

Servants Rooms

Another issue caused by the increasing value of the land, is the size of the servants room. Family has on average two female maids and two male drivers. The area of the two rooms dedicated to the servants are on average 6m², almost impossible to fit one person with a bed, yet they are forced to adapt to it by using objects that can be stored away such as folded bed chairs, etc.



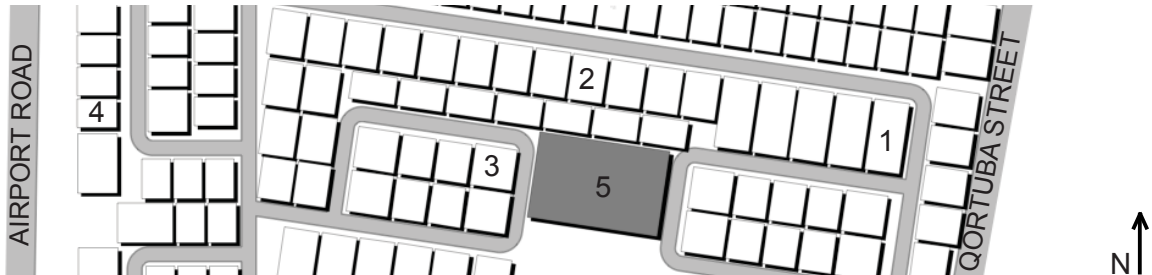
Perspective and plan showing the servants room layout.

In this thesis, my goal is to address these current issues by introducing a new design for a home that deals with the new programs while bringing back old traditional elements such as the courtyard and musharabiya that was once used to improve the comfort of the people living in the house. The new design will also address the side walk and parking space and improve the servants living conditions in the home by enlarging their rooms to a comfortable size.

Property Value

Property value increases depending on location. The higher the number of streets the property faces the higher the price. This is because the property is not close to other homes which enables the property to have larger windows and a better quality of life. Another factor that increases property value is the extended land that comes with properties facing a highway or major street like the Airport Road. The extended land is owned by the

government and it is to be used as a construction site if the road needs to be reconstructed, however, when the government is not using the land property owners build gardens and backyards. The restriction is that what ever is built on the extended property needs to be easily removed if the government needs to use it



1. Property facing three inner streets.
2. Property facing one inner street.
3. Corner property facing two streets.
4. Property facing two streets with extended land.
5. Mixed used public building.

CHAPTER 4: GENDER ZONES

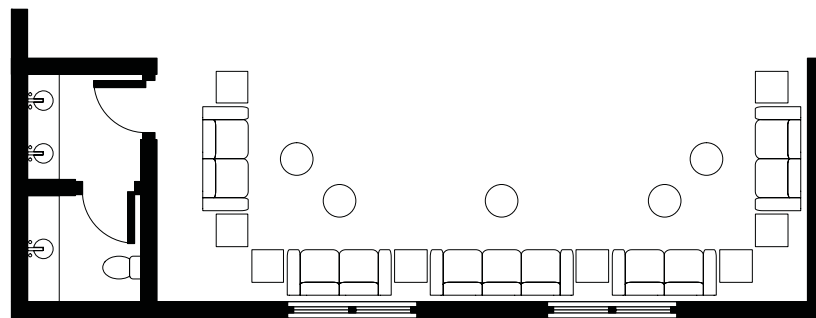
The interior of the house can be seen as an integration of three prime domains, family (male and female), female, and male.

Female Zone

This zone accommodates a number of spaces that serve different functions and is dominated by the female family members, who perform different types of activities within this zone. Some of the spaces are exclusively used by women (kitchen and female toilet); while some other spaces, e.g. the kitchen veranda might be occupied, for short time, by the male members of the family.⁸



Perspective showing the sala during a gathering of women friends.



Typical floor plan of the sala.

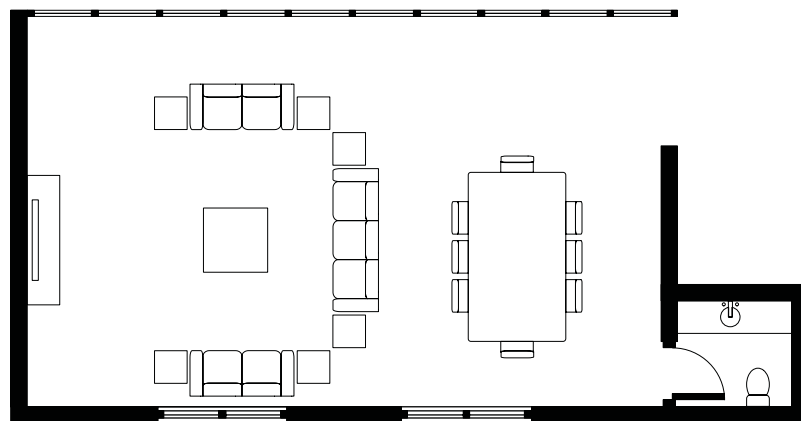
8 Eman Abdelrahman Farah, *Gender Zones in the Arab Muslim House*, accessed March 22, 2014, http://www.ucl.ac.uk/bartlett/3sss/papers_pdf/42_Farah&Klarquist.pdf.

Female and Male Zone

Family members use this domain in different ways. It is dominated by the females and the children, and thus identified by the inhabitants as a females and children's sphere. The male guest, from the Muharam category, may enter this domain under controlled conditions, while female guests are permitted into and received in this part of the private sphere of the house.⁹



Perspective showing the family living room in a family gathering occasion.



Typical floor plan of the family living room.

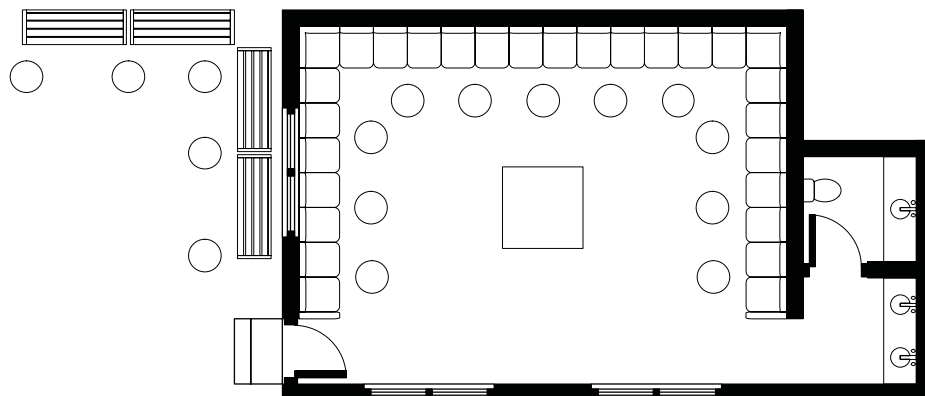
9 Ibid.

Male Zone

Male members of the household and their male guests dominate this domain. It usually consists of a number of spaces that serve multiple functions. This domain, although part of the private territory of the inhabitants, is the least private area of the house (in relation to strangers). Female family members are expected to be alert while using this zone due to reduced privacy, therefore their entrance to this area is permissible only under certain circumstances.¹⁰

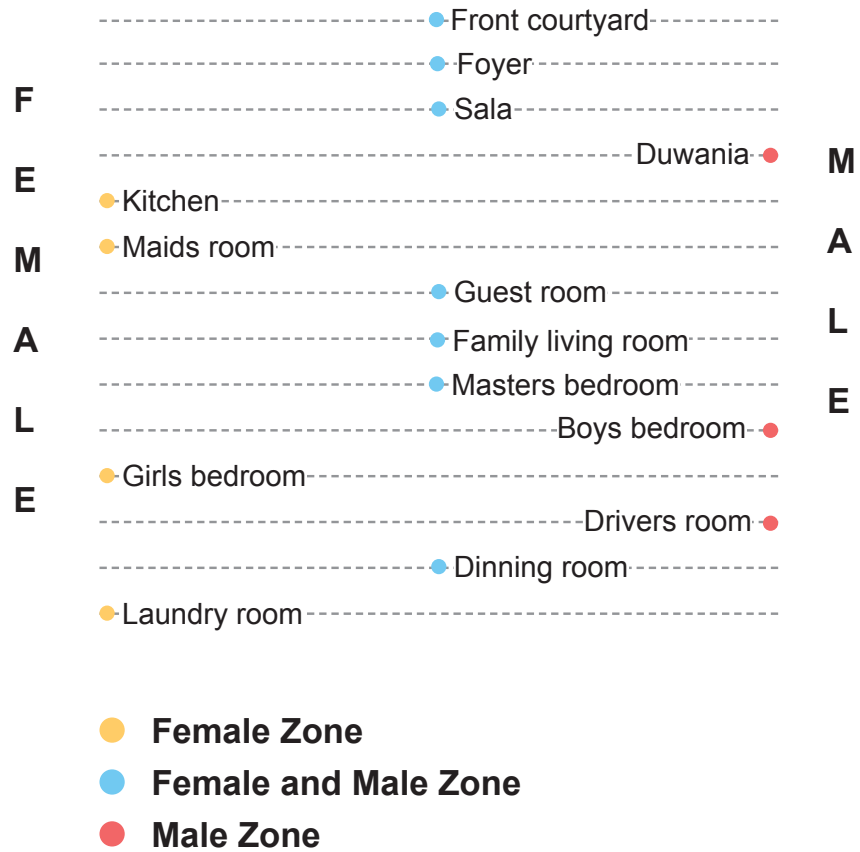


Perspective showing the duwania during a gathering of men friends.

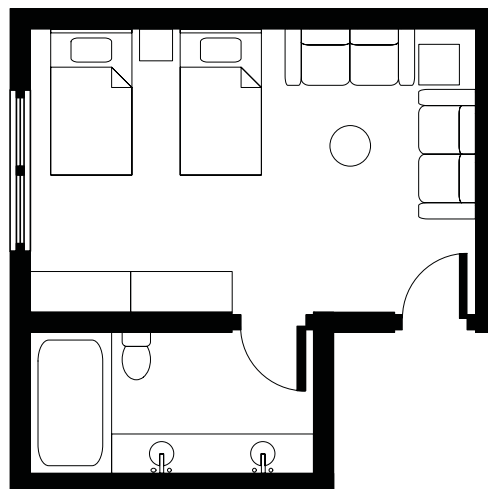


Typical floor plan of the duwania.

¹⁰ Ibid.



The new design will also address the three zones by maintaining an appropriate distance between each zone and placing each zone on a different floor level in the home. The new design will also enlarge the servants room to a suite, where they will have an appropriate amount of space to lounge and sleep.

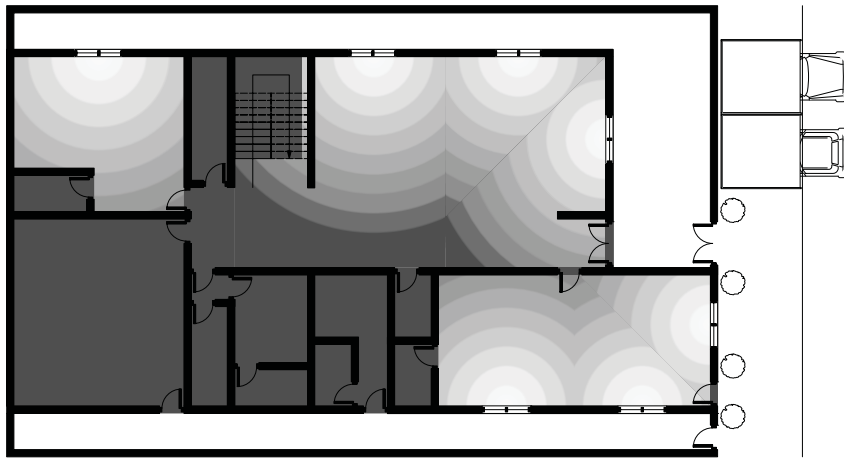


Plan showing the enlarged servants room in the new design.

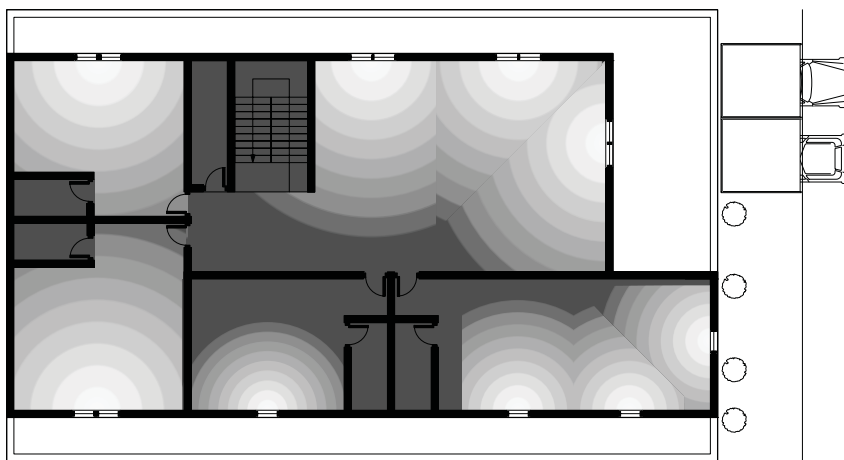
CHAPTER 5: CHARACTERS THAT CURRENTLY DEFINE THE GENDER OF THE SPACE

Natural Light

The male spaces in the house are found to be much brighter than the female spaces. This is because the male spaces tend to face a public open space such as a public street, that receives a larger amount of direct sun light during the day. The female spaces tend to face a private hidden space such as the small space between the neighboring house and the size of the window would be smaller than the males to reduce the exposure to the public.



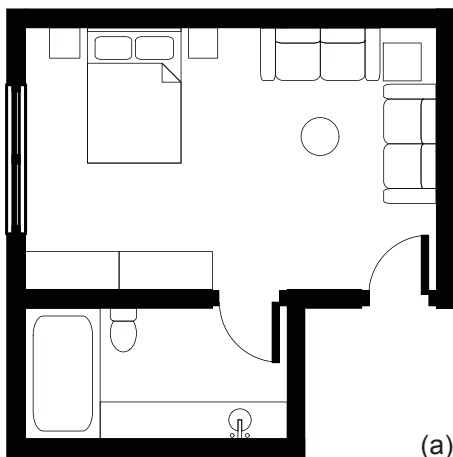
Ground floor plan light study



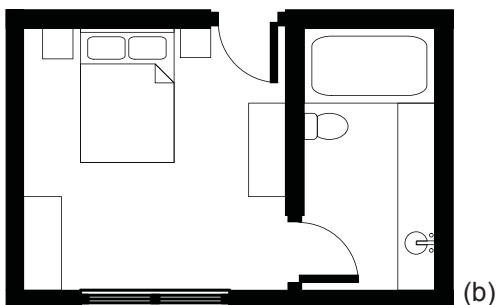
Upper floor plan light study

Size

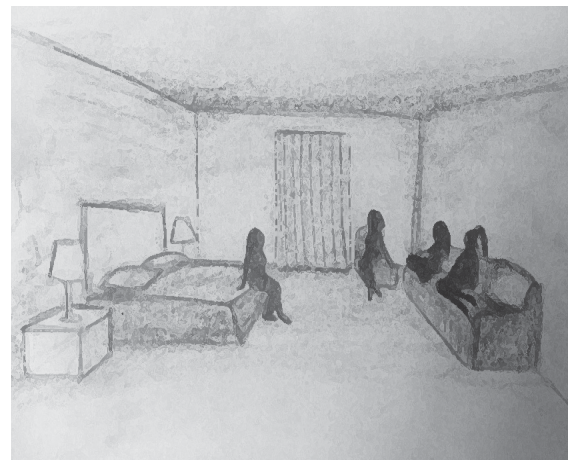
Female spaces are found to be larger than the male spaces. The males have a public gathering living space (the duwania) within the house that is smaller than the living room (sala). The sala is generally occupied by the females. Size plays a bigger role in private spaces, such as the bedrooms. The size of the female bedroom is much larger than the males. The female bedroom is larger in size because they are considered master bedroom style, where they have their own bathroom, small living space, and a larger closet space. This is because, the females do not have a standard gathering place for their guests other than the sala (family living room). In certain formal female occasions, the males have to be dismissed from the sala and not allowed to be around that space, because some of the female guests might have removed their head scarf. For example, when the daughter has her female friends come to visit, she would welcome them in the daughter's bedroom where there is a small seating space for such small gatherings. If the son has his male friends come to visit, it would be inappropriate for his male friends to linger around the house and especially go to the area where the family bedrooms are located, because that space is considered to be the most private space. The duwania is where it is appropriate for the son to greet his male friends.



(a)



(b)



Perspective showing a typical girls bedroom in a girls gathering occasion.

Floor plan view of (a) the girls bedroom and (b) the boys bedroom.

Location

The service spaces such as the kitchen, where females occupy the space the majority of the time, are located in the far end of the house away from the public street. Female bedrooms are also located in the far end of the house close to the parent's master bedroom. The males bedrooms are located close if not facing the public area or street. The duwania is located in front of the house facing the public street and segregated from the house. The sala is located adjacent to the duwania.

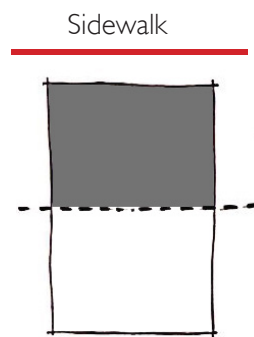


Diagram showing where public and private programs are placed in relation to North and South of the house.

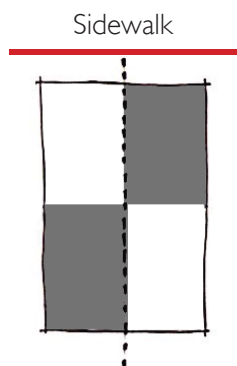


Diagram showing where public and private programs are placed in relation to East and West of the house.



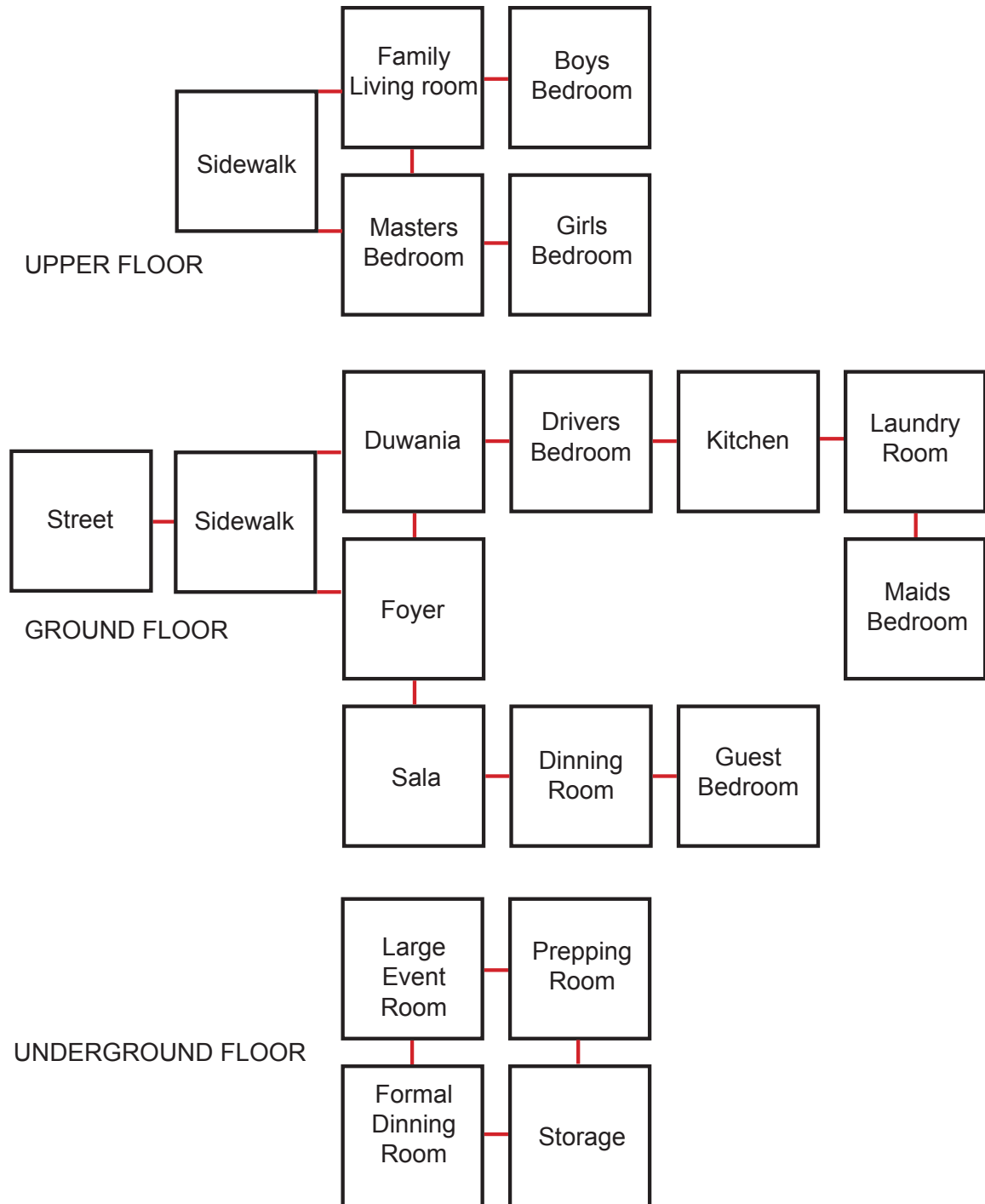
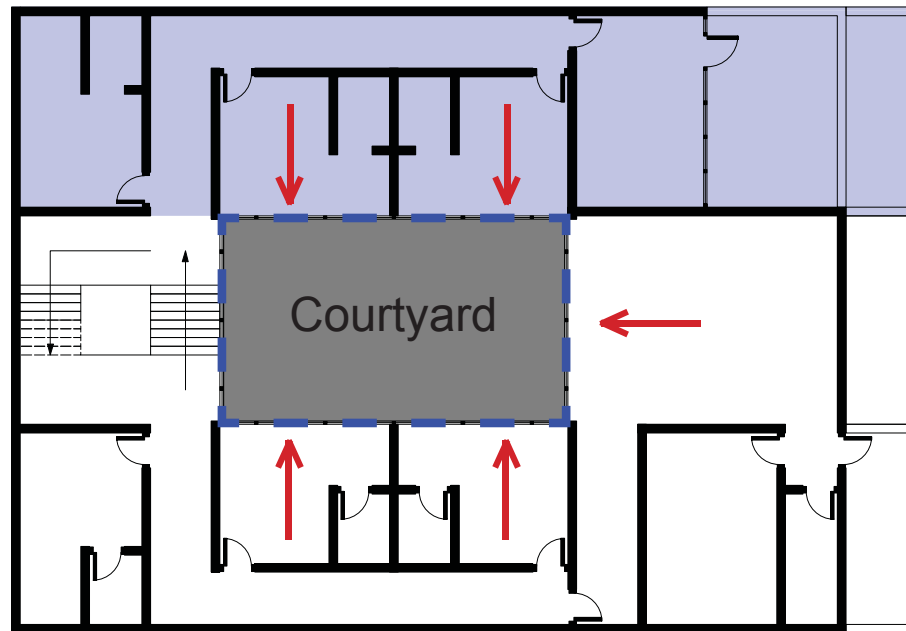


Diagram showing the distribution and order of programs in relation to the street, sidewalk, and floor to floor.

The new design will address the three gender defining elements by orienting private programs towards an inner courtyard to provide larger openings to allow natural light to enter in the spaces and adding a musharabiya to distort the views from looking in. Secondly, by moving the girls bedroom away from the boys bedroom giving the girls their own private section in the home.



Plan drawing showing bedroom orientation towards the courtyard.

Girls zone
 Musharabiya

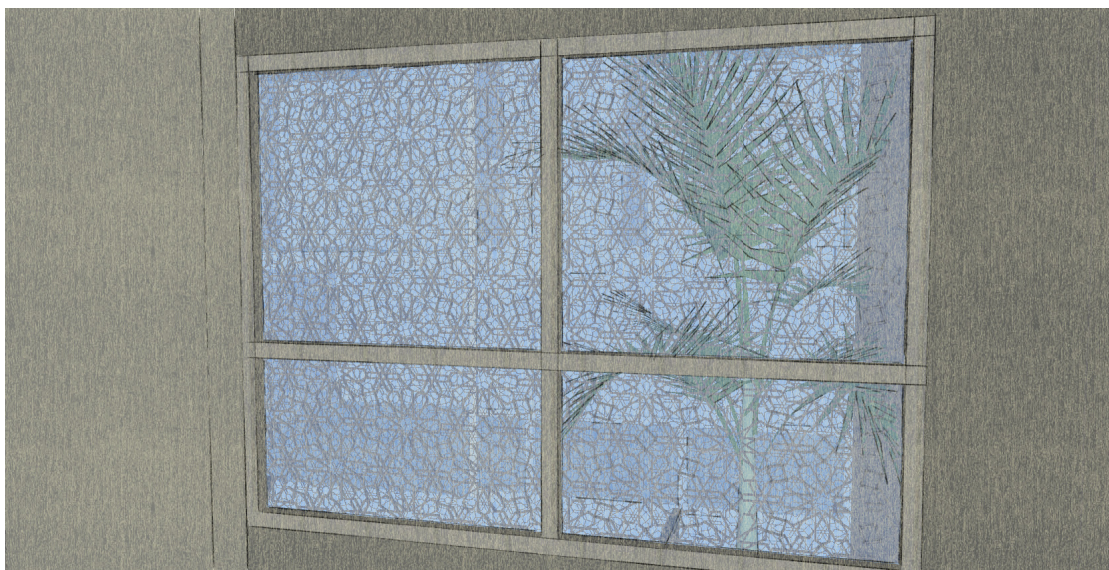


Image showing the effect of the musharabiya on the window in the boys room facing the courtyard

Finally by elevating a section in the home to block direct view planes from across the courtyard and by shifting the street view elevation to prevent external view planes looking into the home.

Cross section showing the shifted floors in the home.

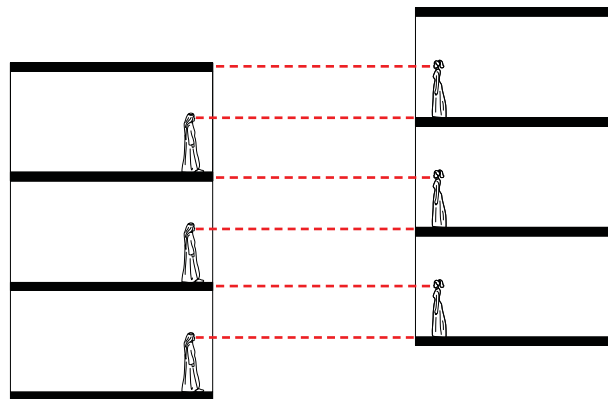
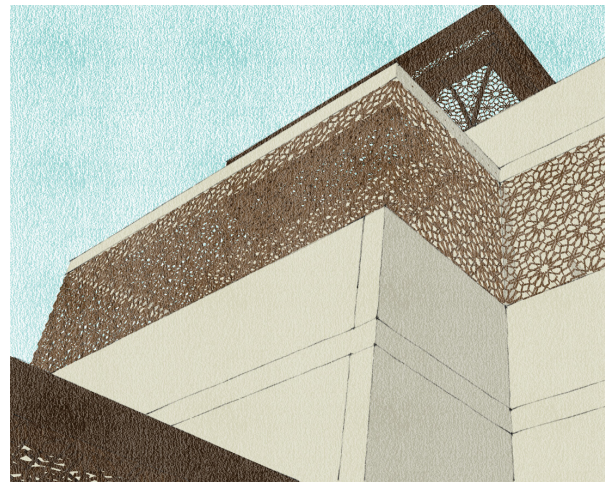
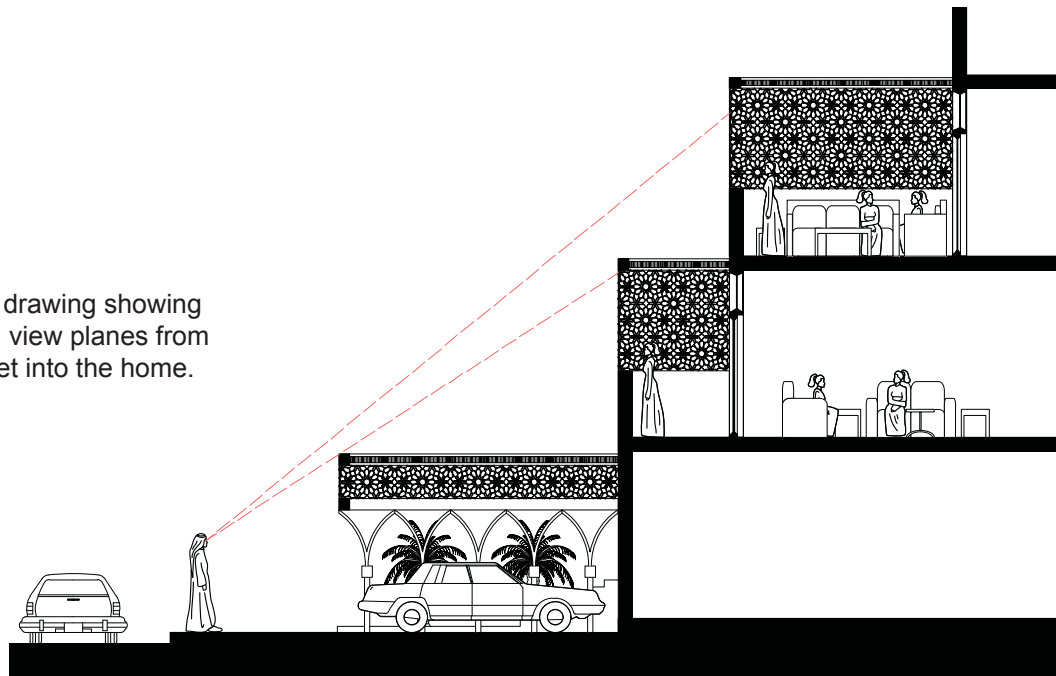


Image showing the front elevation seen from the sidewalk



Section drawing showing external view planes from the street into the home.

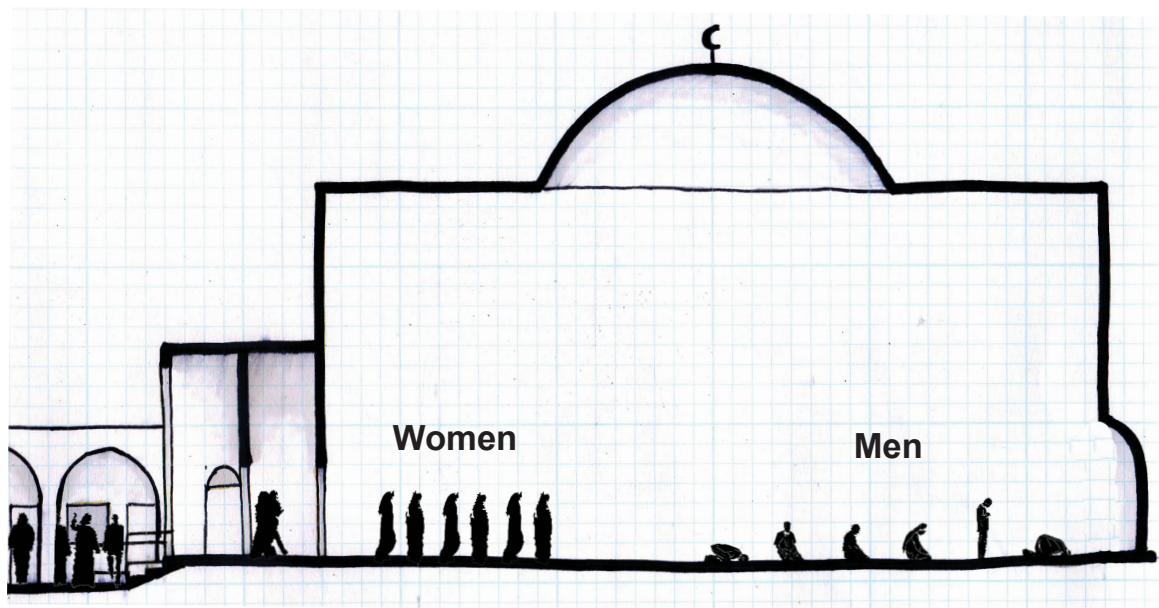


CHAPTER 6: PUBLIC SPHERE

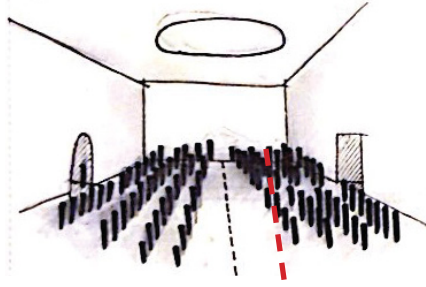
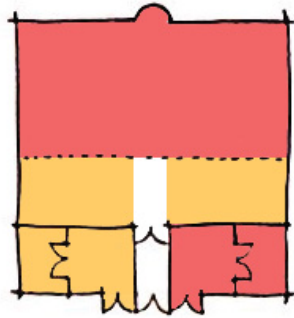
Public spaces in the Middle East segregate the genders in different forms. Some forms are exaggerated, where one of the genders benefit more than the other and some forms provide equality and comfort to both genders. Some of the forms of segregation used in the public sphere can be applicable to the private sphere where appropriate.

Gender Spaces In The Mosques

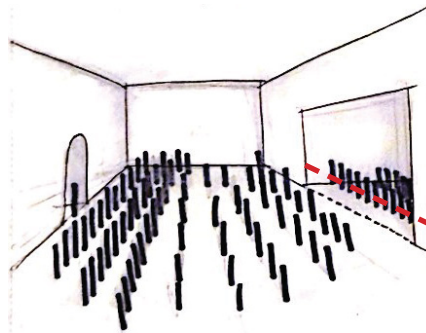
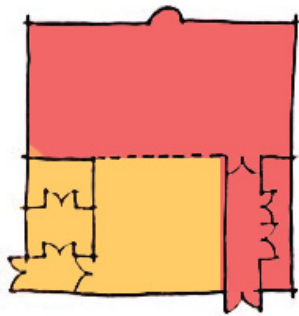
When Mosques were first built in the Middle East during the prophet Mohammed's time in the year 610, the mosque consisted of one main prayer room and separate immunities for men and women. The main prayer room was split in half. The front half dedicated to men and the back for women. The reason for this is because women are seen as a distraction to the men distracting them from their prayer. The mosque has a front centre alter dedicated to the Imam, the person who preaches before the prayer and leads the prayer. As time passed and the number of mosques started to increase, the culture and traditions of the society started to influence the arrangement of spaces in the mosque. The women were pushed further away from the Imam as each new mosque is built till today when women have their own smaller prayer room attached to the main mosque.



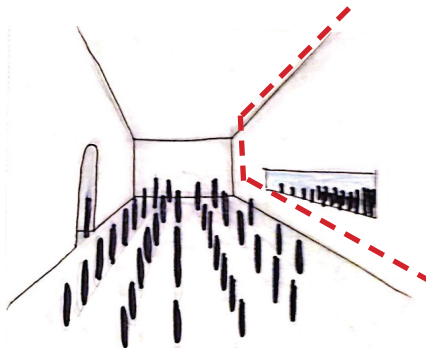
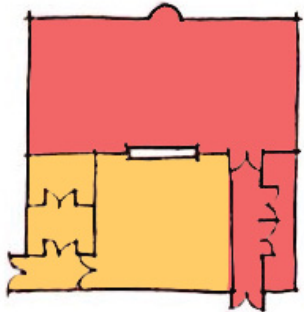
Section drawing showing gender spaces in the mosque.



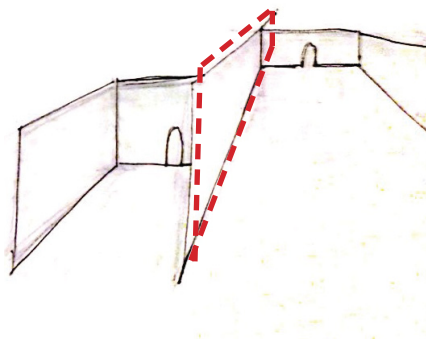
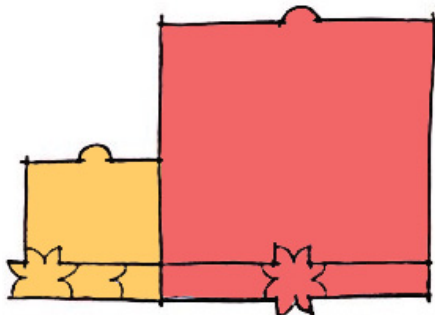
Initial mosque interior design with both genders in one room.



Mosque interior design with men in the main section of the prayer room and women in the connecting room in the back.



Mosque interior design with men in the main the prayer room and women in the back room with a connecting window.



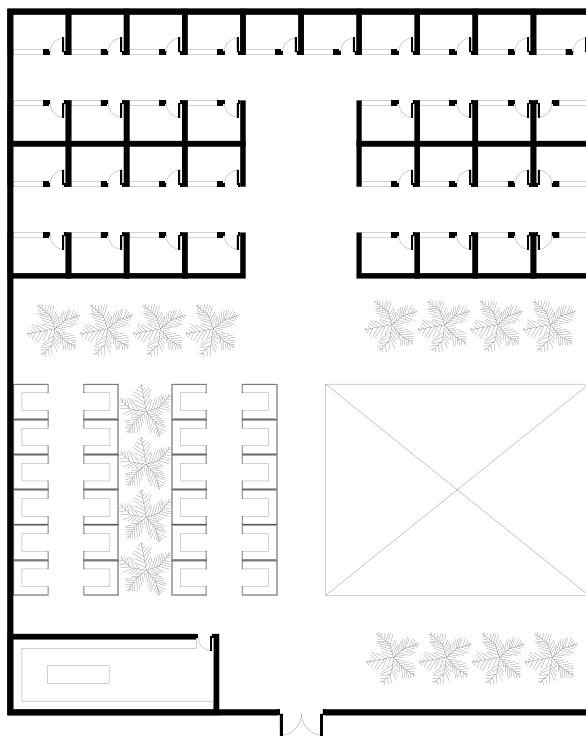
Mosque interior design with men in the main the mosque and women in a separate room.

 Women  Men

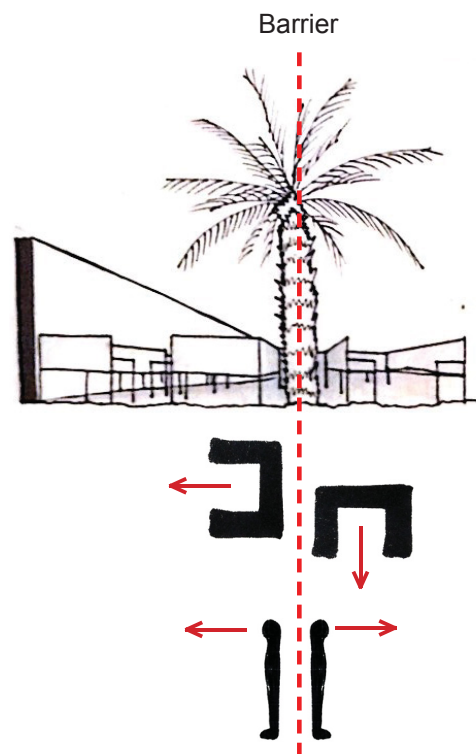
Diagram showing the evolution of the mosque.

Mixed Use Commercial Architecture

Gahwa Al Shaabia is a place where Kuwaitis get a taste of the old days, where children play, women shop in the old souq, and men smoke shisha in the outdoor cafe. The space is divided into three sections. Behind the entrance on the left, is the cafe, it is split into two one side dedicated to men and the other to women and children. The right is a playground for children to play. In the back is a enclosed building dedicated to the souq where people can shop for local food and clothing. The cafe segregates the men and women section in a pleasant way; not with a wall, but with palm trees and by arranging the tables so that they are facing away from each other.



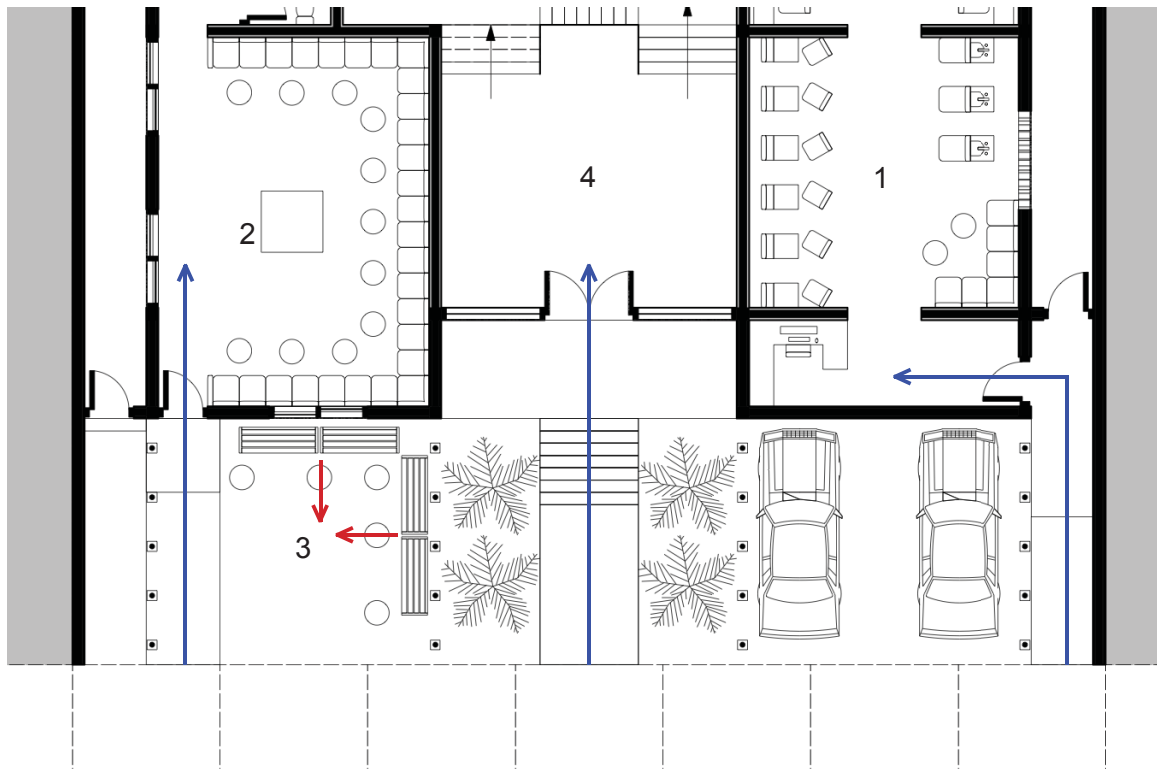
Floor plan showing the distribution of services in the Gahwa Al Shaabia.



Drawing showing the methods the cafe uses to divide the space between the men's section and the family section.

The new design for a Kuwaiti home includes a public section to be used for business. The segregated entrance method used in the mosque can be applied to the entrance to the public business section, main entrance to the home, and the entrance to the duwania. The forms of segregation used in the Gahwa Al Shaabia can be applied to the business section of the home and outdoor seating space in front of the duwania. This is to orient the seating view away from the home's main entrance and use palm trees as a barrier. The use of palm trees and different view directions can be applied within the programs of the home.

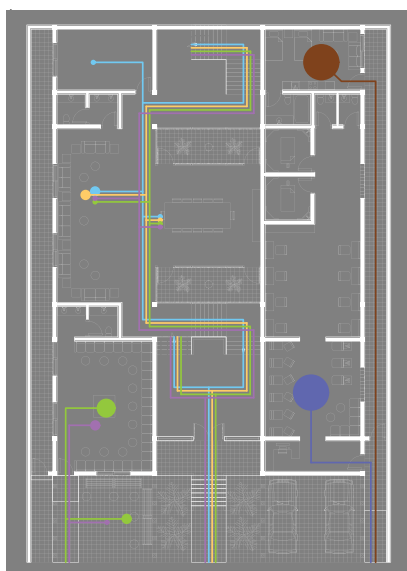
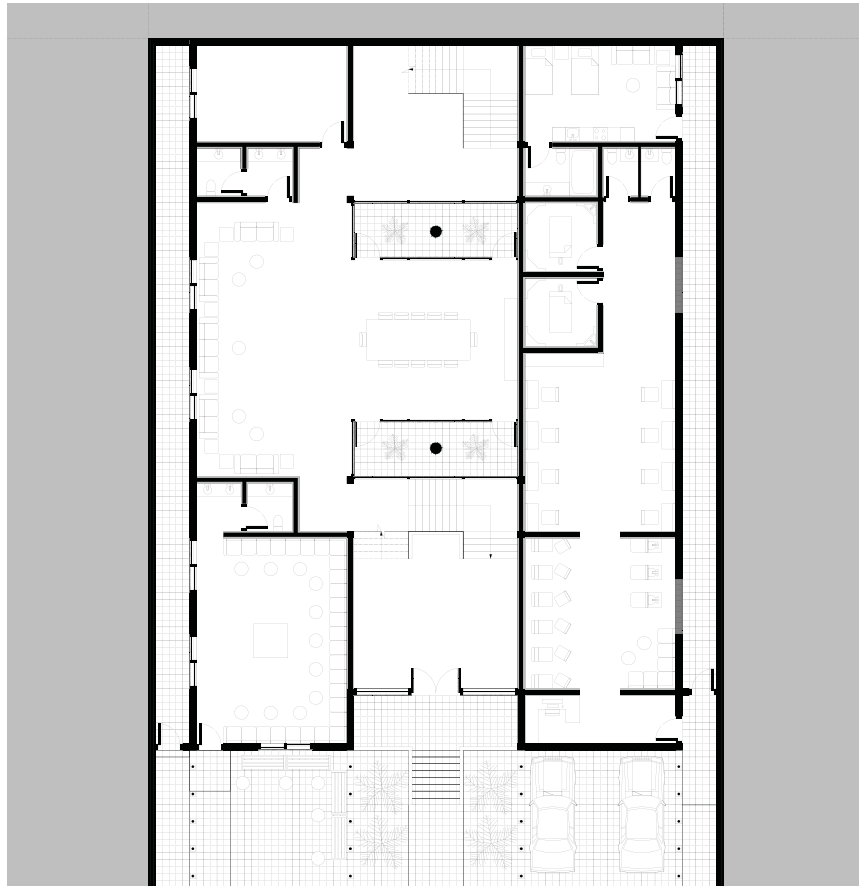
The new design for a Kuwaiti home includes a public section to be used for business. The segregated entrance method used in the mosque can be applied to the entrance to the public business section, main entrance to the home, and the entrance to the duwania. The forms of segregation used in the Gahwa Al Shaabia can be applied to the business section of the home and outdoor seating space in front of the duwania. This is to orient the seating view away from the home's main entrance and use palm trees as a barrier. The use of palm trees and different view directions can be applied within the programs of the home.



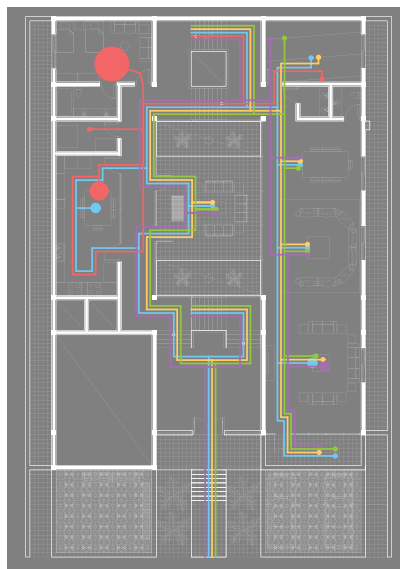
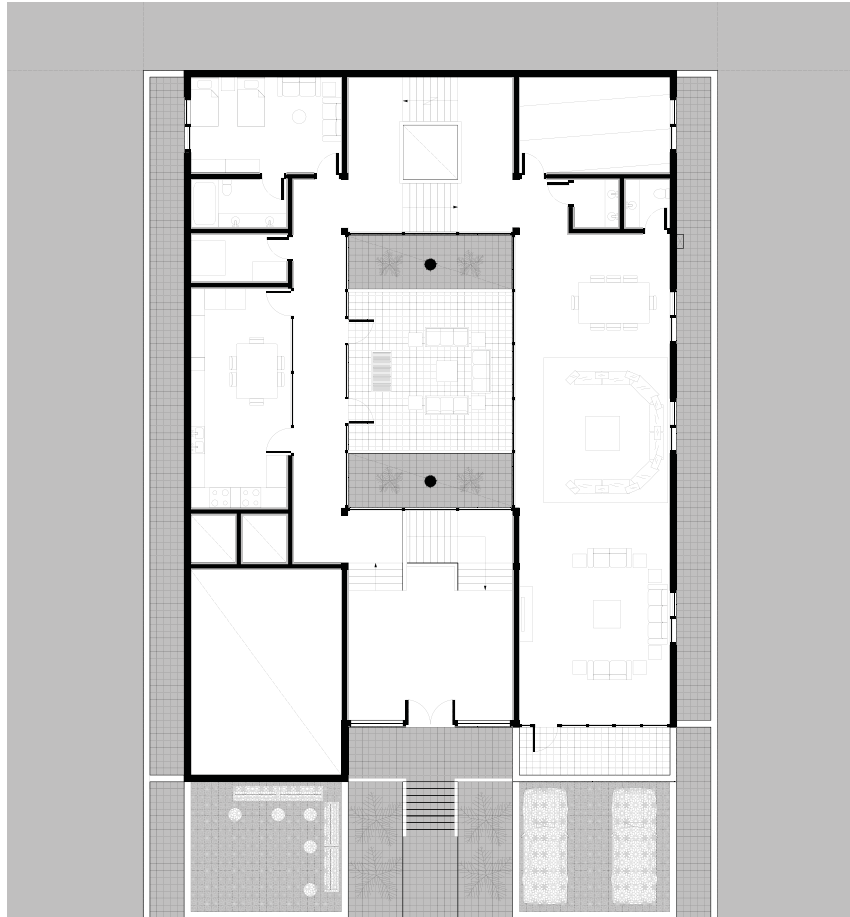
Plan showing external entrances into the home

1. Business section
2. Duwania
3. Duwania outdoor seating
4. Home foyer

CHAPTER 7: DESIGN PROPOSAL FOR A HOUSE

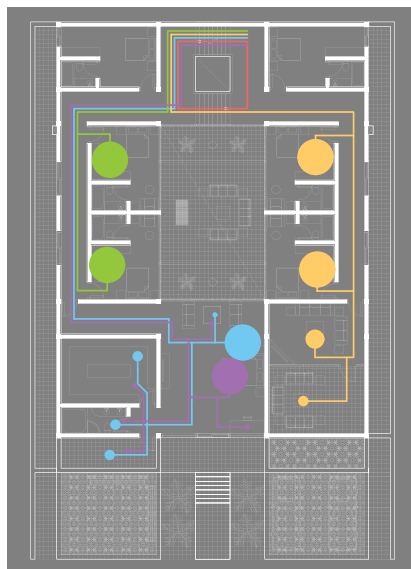
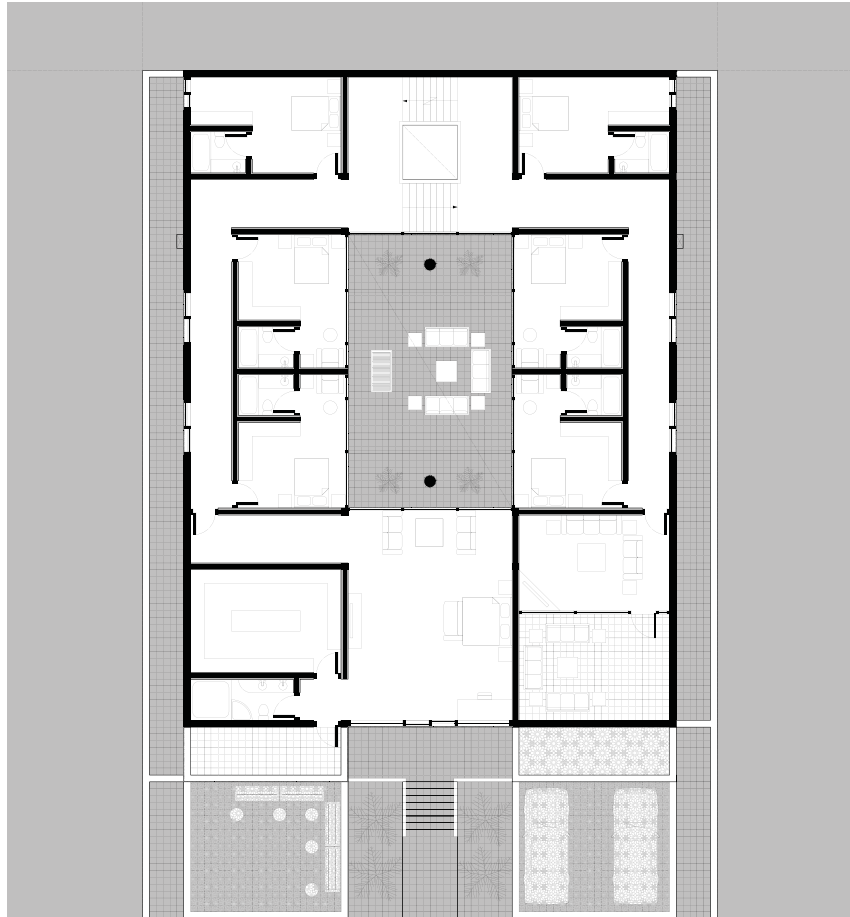


Level 1



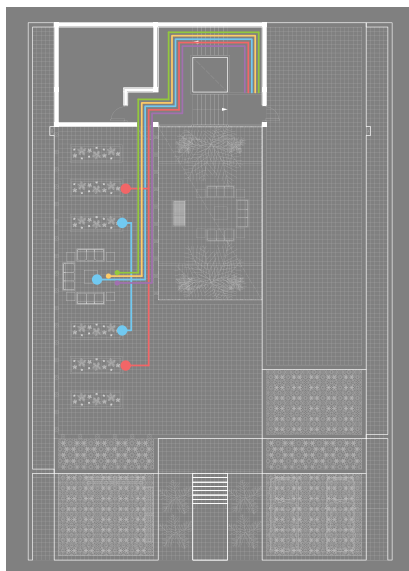
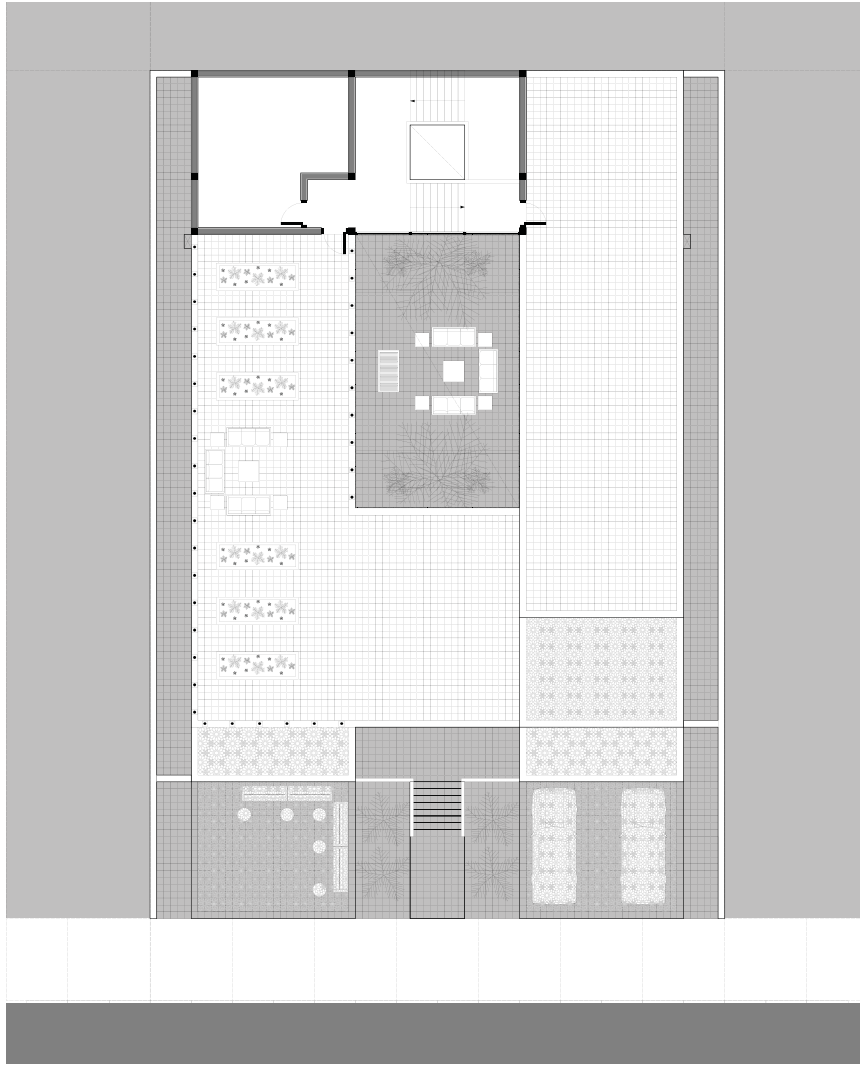
- Father
- Mother
- Girl
- Boy
- Maid (Female)
- Salon Guest (Females)
- Driver (Male)

Level 2



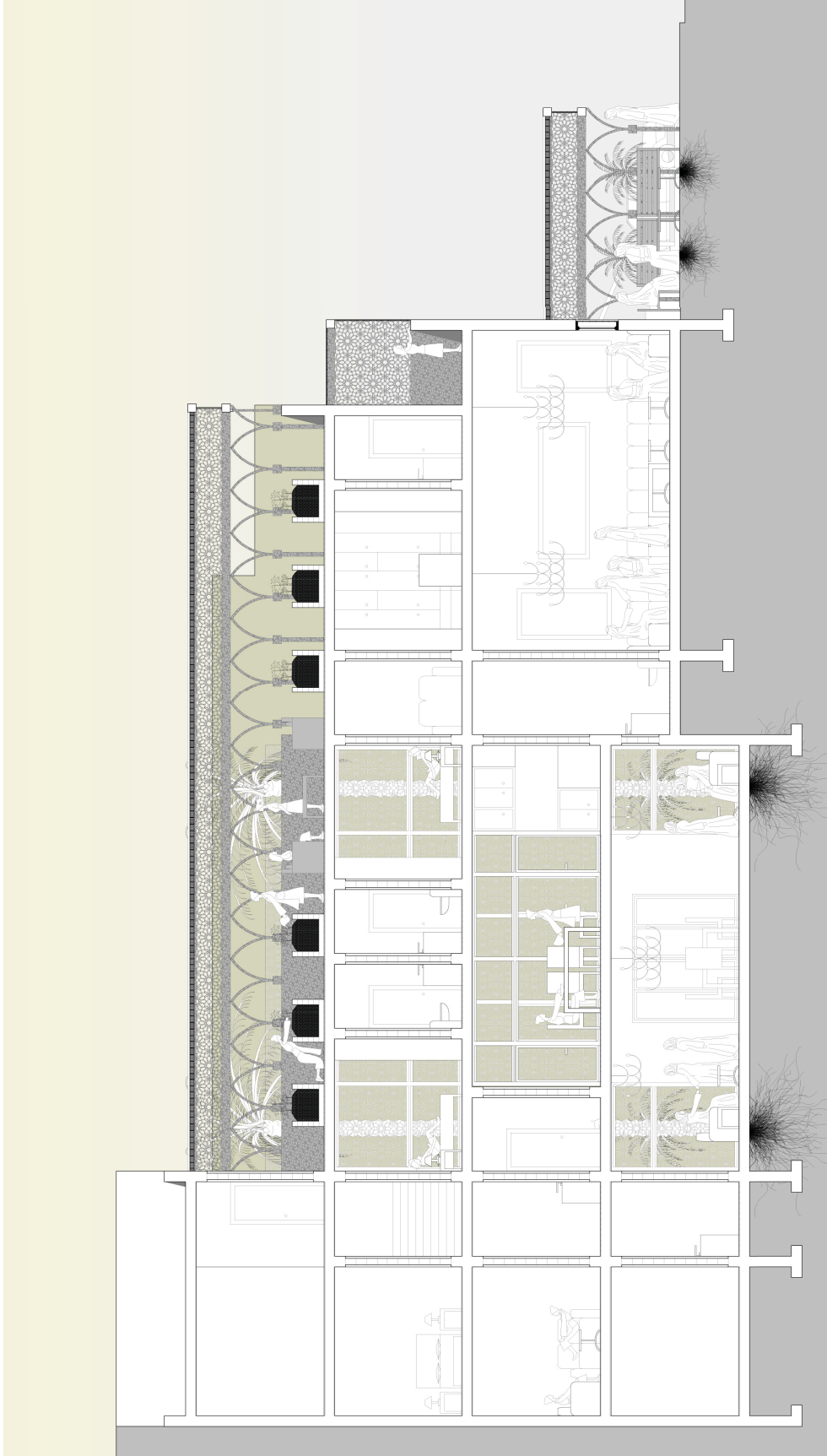
- Father
- Mother
- Girl
- Boy
- Maid (Female)
- Salon Guest (Females)
- Driver (Male)

Level 3

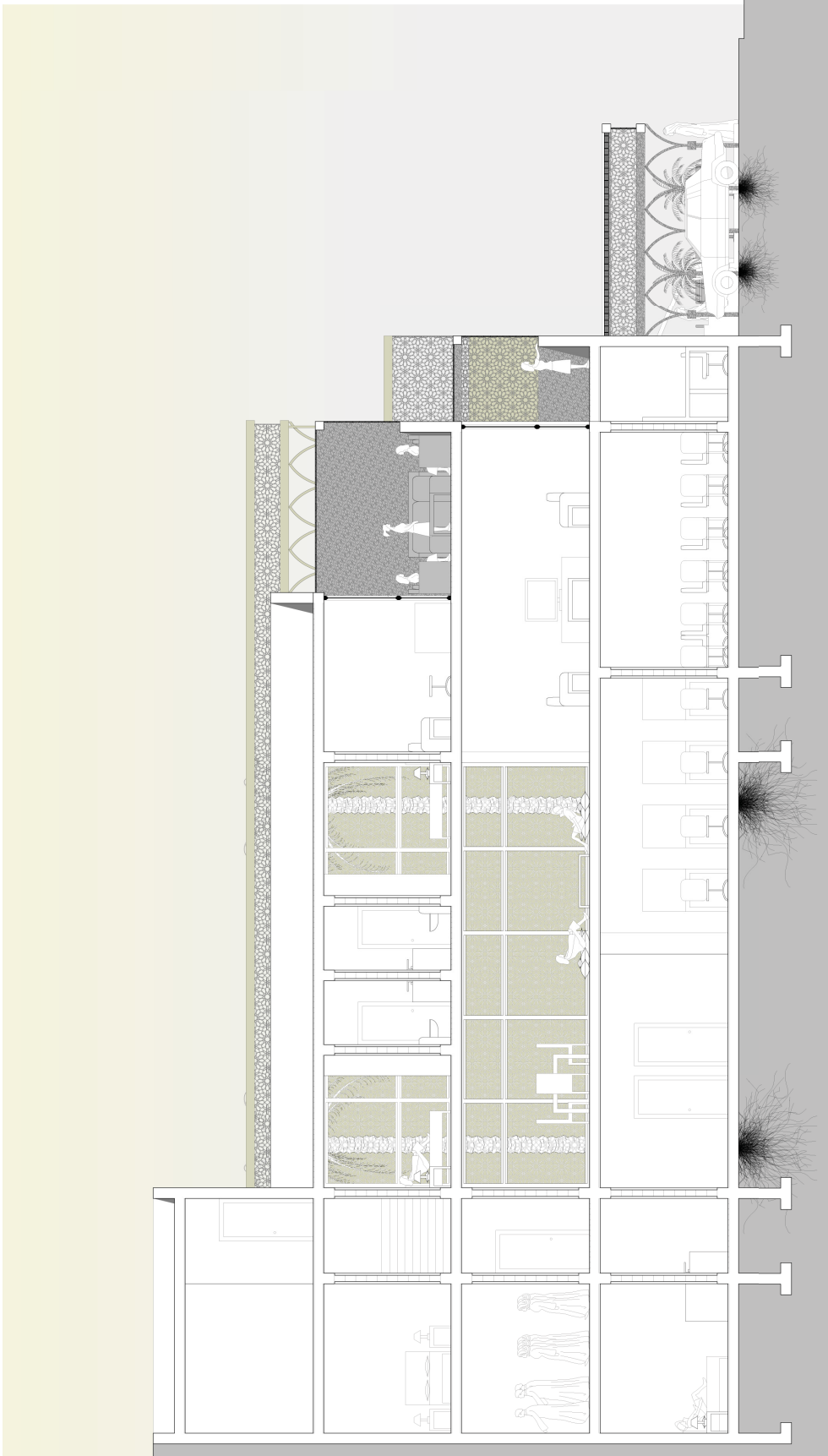


- Father
- Mother
- Girl
- Boy
- Maid (Female)
- Salon Guest (Females)
- Driver (Male)

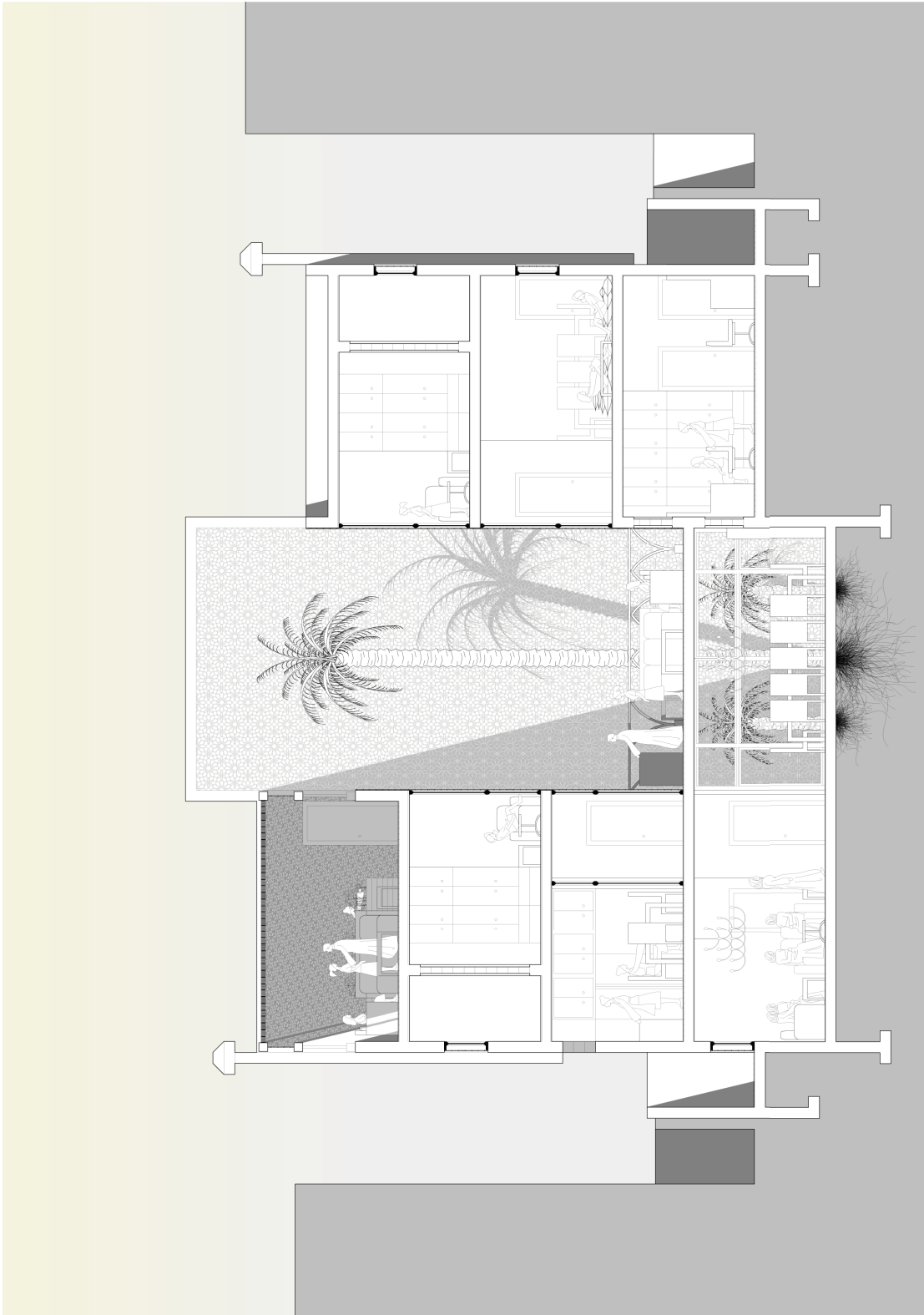
Level 4



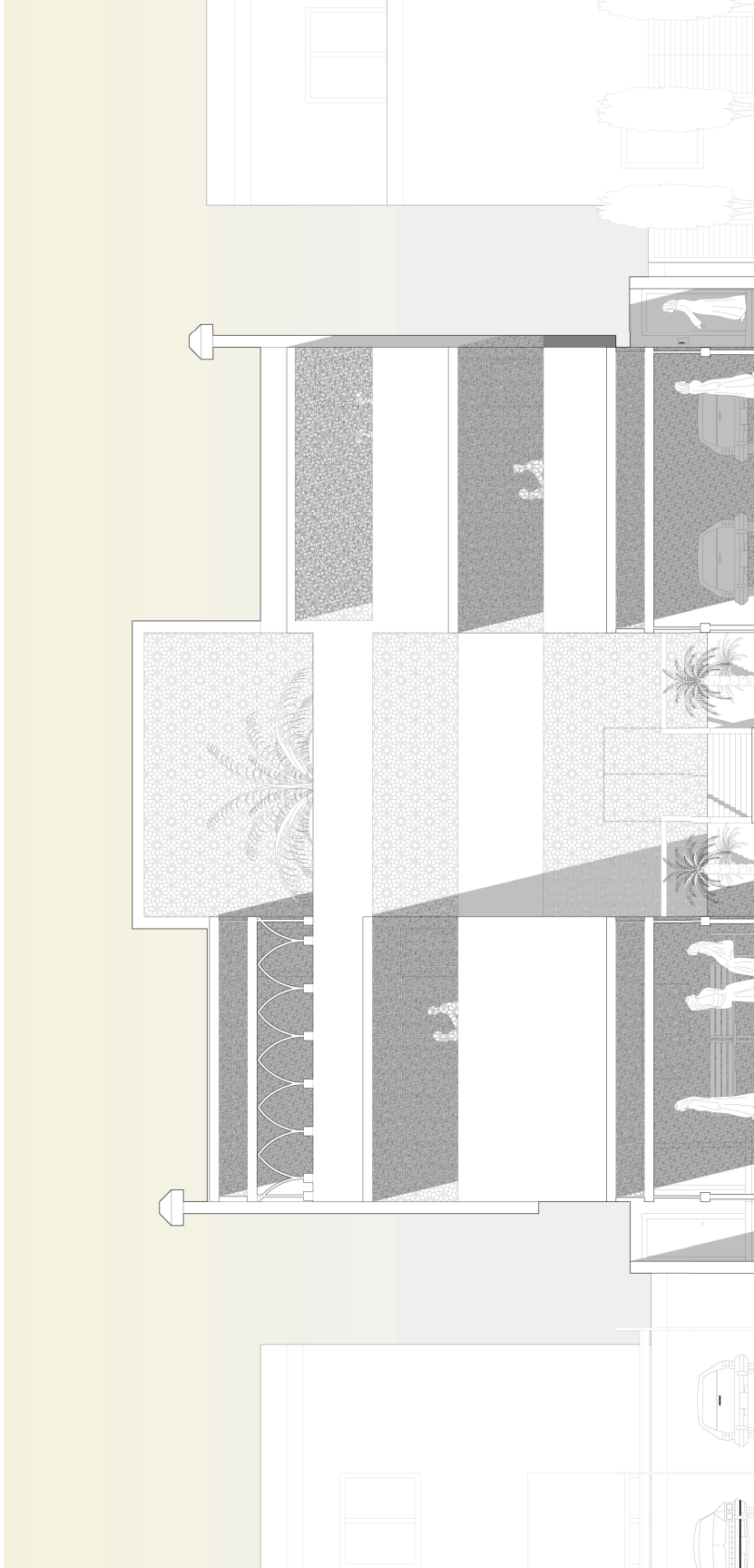
Longitudinal section through the boy's section in the house.



Longitudinal section through the girl's section the in the house.

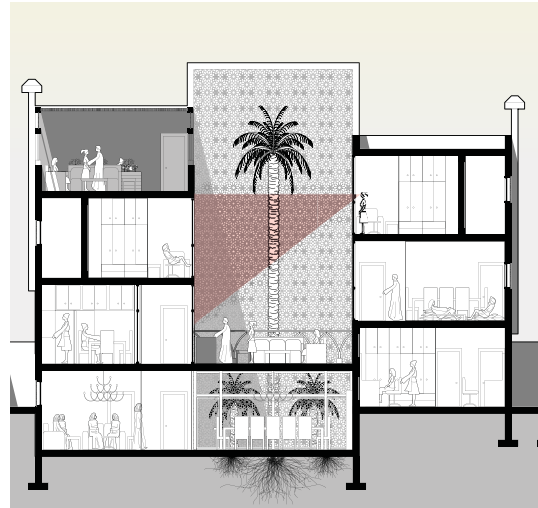
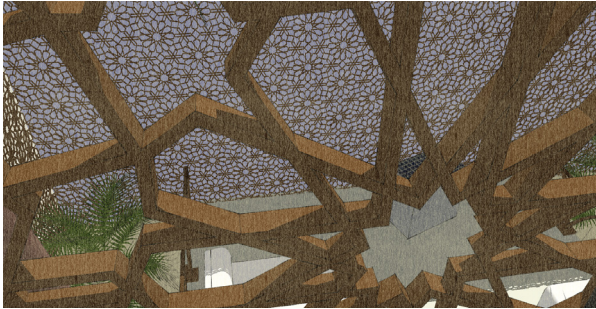


Cross section through the courtyard.



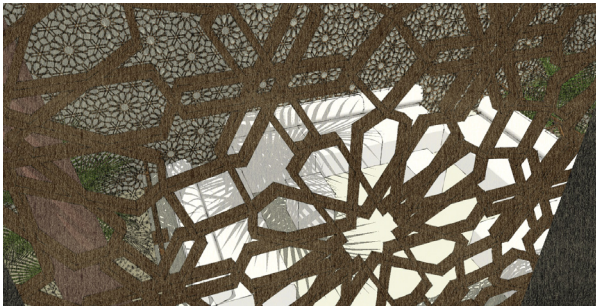
Street view elevation.

View Planes



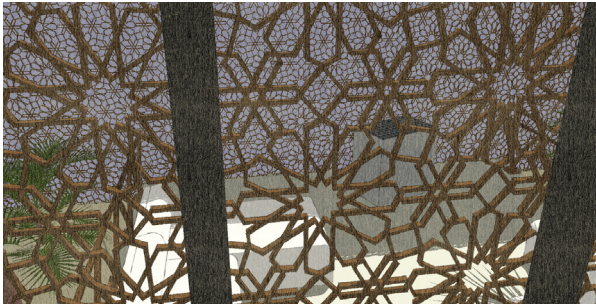
Level 3: Girl's Bedroom

This is the view seen by the daughter in the girl's bedroom. The daughter is able to look into the courtyard, yet the masharabiya across the courtyard prevents her from looking into the kitchen and boy's bedrooms to maintain the program's privacy.



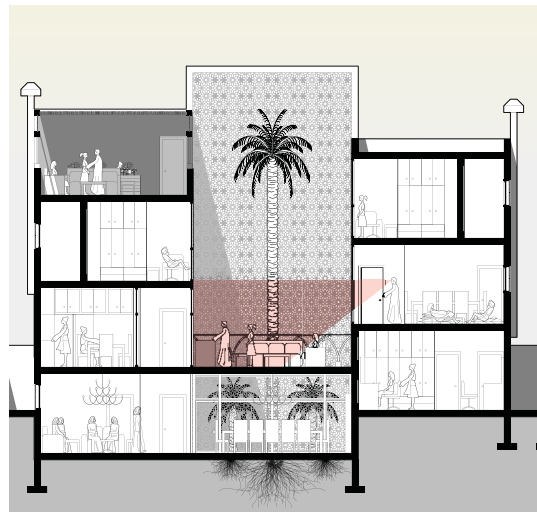
Level 3: Boy's Bedroom

This is the view seen by the son in the boy's bedroom. The son is able to look into the courtyard, yet the masharabiya across the courtyard prevents him from looking into the girl's bedrooms, family living room and the women salon because these programs are dedicated to the females who will be removing their head scarves and no males are allowed to see them.



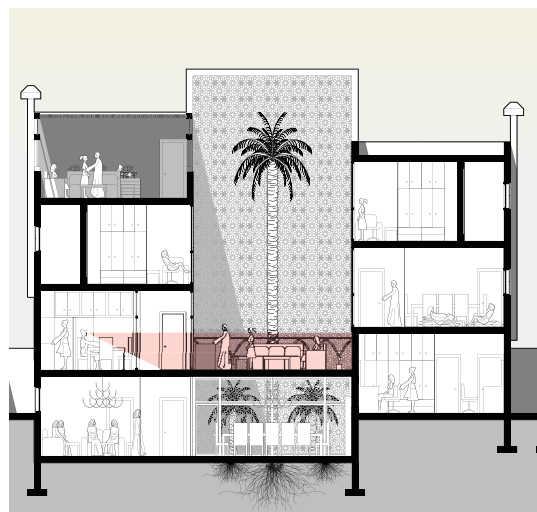
Level 2: Family Living Room

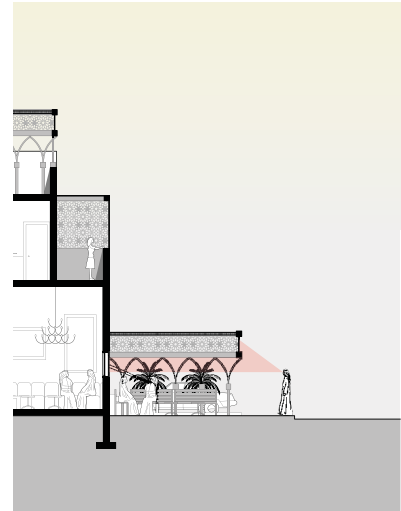
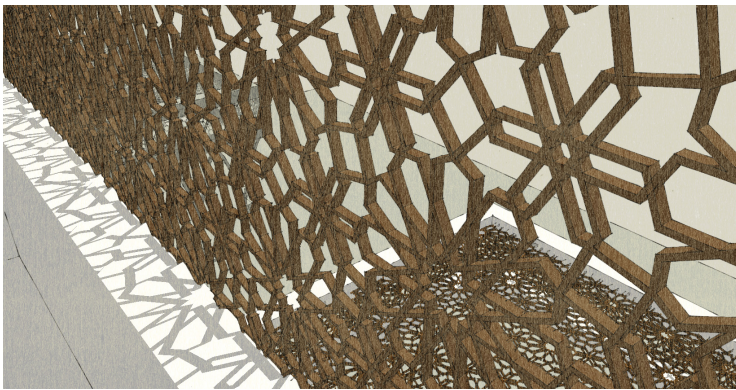
This is the view seen by any members of the family in the family living room. They are able to look into the courtyard, yet the musharabiya across the courtyard prevents them from looking into the kitchen where the maids spend the majority of their working hours. The view is blocked to give the maids privacy while they work in the kitchen and not feel as if they are being watched while they work to give them a sense of freedom in the kitchen.



Level 2: Kitchen

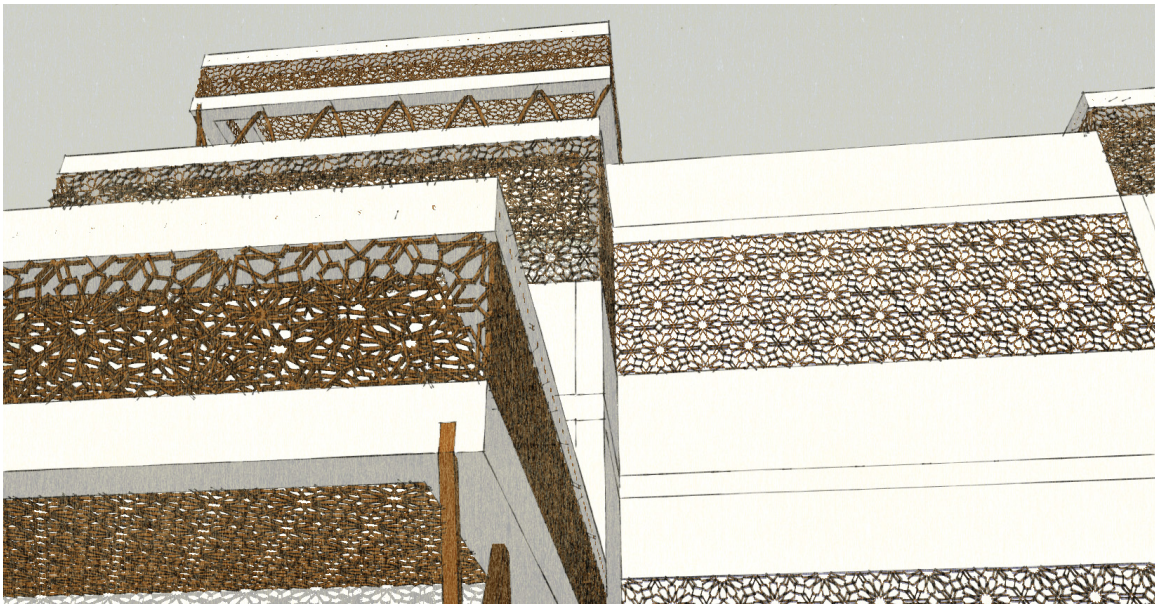
This is the view seen by the maids in the kitchen. The maids are able to look into the courtyard, yet the musharabiya across the courtyard prevents them from looking into the family living room and girls bedroom incase extended family members are visiting and are using the kitchen with the maids. This way the girls bedroom and family living room maintains its privacy and the females of the house do not need to cover their hair.





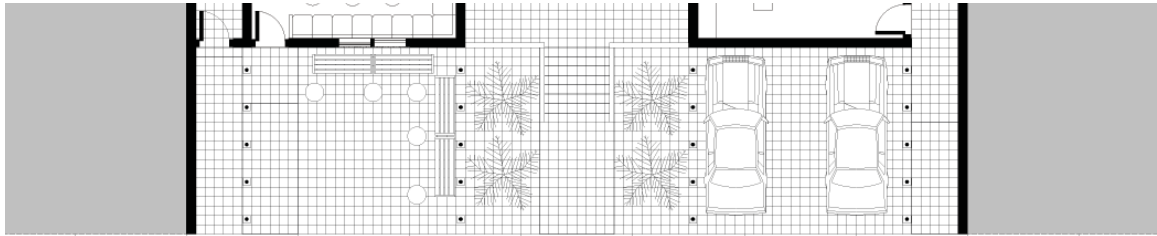
Exterior View Planes: Balcony to the Sidewalk

This is a view seen from the balcony facing the street. The person standing in the balcony has a clear view of the street and sidewalk.



This is a view seen from a person standing on the sidewalk looking into the home. The shaded structure used for the duwania outdoor seating and for parked cars blocks pedestrian view planes into the balconies. The balconies block the pedestrian view planes into the roof. This protects the family member using the balcony or the roof from public exposure and maintains the privacy of the house from the street and sidewalk.

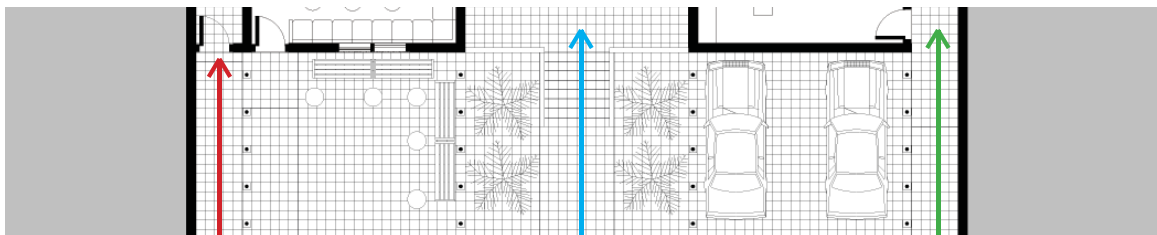
Examples and Guidelines for a Kuwaiti Home



1- Parking: Include the parking within the property perimeters to prevent cars from blocking the sidewalk and improve pedestrian circulation within the neighborhood.



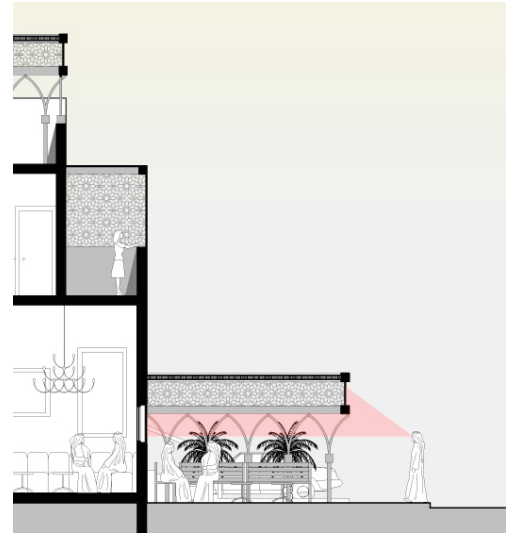
2- Greenery: The use of green spaces in the neighborhood cools the air and improves the neighborhood's scenery.



■ Duwania Entrance
 ■ Main Home Entrance
 ■ Drivers Room Entrance

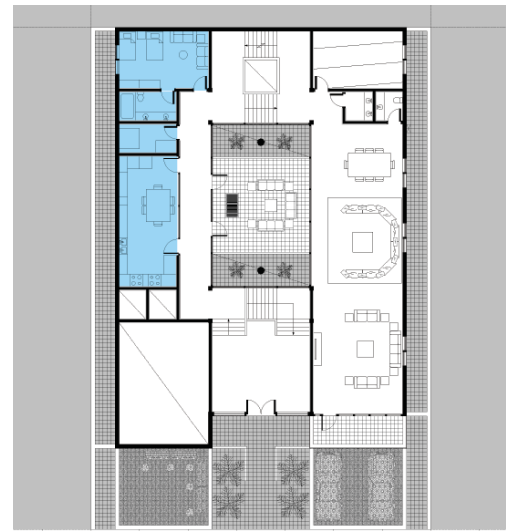
3- Entrances: Separate by directing the entrance to the duwania and drivers room from main entrance to the house to give the female members of the house privacy when entering.

4- Facade: Extend areas in the facade to block away view planes looking into the house from the side walk and street. This technique also allows for private programs to face the street because they are not exposed to the public.



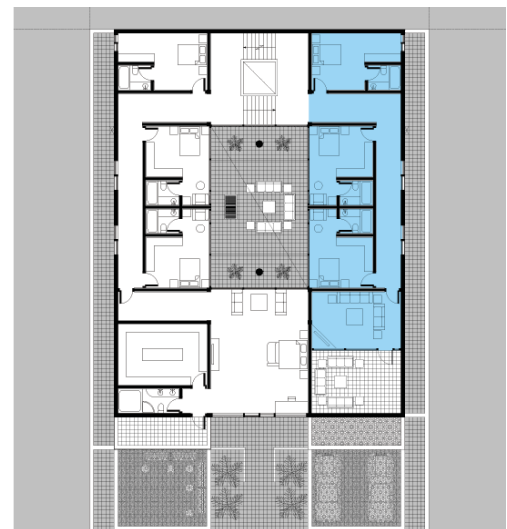
5- Maids Section: a- Group the programs the maids often use such as, the kitchen, laundry room and their bedroom, and locate them in a private section in the home to improve the comfort and privacy for the maids while working.

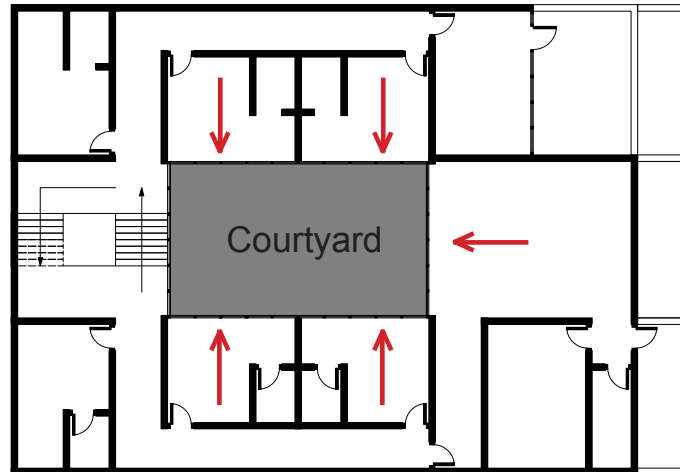
b- Provide the maids with a comfortable size bedroom that also includes a lounging area for them to comfortably rest in their own privacy.



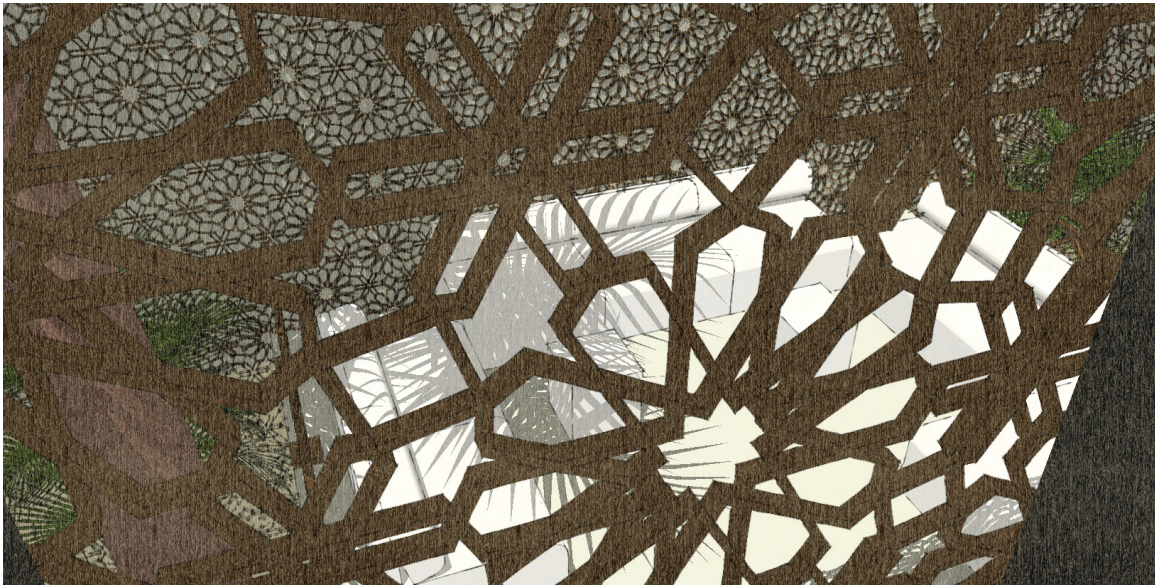
6- Girls Section: a- Provide the girls with a small private living room either in the bedroom space or separate that is dedicated only for them to use when they have female guests.

b- Group the programs the girls will occupy together such as, their bedroom and living room and locate them in a private section in the house far from the boys room to provide the girl with comfort and privacy.





7- Courtyard: Include a courtyard in the plan and locate it in the heart of the house while directing all the programs towards it. With the courtyard being the main focus of the programs in the house, the courtyard will provide the programs with access to natural light, air, and out activities such as traditional outdoor Middle Eastern barbequing.



8- Musharabiya: Insert musharabiya screens on windows facing the sidewalk or neighbors to enhance the privacy of the space and allow for the windows to be large to increase the space to natural light. The musharabiya should be made of wood and can act as a natural cooling system for the home. During the summer time when the weather is hot and humid the wood absorbs the moisture in the air and cools the air as it passes through.



9- The Roof: Provide an outdoor program on the roof for the whole members living in the family, because it is the most private space in the house because it is elevated away from the neighbors and street.

CHAPTER 8: CONCLUSION

The design enhances the functionality of the programs and living quality in the home by reintroducing outdoor activities that all members of the home can participate in. It enhances the privacy of private-programs while exposing them to natural light and air. Quality of living is improved for servants. New barrier methods are introduced in the design that are more natural instead of a harsh physical concrete wall. This design gives examples of how a property facing only one street can have equal if not greater advantages than a greater valued property that faces multiple streets and has a extended government land for a front or backyard. Finally in the future this design method can be applicable to government housing projects where the home is duplicated along a street and the majority of the homes will only be facing one street.

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