Landscape

JEDDAH'S SEAFRONT DESIGN

& Culture

Master of Landscape Architecture

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March 2009

Landscape and Culture: Jeddah's Seafront Design

A project submitted in fulfilment of the requirements for the degree of Master of Landscape Architecture

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

signed

Raed Dawood

March 2009

Acknowledgement

Special thanks is offered to my father, always available for advice; to my wife, the greatest of woman in my life; to my supervisor, Rosalea Monacella, Department of Landscape Architecture, who encouraged me to pursue my research; and finally, to all of my friends world-wide, who support and care for me every day.

Many people encouraged and helped me to accomplish this work. I will not name each one at this moment for fear of inadvertently forgetting someone; however, I will never forget their faces and their helpful advice, critiques and insights.

To all of you I extend my sincerest thanks.

Table of Contents

Preface

Jeddah is an ancient Saudi Arabian city on the Red Sea. As the gateway to Mecca, it hosts over a million visitors each year; it has a distinctly Islamic culture which features in its landscape architecture. However, with its youthful population, Jeddah is developing rapidly and more public recreation spaces attuned to families and gender-oriented groups are urgently required.

This case study concerns the recreational needs of the city, particularly those of southern coast residents in new developments some 20 kilometres from the centre of Jeddah. The aim is to provide beaches, promenades and seating, parks and picnic facilities to accommodate Jeddah's four million plus residents and visitors. Research is conducted to determine principles of ancient Islamic architecture which provide privacy for the various groups, with recreational activities offering an enjoyable experience. The goal of this project is to create a zoned design for a traditionalist culture that considers leisure activities for all residents, whilst transforming the current conceptualisation of public recreational spaces in Saudi Arabia.

The intention of this project is to investigate historical Islamic design and construction techniques to guide development for the southern coast of Jeddah, Saudi Arabia. The goal is to use the undeveloped south coast of Jeddah to offer citizens and visitors a recreational experience that reflects their needs and their culture.

This study is set out in four main chapters. The first chapter presents the physical and cultural nature of Islamic Jeddah, explaining the differences in recreational needs for a devout society. The next two sections considers traditional Arab architecture and the various means employed over the centuries to address residents' desire for privacy; and the last chapter offers the elements of the study's design for coastal recreation facilities for Jeddah which offer an enjoyable experience to all residents, whilst respecting their Islamic sensibilities.

Jeddah

Jeddah is the second largest city in the Kingdom of Saudi Arabia with a population of 3.4 million, and is located on a coastal plain at the eastern edge of the Red Sea. It is desert; it has no rivers or freshwater lakes. Unlike other Saudi cities, Jeddah has warm winters so that the average summer (37°C) and winter (29°C) temperatures show little variation. Jeddah is considered the most cosmopolitan of Saudi cities, with an historic role as port and gateway to the holy city of Mecca. For over one thousand years, Jeddah received millions of pilgrims of different ethnicities and backgrounds, many of whom remained and became residents of the city. As a result, Jeddah is much more ethnically diverse than most Saudi cities and its culture more eclectic in nature.

The city expanded to the north and the south during its 'boom period' in the 1970s, constrained in the east by the airport complex, and to the west by the Red Sea. At that time, new residential subdivisions to the north developed along the main highway (Al Madina Highway) between the old city and a new airport, and along the coast to the west. As available residential and commercial land in the old city and adjacent to the airport was used, growth continued into the 1980s, extending beyond the airport zone to the north (Abdu, Salagoor & Al-Harigi 2002, p.124). This growth was matched by rapid development in infrastructure, city services and recreation areas. The 1973 Jeddah master plan zoned areas along the coastline and throughout the city merely for land use, without consideration of the ultimate needs of the population, or for the aesthetics of the places (ibid. p.117). Planning for recreation places, especially the seafront did not provide facilities or activities for citizens and visitors, and the design of the area, now dated, does not comply with modern usage of public places.

Public Places in Jeddah

Culture is an important factor in Saudi Arabian society. In this study, the term culture refers to *the totality of a way of life shared by a group of people linked by common and distinctive characteristics, activities, beliefs, or circumstances* (Tomlinson & Masuhara, 2004, p.5). Religion has priority in any planning undertaken in an

Islamic country, and it has a direct influence on Saudi culture which is enforced through regulation and the devout lives of the population. This cultural factor has further significance as Jeddah is the entry point for the Hajj, that is, the pilgrimage to Mecca, and the influence of Islam must be reflected in public spaces.

Saudi Arabia's cultural mores extend into divisions of public spaces. Malls, restaurants and cafés, for example, are governed by regulation, based on the Qu'ran which forbids unmarried men and women to mingle. Thus, restaurants are divided into two screened sections, one each for families; and one for single men who cannot occupy the same room as women to whom they are not related. On the weekends, some malls bar single males and allow only families and single females to attend. With exceptions, public open spaces are not subject to regulations, but public etiquette must be observed. Nevertheless, regulations require that Muslim women have their hair and faces covered, they cannot exhibit body shape, or swim in public. Such cultural mores have a profound effect on designing facilities at the beach.

Nature of the Study

Landscape Architecture and public space on Jeddah's seafront is the subject of this study. It is regulated public space that must incorporate cultural sensitivities and provide a gracious promenade for the local population and visitors alike. The proposed landscape, respectful of Saudi culture, will provide the southern coast residential areas with a new public space, serving the city and regional areas. The aim of this challenging project is to ensure that everyone can linger and enjoy waterfront activities.

In this study, Jeddah's existing seafront facilities is examined to determine residents' actions and the protocols they observe when visiting the seafront. Then the facilities and activities will be assessed as to whether they meet the privacy needs and leisure aspirations of the users. Issues regarding standards and usage of available facilities on the north shore are considered. Traditional Islamic designs for residences, open private spaces, and common public spaces such as plazas and promenades are observed to identify traditional solutions to privacy and separation of various groups such as women and single men. This information and analysis informs the cultural framework for the design of the public beach landscape.

To ensure adequate consultation with those who will use the new landscaped public space, seafront visitors were surveyed to determine their perceptions of existing facilities and activities, and expectations regarding improvements they may desire for a proposed new public space. My masters research was presented to several people for their reactions, including singles, family groups, and representatives of religious authorities who can assess the plan against civil regulations. The results of this consultation process are used to amend the plan if required. The research answers the question of how to develop an approach to seafront landscaping, including amenities and activities, within the Saudi cultural ethic.

Part 1 takes into account the issues related to the residents and visitors of Jeddah, the nature of existing public recreation areas, the Islamic lifestyle, and the patterns of group visitation along the city's coastline.

Part 01: Jeddah's coastal areas

Jeddah's coastline forms its long western boundary, with growth over the last few decades extending north-wards, past the airport to the northeast, and based on waterfront residences and commercial developments along the avenue, the Corniche. According to Daghistani (1993, p.16), the coastline north of the city has a variety of private and commercial buildings: holiday villas, walled enclosures, or subdivisions. These are occupied for weekends and holiday periods by the more affluent people from the city and district.

Jeddah's north and central districts are heavily populated and the beaches and seafronts have basic public developments insufficient to support the recreational activities of residents, or the visitors during the Hajj. In common with the other city states on the Arabian Peninsula, Jeddah is undergoing rapid development with many large private buildings and commercial developments. However, these areas lack the infrastructure to fulfil their recreational potential for Jeddah's population, such as swimming in segregated sea baths, appropriate landscaping for promenades, areas to enjoy a meal for families, fishing and fish viewing piers, nature pathways and cycling tracks along the coastline. Finally, the far southern coast is a greenfield site that offers little to the people who visit the area, and these visit mainly for privacy from the crowds to the north.

In terms of public leisure activities, the heavily-populated coastline is therefore underdeveloped. Recreation along the coast is either for private use or commercial enterprises that charge for their services, such as a fun park and hotels for visitor accommodation.

Different social values raise different needs

The characteristics of any society are influenced by its social values. In Saudi Arabia social values are Islamic principles and local tenets, which influence Saudi behaviour and lifestyle, such as segregation of non-related adult sexes. Design, especially design of attractive public recreation areas, therefore must incorporate all aspects of Islamic life practices and tenets in order to succeed. As noted, Jeddah's public infrastructure is insufficient to exploit the natural beauty of the Red Sea that forms the city's western perimeter.

The sparse public recreational infrastructure on the northern seafront is focussed on children and married men. It does not take into account Jeddah's growing population, average age of 21 years, and therefore offers little in the way of recreation for married women, or for singles of either sex. For example, in a climate which does not change from *hot*, summer or winter, females cannot swim in the sea. The only public beach, on the northern side of the city, is occupied by males and children because of Islamic regulations. Women are restricted from swimming, and are only able to sit on the sandy beaches in the blazing sun, and must wait for male relatives to come out of the water. A Saudi woman, Gazwa Almotairy (Alosaimi 2007), spoke to *Arab News* expressing her feelings about Half-Moon Beach, in Al Khobar on the other side of the peninsula: *I can only touch the water with my feet* and, *When I watch my brother and his children swimming I wish I could be a child again, able to swim with as much freedom.*

Location

The research site is located at Jeddah city on the western side of Saudi Arabia. It is the largest city in Makah Province, and the second largest city in Saudi Arabia after the capital city, Riyadh. The population of the city currently stands at over 3.4 million.

The site is located at Jeddah southern coast which is 20 km far from the city center
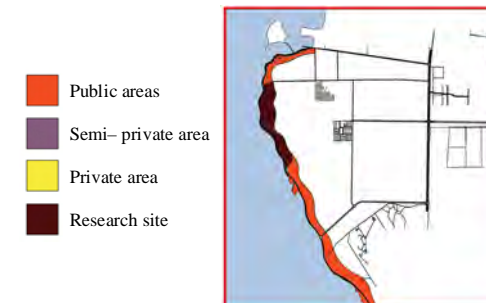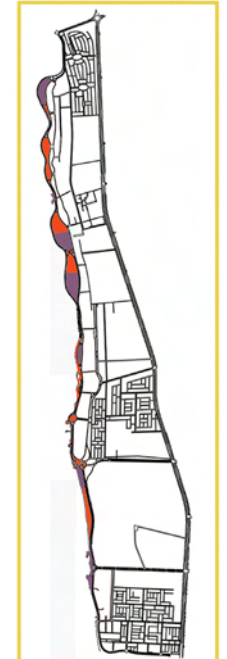
Jeddah coastal parts

(Obhor) the city's northern coast
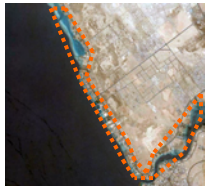

(Al– hamra) the city's southern middle coast

(Al– cornach) the city's northern middle coast

(Baher Al– ganoob) the city's southern coast

- 🟧 Public areas
- 🟪 Semi– private area
- 🟨 Private area
- ⬛ Research site

Jeddah's northern coast

The majority of the northern part land uses are semi-private

The southern part land uses are semi-private and private

The eastern part land uses are semi -private and private

Jeddah's northern middle coast

The majority of the northern middle coast are public areas however, these areas are separated with semi– private land uses serve only the high and middle income people

The northern part of the northern middle coast are occupied with private lands which are inaccessible by public

Jeddah's southern middle coast

Most of the land uses at the northern part of this area are private or government institutions

The land uses of the southern part at this site are semi-private and government institutions

Jeddah's southern coast

The southern coast is fully public coast side however it lacks of services and activates

Jeddah, widely considered the most liberal city in the Kingdom of Saudi Arabia, offers a commercial alternative. On weekends it is not uncommon to find young Saudi women at private facilities that offer seaside relaxation for a daily entry fee. These semi-private beaches are popular among younger Saudis because they offer a semblance of resort cities outside of the Kingdom where a woman can wear a swimsuit like most other places in the world. At a private beach that caters for women only, two Saudi women in their early 20s were lounging in beach chairs listening to Arab pop music. They said they come to this private beach for snorkelling and jet skiing (Alosaimi 2007).

Just four per cent of Jeddah's northern beach coastline is available to the public; thus it lacks public areas that provide comprehensive social activities. The Okaz newspaper mentions that many Saudi families find privacy on the vast reaches of the far southern coast to maintain privacy as a family group (Alariani 2007). As noted, this coastline is relatively featureless, with a few roads and little habitation as yet. The southern coast is an opportunity explored below.

South Coast

The south coast provides an opportunity to solve Jeddah's seafront problems. It is so far devoid of the high-rise residential and commercial developments which are the overriding aspect to the north of the city. These buildings overlook the public coastline that otherwise could be developed; however women's modesty and need for privacy is compromised in these locations. Further, the northern coastline presents difficulties, as in parts it is narrow and the roads and walkways prevent beach development. In other places, a coral reef is close to the shore and this precludes the possibility of extending the seashore. Of interest to this study is an Okaz newspaper article which reported that Jeddah's residents to the south of the city voice their needs for public recreational facilities along the south coast (Alhatar 2006).

The south coast therefore presents a unique opportunity to give Jeddah a public recreational place of great significance. Private recreational developments are haphazard by nature, they have a defined site on which to build and take little or no consequence of adjacent buildings or the environment. They do not enhance the view or the neighbourhood, they serve precise purposes. On the other hand, as can be seen with developments along the Gulf coast to the east, good public planning and appropriate landscaping serves to unite private construction, and broad avenues and public promenades enhance and dignify new developments. This is particularly relevant for the seacoast. Adequate public facilities and special features improve the relaxation experience for residents and visitors alike, and the new seafront infrastructure grants the wishes of the two Saudi women at the private beach who sought to experience resort living. Jeddah will have a world-class seafront that offers everyone who visits his or her wish.

To make the new Coast a reality, the plan developed in this study takes into account the following matters, discussed later.
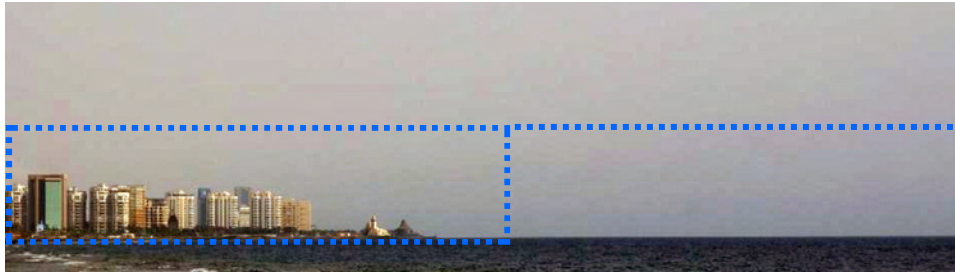
The skyline of Jeddah city at the existing seafront shows the amount of the high-rise buildings whish overlooking the public areas on the seaside
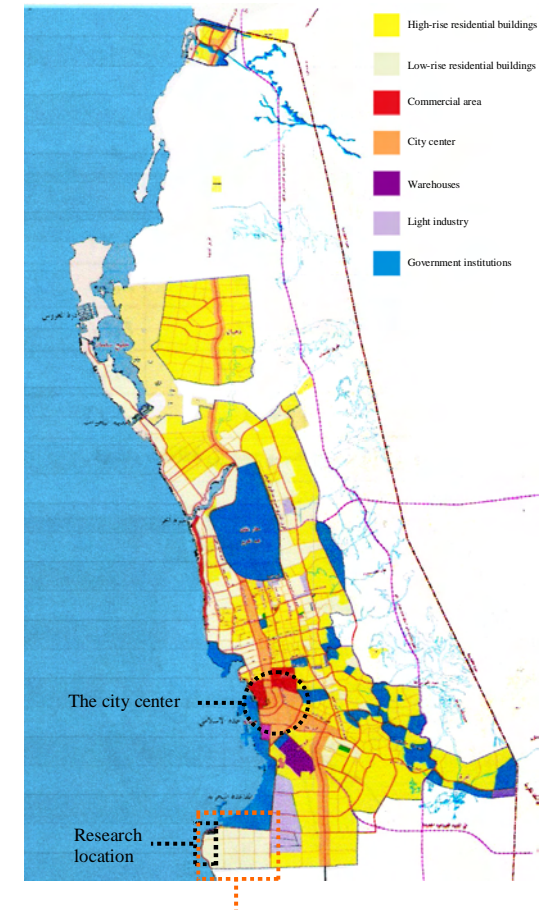
Jeddah Master Plan

The 60-kilometre length of the south coast is underdeveloped, beginning some 20 kms. from the city centre. Despite its lack of infrastructure, with roads, industrial area and few dwellings, the south coast is attractive to city residents. The central and far south areas comprise 45 per cent of the municipality, with various population densities ranging from 51 to 102 persons per hectare (BeeA'h 2004). Jeddah's current development plans indicate residential development along the southern coast, implementing essential infrastructure and improved accessibility. According to consultants BeeA'h (2004), the city needs 214,000 new residences by 2023 to house its young population; 30 per cent more than it recorded in 2003. While the greater part of private development is along the north coast, there is potential in the vast reaches of desert to the south to develop new cities with appropriate social infrastructure, including public spaces and enhanced recreational facilities along the coast.

Recreational development on the south coast is therefore a cost-effective project, compared to redeveloping constrained north coast sites, taking into account Islam sensibilities regarding privacy and segregation. Further, existing south coast commercial and residential construction comprises low density low rise buildings with limited angle views seawards.

Whilst the northern coast is accessible to these districts of Jeddah, as noted, public facilities are sparse and do not meet the Muslim ideal. The southern districts require an appropriate symbol for Saudi Arabia's second city, and the host city to the million pilgrims that enter the gateway to Mecca each year. Developing a new seafront, *Palm Coast, where the desert meets the sea* will significantly add to Jeddah's reputation as a gracious host and a desirable place to reside.

Jeddah's master plan

- High-rise residential buildings
- Low-rise residential buildings
- Commercial area
- City center
- Warehouses
- Light industry
- Government institutions

The city center

Research location

The master plan of Jeddah city illustrates the land uses near the research site where all low– rise residential areas that have narrow view angle to the public coast

People's behaviour at the existing seafront

Research was undertaken to determine the requirements of people who visit the central and northern coastal areas for relaxation and recreation. The study includes surveys at eight separate areas of the city's seafront to determine the behaviour of different social groups in each area. These areas included semi-public places (restaurant and resorts), seating areas (public spaces) and activity zones designed for the public (beaches, children's playgrounds, and open art places).

🟥 Families with children and no children	🟦 Teenagers males from 10-14 years old	🟨 Single old males over 60 years old	⬜ Semi-open area	⬜ Semi-restricted area
🟩 Single adults males	🟧 Single females over 12 years old	🟩 Children	⬛ Open area	⬜ Restricted area

The use of art and sculpture at the city seafront

Jeddah displays an unusually large number of landscape art pieces and the city enjoys a world-wide reputation for its collections of modern art. Sculptures include works by a variety of artists, including internationally recognised artists such as sculptors Cesar Baldaccini, Henry Moore and Victor Vasarely. These sculptures can be found throughout the city, with the majority concentrated in the city centre and the central seafront.

The first coastal art site is on the seafront opposite the city centre, an open air gallery of sculptures placed at intervals along the 40-metre wide promenade. The area is open to all; however, it is clear from the site survey that the majority of visitors are family groups, which reduces the opportunity for single males to also use the space. Etiquette decrees that single males respect the privacy of families and single females if they are using the area.

The second, smaller coastal art site is still in the central area, but to the north. It is an asterism, that is, representations of star clusters, and the landscaped site incorporating the artworks was designed for relaxation: sitting and viewing. The asterism sculptures are installed along the promenade and they serve as screens as families and groups of single women promenade, providing them with a greater degree of privacy.

It is clear from this analysis that the original main role of these art gallery spaces was 'converted' over time; these places were designed as art galleries, available for all to enjoy. However, the actual use of the space illustrates a need for shelter from the hot sun, more space and screening for family groups to allow children's play, and greater segregation for the two discrete groups, women and families, and single men. The issue then is that the aesthetics of the landscape design is overshadowed by planning attention to the segregation needs of the users.
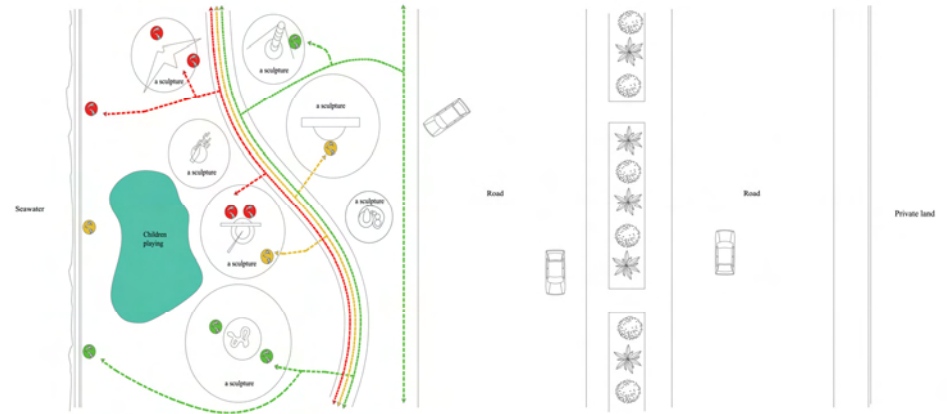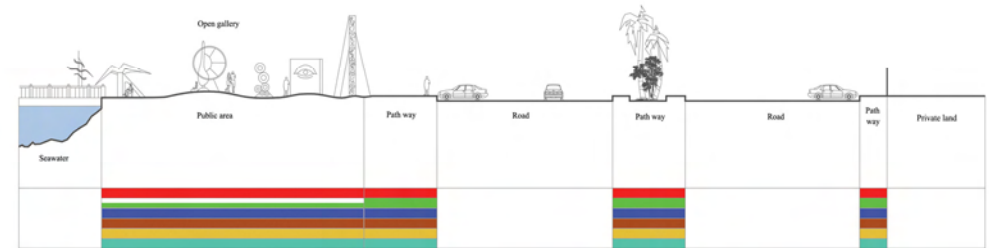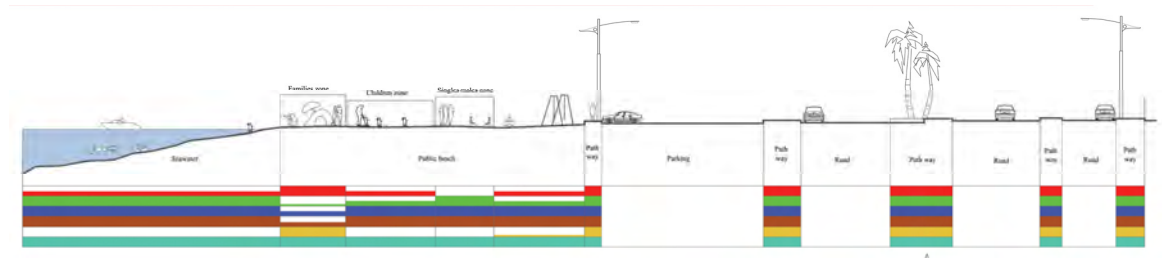

Section and plan A
(the open gallery)
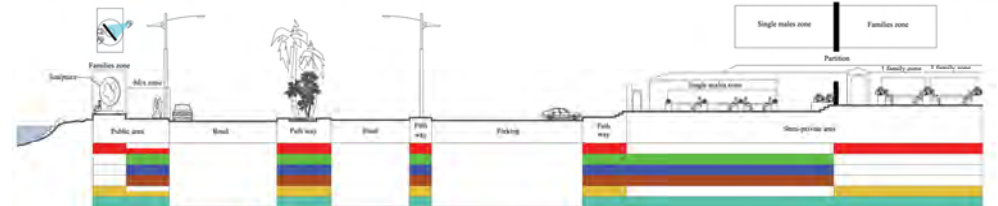
Section and plan B
(the asterism)

13

13

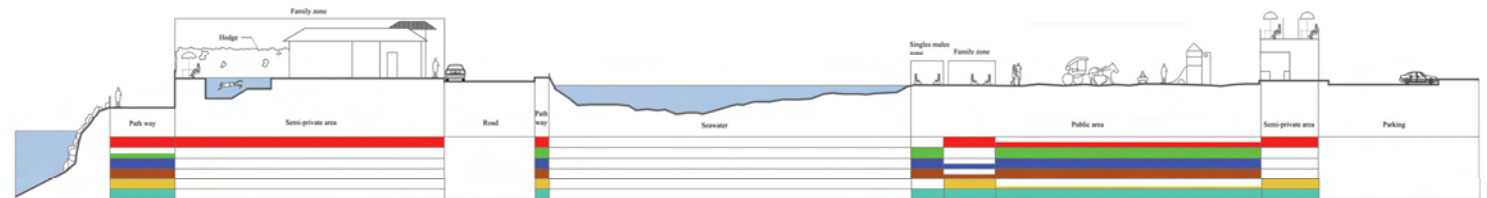# The city's public beaches and swimming areas

The only public swimming beach in Jeddah is located at the northern end of the seafront. This area is designed to be a public swimming area for the city dwellers; however, it does not consider the female requirements for privacy: in Islam, women can not appear in public without wearing their veils, and as a result, they are unable to swim in this area in front of males who are not related to them. Since the city's beach is open to both sexes, and women are unable to swim because of the veil requirement, the area can essentially be considered as a swimming area designed for men only.

The second swimming area is at the northern part of the middle seafront area in the city. This area is predominately occupied by private resorts for families, and female members of the family are therefore able to enjoy swimming in an open environment. These areas are completely designed for privacy since they incorporate private swimming pools for each resort, surrounded by physical screens, and constructed at a level higher than that of the public pathways. This place, despite its different environment from a real beach area, is considered as an open swimming area for females -- but not every one Can afford it because of its expensive fee.

Nevertheless, devout Muslim women refuse to swim in public places and authorities have yet to acknowledge this fact and provide them with appropriate bathing beaches.

This site is one of the many sites at the city existing seafront that have motorcycle riding activates. This type of activities is desirable from the seafront users but it minimizes their safety where it interferes whit other activities at the beach or sitting areas.

Section and plan C
(the public swimming beach)

Section and plan D
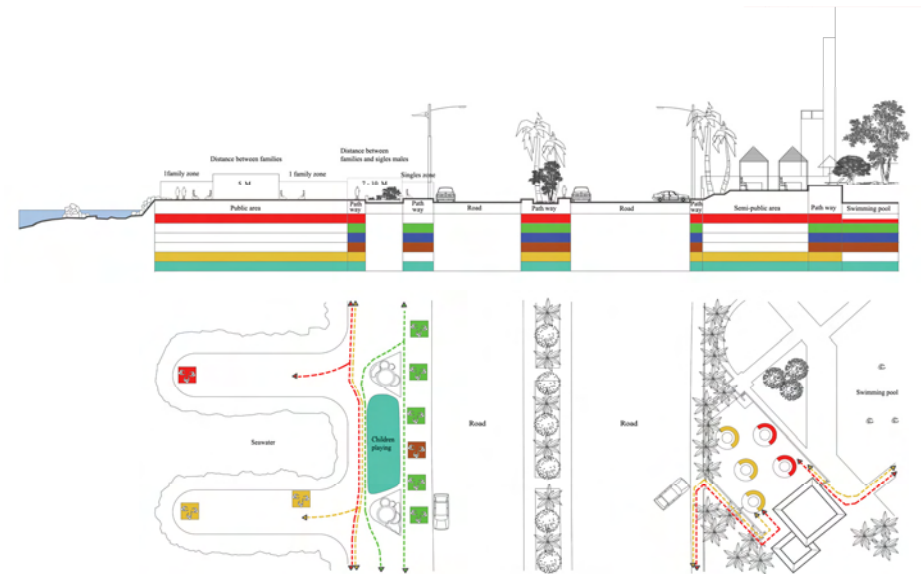(the swimming area at the middle seafront)

The semipublic and public areas at the seafront

The central commercial and public seafront are divided by long embankments or groynes forming enclosed spaces with a sitting area, up to twelve metres in length. Each space is often occupied by one family, leaving free space at the back along the promenade for passers-by. This design creates enclosed places for privacy for each family, but the groynes represent substantial unused space and enclosures are sometimes unoccupied.

Four-metre wide pathways, used as sitting areas, are frequently designed into seafront areas. This design again is inefficient usage of space, as each social group requires a considerable area for privacy. For example, the distance required between two families is approximately five metres, whilst seven to ten metres are necessary between a family and young men.

The same demand for privacy exists in commercial establishments (restaurants and cafés); here, two separate zones are required: one for families and single females, and the other for single males. Privacy is provided inside the first area by placing screens between each family, or between each family and a single female group.

Section and plan E

The design issue is then the amount of space required to under-take any activity involving the public. While a sitting area, for instance, is occupied by one young male group, there is an isolated space surrounding them that is 'off limits' socially to other groups; a distance that can extend to 15-20 metres in diameter around the group. A further restriction is the linear pathways which force groups into the others' space as people pass each other, or pass those seated. Passers-by retreat to the roadway, or break etiquette by passing too close. This is of critical importance when it comes to designing and costing any recreational facility for public use. Despite a high degree of privacy, cafés and restaurants expect to recover the costs for providing spatial distances between groups through their pricing arrangements; this cannot occur with open public space.
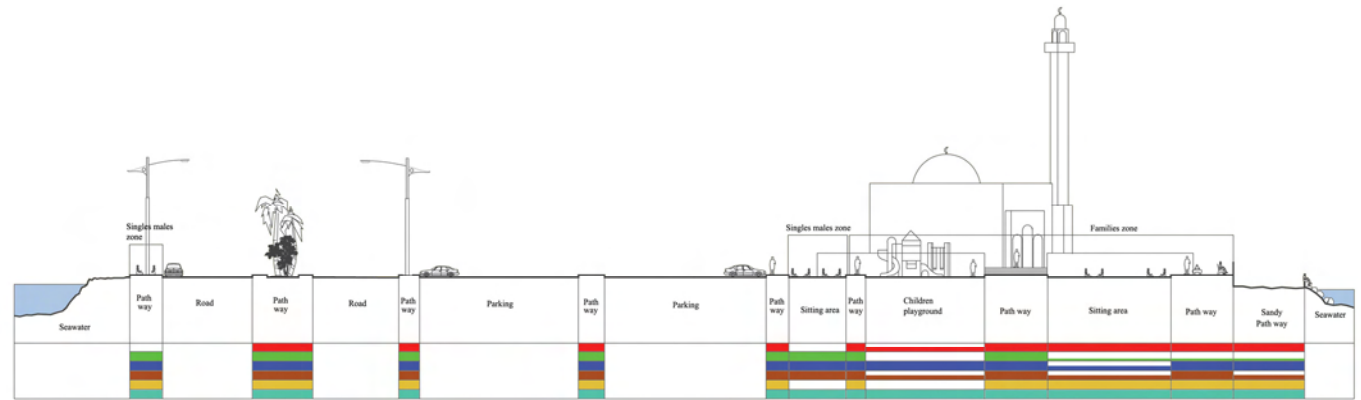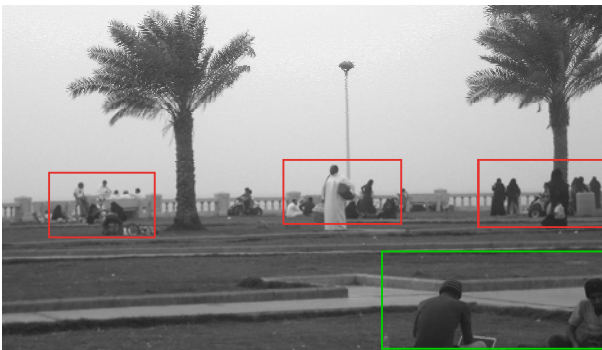

Section and plan F

15
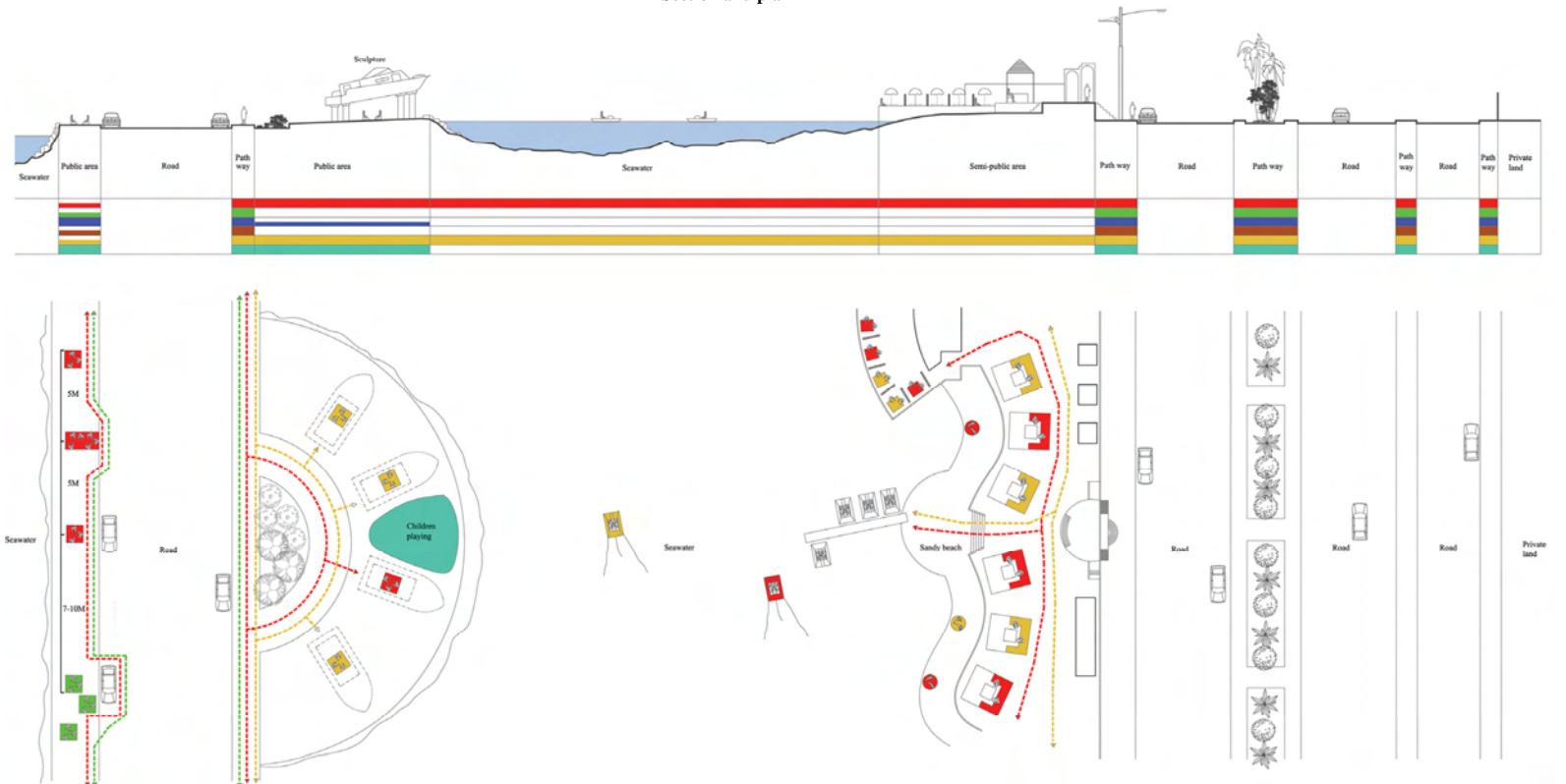
Green spaces at the city seafront

Parks on the central coastal areas are usually designed as larger zones along the seaside. These areas are occupied by children's playgrounds, spiritual places, and lawn areas that are used as sitting areas. Seaview parks are utilised by families and single female groups, while male groups conventionally remain at a distance to the rear. The single men are thus precluded from the best views and seating arrangements.

The mosques and children's playgrounds are public places shared by the social groups. Usually mosques are considered as places for men; however, sometimes they provide places for women as well. With parks and plaza spaces, children's zones do not need to be at a specific distance from women's areas; women can remain unveiled in the presence of others' children. However, when in public, women are required to maintain a distance of no less than five metres to other family groups.

Parks present the same spatial issues of other places where groups gather. Vast areas of lush green lawns are provided by the municipality, but are under utilised due to the mores of the Islamic way of life. The segregation of groups maintains a hierarchy of space where there is little in the way of specialised design to take account of these ancient practices.
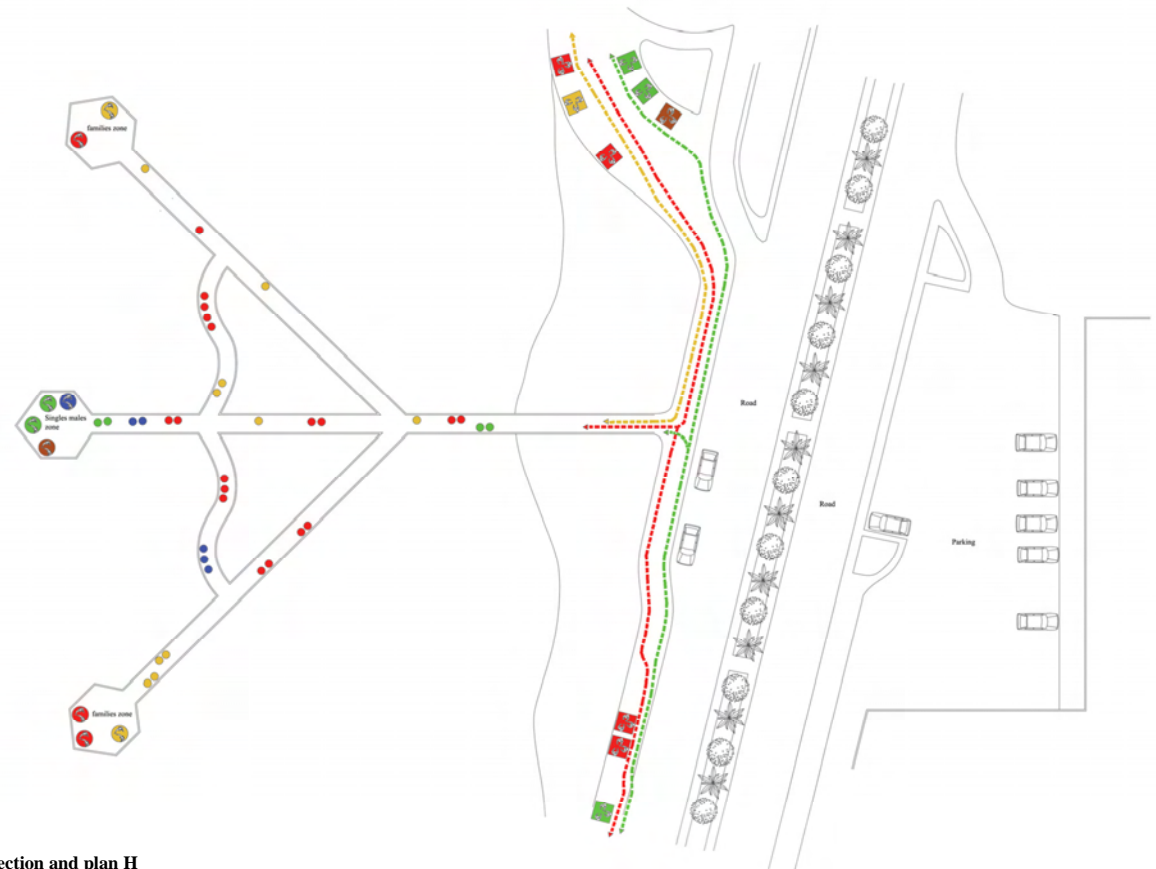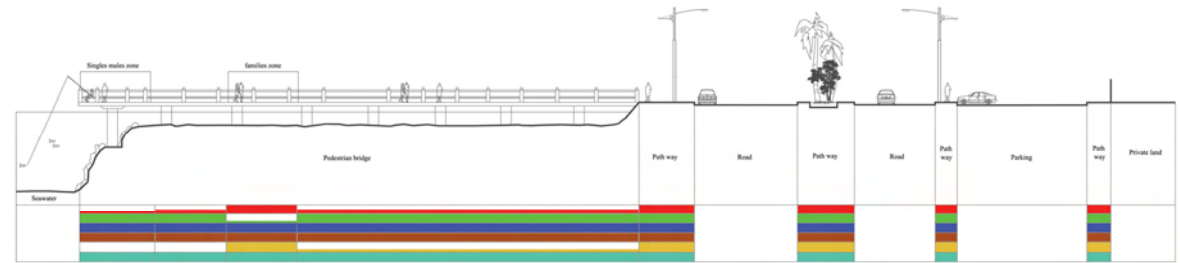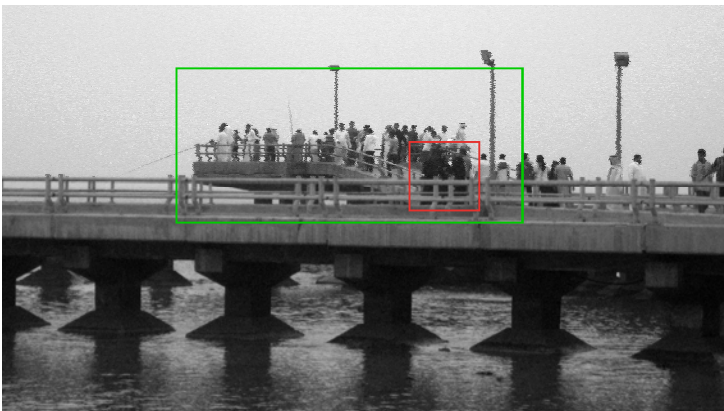

Section and plan G

16

The fishing activity at the city seafront

Fishing Angling is a highly sought-after sport for seafront visitors. A triple fishing pier extends to the offshore coral reef to allow a greater variety of fish species to be caught. The central pier is very popular with fishermen; thus single women and families utilise the other two branch piers or sometimes occupy the centre of the main access pier if the men of their group are fishing.

The main access pier is wider before it branches into three, and each seaward end of the three piers forms a circle to accommodate the people fishing. The piers are connected halfway along with access walkways, thus the separation issue remains. Each end of a pier was observed during the research to be occupied by a specific group, either a family or single men. However, once these areas were occupied by one group type, other group members avoided the area. In addition, the pier ends can be considered as a medium-sized space, and most men stay longer fishing than the families. Based on this study's site analysis, families remained for a shorter period in the end pier locations because the medium-sized place did not permit the spatial areas the families felt were comfortable. In larger places they could relax and stay; in smaller places, there is sufficient space for just one family. Thus, it is rare to see a family member, male or female, sitting with his/her family and enjoying fishing, although that was the purpose when the pier was constructed; that it was to be a public place and a fishing activity area for all. Again, the spatial distances that are a part of Arab life were not taken into consideration when the pier was designed. The issue is that families and female groups are uncomfortable with the design of the triple pier and thus have less opportunity to join in this activity, given their perceived spatial constraints.

Section and plan H

17

Part 02: The Islamic methods for implementing privacy

This chapter is presented as a personal survey of traditional architecture and solutions adopted over the centuries to serve Muslim sensibilities. The sections are designed thus: an examination of Islamic residential and commercial architecture over the centuries, treatment of open public spaces,

History of Islamic Architecture

The development of Islamic architecture from the 7th through to the 18th century can be divided into three periods. Itani (2008) showed that the first period coincided roughly with the Umayyad (661-750AD), under whose rule Islamic territory was extended from Damascus, in Syria, to Spain. The middle period spans the time of the Abbasid caliphs (750-1258AD), who ruled Islam from Baghdad in Iraq, until the time of the Mongol conquest. The period from the Mongol conquest to the 18th century is called the 'late period' of Islamic art and architecture. Islamic architecture also flourished under the Ottoman Turks, rulers of Turkey from 1299 to 1922AD, who extended their empire to Egypt and Syria in the 16th century. In Egypt (and Syria), architectural styles were also associated with the reign of the Fatimids (909-1171AD) and that of the Mamelukes, who established control there in 1250AD. Within this period distinctive architectural styles can be found in different parts of the Islamic world.
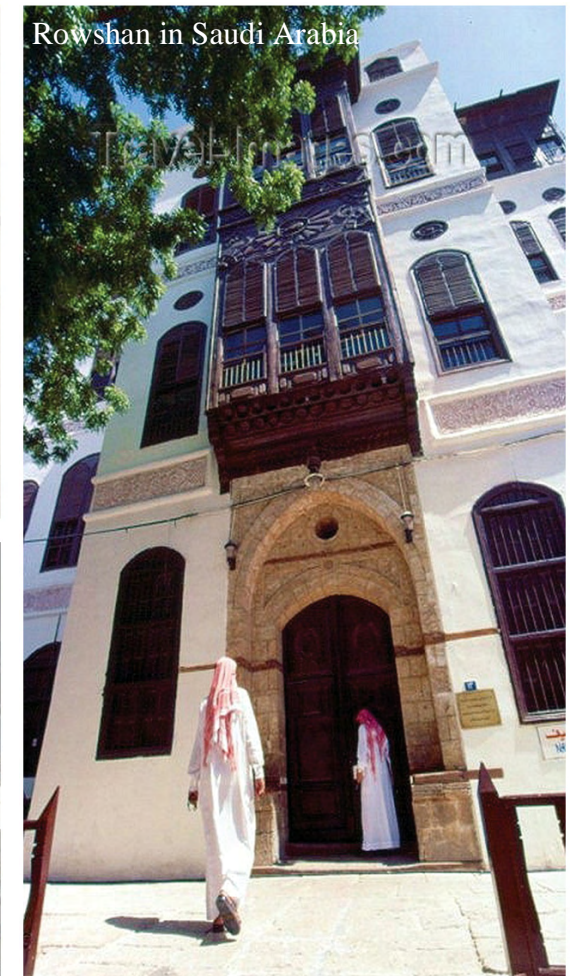
Courtyard in Turkey

Courtyard in Syria

Rowshan in Egypt

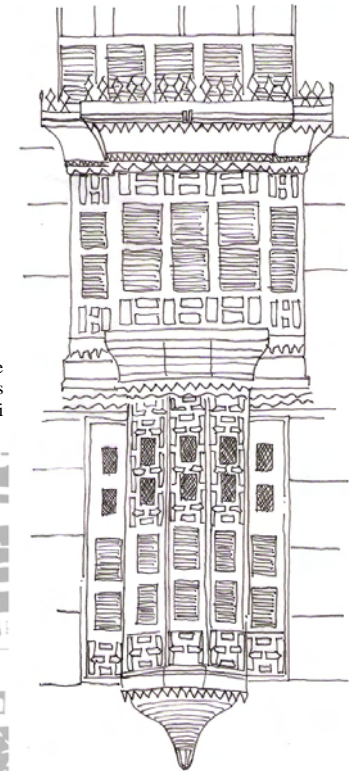Rowshan in Saudi Arabia

Courtyard in Spain

Courtyard in Morocco
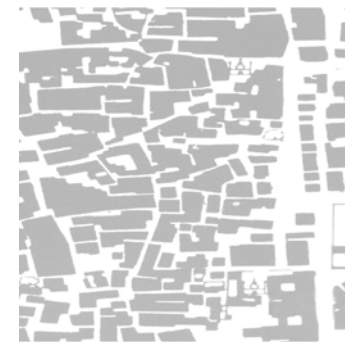
Buildings' exterior feature

The Rowshan buildings

The west coast of Saudi Arabia along the Red Sea is extremely humid throughout the year. The proximity of a large body of water and the humid conditions affect a narrow belt of twelve to fifteen kilometers along the coast. Beyond this humid belt, composite climatic characteristics may be observed as a result of the meeting of the hot-humid coastal belt and the hot-dry hinterland area behind it. In Hijaz, the Western Province of Saudi Arabia, the vernacular architecture evolved into a refined building art and technology. Jeddah played a prominent role as a trading port, and thus, cross-culturalization between the trading Middle-Eastern, Asian and European nations enriched the arts and architecture of Hijaz. Also, the pilgrims who came from various parts of the world brought their skills and exchanged ideas with the local people. In addition, Talib (1998) revealed that the building activities in Egypt (across the Red Sea) influenced the construction skills of the people of Hijaz. For example, Rowshans and Mashrabiyas (projecting screened windows) which are prominent features of Hijaz architecture which came from Egypt to Jeddah. Rowshans or Mashrabiyas fulfilled two main functions. Transparent wooden screens allowed cross ventilation and provided privacy from the outside world for the family. Rowshans also became decorative over a period of time and acquired popularity and prestige. This in turn influenced architecture in hot-dry Mecca and Medina, as well as in the uplands of Taif, where Rowshans are found in vernacular buildings. Egyptian artisans worked on the west coast, whereas skilled artisans from the Indian sub continent worked in the east. During the Ottoman occupation of Saudi Arabia, architectural design and construction techniques were influenced by the activities of the Turkish garrisons (Talib 1998).


The Rowshan buildings facade presents the decorative work of the wooden windows that used widely in Jeddah city in Saudi Arabia

The urban fabric of Jeddah city by its narrow streets shows the reason of using the screens objects at buildings openings

The Rowshan contains multi- openings covered by small sliding wood that allow crossing view from indoor to outdoor
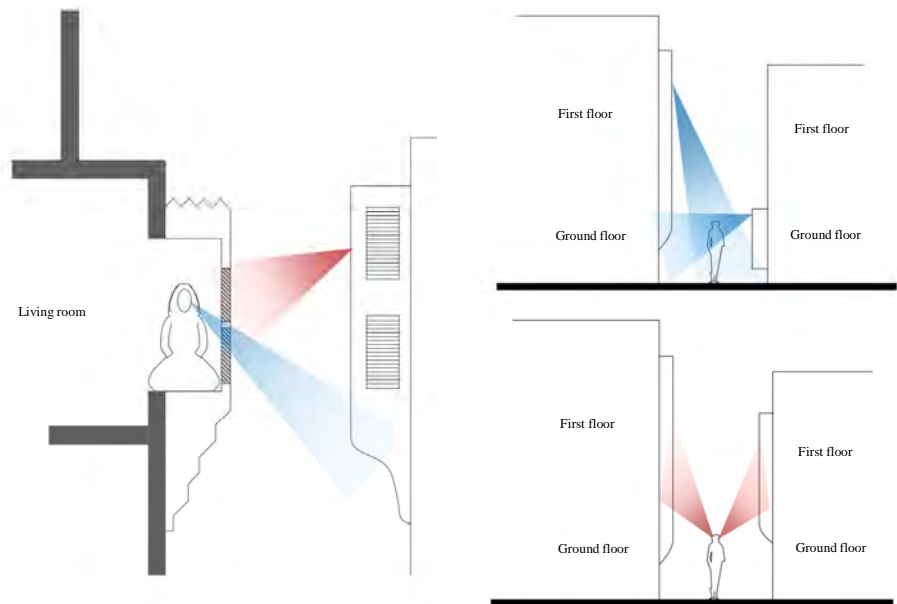
The main function of the screen windows (Rowshans) is to allow females inside buildings to be in contact with the outdoor environment with out being seen by neighbors or people in streets

Unclear view

Clear view

The typical function of Rowshan

The Rowshans or Mashrabiyas were developed in response to the hot-humid climate of the western coast along the Red Sea. Cross-ventilation is a necessity in buildings in this climate, and for this reason transparent facades of decorative wood were created. The desire for privacy, however, required that large openings be screened so that one was able to see from within without being seen from outside. Climate and privacy requirements, therefore, prompted the design of Rowshans and other types of louvered or screened windows (Talib 1998).

Muslim architecture adopted this building style because of the great demand for physical screens to implement privacy in Islamic cities; similarly, a screened object can be implement privacy at the public places in the new seafront.
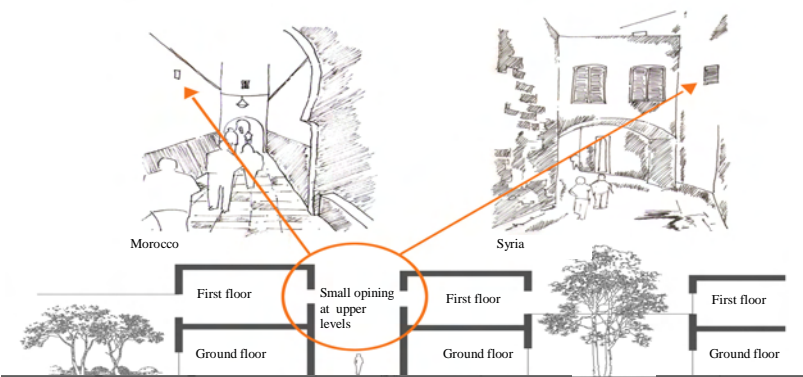
The courtyard buildings

The most striking feature of all Islamic architecture is its focus on interior spaces as opposed to the outside or facade. The most typical expression of this focus on inner space is in the Muslim houses. Rectangular dwelling units typically are organized around an inner courtyard. These courtyard houses are often clustered together into a walled complex to serve the needs of extended families. Courtyards in the Arab world come in a variety of sizes and shapes and perform a variety of functions: they allow traffic to circulate to various parts of the house; they help cool the house, and mainly they serve to ensure the privacy of a family gathering place (Ibrahim 1999). According to Leong (2009, p.4) the architecture of the Islamic courtyard house has been called the "architecture of the veil". The courtyard house expresses the need to exclude the outside environment while protecting that which is inside (the family and their inner life) by the buildings that surround it.

Having a space, such as a courtyard, that can be used by one family as a recreation area, in-between different usage areas and building units, prompts the idea of creating a family area at the new seafront, surrounded by another space type, and suitable as a space for another family or a single male area.
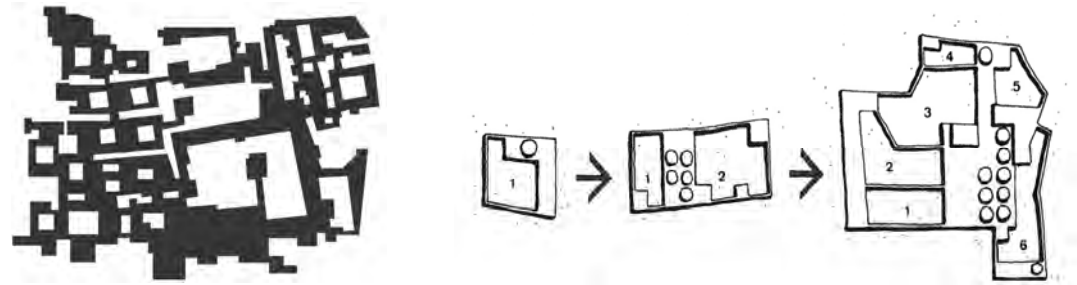
The courtyard house facade

The facade of the courtyard house offers high windowless walls interrupted only by a single low door. This condition protects the interior environment from pedestrians on the outside who may want to violate the privacy of the house. Screening objects are a significant requirement for the Muslim family; however, crossing ventilation is also important, helping the wind permeate the buildings' rooms from either the courtyard on the ground floor or through the small openings in the top floors (Hamoosh 2006).

Using physical screens at the new seafront should be considered to provide cross-ventilation as an important consideration for users' comfort.

The small opening in the courtyard buildings shows the great need of crossing ventilation as well as privacy

The buildings clusters in Riyadh city in Saudi Arabia helps to form the courtyards shapes that presents the low level spaces between the buildings the way that nature topography presents its valleys between mountains
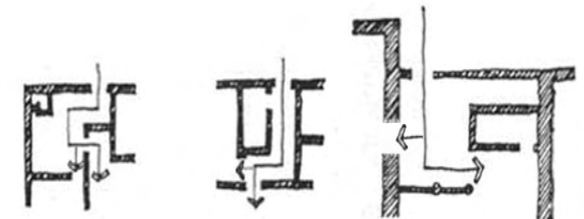
The courtyard house entrance

Hamoosh (2006) mentioned that most of the courtyard buildings, entrances are indirect: there is typically a physical screen opposite to the door that protects the families' area inside the house from direct view of the outside once a door is opened. In some houses there are separate entrances for family and male visitors, or one entrance may guide the male visitors down a corridor or a set of stairs to the males' guest area, far from the main family section.

The first indirect entrance type leads the visitors to the guest areas vertically at different levels

The use of two different entrances or one entrance with two ways, for families and single males, is a way to provide entrance to different groups at all places on the new seafront that ensures that visitors do not inadvertently cross into family or singles' areas.

The second indirect entrance type leads the visitors horizontally to the two different guest areas at the ground floor

The courtyard house roof

The flat reinforced roofs of the rectangular residences are useful outdoor spaces. Roofs perform a range of domestic functions: they can be used for domestic purposes such as drying, and in the evenings, they can be used for social gatherings. Through regulations derived from Islamic law, roof spaces are surrounded by high walls for privacy, usually 1.75 to 2 metres in height (Hamoosh 2006). This accepted height limit, no more than a screen, can be translated as a guide to the height requirements for landscape architecture as well.
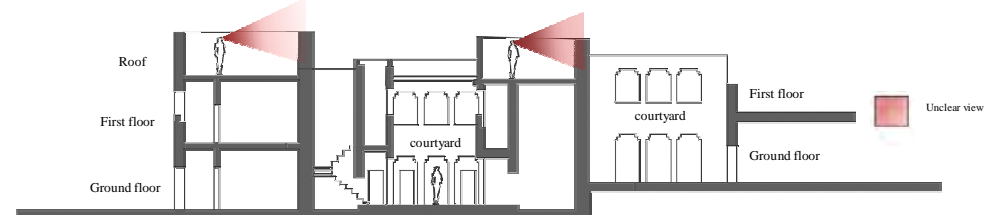
The roof walls heights in Riyadh city as an example shows the minimum heights that can be used for an object screen

Buildings' interior feature

## The function of Islamic traditional house

As a general rule, men and women are in two separate domains in Islamic houses. The man has more interaction in the public realm and hospitality is an important obligation that gives rise to the need for spaces within which to receive and entertain guests. The concept of a male guest room or reception room is widely recognized throughout the Islamic world. The traditional need to entertain male guests while at the same time prevent access to the females of the household, has given rise to additional complexities of design that are specific to Islamic domestic architecture, which must therefore accommodate a double guest room. The men's reception (or guest) room tends to be located adjacent to, or directly accessible from, the entrance lobby of the house -- whether on the ground floor or first flour -- so that visitors do not meet or converse with the female household or women in the female guest room (Hamoosh 2006). The simplest form of separation of male and female areas is found in the tent of the nomad, where there is no permanent structural division. Instead, a screen is hung across the center of the tent and along one half of the front of the tent when unrelated male visitors are present.

The idea of using two different areas for family and male guests can be used at public areas, either by making two zones on one level, separated by a type of screen in the middle, or two level-areas where each floor could be used by one type of social group.
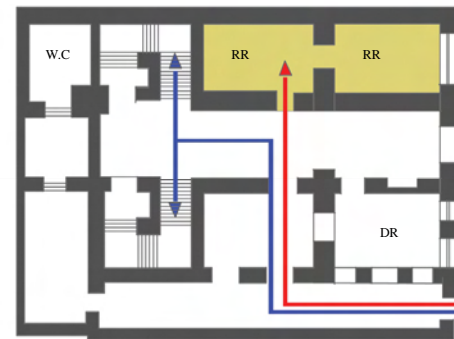
The traditional house in Algeria
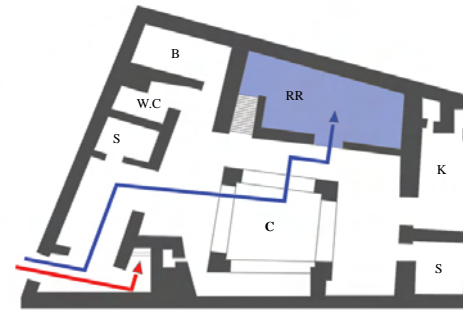
(ground floor plan)
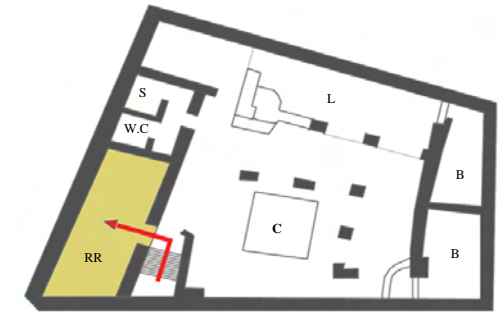
(first floor   Source: adapted from (Hamoosh 2006).

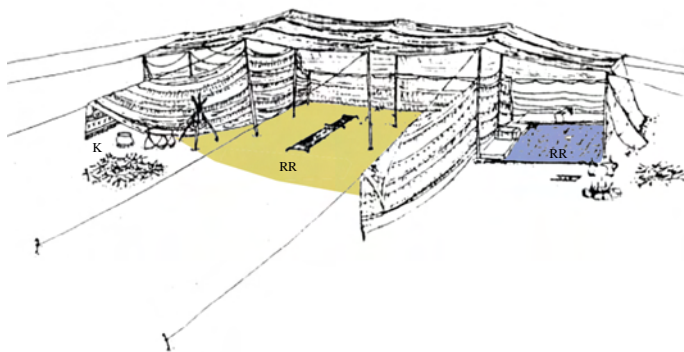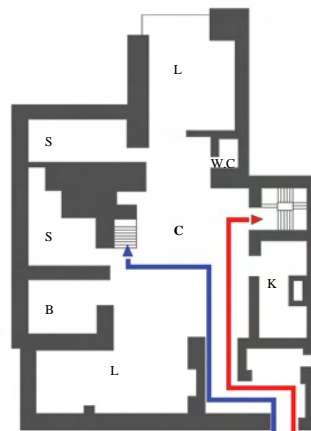### The traditional house in Jeddah

(ground floor plan)

(floors section)

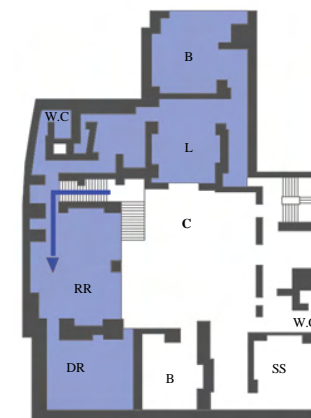Source: adapted from (Talib 1998).

The Bedouin tent

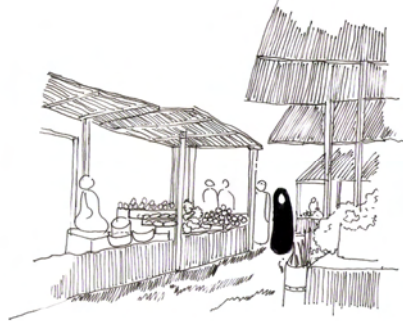### The traditional house in Cairo

(ground floor plan)   (first floor plan)   (second floor plan)   Source: adapted from (Ibrahim 1998).

Legend	
(yellow)	Males' guest room
(blue)	Females' guest room
(red arrow)	Males' entrance
(blue arrow)	Females' entrance
C	Courtyard
L	Living room
B	Bedroom
S	Storage
W.C	W.C
K	Kitchen
SS	Slaves section
RR	Reception room
DR	Dining room

22

Islamic cities public areas

City market areas

It is obvious for most of the old traditional Islamic cities' visitors that the design of city market areas is the same. The shops are always clustered in one place, and they are either a rectangular or a square shape. Both shapes allow different spaces and environments along the market area, which may differ in its size from a narrow to a wide space. In these market spaces – as opposed to other public areas in an Islamic city -- women have more privacy. A personal study on Jeddah traditional market shows that despite the small distances and high (people) density, women feel more relaxed to move about and shop in the midst of (unrelated) males. The reason for this is that shopping behavior in market places is hard to control. The small distances between males and females in old market places are considered to be a normal situation or condition -- unlike other places that require larger distances for privacy.

The zigzag nature of the corridors and plazas give women a sense of security; differing levels of shops and stairways allow a feeling of remoteness and separation from the people below . The market environment can be adapted for recreational spaces to allow the greater inter-mix of women and children, and single men. The market model is derived from the focus of attention of buyers; in the market, the attention of all is on their prospective purchases, incurious of other people around.


The condition of privacy for females increases when they face shops and give their backs to the market corridors

The reason of the short distance between males and females at markets is related to the visitors' interests where every one concern oneself with shopping and the market's products

The privacy condition at large markets depend on the shape , level and size of the markets' plazas and corridors

Traditional market in Damascus city (Syria)

Source: adapted from (Kafesciolu 1999).

Traditional market in Aleppo city (Syria)

Source: adapted from (Kafesciolu 1999).
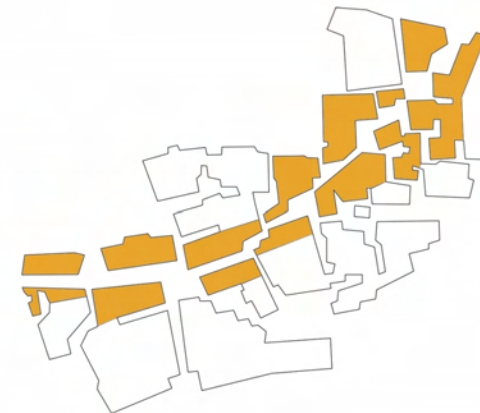
Traditional market in Jeddah city (Saudi Arabia)

Source: personal site survey.

The irregular shape design of old traditional markets forms corners and narrow spaces where females can find their privacy
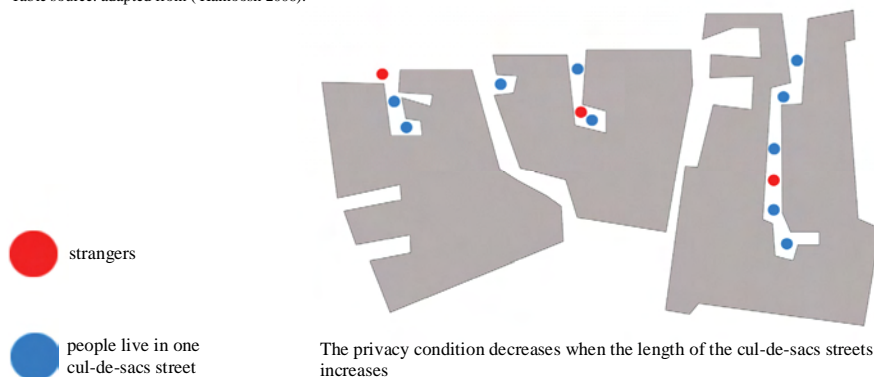
City streets

The plans of old Islamic cities show that cul-de-sacs were widespread, used as a security measure by the residents along a passage to restrict entry to strangers (Hamoosh 2006). The cul-de-sac notion is used at the existing northern seafront in the long enclosures facing the sea and used by a single family or group, however, in spite of achieving its aim for privacy, this design is an inefficient use of scarce space due to the construction of the groynes and the usage of a large space by sometimes just a few people. In the new seafront development, the cul-de-sac concept can also be used for the family zones; however, less intrusive construction materials are required, and the total activity usage of the area considered. Another solution is to use the enclosures for families, separated by a further enclosure accessible from both family areas and dedicated to play activities for children and teenagers.

Cul-de-sacs in Islamic Cities

City	Cul-de-sacs as a percentage of all streets
Fez, Morocco	52.4
Algiers, Algeria	45.8
Cairo, Egypt	46.8
Damascus, Syria	43.1
Aleppo, Syria	41.3
Baghdad, Iraq	24.6

Table source: adapted from (Hamoosh 2006).

● strangers

● people live in one cul-de-sacs street

The privacy condition decreases when the length of the cul-de-sacs streets increases

The streets network in Damascus city (Syria)

The Islamic old cities plans show the massive number of cul-de-sac streets that have different sizes

City open spaces

Typically, there are three different types of open spaces in Islamic cities: public, semi-public and private. Abu-Ghazzeh (1995) specified the three types as first, large open spaces include pedestrian squares and pathways (sahat). These areas are used daily by males, elders and young, for social purposes. Public recreational areas can also be used for large gatherings, such as the parts of wedding ceremonies concentrating on the bridegroom. Coffeehouses are also part of this notion of public space; the first secular environment that brought an appreciation for male recreation, communication and community integration.

The second, smaller types of open space include small squares and cul-de-sacs that are used by neighbours who live in the buildings surrounding this space. Women and children may use this enclosure for both social and recreational activities. The last type is the private residential courtyards (fina), used continuously by women and children, and also for the bride's own wedding rites.

An example of the open space utilisation in Saudi Arabia is Al-Khalaf village, some 500km south of Jeddah. It has a large open square (sahat) in the village used by men to discuss current issues. Communal decisions are made in the sahat, tribal members' disputes are solved, and stories told. The *sabat*, the smaller, more private form of a public square for cul-de-sacs provides a small open space for local women's social gatherings and space for children to play. The village also contains another type of open space, the *housh*, a form of private courtyard for families and women's gatherings.
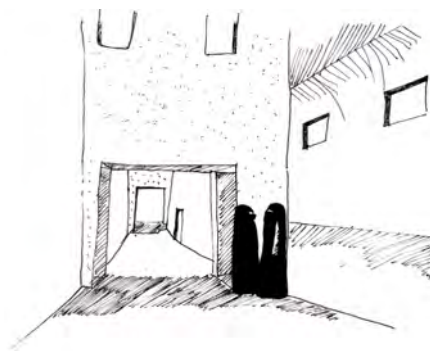
The small squares are the spaces of female gatherings

Celebrating of social activities for males at cities large open squares

The coffeehouses are the place of males recreation activities

Cities open squares are the place of meals gatherings

Al –alkhalaf's land uses

Al –alkhalaf's streets networks

Source : adapted from (*Abu-Ghazzeh 1995*).

■ Residential buildings	■ Semi-public spaces	▬ Thoroughfare routes system
■ Private courtyard space	▪▪▪ Access routes to major residential quarters	
◎ Public open spaces	•••• Minor routes	

The size of the space is an important factor for its users: small squares are preferred by women since they are enclosed places and, once they are occupied by women, men respect their privacy. Medium-sized squares are avoided by women due to the proximity of others.

The space-size concept is therefore an element for the new seafront when planning the size of its squares and definition of the spaces by user type; women will adopt the smaller spaces with their children, singles females will also prefer such allocated areas, and single men will use medium size plazas and sitting areas. Larger promenades and open areas are used for public entertainment and festivals, and thus each social group will gravitate to the area in which they feel more comfortable.

Part 03 : The research analyses and guidelines

The research methods for design

The previous chapters presented the Islamic tenets governing recreational activities, Jeddah's harsh environment, and the nature of the existing seafront recreation on the long coastline. To assess these elements, this study uses extracts from existing seafront analyses and research into traditional Islamic architecture and construction (Abdu et al. 2000, Alariani 2007, Hatrash 2007, Ibrahim 1999). This chapter presents two approaches to address the privacy issues for the new seafront development; paradoxically, the first approach serves visitors' requirements of decreed physical separation between men and women; whilst the second method allows for this distance to be reduced. Both these approaches are useful for the new seafront, with each forming a planning framework in different circumstances and for varying activities.

A- The zoning method

The existing situation at Jeddah's seafront reveals a lack of use of public space along the coast line. Only 20 % to 60 % of the public area at the seafront is occupied by visitors because the distance required between families, or single males and families, increases the percentage of space that cannot be used.
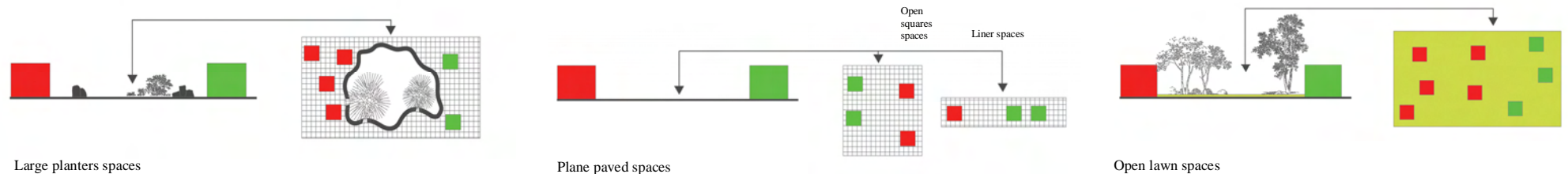
Courtyard space in Islamic countries presents the cities with open spaces for a private use. The space usually used by the houses' dwellers and especially females who find both their demand for privacy and desire for an open environment in courtyards. The remaining areas in the houses (the constructed areas) cover the greater share of the area that is used by the house's family and their guests. The total area – including house and land -- that is occupied is considered 100%, unlike Jeddah's seafront of which 40% is uninhabitable.

The idea of the zoning method is to achieve a seafront area that is 100 % occupied and that responds to visitor demands, needs for seafront activities, and privacy. The zoning method will result in a greater number of activities taking place in the unoccupied spaces between visitors, for example, the areas may be used by selected users including children and teenagers who do not affect the other groups' privacy.
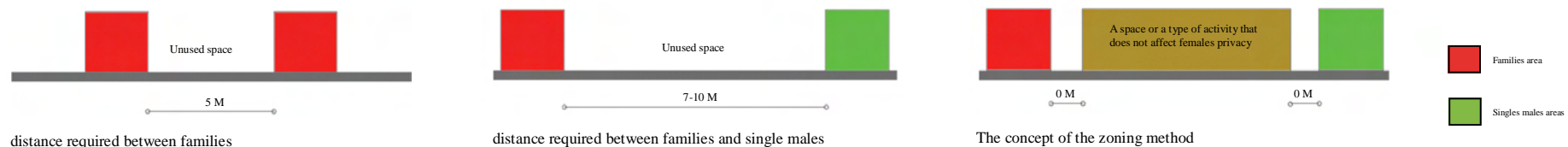
The rate of occupancy at courtyard buildings and Jeddah existing seafront

bedroom	
guest room	
kitche	
storage	
W.C	

Courtyard Courtyard

Unused area Unused area

Partly used area Partly used area

100% occupied area

20-40 % occupied area

40-60% occupied area
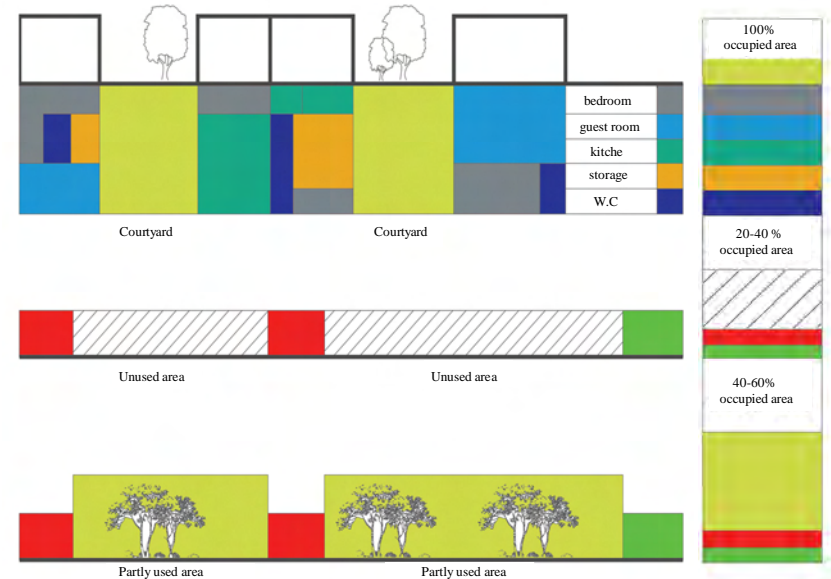
The type of unused spaces at Jeddah existing sea front

Large planters spaces

Open squares spaces Liner spaces

Plane paved spaces

Open lawn spaces

The concept of the zoning method

Unused space

5 M

distance required between families

Unused space

7-10 M

distance required between families and single males

A space or a type of activity that does not affect females privacy

0 M 0 M

The concept of the zoning method

Families area

Singles males areas

The relationship between seafront activities and visitor groups and a response to privacy demands

Zoning is the recommended method to achieve maximum capacity by responding to visitor demands: recreational opportunities and privacy. Zoning allows for a greater number of activities in otherwise unoccupied separation spaces, for example, using these areas for children's playgrounds.

Privacy requirements in public spaces such as the new seafront differ from place to place and from one activity to another, depending on the nature of the group. In seating areas, mothers and children and single females require a high degree of privacy from single male groups, whereas, as noted, children require no separation. On the other hand, the demand for privacy increases, even between family groups, where women cannot swim if males other than family members are in view. Thus there is a 'scale of privacy' for women's recreation based on separation and activity. The following is a series of concepts to address these issues.

The relationship between the visitor groups and their privacy requirements in different places at seafronts areas

The zoning method concepts

1- The screen concept
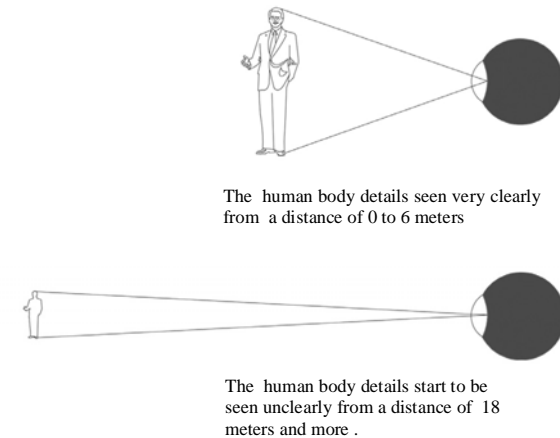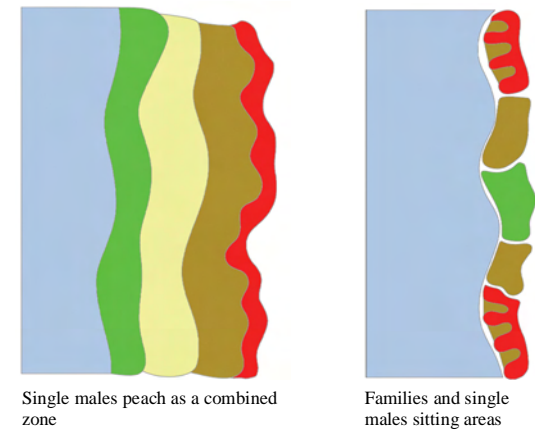
1.1- Physical screen

Physical screens are used in Islamic cities to implement privacy. Rowshan buildings, for example, have wooden windows that cover the large openings of houses so that one is able to see from within, without being seen from the outside. This method can be applied at the sitting areas on Jeddah seafront by using small screened structures to separate each family area from another, or to separate families from single males' zones.

Small zones screened by a physical object

Large zones screened by a physical object
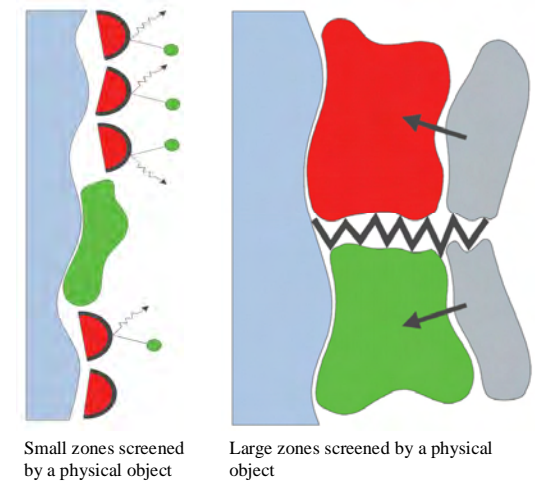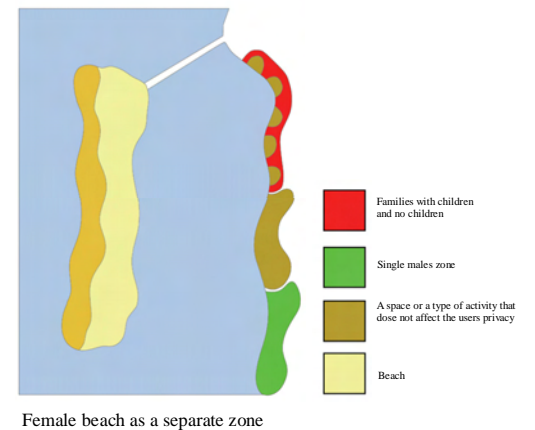
1.2- Distance screen
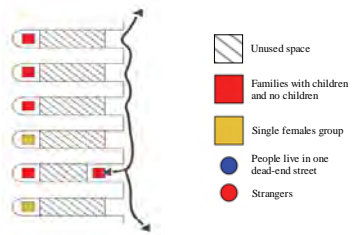
1.2.1- Short-distance

The main point of this concept is to retain the distance that is required between the groups of families or families and single males groups at the existing seafront while providing an opportunity for more activities and services to be situated in-between the occupied spaces. The type of land use in these "in-between" spaces will be assessed by the privacy and seafront zone study, which can define the privacy distance requirements of each visitor group based on different activities and services.

Single males peach as a combined zone

Families and single males sitting areas

The human body details seen very clearly from a distance of 0 to 6 meters

The human body details start to be seen unclearly from a distance of 18 meters and more .

1.2.2- Long-distance

The goal of this concept is to expand the distance between females and males. The idea is based on the fact that details of the human body gradually become indistinguishable the further away they are from the field of vision. A personal field study shows that human body details start to become indistinguishable from a distance of 18 meters; however, the distance required for women's beaches to be screened from the males' is at least 100 meters.

Families with children and no children

Single males zone

A space or a type of activity that dose not affect the users privacy

Beach

Female beach as a separate zone

fingers sitting areas at the existing seafront

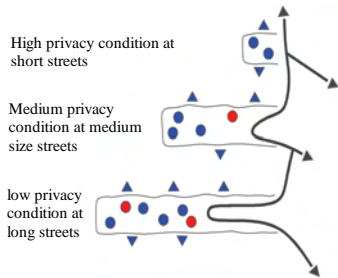cul-de-sacs street in the Islamic cities

2- The cul-de-sacs concept

This concept reflects the mechanism of dead-end streets in the Islamic countries which control strangers' entrance into private areas. This concept was applied in the existing seafront; however, its large length leaves large, unused spaces that could be put to better use by serving a greater number of visitors.
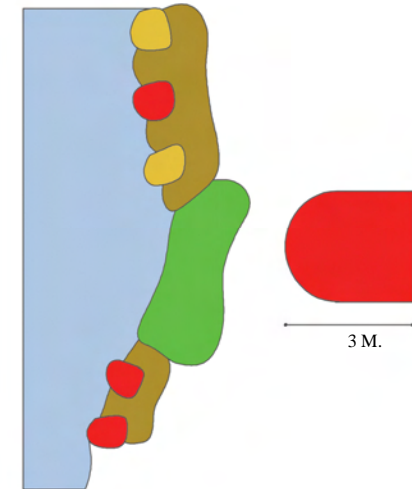
This study shows that a system of short cul-de-sacs works better than a system of longer streets. Shorter streets guide pedestrian circulation away from the entrance of the streets once the streets' dead-ends are clearly seen. Therefore, an individual who is not familiar with the streets network in a specific residential area can easily figure out the cul-de-sac streets and, therefore, he / she can probably easily avoid entering these "private zone" places.

The cul-de-sac concept will be used in the same way as the "finger" shapes are used at the existing seafront; however, the length of the "fingers" will be reduced to save more land for different activities and uses.
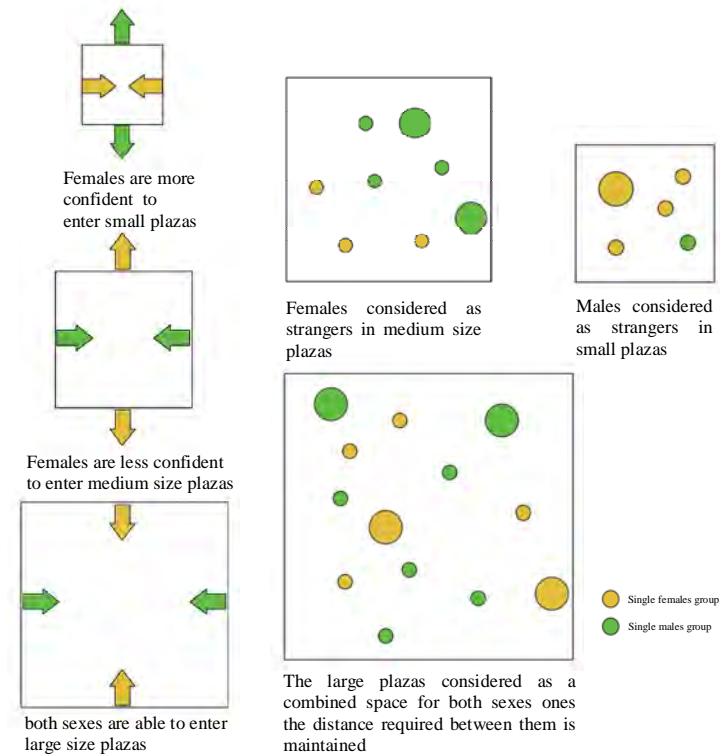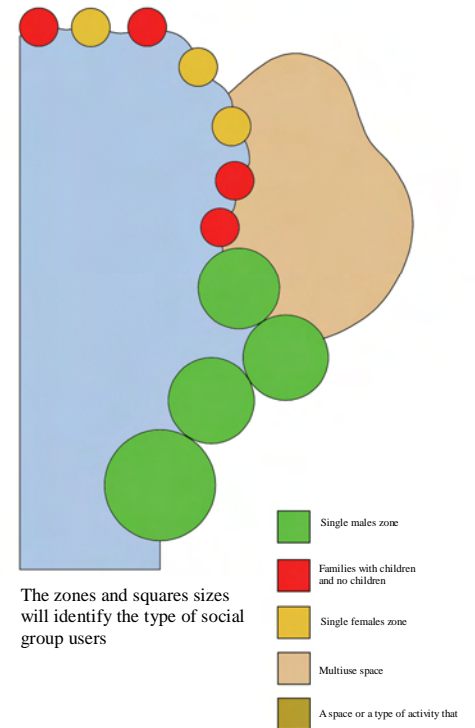

The sitting area for families and single females should be no more than 9 meter square

3- The plaza concept

Plazas Research shows that privacy is a greater issue in medium-sized places than in either smaller or larger open areas. Women are attracted to smaller parks as men respect women's prior occupation of such places. Separation of the gender groups in medium-sized plazas is difficult to control; thus, women tend to avoid these places. Large places are popular by both sexes as women can gain separation space in the greater area. Thus for the Palm Coast development, the idea is to use different zone sizes, where sitting areas, plazas, and activity places at the seafront will be defined by groups, the number of potential users, and by its size.

Females are more confident to enter small plazas

Females are less confident to enter medium size plazas

both sexes are able to enter large size plazas

Females considered as strangers in medium size plazas

Males considered as strangers in small plazas

The large plazas considered as a combined space for both sexes ones the distance required between them is maintained

The zones and squares sizes will identify the type of social group users

4- The topography concept

The skyline of courtyard buildings resembles the natural topography of the country's hills and valleys. The building roofs represent the top of hills; in nature the hills have a view that is open to the surrounding countryside. However, the courtyard, which represents the valleys in nature, is screened by buildings and walls; further, valleys and low areas are shielded by hills. The courtyard buildings and nature's topographies use the same concept, hidden places are situated in lower areas and open areas with views occupy higher places.

The topography concept applies to seating areas at the new seafront; using the concept of the courtyard and reflecting the natural topography of the site, so that women and children have the opportunity to gain more privacy in the courtyard/ valleys looking over the sea, while single males have a direct view to the sea and nearby activity areas from the top of constructions/hills.
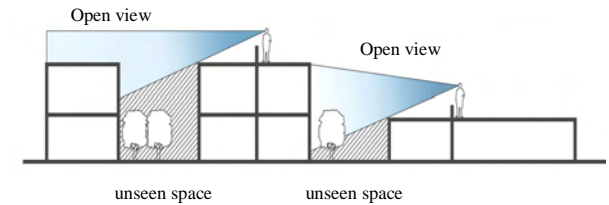
The bottom of valleys is a closed area that has a limited view to surrounding areas
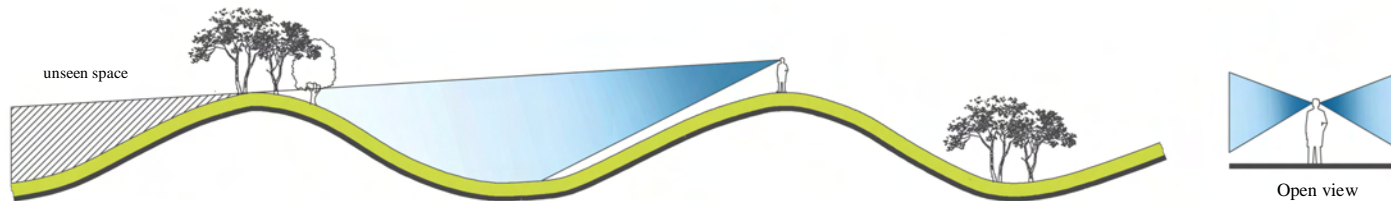
The top of hills is a great space to view surrounding areas except hidden spaces covered by other hills
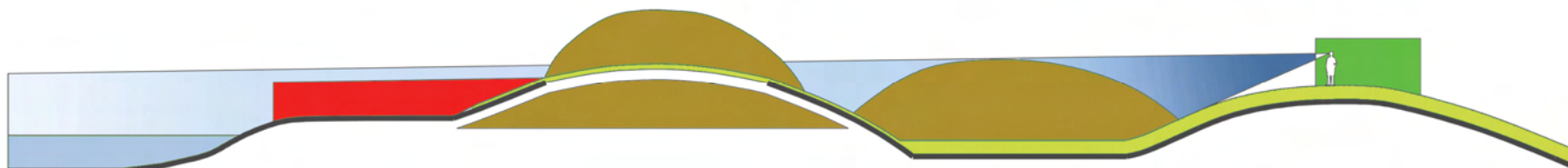
The concept of nature topography can be applied at the seafront using the unseen spaces for families where it can be hide by the topography of the space from the other high ground areas used by single males. According to the privacy study at seafront places; spaces in-between the two zones will be assigned for activities that do not affect families privacy condition
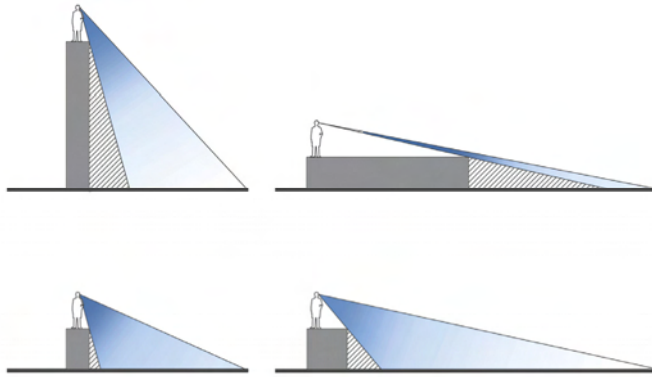
The size of unseen zones at lower levels increases or decreases by the height and the width of the surrounding areas

5- The height and width concept

The degree of privacy in courtyard houses depends on the height and width of constructed area. Privacy increases when the height and the width of buildings increase, as they create areas that cannot be overlooked.

The proposed design separates the families' and single males' areas at the seafront so that the families' zones are hidden by the height and the width of the space, and are located away from areas designed to attract single male groups.

unseen zones can be a perfect spaces for families and single females where at the same time it gives single males more opportunities to be close from the seaside
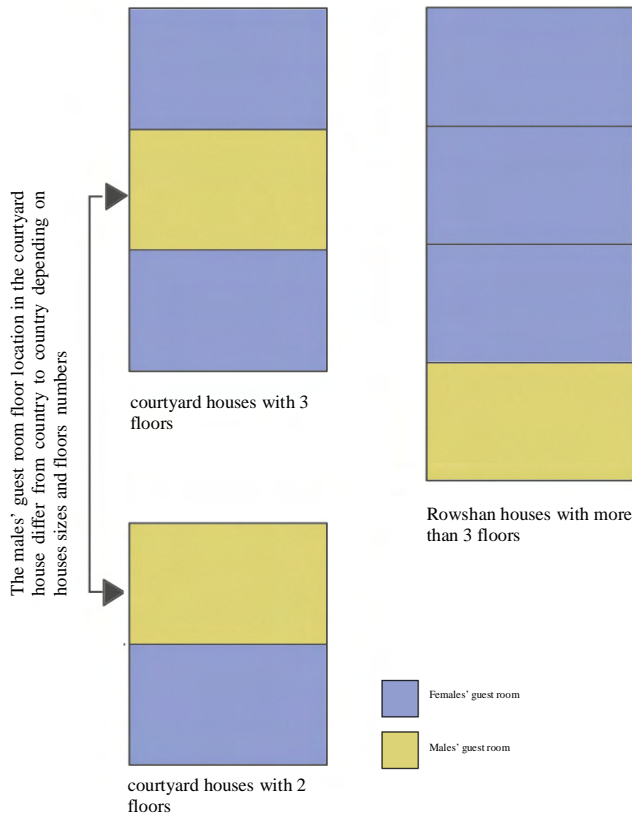
6- The guest room concept

The historical study of Islamic housing reflects the great demand for privacy through the system that was used for dividing rooms and floors. Different ideas are used inside the houses to separate female areas from male guest rooms depending upon whether the house is one- or multi-floor.

The system which works inside Islamic houses may also be a means to implement privacy in public areas. The concept can be applied to Jeddah's seafront by separating the families' area from the single males' area using two different levels in one place, which provides the opportunity for each of the two groups to be close to the seaside.

At this concept both sexes have the opportunity to be close from the seaside where families and single males zones located vertically at one space

The males' guest room floor location in the courtyard house differ from country to country depending on houses sizes and floors numbers

courtyard houses with 3 floors

Rowshan houses with more than 3 floors

courtyard houses with 2 floors

■ Females' guest room
■ Males' guest room

■ Single males zone
■ Families with children and no children
■ A space or a type of activity that dose not affect females privacy

The market method

According to the study of old markets in Islamic countries, women have more freedom and opportunity to walk around old market places, together with members of the opposite sex, with less need for privacy. The design of old markets in most Islamic cities reflects the irregular shape of the residential buildings, forming large and small plazas and corridors.
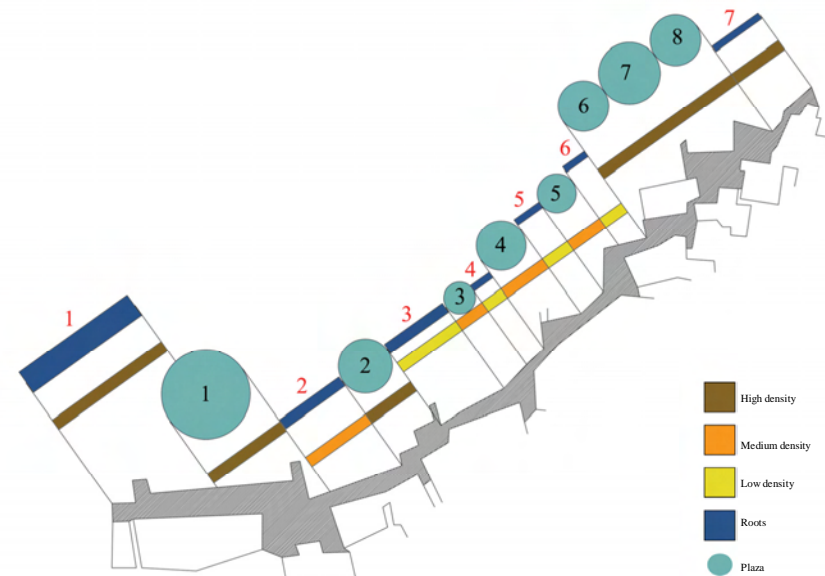
Jeddah's historical market is an historical area that attracts a high number of visitors engaged in shopping or sight-seeing. The market's old buildings, pathways and narrow places are filled with stalls and small shops trading in nooks and crannies in the multi-level market. Larger establishments line the main walkways and internal plazas, filled with all manner of food, materials, luxury goods and essentials. In spite of the crowds and confined spaces, devout Muslim women stay in the market for long periods.

The way that old markets work raises the question of how these old market areas can provide female visitors with an adequate level of privacy despite the high density of people and narrow places. The answer to this question is explained in this section by a detailed study of Jeddah s old market to clarify and understand the system and how it works.

The market and shops location

Residential buildings
Market zone
Place of steps
Shops
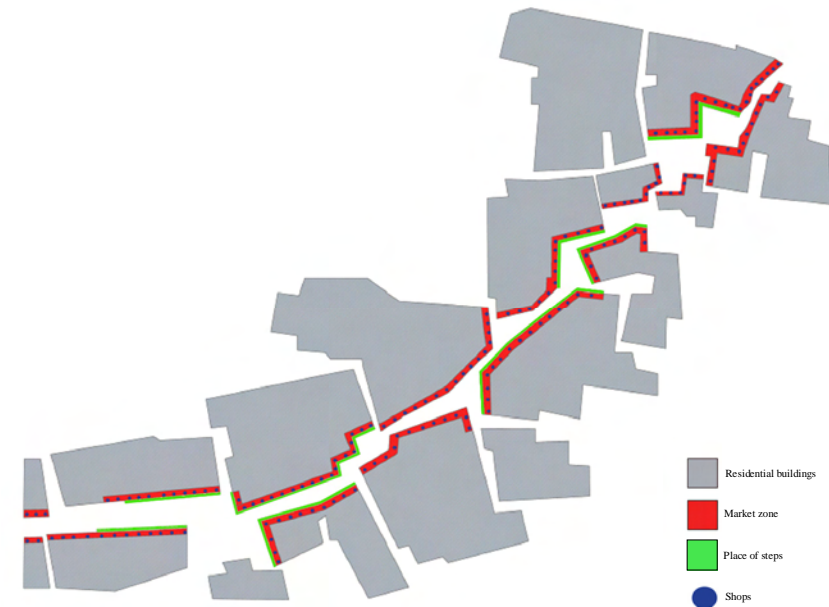
The density of people at the market plazas and corridors

High density
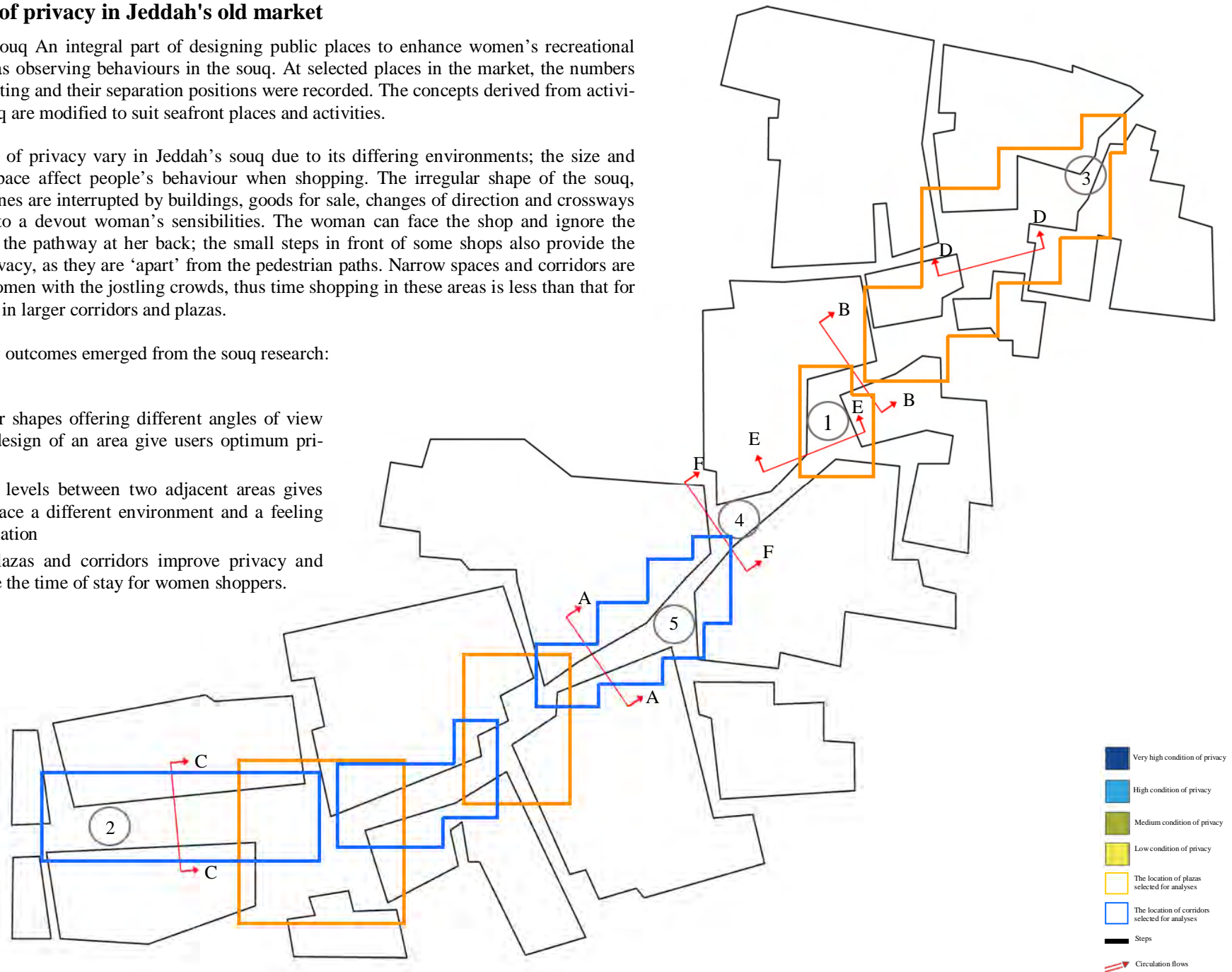Medium density
Low density
Roots
Plaza

The status of privacy in Jeddah's old market

Marketplace/souq An integral part of designing public places to enhance women's recreational experience was observing behaviours in the souq. At selected places in the market, the numbers of people meeting and their separation positions were recorded. The concepts derived from activities in the souq are modified to suit seafront places and activities.
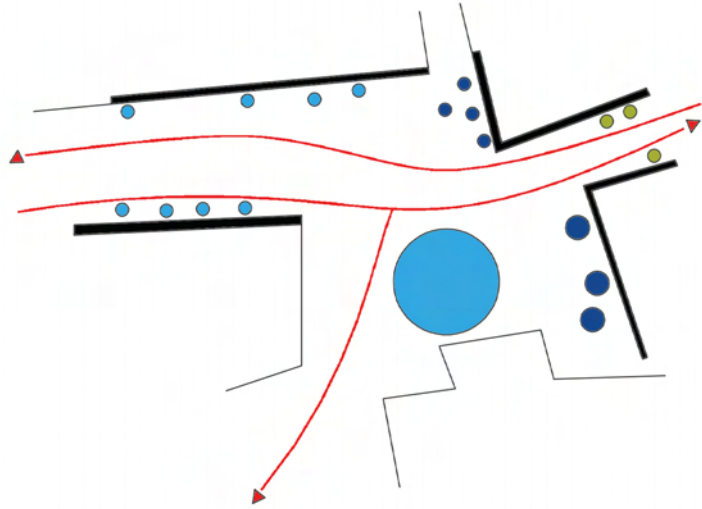
The protocols of privacy vary in Jeddah's souq due to its differing environments; the size and aspect of a space affect people's behaviour when shopping. The irregular shape of the souq, where sight-lines are interrupted by buildings, goods for sale, changes of direction and crossways is of benefit to a devout woman's sensibilities. The woman can face the shop and ignore the crowds along the pathway at her back; the small steps in front of some shops also provide the illusion of privacy, as they are 'apart' from the pedestrian paths. Narrow spaces and corridors are stressful to women with the jostling crowds, thus time shopping in these areas is less than that for visiting shops in larger corridors and plazas.

The following outcomes emerged from the souq research:

- irregular shapes offering different angles of view in the design of an area give users optimum privacy
- varying levels between two adjacent areas gives each space a different environment and a feeling of separation
- large plazas and corridors improve privacy and increase the time of stay for women shoppers.

Legend:
- Very high condition of privacy
- High condition of privacy
- Medium condition of privacy
- Low condition of privacy
- The location of plazas selected for analyses
- The location of corridors selected for analyses
- Steps
- Circulation flows

Privacy condition at plazas

Females have a high condition of privacy at corners ,places supported with steps and large open area
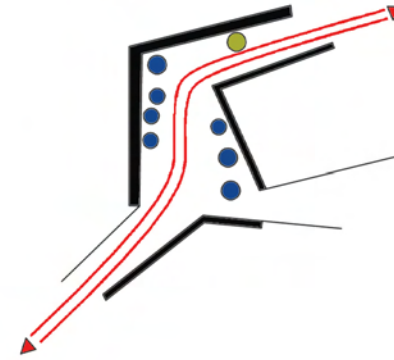
Corners and steps are the tools to increase privacy condition at small plazas

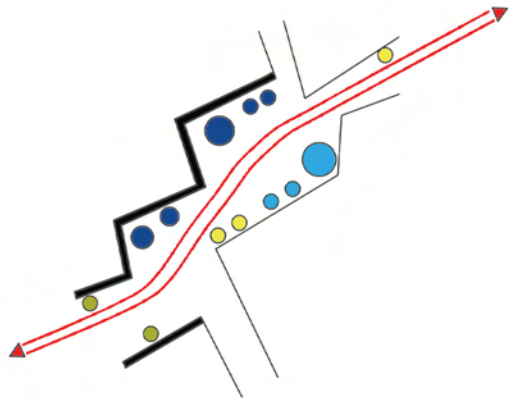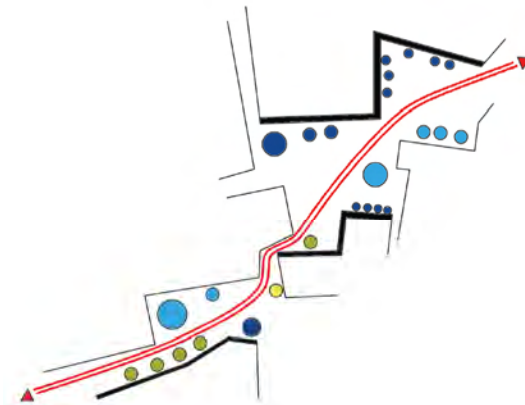Privacy condition decreased in small plazas where steps are not available infront of shops

The narrow corridors between plazas are the place where privacy condition decreased

The condition of privacy at corridors
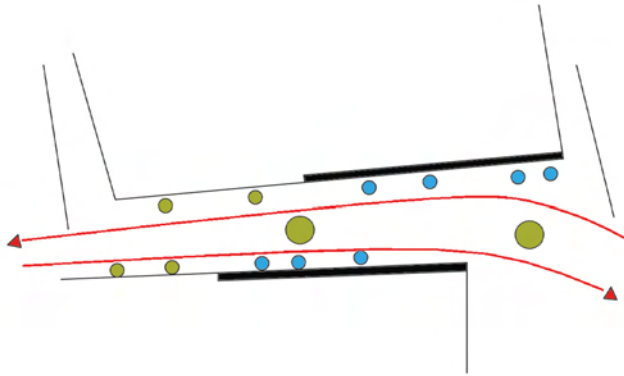
The condition of privacy at large corridors is even lower than very small plazas where corners are not exist; however, steps infront of shops play a role in rising this condition
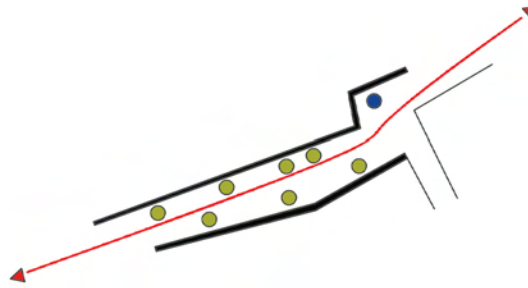
Small corridors with steps infront of shops have a medium condition of privacy
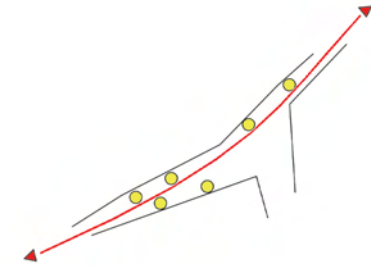
The very small corridors with no steps infront of shops have low condition of privacy

The staying time in front of shops
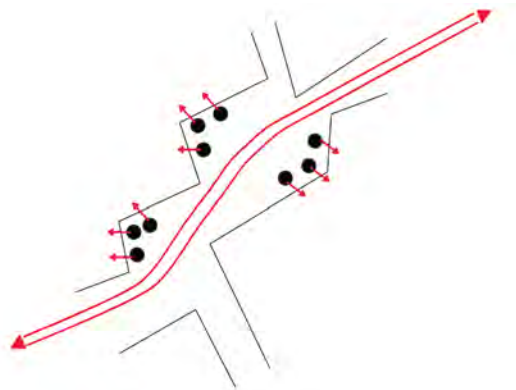
Market females vestures stay longer time in corners shops at plazas
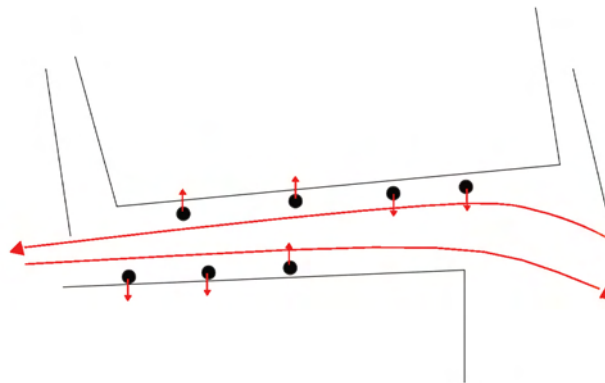
staying time in front of shops decreased in large corridors where corners are not exist
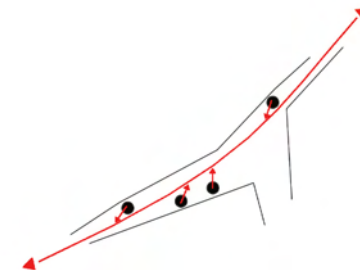
The market females visitors stay shorter time in front of shops in small size corridors where circulation flows is very close

The condition of privacy at large or small plazas and corridors in the traditional market depends on the space size, level and shape
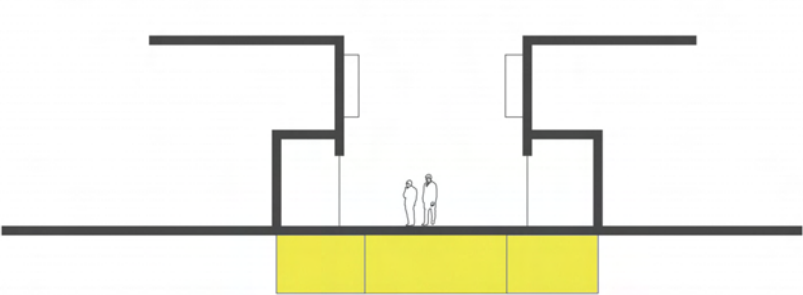
Section A-A

Small size corridors
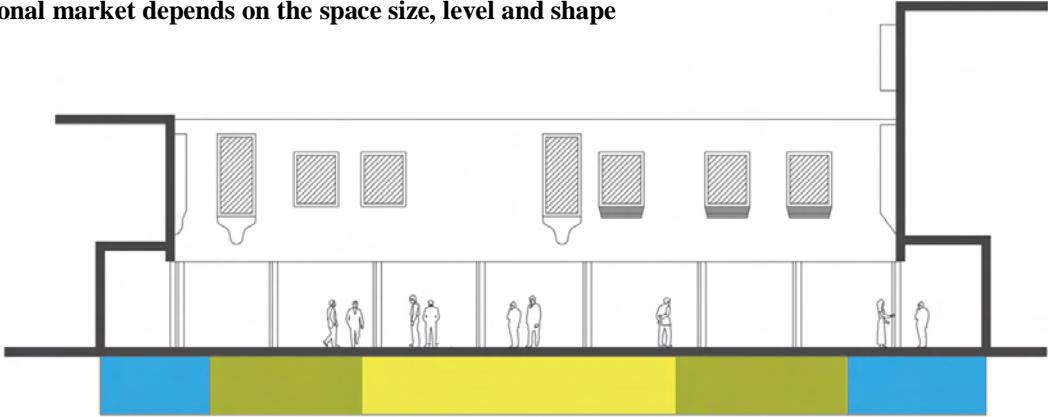
Section D-D

large size plaza
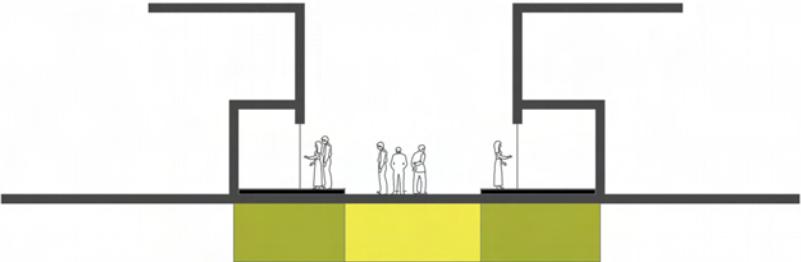
Section B-B

Medium size corridors
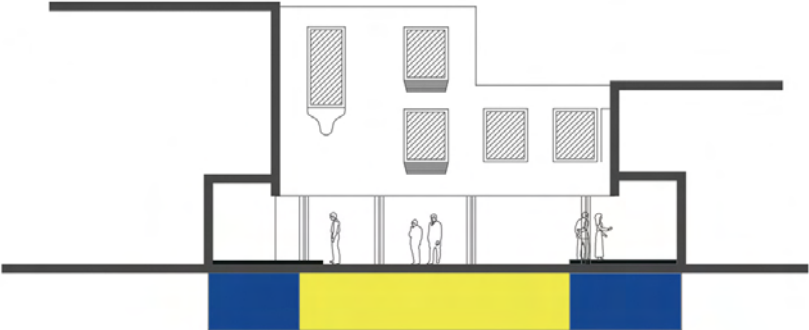
Section E-E

Medium size plaza
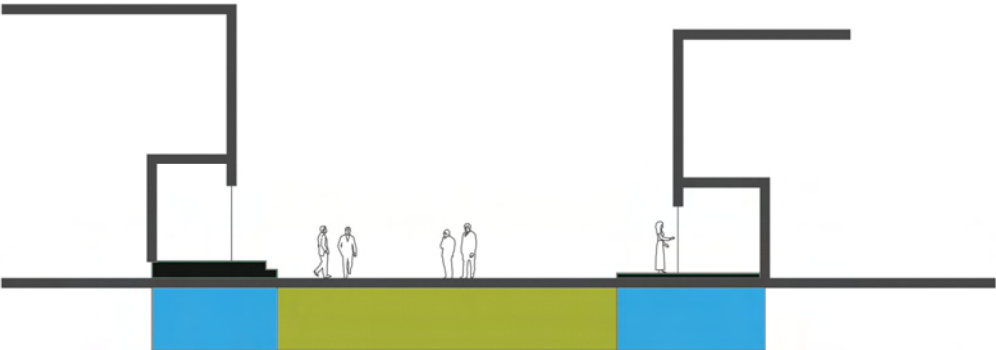
Section C-C

large size corridors
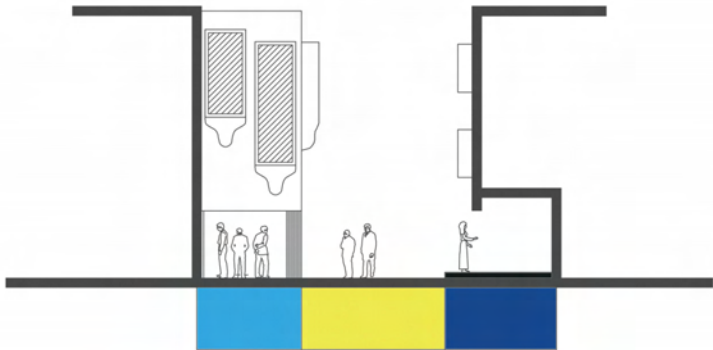
Section F-F

small size plaza

Jeddah's old market material and visitors' interest

The flooring material used in the market helps to guide the circulation flows by using different colors and textures as pavement. The difference in pavement at the shops' steps and pathways in the market reflects the use of the land in these places. This gives a clear indication to the visitors about the zoning of shopping areas and the rest of the market, and increases the level of privacy felt by women, who consider shopping zones as private areas.

The old market place is an historical area that attracts a high number of visitors. The interests of the visitors vary between shopping and old building tours and these interests will direct their visual perspectives to different spots in the market place.
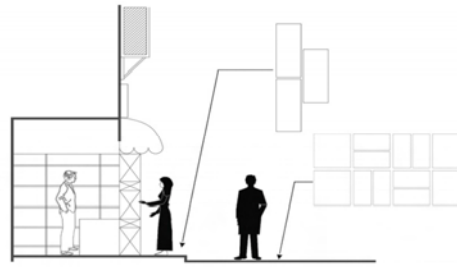
different pavement shape and color between pathways and steps in front of shops helps to rise the condition of privacy
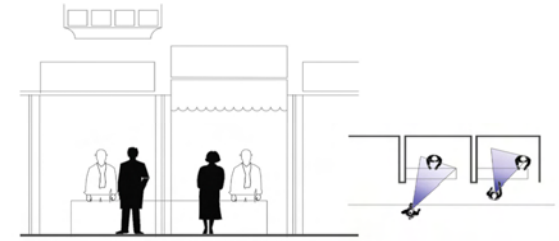
The different view direction at the market considering people interest rises the condition of privacy

1

2
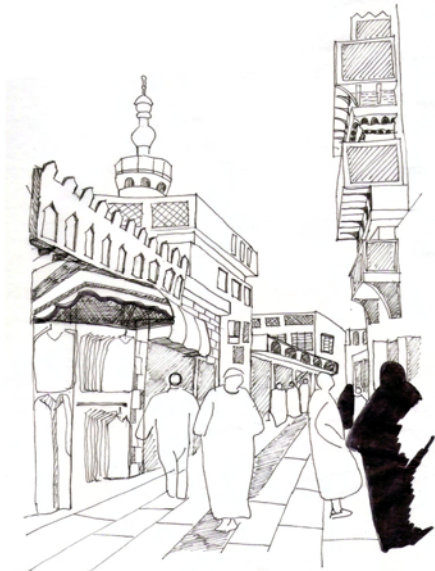
3

4

5

The market concept

Concept tools
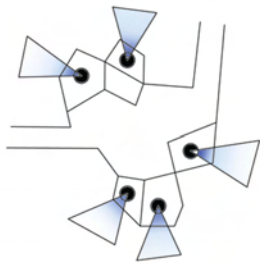
Irregular shape sitting areas to have different view direction
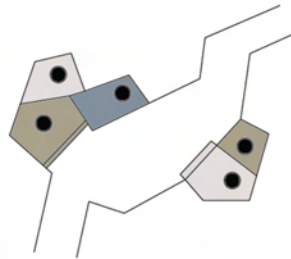
Sitting areas with different levels to Increase the privacy condition
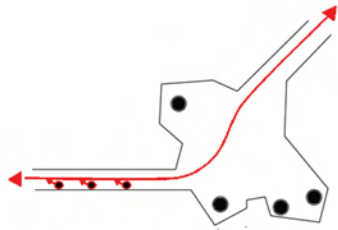
Sitting zones linked with narrow corridors to prevent group clustering at circulation areas

Appling the concept of market method on Jeddah's seafront

An element of the new seafront's design is that there are large areas for amusements and public gatherings, thus screens and space separation are not appropriate. The study raises three points that have a direct effect on the behaviour of the city's old market visitors. The market's irregular shape, topography, and lines of sight are elements of the conceptual design of Jeddah's seafront. Designing seating areas with irregular shapes at the seafront improves privacy for the seafront groups. The shape of a corner, or chevron, with different elevations, provides seating positions away from promenades for all groups to take in views (sea, parks and playgrounds) and maintain separation distances. Small differences in levels between the seats allow visual separation and define privacy zones at a public site. The dimensions of the plazas and promenades can control the time that different groups will linger: narrower pathways are therefore short-stay zones to manage pedestrian flows.

Sitting areas

shops

Children playground

Sitting areas

Sitting areas

Green space

Children playground

Single males group

Families with children and no children

Single females group

View direction

The proposal reflects the market privacy concept by using its tools to make a space that can be use by all social groups

39

Part 04: The research design

Master plan concept

Legend:
- Single males' food court
- Families' food court
- Teenagers' playground
- Families males member sitting area
- Families' and single females' sitting area
- Single males' sitting area
- Females' beach
- Open sitting area for all Jeddah's social groups
- Parking
- Sermons open theater
- Children's beach
- Spiritual center
- Single males' beach

Master plan circulation

Legend:
- Main road
- Secondary road
- Main pedestrian pathway
- Secondary pedestrian

The research concept for the southern seafront master plan

The new seafront development is located on a two-kilometre stretch on Jeddah's south coast. It is in a greenfield site allocated for residential development along the flat desert plain between the mountains and the Red Sea. The aim is to provide a wealth of public spaces where all visitors can enjoy the seaside, picnics, recreational activities and the seaside ambience. The Coast will be a world-class public attraction, one of very few large public places designed for the cultural mores of Jeddah's 3.4 million residents and its million guests who arrive each year for the Hajj.

Islamic culture requires separation for women that varies according to circumstances, from spaces that are sole use for women and children to semi-open areas where there is general circulation, particularly at large public gatherings. The new seafront design accommodates these sensibilities through zoning and all aspects of the design are considered carefully to ensure appropriate separation, maximum usage of the site, its attractiveness to users, and the prevailing climate. Traditional Islamic architectural elements for residences, open spaces and the souq were the inspiration behind the design project.

The southern seafront master plan

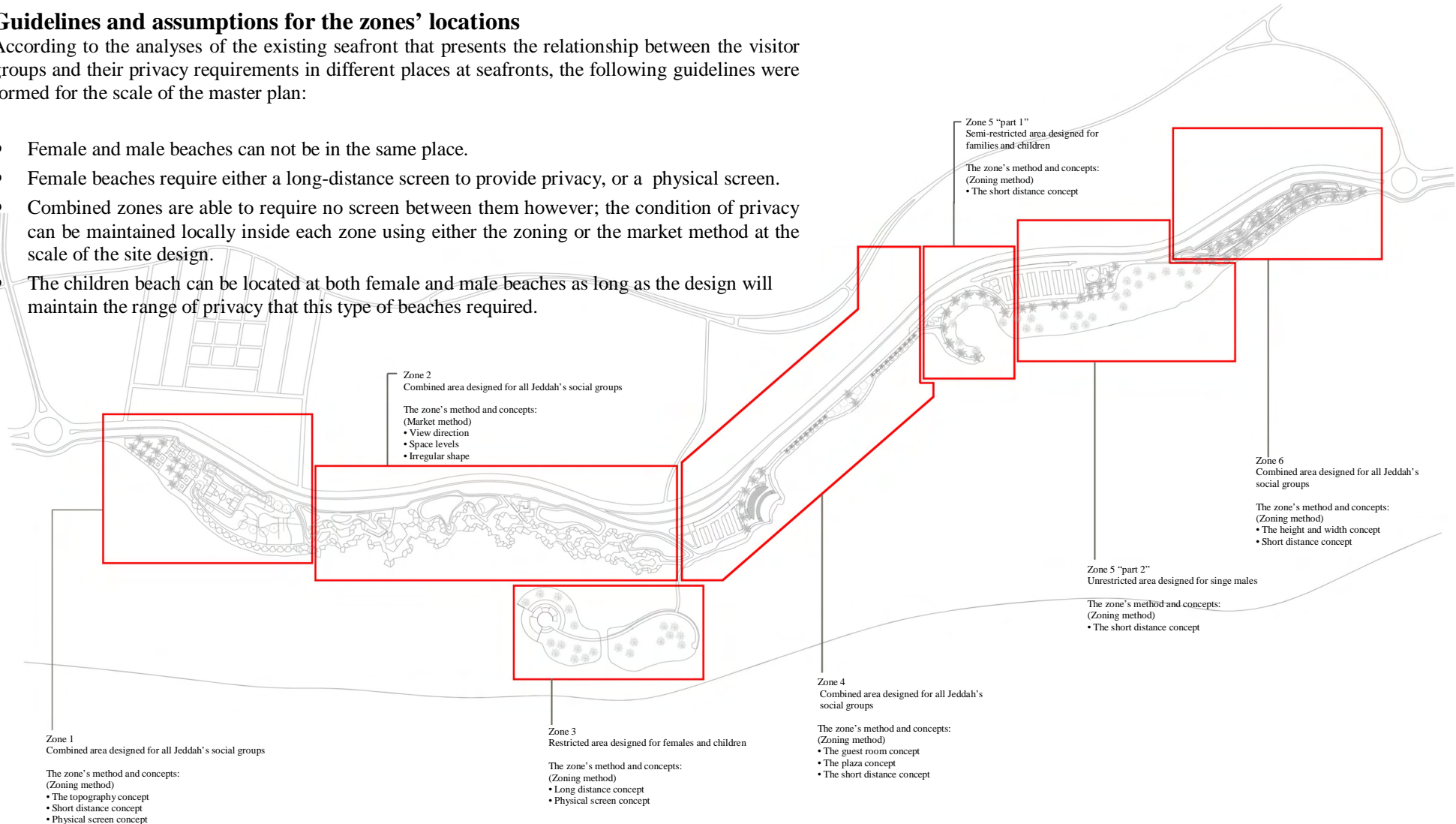## The design zones at the scale of the master plan

The public recreation master plan has six different zones. Each zone employs the architectural elements derived from Islamic architecture and is primarily based on separation aspects discussed in chapter 3. The design aims for maximum attraction of each area to a particular group. For example, the women's beach, zone 3, is located at one end of the Coast development to ensure maximum privacy. The intervening zones are placed so that the mixed male beach, zone 5, is placed out of line of sight to women enjoying the water away from line of sight from men .Therefore; the women have their own swimming island where they are not disturbed by overlooking or passers-by from an adjoining zone.

In other activity zones women are fully dressed, so that line-of-sight aspects are not important; however, separation protocols of five to ten metres are maintained. The reminder of the zones are interconnected through a main promenade that bisects the development, so that, with the exception of the women's swimming island, all zones are linked visually and physically without wasting space or the use of screens. There is a vista along the large reach of the new Coast.
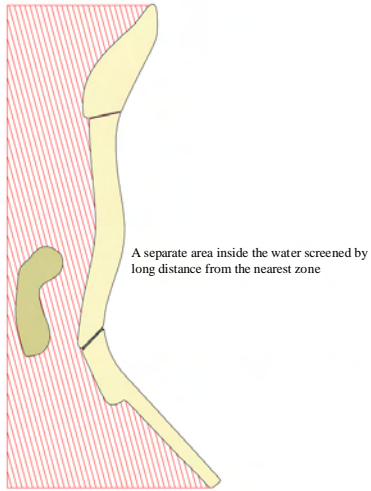
Guidelines and assumptions for the zones' locations

According to the analyses of the existing seafront that presents the relationship between the visitor groups and their privacy requirements in different places at seafronts, the following guidelines were formed for the scale of the master plan:

- Female and male beaches can not be in the same place.

- Female beaches require either a long-distance screen to provide privacy, or a physical screen.

- Combined zones are able to require no screen between them however; the condition of privacy can be maintained locally inside each zone using either the zoning or the market method at the scale of the site design.

- The children beach can be located at both female and male beaches as long as the design will maintain the range of privacy that this type of beaches required.

Zone 5 "part 1"
Semi-restricted area designed for families and children

The zone's method and concepts:
(Zoning method)
• The short distance concept

Zone 2
Combined area designed for all Jeddah's social groups

The zone's method and concepts:
(Market method)
• View direction
• Space levels
• Irregular shape

Zone 6
Combined area designed for all Jeddah's social groups

The zone's method and concepts:
(Zoning method)
• The height and width concept
• Short distance concept

Zone 5 "part 2"
Unrestricted area designed for singe males

The zone's method and concepts:
(Zoning method)
• The short distance concept

Zone 1
Combined area designed for all Jeddah's social groups

The zone's method and concepts:
(Zoning method)
• The topography concept
• Short distance concept
• Physical screen concept

Zone 3
Restricted area designed for females and children

The zone's method and concepts:
(Zoning method)
• Long distance concept
• Physical screen concept

Zone 4
Combined area designed for all Jeddah's social groups

The zone's method and concepts:
(Zoning method)
• The guest room concept
• The plaza concept
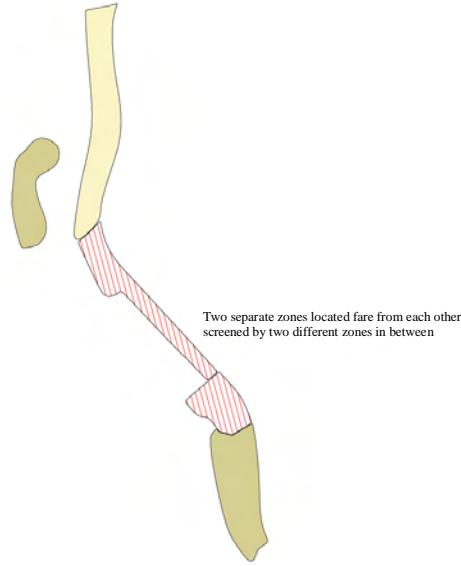• The short distance concept
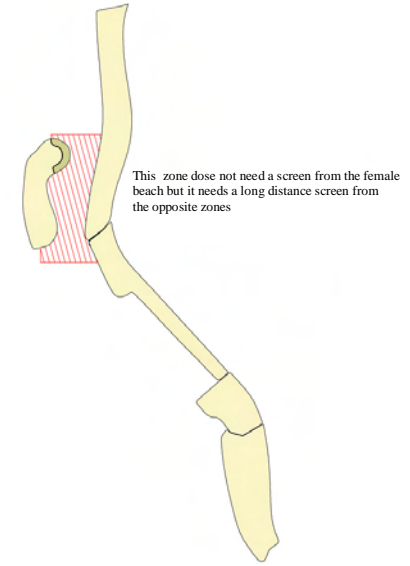
The master plan privacy techniques

A separate area inside the water screened by long distance from the nearest zone
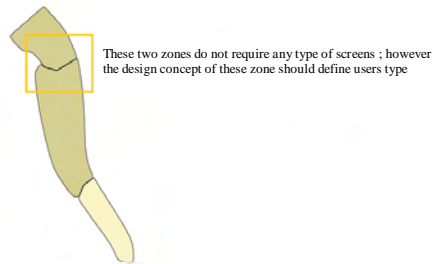
Females' beach

Two separate zones located fare from each other screened by two different zones in between

Females' and single males' beach
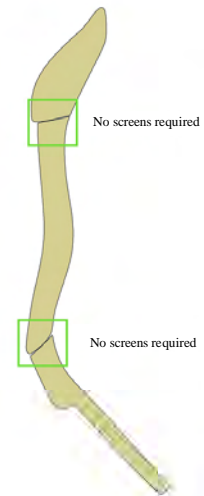

This zone dose not need a screen from the female beach but it needs a long distance screen from the opposite zones

Children's beach located at females' beach

These two zones do not require any type of screens ; however the design concept of these zone should define users type

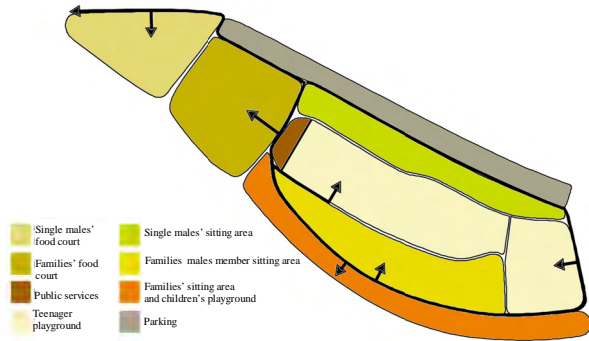Children's beach located at single males' beach
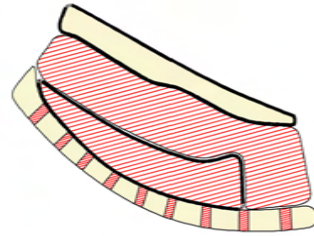

No screens required

No screens required

Other zones

The design concept

- 'Single males' food court
- 'Families' food court
- Public services
- Teenager playground
- Single males' sitting area
- Families males member sitting area
- Families' sitting area and children's playground
- Parking

The privacy technique

Children playgrounds confer the distance reacquired between the families sitting areas While The teenagers' playground and the topography work as a screen between families and single males' zones
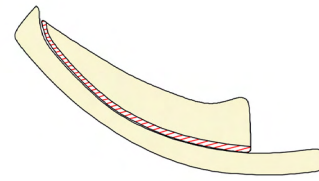
The slop and the pathway confer the distance reacquired between families and males area
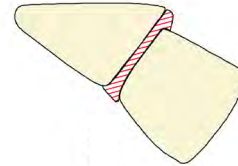
The restaurants buildings works As physical screen object between families' and single males' food court
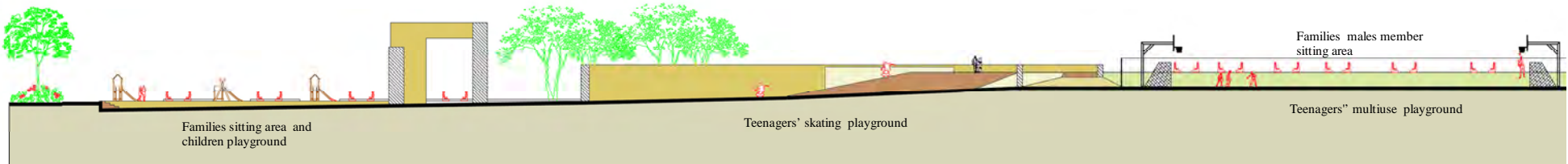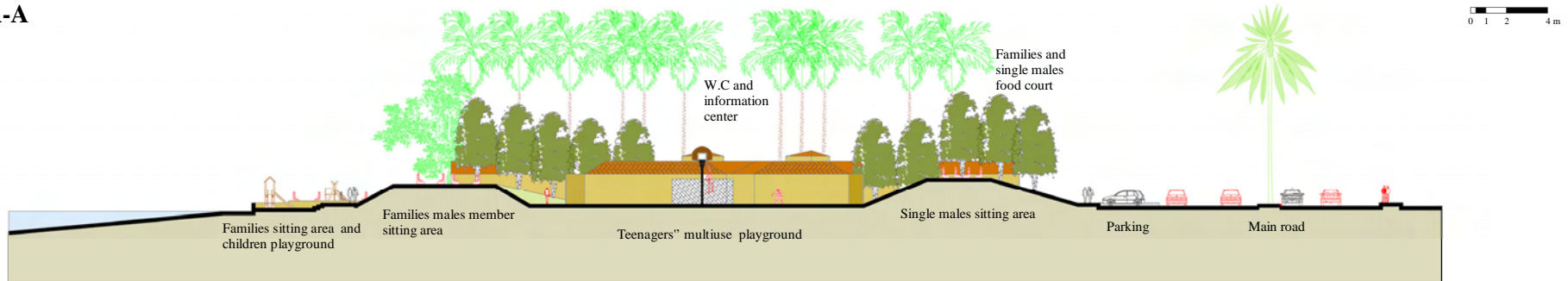
Zone 1 : the topography plaza

This large zone is located at the northern end of the new Coast development and is a mixed use area. It employs screening and physical separation elements to allow full use of its facilities. The elements used in this zone are substantial and light screening, landscaping into hills and valleys, and cul-de-sacs.

All restaurants and cafés have separate areas for families and single males . The restaurant in zone 1, a public food court, is designed so that single men and families with children can eat separately overlooking the sea. Elsewhere in Jeddah, a payment must be made to sit looking at the view at a restaurant or food court.

In other areas of this zone, the topographical concept of separation through a change in levels is used in public seating areas; using seating at different heights, both groups can enjoy the sea views. Men can use a higher level of seating whilst women in the families' area and teenagers' sports area are behind a mound. The family seating area is designed on the cul-de-sac and short-distance screen principles. Each seating space is designed for one family group, separated by a playground for young children up to six years of age, thus maintaining the five metres' separation between two families. The use of joint children's play areas is a positive use of space that would otherwise be wasted in separation protocols or construction materials. However, whilst the men's seating is elevated for the view, it is still further from the water.

The site plan

Single males' food court

Families' food court

Parking

Single males' sitting area

Teenagers' multiuse playground

Teenagers' skating playground

Families males member sitting area

Families' sitting area and children's playground

0 5 10 20 40 m

W.C and information center

Families' food court

Single males' food court

Section A-A

Families sitting area and children playground

Teenagers' skating playground

Families males member sitting area

Teenagers" multiuse playground

0 1 2 4 m

Section B-B

Families sitting area and children playground

Families males member sitting area

W.C and information center

Teenagers" multiuse playground

Families and single males food court

Single males sitting area

Parking

Main road

0 1 2 4 m

Section C-C

Children playground

Pathway

Families sitting area

The slop and the pathway confer the distance reacquired between the families and males area

Families males member sitting area

Pathway

0 1 2 4 m

45

Families males member
sitting area

Females food court

Single males food court

Families sitting area

Multiuse playground

Single males sitting area

Skating playground

parking
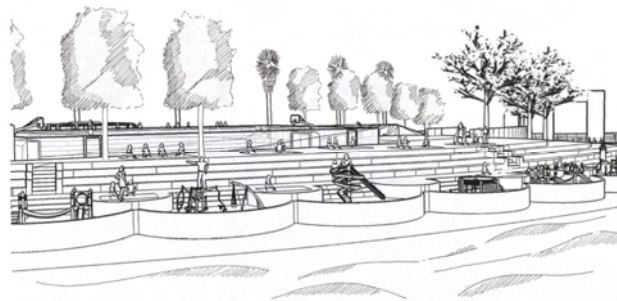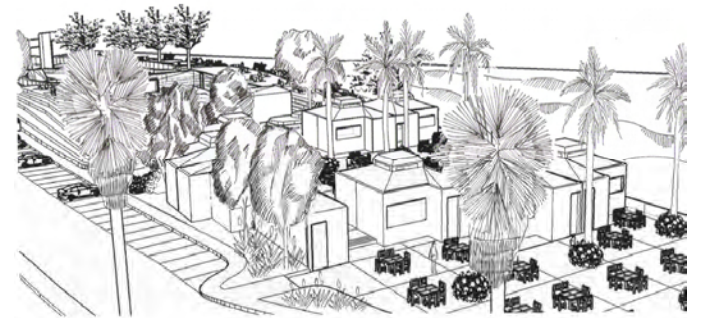
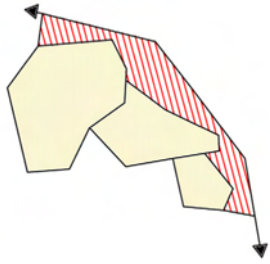Teenagers' Playground areas

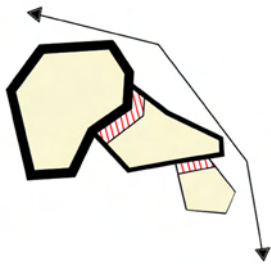Families' sitting areas

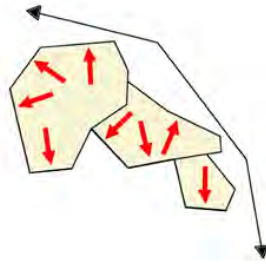Families' and single males' food courts

46

The privacy techniques

The irregular shape of the sitting spots work as the old Islamic markets corners that have different privacy environment from the main pedestrian pathway
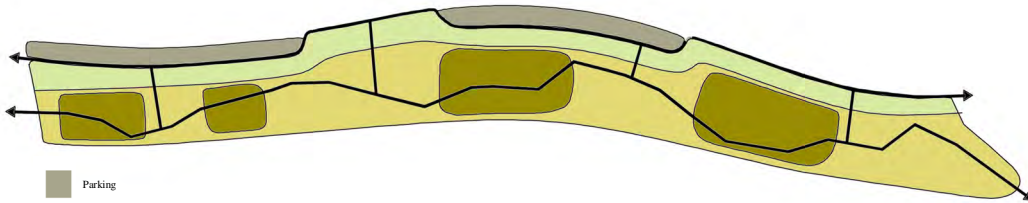
The difference in levels at sitting area works as the old Islamic market steps

The irregular shape of the sitting spots confers different view direction to the surrounding areas

The design concept

Parking

Linear green space

Combined sitting area

Children's playground

Zone 2 : the market plaza

This is a similar seating area for social groups, with playgrounds for children aged 6 to 12 years. This zone does not use screens or topography; rather it employs the three separation approaches used in the market; varying levels, interrupted sight-lines and irregular shapes. Each seating area is an irregular shape, at slightly different levels and can accommodate only one group. The irregular shapes allow angular views to the seaside, the green space areas, and the children's playground so that women can place themselves for privacy. Further, there are differing levels to enhance separateness, and pavement colourations lead the visitor around the zone to the various seating areas. There are also pebble areas in the lawns which deter people from sitting on the ground near other groups.

The advantage of the market plaza approach is an environment that maximises the sitting capacity of the space, especially looking to seaward, and avoids intrusive objects that block the views. There is a potential difficulty in sightlines if a seated person does not maintain discreet behaviour. The market approach is not useful for maintaining full physical separation, and the viewing angles alter according to the behaviour of the individual.

The site plan

Parking

Green space view sitting area

Green space view sitting area

Shade structure

Playground view sitting area

Children's playground

Children's playground

Sea view sitting area

Shade structure

Shade structure

Sea view sitting area

The site design

0   5   10   20   40 m

Section A-A

combined sitting area

combined sitting area   Children's playground   Linear green space   Main road

0 1 2   4 m

Section B-B

combined sitting area

Children's playground   combined sitting area   Shops   Children's playground   combined sitting area

Seawater   Seawater   Seawater

0 1 2   4 m

Section C-C

Family's sitting area   Single males' sitting area   Family's sitting area

Seawater

0 1 2 4 m

Section D-D

Straps of Stones are distributed at this area to stop the seafront visitors to sit in front of the main sitting spots

The trees and shrubs at this space are designed to reflect a good view to the sitting area and at the same time to cover the flat areas that can be used as a sitting spots

Family's sitting area
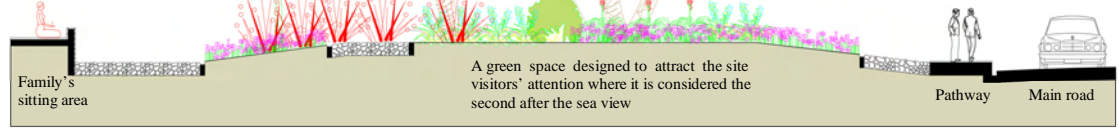
A green space designed to attract the site visitors' attention where it is considered the second after the sea view

Pathway   Main road

0 1 2 4 m

49

The sitting areas in the market plaza have several view directions to (green areas, children playgrounds and the red sea)
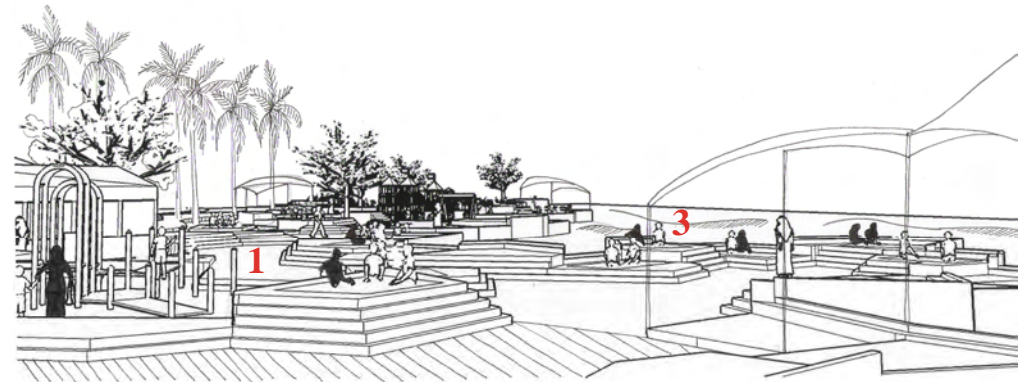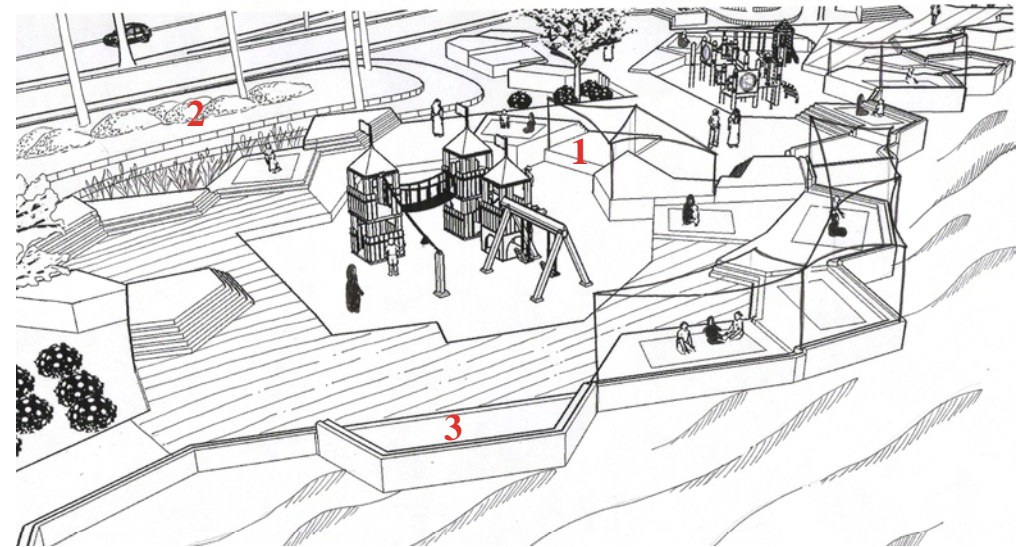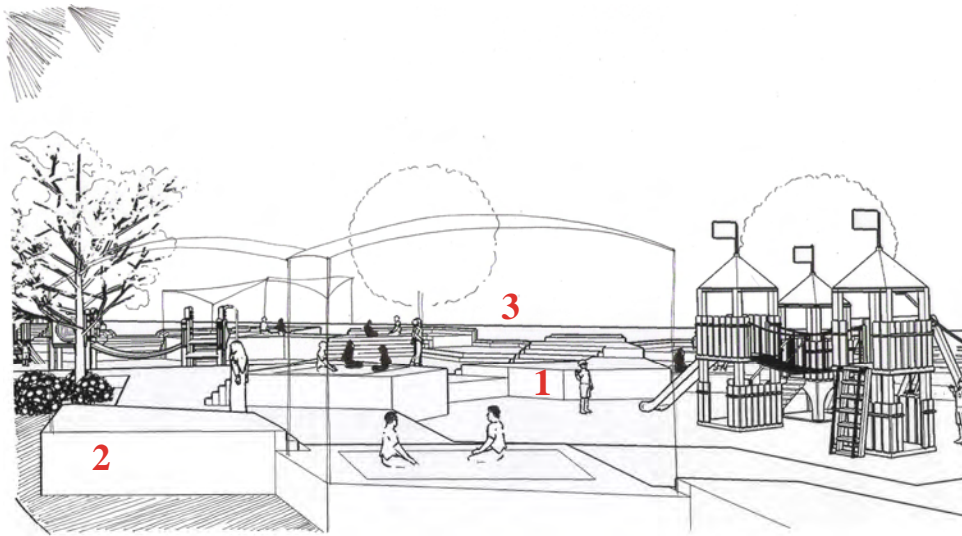
1– Children playground view sitting areas
2– Green spaces view sitting areas
3– Red sea view sitting areas
4– Shops

Zone 3 : the females' beach

This beach is designed for both women and children, and is a highly secured area. The beach is separated into two parts; one is quite a large area screened by a wall across the eastern, landward side to give privacy from zone 2's seating and viewing places. The beach is accessed by a bridge from the shore where there are two check points; one to stop males reaching the beach and the other is to prevent cameras being taken into the zone. The second part of the beach does not use a wall as it is more than 100 metres from any viewers on the shore, further, the eastern aspect of the beach is reserved for children which extends the sight lines further.

The women's beach is the centrepiece of the new seafront design. For the first time it offers Jeddah's Muslim women the opportunity to continue the swimming they enjoyed as children in a purpose built haven. This is a public beach, they do not have to pay as required at all other private and commercial women-only places, and they can utilise the whole beach without concern for modesty. This is a first for Jeddah and a model for other Muslim nations.

However, this is a single group use beach, and therefore another beach is required to accommodate the other groups, males, older children and visitors.

The design concept

Females' beach
Children's beach
Females' food court and services
Parking
W.C and changing room
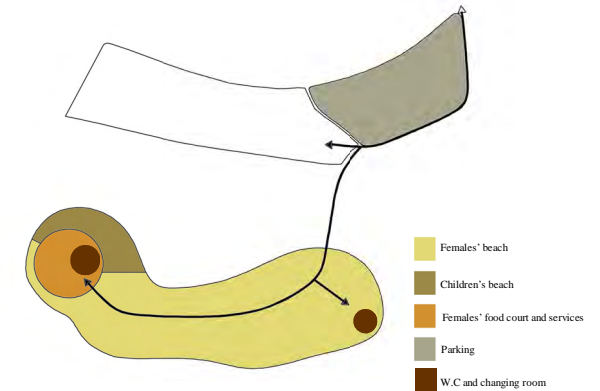
The privacy techniques
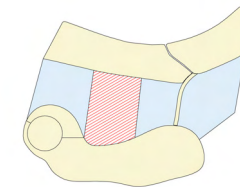
The long distance between the females' beach and the opposite area is one of the screen types used in the female beach

The high wall is working as a physical screen at the place where the distance less than 100m from the opposite area

The children's swimming area is located at a place where the distance is less than 100m; this is because children do not need a screen for privacy from the opposite area

The site plan

Parking

The market plaza

First check point to prevent males to inter the beach area

W.C and changing room

Children's swimming area

Second check point (The females securities area)

Services

Females food court

A bridge to connect the two sides of the beach

Females' beach (First part)

W.C and changing room

Females' beach (second part)

0   5   10   20   40 m

51

Screen walls

Second check point
(The females securities area)

First check point to prevent
males to inter the beach area

Females' beach

The bridge connects the females'
beach with the opposite areas

Section A-A

0 1 2 4 m

Children's swimming area

Females' beach

Females' food court and services

The market plaza

Section B-B

0 1 2 4 m

A bridge to connect the
two sides of the beach

Screen walls

Females' food court and services

Females' beach

Females' beach

W.C and changing
room

Section C-C

0 1 2 4 m

1– The restaurant and services area
2– The females' close beach
3– The females' open beach
4– The screen wall
5– The second changing room and W.C
6– The view from the opposite area to the females beach

The design concept

Single males' sitting area

Families' sitting area and children's playground

Females' Theater

Males' Theater

Parking

The site plan

Families' sitting area

Parking

B

Single males' sitting area

C

D

E

Single males' plazas

Parking

B

B

D

D

C

E

C

Families' sitting area

Single males' sitting area

A

Females' Theater

Males' Theater

A

Parking

0 5   10   20   40 m

The multi-levels space separated to three levels, the ground and underground levels are singles males' zones while the top level designed for families where children's playgrounds located in between families' sitting areas

The females' theaters located at the top while Males' theater located at the lower level

The two medium size plazas designed for singles males where they are separated by a rough surface pathway to stop other groups to sit in the middle

Zone 4 : the theater plaza

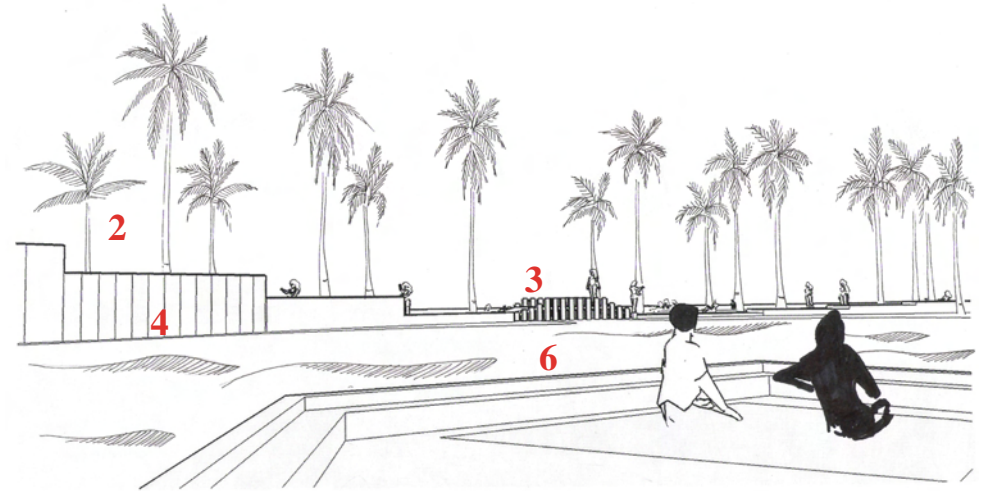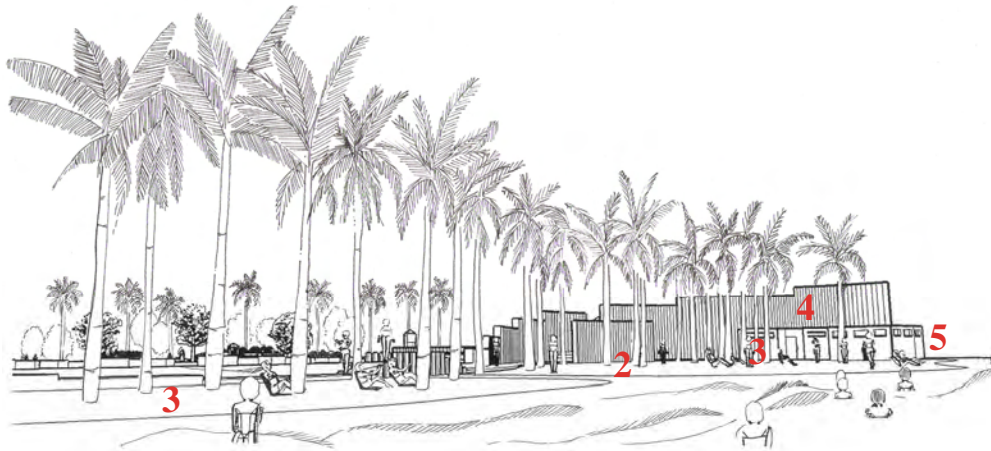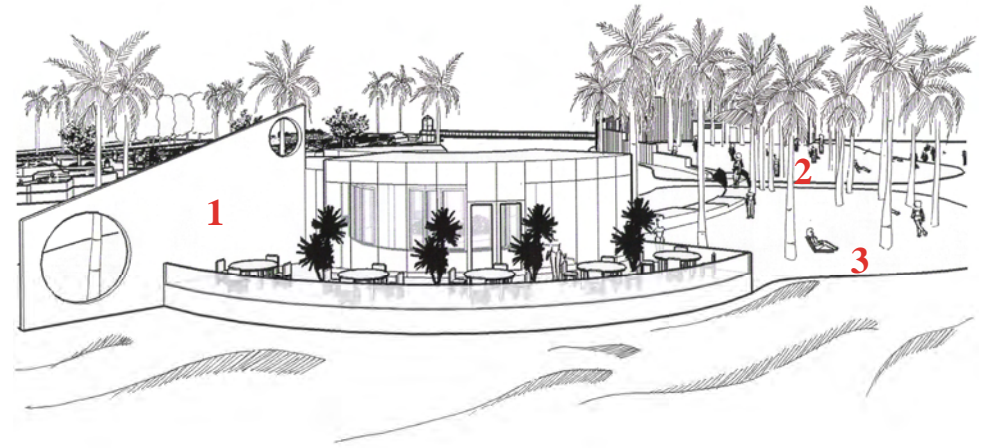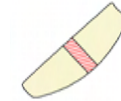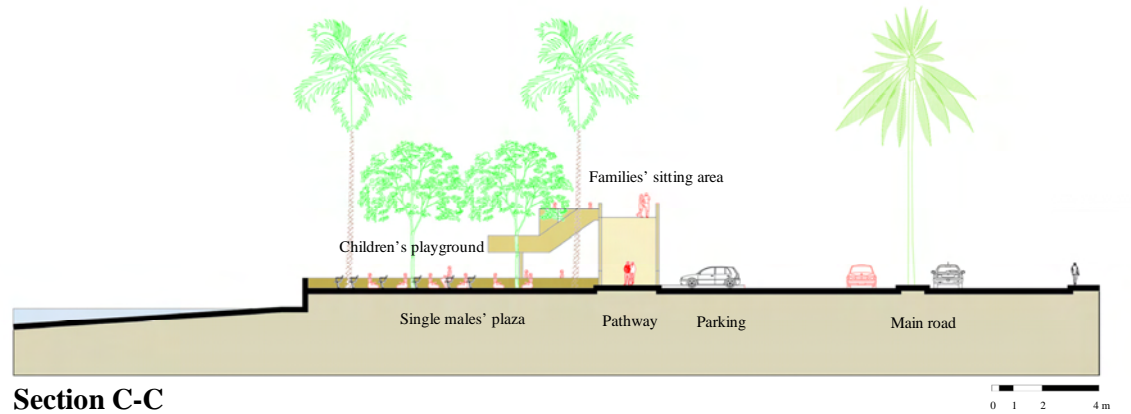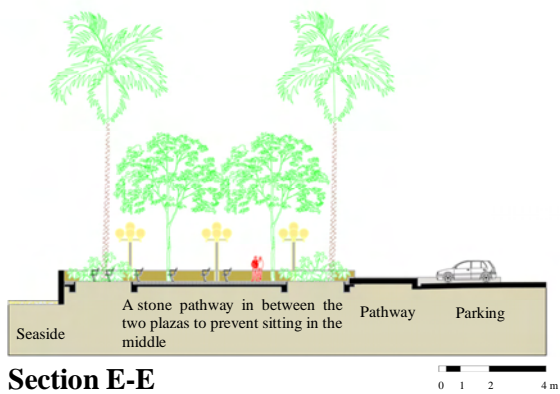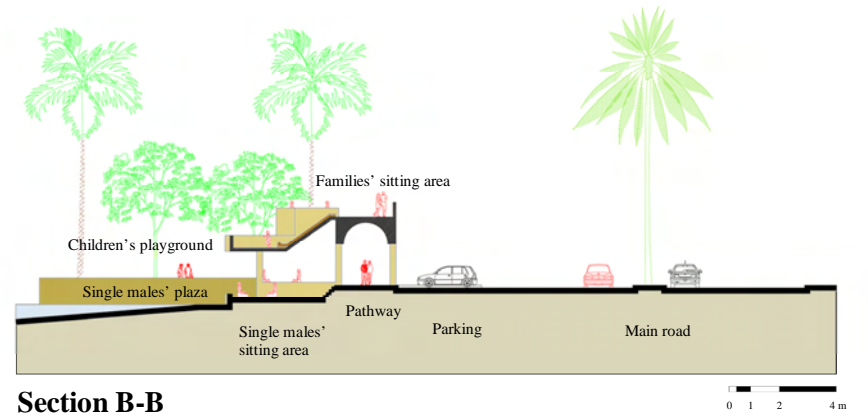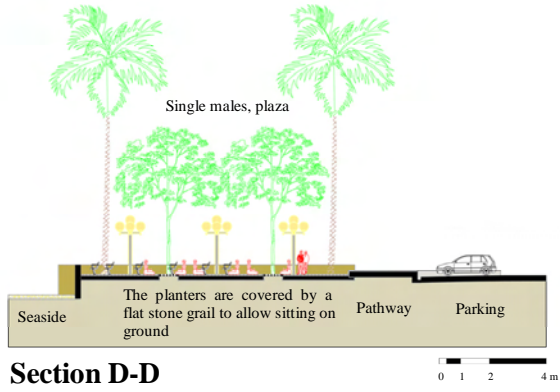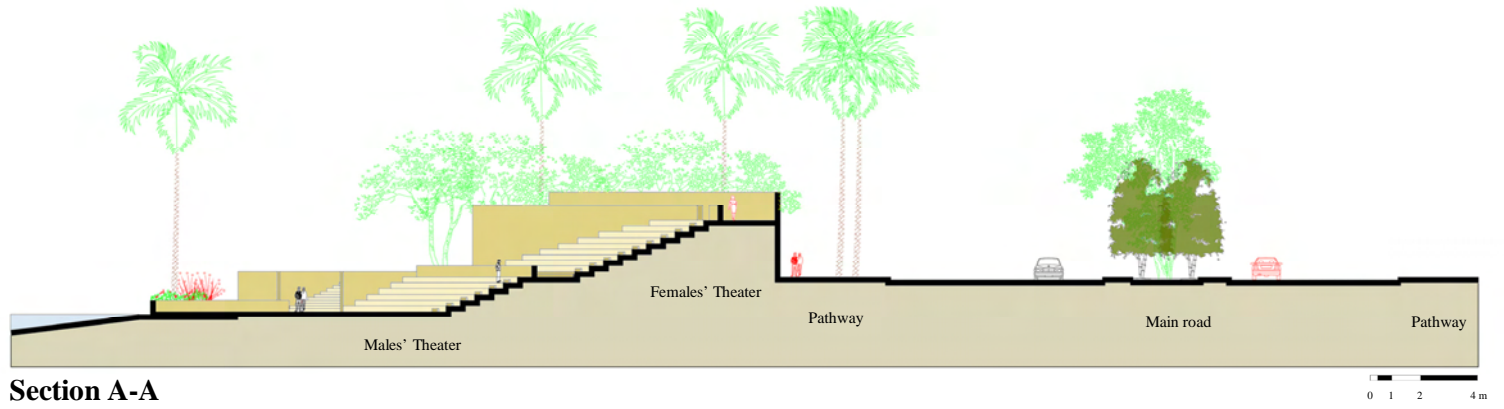Using separation protocols of heights, this area relates to promenading, sitting, and enjoying views and conversation. In this zone, the guest room concept is used, where male and female guest rooms are located on different floors of a residence, that is, vertical separation. This division by level is also used in the theatre, with the gallery around the top and stalls underneath. Women and children are seated in the gallery, whilst men occupy the lower stalls. This preserves a women's privacy in the close confines of a commercial building and prevents oversighting by men. So this idea is used in this zone; families can occupy the 'gallery', looking out to the view and men sit at the lower levels. This arrangement reverses that of zone 1, where the men occupied the high ground at the back, away from the sea. In this configuration, they are the group that is closest to the sea. The distance between two families' seating is again allocated to children's playgrounds to maintain the five metres' protocol. Each family remains close to their children and can help them play.

The second concept for this zone takes the notion of Islamic plazas. The design here is for two medium size plazas separated centrally by a pebble stone path which deters lingering. This plan seeks to dissuade women from remaining in the area due to its size and the proximity to strangers, so they just pass on through.

The theatre plaza zone is aimed at Jeddah's residents who prefer full separation from the other groups. The advantage of this approach is the opportunity for all to be closer to the actual seafront. However, the question arises whether the subtlety of the separation designs are sufficient to invite the intended groups and deter the remainder, especially if the Coast is crowded on a holiday. Previous occupation of seating, the perceptions of passers-by and the intentions of the users may mitigate against the design aim. Further, separation observance may be less for some families than others, or indeed, non-Muslim visitors, who do not perceive the separation protocols.

Section A-A

Females' Theater

Pathway

Main road

Pathway

Males' Theater

0 1 2 4 m

Single males, plaza

The planters are covered by a flat stone grail to allow sitting on ground

Seaside

Pathway

Parking

Section D-D

0 1 2 4 m

Families' sitting area

Children's playground

Single males' plaza

Single males' sitting area

Pathway

Parking

Main road

Section B-B

0 1 2 4 m

A stone pathway in between the two plazas to prevent sitting in the middle

Seaside

Pathway

Parking

Section E-E

0 1 2 4 m

Families' sitting area

Children's playground

Single males' plaza

Pathway

Parking

Main road

Section C-C

0 1 2 4 m

1– Families' sitting areas
2– Children's playground
3– Single males' sitting areas
4– Parking

Zone 5 : the children and single males beach

Open beaches are used by all social groups except women, who do not swim in sight of men. This zone is divided into a children's beach in shallow water to suit children's swimming abilities and to deter adults from using, except to help children. Mothers who bring their children to the beach therefore have a reasonable separation from the main adult swimming area, unlike the existing situation at the public beach to the north.

Single men and adult family members are allocated the remainder of this zone, where they have deep water. The large open beach for the men is designed on the concept of Islamic city plazas where women are comfortable sitting on the beach for long periods, as there is sufficient distance to maintain separation from other groups. Further, a large beach allows women and families to play beach sports under separation principles. This zone differs through the use of a large space for separation, rather than other interventions of small and medium space dimensions that define the type of users as male or female and families zones.

Analysis of the existing north beach show that the various activities, open beach, playgrounds, fishing and motorcycle riding taking place in a small area reduces the women's ability to join in beach activities with their children or as a family. To maintain their Muslim sensibilities, they must find a suitable place and just watch. The intention of the new Coast zoning is to relieve this situation, allowing women plenty of opportunity to undertake any activity they may wish in areas allocated for the purpose. The only negative to this zone is that men can intrude on the children's beach; however, the design strategy of this beach is to make the separation obvious through the sea levels and design features. Observation of the triple fishing pier to the north confirmed that single men avoid the women and families at the pier and the men group together in the main central pier where they enjoy fishing in each other's company. This is expected to be the case at the large beach at the new seafront.

The site plan

The design concept

■	A spiritual center (a mosque)
■	Parking
■	Children's beach
■	Families' and single males' sitting area
■	Singles males' beach
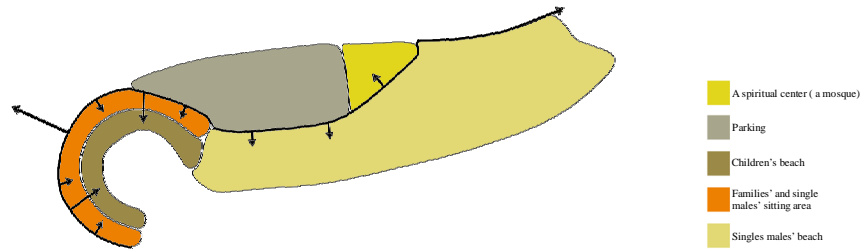
The privacy techniques

The planters and the steps between the families' zones provide the distance that families need to implement privacy
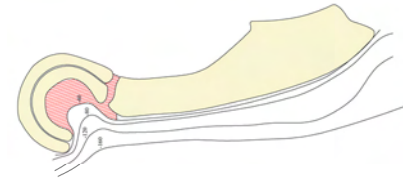
The shallow water at the family zone attracts Children but deter adult single males
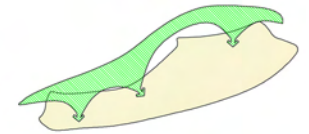
The single males' beach is designed to be an open area for all city social groups but females swimming activity is not allowed at this area

Mosque

The Mosque's front plaza

Public W.C

Single males' beach

Section A-A

0 1 2 4 m

The theater plaza

Public W.C

Families' and Single females' sitting area

Children's beach

Families' and Single females' sitting area

Drop-off point

Parking

Main road

Section B-B

0 1 2 4 m

58
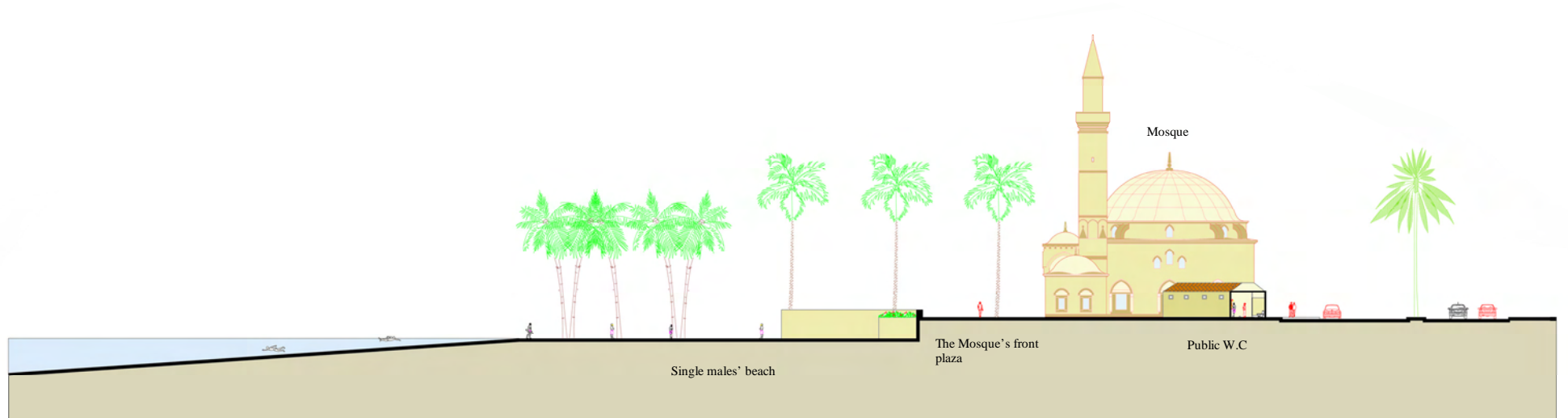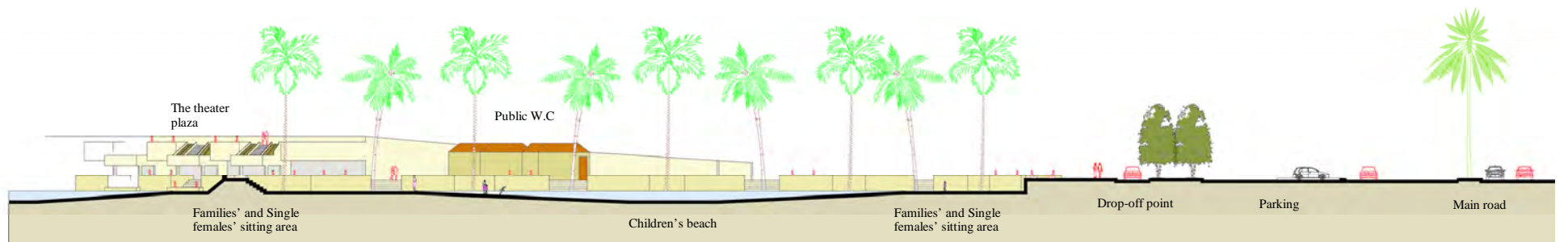
Zone 6 : the motorcycles plaza

This is designed for community recreation. The first section is the seating and viewing concept that uses both horizontal (5m.) and vertical elements (3m.) and allows both the main groups proximity to the seafront. Single men occupy the top area, with families obscured from their view when seated behind the pathway and the planters. The central playground (6 to 12 years of age) concept will also be used in the family areas.

This zone employs the discrete entry concept. The entrances to both areas follow the notion of the indirect entrances used in old Islamic houses. Each zone will use the same entrance but the path splits in two, one leads to the front of the family area and the other leads up into the young men's zone, thus there is separation for strolling. The other section at the site, a track for motorcycling and cycling activities, is located behind the men's raised seating area. Both sexes can engage in these sports in a safer environment than the recreation seafront to the north, where there are busy roads and pedestrians.

Zone 6 combines the advantages of strong privacy with maximum separation elements for the seating areas without using screens or architectural elements that can block the view. It also caters for cycling, a popular activity for both genders, by providing a safe public track away from pedestrians and vehicular traffic. The separation through use of both dimensions here may be useful in other public or recreational spaces.
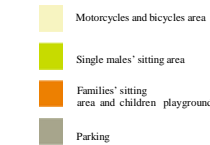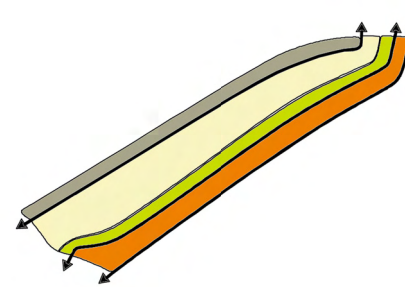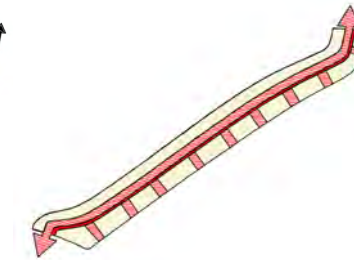
Summary The six approaches were designed to give every Jeddah resident the opportunity to enjoy a wide range of beach activities. The zones reflect the activities that are currently offered in public areas (promenading, seating, viewing, eating, fishing and cycle riding) and swimming for everyone, which is not available on the public beaches. the new Coast offers exemplary facilities and amusements, using a traditional theme where the concepts are easily recognised by all Muslims. The use of separation principles of residences, courtyards, markets and plazas of all dimensions offer an innovative use of ancient practices that are sure to delight the population. Although the separation principles are subtle and usage may be imperfect, there is undoubtedly far greater usage of public facilities if the privacy needs of a greater number of residents and visitors can be accommodated in the pleasure gardens of the new seafront.

The design concept

Motorcycles and bicycles area

Single males' sitting area

Families' sitting area and children playground

Parking

The privacy techniques

The top level is a single males' zone separated from the families' area by a pathway and a planter in the middle . The children's playgrounds at the families' area in the lower level is designed to be the distance screen between families' zones

Males beach

Males swimming area
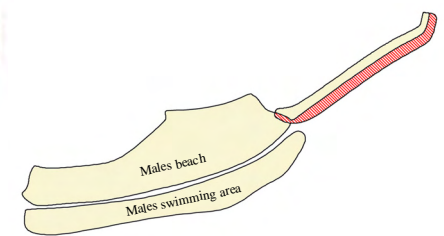
The stones at the seaside are the barrier to stop the males swimmers to come close to the families' zone

Public W.C

Single males' sitting area

Parking

Motorcycles and bicycles area

Families' sitting area and children playground

Single males' sitting area

Single males' beach

The site plan

0   5   10   20   40 m

Section A-A

Families' sitting area and children playground

Single males' sitting area

Motorcycles and bicycles area

Pathway

parking

Main road

0 1 2 4 m

Section B-B

Motorcycle way

The trees and shrubs at this space are designed to reflect a good view to the sitting area and at the same time to cover the flat areas that can be used as a sitting zones

Motorcycle way

Motorcycle way

0 1 2 4 m

Children's playground

Single males sitting area

Pathway

Pathway

planter

Pathway

Family's sitting area

Section C-C

0 1 2 4 m

60

Parking

Motorcycle and bicycle area

Families' sitting areas

Single males' sitting areas

Children's playground
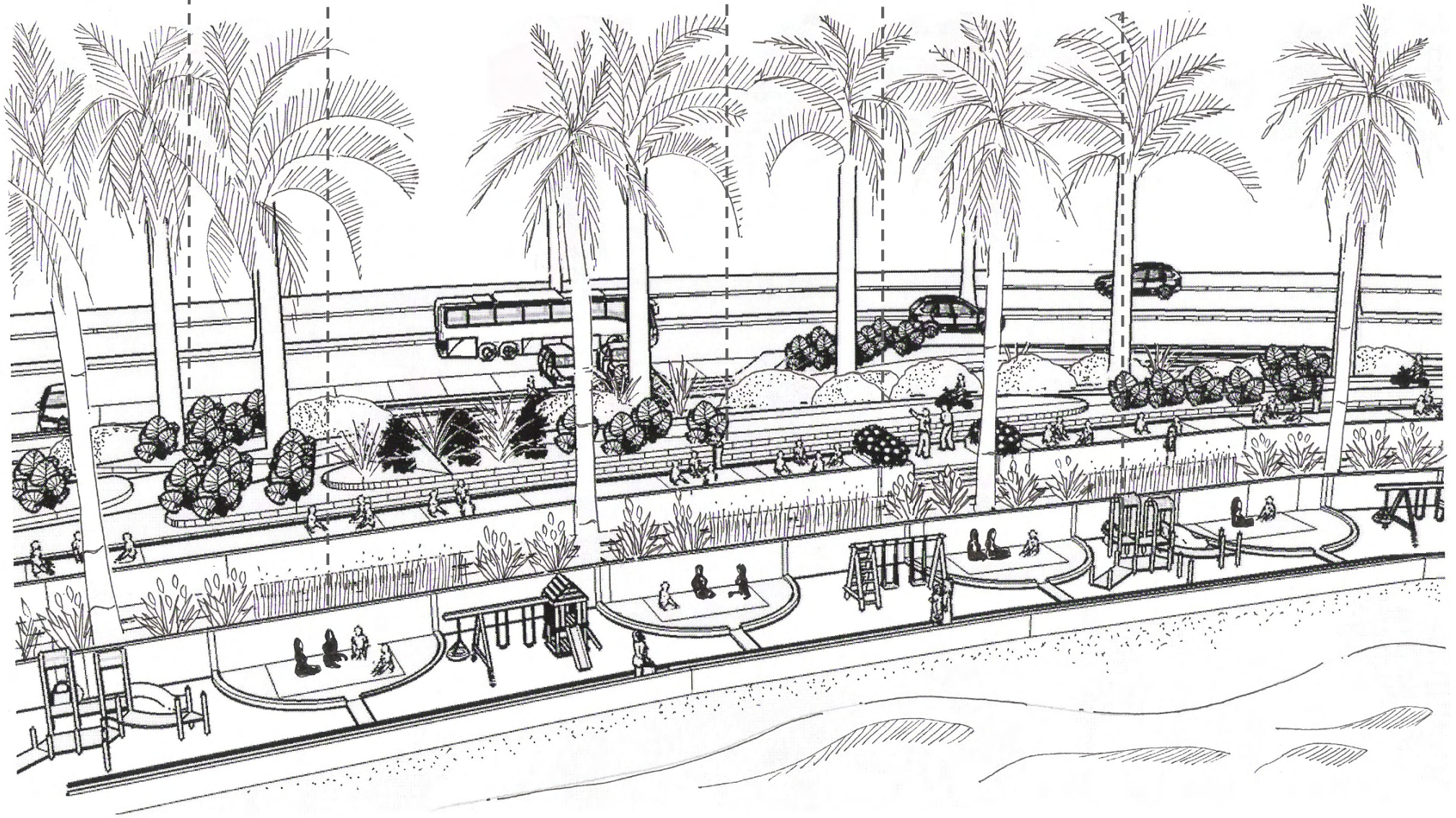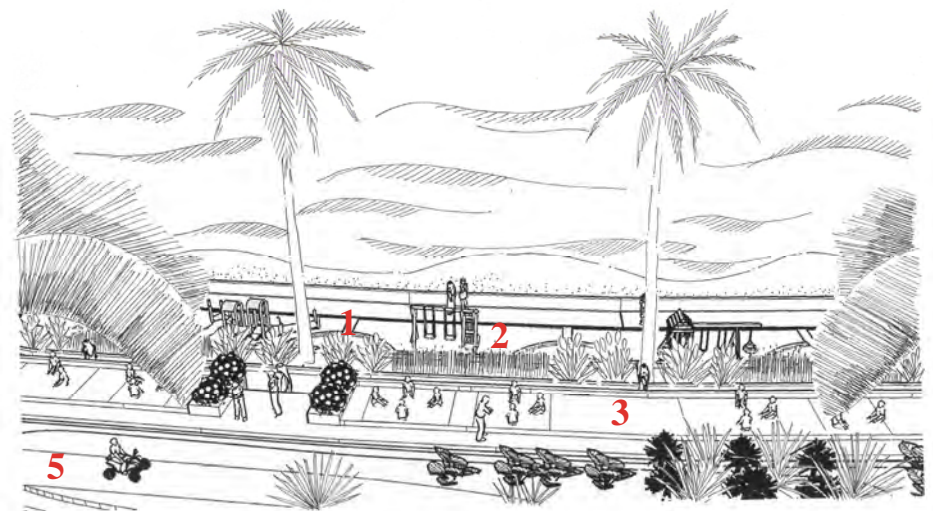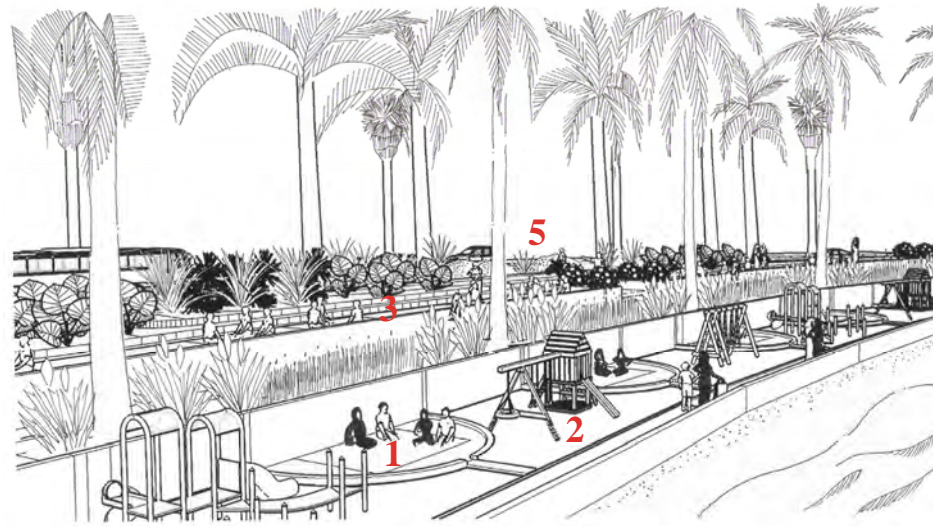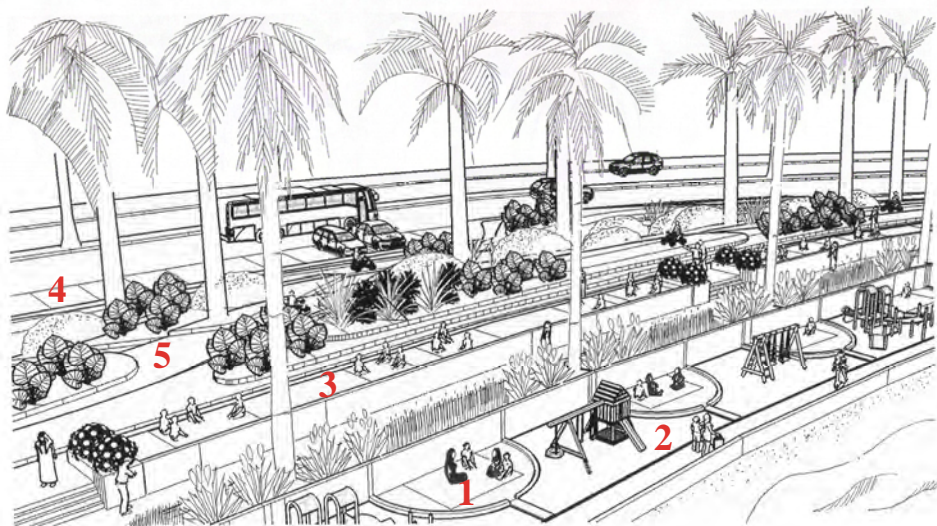
1– Families' sitting areas
2– Children's playground
3– Single males' sitting areas
4– Parking
5– Motorcycle an bicycle area

Jeddah's social groups' feedbacks

During this course the writer returned to Jeddah and the opportunity was taken to introduce the elements and concepts of the new seafront to the residents for which it is planned. The aim was to gain feedback from each group and obtain rich information with which to inform the plan. For example, zone elements that met each group's approval, and those that the potential users wanted improvements, or the design concepts did not suit their culture and religion. Further, the writer was concerned to discover whether the separation concepts for the women were acceptable, particularly the island beach (zone 3).

Family Families were a priority in the new Coast plan, as they were expected to form the majority of its visitors. They appeared delighted; there were plenty of areas with adequate separation and children could play under supervision in safe areas. One father commented:

> the existing recreational areas at the seafront in Jeddah are common areas where anyone can sit, and young men are often inconsiderate in observing the appropriate privacy requirements. They also want to sit at the seafront. However in my opinion, the design proposed for the southern coast gives both families and singles the opportunity to sit and watch the sea without inconvenient behaviour from either group, especially when the family areas are near the children's playgrounds, where single males remove themselves from noisy children.

Single Men The single men participants also approved: *this design gives us a great advantage of being close to the sea without interrupting families either in the seating areas or on the beaches*.

Women, Single and Married The women, either single or married, were very happy about the idea of a public beach for women. This would be the first women-only beach in Saudi Arabia. Further, two-thirds (65%) of respondents said that they would feel uncomfortable swimming anywhere else other than a dedicated beach such as that proposed at Palm Coast. They demanded their own area for changing, showering after a swim and toilet facilities, similar to that provided at the main beach. The plans were altered to accede to this request. The remainder of the group were satisfied with the main beach, as it is planned to be of a sufficient size to accommodate women swimmers 100 metres from single men. Some noted that the real test for using the open area at the beach will appear after use; if there is an issue, the seawall can be easily extended to gain visual separation.

Further issues for Muslim women are their lack of public sports facilities, an issue which this researcher intends to investigate in the future. During the survey interviews, some women commented that, although the new Coast concept considers feminine sports at the beach, including swimming, there are women who wish to play volleyball, soccer and different kinds of sports activities. They recognised that the new seafront offers opportunities to participate in sport, but believed that separate facilities should be purpose-built for women's sport to allow full participation in these activities.

Regulatory Considerations Imams said that a women's beach does not oppose the Islamic rules, as women are not veiled in their own company. One imam approached on the new Coast plan said

> *some females try to find a place to swim, especially at the resorts in the northern seaside coast, where they are a target for males; however, the idea of females' beach will give the Saudi females the chance to swim in public in a private environment.*

The imams also mentioned that the idea of the open area is accepted from a religious point of view, nevertheless, controls are required in case a male used binoculars to see women swimming. In this writer's opinion, aberrant behaviour cannot be controlled, as any design or invention has disadvantages that may be exploited; the aim here is to focus on the advantages offered by new Coast in general .

Summary of Responses All social group participants were interested in accessibility by others to the areas dedicated to a certain group, and the means to attract the intended users whilst deterring the rest. Respondents noted that the design of the spaces partly control usage; families cannot find privacy at single men's seating areas and the male group will avoid places occupied with children and women; however, this is not totally effective as a deterrent to the other groups. Signage was suggested to indicate appropriate areas and avoid confusion. Whilst this idea is noteworthy, the landscape nature of new Coast does not lend itself to overuse of signage, and this researcher is considering the Islamic traditional market concept of coloured strips alongside the pathways, which could incorporate directions as text (for example, *single male seating 50m.*) .

The survey and discussions on the new seafront design by the stakeholder groups was a key support of the outcome of the research, inasmuch as it improves the design concepts. The majority of feedback was enthusiastic support of the design ideas for each zone; however, the writer also considered majority points of view when it came to making adjustments on parts of the design, and these were all adopted into the design. Of interest to this researcher was that although the country has a single culture and religion, there was a diversity of opinion on the various elements of the design. Whilst *privacy* was the priority, the amount and nature of separation was subjected to debate: some wanted full privacy, others less so, as the example of women swimming at the open beach attests. The aim for this research is to support both opinions where different solutions to the privacy question can harmonise at the new Coast.

Saudi Arabia's Islamic culture guides daily life for Jeddah's residents. This culture decrees that women in public remain hidden in body shape by wearing *abbayas*, and that their hair and faces are covered by *hijabs*. This aspect of Islam has a profound effect on devout women's lives, including that they have few opportunities to join in public recreational activities, as they require physical and visual separation from single men and spatial separation from families.

If a public area is to be used for recreation in a hot and humid country, the design must take account of these regulatory and social conditions. In a large traditionalist city like Jeddah, the design of public areas for passive pursuits such as looking at views, eating, or sitting in conversation must consider women's privacy, or they will not linger and the space will not be used to its optimum. Women's self-consciousness in this regard impacts other groups and their activities; single men must respect appropriate separation from women and families, and thus cannot enter a space occupied by women; children cannot play if their families are not content to stay. Thus for recreation, families and single women must use expensive commercial facilities where their privacy is maintained.

The developments on the north coast militate against the redevelopment of the scarce public recreation space, as the seafront is either taken up with waterfront housing, or overlooked by high rise buildings. Visual separation in an open space under these conditions is impossible. A new approach to providing public recreation for Muslim countries is required.

The aim of this project is to design attractive beachside places and activities for all Jeddah's residents, taking into account women's privacy requirements. Further, all pursuits offered on the north coastline should be duplicated, as that small area is insufficient to serve Jeddah's population, despite the issues residents have with its facilities. The secular nature of its international design is shunned by Muslims as they cannot enjoy its coastal attractions, through difficulties in spatial and visual separation, and the sole public beach is not used by women.

The purpose of this research thus determined, the project began by observing the recreational behaviour of Jeddah's various social groups, broadly determined as groups containing women, and young single men. It is clear from this study of Jeddah's north seafront that the behaviour of visitors reflects the culture of the country. Single women and women with children were obviously seeking visual and spatial separation, impacting design efficiency for the future development contemplated by this project. These groups used any screening, such as foliage, sculpture and building elements. This was not the intention of the designers for this public promenade and plazas along the Corniche; the sculptures for which Jeddah is famous are there to be enjoyed by all, the parks are there for relaxation, not to engender stress if men inadvertently stray into women's space. The separation protocols are unique in that they are determining the use, the enjoyment and the purpose of the seafront promenades that were designed to display Jeddah's magnificent art.

The new seafront changes the nature of public spaces in Saudi Arabia. Rather than Muslim regulations, protocols and social habits reducing the ability of town planners and landscape designers to offer recreational public places to Jeddah's residents, the new Coast uses these 'restrictions' to produce a design based on the nature of Islam's ancient architecture. The Islamic built environment logic offers a diversity of possibilities for dealing with the problems of the seafront public areas and provides several ways to form the concepts of privacy at the seafront's recreation activities and places.

In the site research environment, zoning is used to offer attractive places and activities to groups: seating areas, viewing areas, activity places, and importantly, swimming areas add new and novel solutions to visual and physical separation. However, the design extends beyond the overriding purpose of accomplishing separation needs for the community. Women can swim. Children can play. Young men can ride their bikes and young women can engage at the same activity. There are children's beaches (two). There is a large open beach where anyone can play beach sports. Older men and women can fish from the seawalls. Mothers can watch over their children and maintain their discretion so they can relax. Young men are not relegated to the back of the park; they can climb up to mounds in zone 1 and sit looking out to sea. Women, too, can gain height; in the theatre zone 4 they can look out to sea in very pleasant surroundings. They will linger.

The design determinants, a combination of zoning and Islamic architecture were selected for two reasons. First, the social groups' concept of appropriate spatial separation differed noticeably, as the interviews with future users showed: there was no uniformity of opinion on separation, thus observation of people's behaviour combine with Islamic regulation were the guides. Secondly, separation concepts by the stakeholder respondents were mixed regarding the women's island beach; complete separation was preferred by the majority; a dedicated area on the main beach was favoured by a minority.

As a conclusion to this research project, the aim is to address the issues that are emerging as the Kingdom of Saudi Arabia acknowledges its position on the world stage and maintains its open invitation and hospitality to all Muslims. There are solutions to all issues, and women's rise within the community requires a different approach to the international seafront architecture. Each culture, including Islamic, should accommodate its residents in public places. This approach could not offer all the activities the social groups wish for at public places; however it at least offers essential activities for seafront areas.

The new Coast is a beginning in the beautification of Jeddah's environment and an offer for inclusiveness for all Muslims in public places. However, it is not the sole answer. There is the question of sports for women, for international sports stadiums with allocated spaces; for female sports where women can compete; for all manner of sport, arts, craft and other leisure pursuits. What are the effects of the research methods on different activities at different types of public spaces? Can the country culture become adaptive to more different methods to offer more recreation activities for the city social groups?

These issues will form the basis for future research.

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