



2015

Successful Urban Design Principles for the Redevelopment of the Historic Seafronts in the Kingdom of Saudi Arabia, along the North Red Sea , Case Study: Yanbu Al-Bahr's Historic Seafront

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Successful Urban Design Principles for the Redevelopment of the Historic Seafronts
in the Kingdom of Saudi Arabia, along the North Red Sea

(Case Study: Yanbu Al-Bahr's Historic Seafront)

A thesis submitted in partial fulfillment of the requirements for the degree of Master
of Urban and Regional Planning at Virginia Commonwealth University.

By

Naif Fluah Al-Anazi

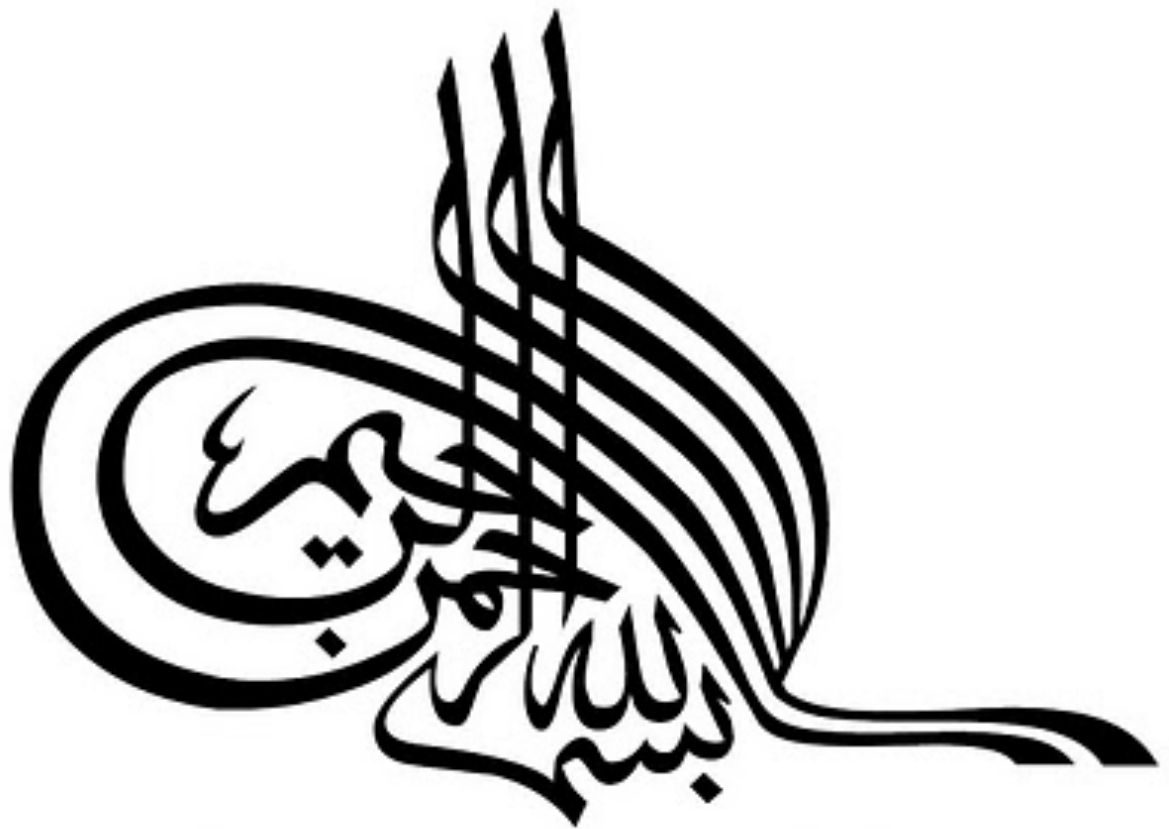
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April 2015



*In the name of Allah,
the Most Beneficent,
the Most Merciful*

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ABSTRACT

SUCCESSFUL URBAN DESIGN PRINCIPLES FOR THE REDEVELOPMENT OF THE HISTORIC SEAFRONTS IN THE KINGDOM OF SAUDI ARABIA, ALONG THE NORTH RED SEA. CASE STUDY: YANBU AL-BAHR'S HISTORIC SEAFRONT

By: Naif Al-Anazi, M.U.R.P

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Urban and Regional Planning at Virginia Commonwealth University.

Virginia Commonwealth University, 2015

Director: James C. Smither, PLA, ASLA
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This thesis highlights the role of urban planners in the revitalization of historic seafronts as creative and attractive places for people and a key factor in the regeneration of the urban economy in the historic seafront areas. The Saudi Arabia historic seafront areas along the North Red Sea have been neglected and are suffering because of slow development and changes to industrial uses. This thesis will focus on the urban design principles that make historic seafronts more attractive and successful, and will use a case study approach of several American waterfront cities such as Baltimore, Maryland; San Francisco, California; and Charleston, South Carolina. These American cities and the urban design principles applied for their successful revitalization were selected for analysis because of their similarities with the Yanbu Al-Bahr's historic seafront. The results of this analysis will enable planners to apply the best of these urban waterfront design models to assist in the revitalization of historic seafronts along the North Red Sea in the Kingdom of Saudi Arabia (KSA).

DEDICATION

This thesis is dedicated to my lovely brother, Abdul Aziz. His life was interrupted, and he passed away early. May Allah bless him and may his soul rest in peace.

ACKNOWLEDGMENTS

Initially, I would like to say thank you in a sky-size manner for “Allah the Al-Mighty,” who enabled me to do my best on this thesis. I wish to thank my parents, who took time to follow my studies in the USA and who advised me until today. A special thank you goes to my wife, Sarah, and my lovely daughter, Shomokh, for their unlimited support and advice, and for helping me realize the value of family. I am deeply grateful to King Saud University for the scholarship that funded my graduate studies in the USA. I would further like to give my appreciation to the Saudi Commission for Tourism and Antiquities for its continuous support and for giving me the opportunity to interview key SCTA members, and providing appropriate resources for my thesis. Great thanks also for my dear friend, Abdul Azzaam Madyun. I can never forget his guidance and efforts during my stay in Richmond, Virginia. A very special appreciation goes to my thesis advisor, Mr. James Smither, for his interest, guidance and insightful comments throughout the development of this thesis. Special thanks to Dr. Ivan Suen and Mrs. Kimberly Chen for all of their perceptive comments and for helping me to direct the thesis. This thesis could never have been possible without their efforts toward the development of my research. To all SCTA officials especially Eng. Sultan Al-Gorry, Eng. Adel Osman, and Dr. Adnan Al-Jaber, I highly appreciate your invaluable contribution. To everyone else not mentioned by name, thank you for your support and guidance, which made writing this thesis more valuable. Finally, I have learned that what really matters in design and urban planning is to educate oneself rather than to take what is called a certificate. To be sure, this will be a continuous learning experience.

TABLE OF CONTENTS

THESIS COMMITTEE	IV
ABSTRACT	V
DEDICATION	VI
ACKNOWLEDGMENTS	VII
TABLE OF CONTENTS	VIII
LIST OF FIGURES	X
LIST OF TABLES.....	XII
GLOSSARY OF TERMS AND ACRONYMS	XIII
CHAPTER I - INTRODUCTION.....	1
1.1 STATEMENT OF THE PROBLEM	1
1.2 RESEARCH OBJECTIVES	2
1.3 STATEMENT OF THE HYPOTHESIS	3
1.4 RESEARCH QUESTIONS	3
1.5 RESEARCH APPROACH	4
CHAPTER II - LITERATURE REVIEW.....	6
2.1 KEY CONCEPTS.....	6
2.1.1 SEAFRONTS.....	6
2.1.2 URBAN DESIGN	6
2.1.3 URBAN DESIGN PRINCIPLES	7
2.1.4 SUCCESSFUL URBAN WATERFRONT PRINCIPLES.....	8
2.2 URBAN DESIGN THEORIES.....	10
2.3 THE REVITALIZATION THEORY	16
2.4 HISTORIC SEAFRONTS IN THE KSA.....	16
CHAPTER III - RESEARCH METHODOLOGY	21
3.1 CASE STUDY METHODOLOGY	21
3.2 YANBU AL-BAHR: LOCATION.....	22
3.3 HISTORIC BACKGROUND	25
3.4 SIGNIFICANCE	26
CHAPTER IV - URBAN DESIGN PRINCIPLES ANALYSIS	27
4.1 YANBU AL-BAHR HISTORIC SEAFRONT	28
4.1.1 DIVERSITY: MIXED-USE DEVELOPMENT	28
4.1.2 ACCESSIBILITY	32
4.1.3 DISTINCTIVENESS.....	32
4.1.4 PUBLIC-PRIVATE PARTNERSHIPS	35
4.1.5 RESULTS OF AN URBAN DESIGN PRINCIPLES ANALYSIS	36
4.2 WATERFRONT CASE STUDIES IN THE USA	38
4.3 BALTIMORE INNER HARBOR, MARYLAND.....	40
4.3.1 HISTORIC BACKGROUND.....	40
4.3.2 THE URBAN DESIGN PRINCIPLES OF BALTIMORE'S INNER HARBOR.....	41
4.3.3 RESULTS OF AN URBAN DESIGN PRINCIPLES ANALYSIS	47
4.4 SAN FRANCISCO WATERFRONT, CALIFORNIA	50
4.4.1 HISTORIC BACKGROUND.....	50

4.4.2 THE URBAN DESIGN PRINCIPLES OF THE SAN FRANCISCO WATERFRONT.....	52
4.4.3 RESULTS OF AN URBAN DESIGN PRINCIPLES ANALYSIS	57
4.5 CHARLESTON WATERFRONT, SOUTH CAROLINA.....	58
4.5.1 HISTORIC BACKGROUND.....	58
4.5.2 THE URBAN DESIGN PRINCIPLES OF THE CHARLESTON WATERFRONT	59
4.5.3 RESULTS OF AN URBAN DESIGN PRINCIPLES ANALYSIS	67
CHAPTER V - EVALUATION OF SUCCESSFUL URBAN DESIGN PRINCIPLES	68
5.1 ASSESSMENT METHODOLOGY FRAMEWORK	68
5.2 SAMPLING CHARACTERISTICS AND MECHANISMS	68
5.3 DATA ANALYSIS AND INTERPRETATION.....	69
5.4 THE OUTCOME	71
CHAPTER VI - RECOMMENDATIONS.....	73
APPENDIX	79
BIBLIOGRAPHY	86

LIST OF FIGURES

Figure 1. Map showing Yanbu Al-Bahr historic core and seafront	2
Figure 2. This diagram shows elements of urban design from macro to micro	7
Figure 3. Vertical mixed-use waterfront buildings in Battery Park City, New York	11
Figure 4. Horizontal mixed-use in the historical center of Tønsberg, Norway.....	11
Figure 5. View of Market Street is four miles away from the waterfront.....	12
Figure 6. Historic Jeddah, Saudi Arabia	13
Figure 7. Santa Fe, New Mexico.....	14
Figure 8. St Mark's Square, Venice, Italy.....	14
Figure 9. Bird's eye view of Yanbu Al-Bahr historic core area	19
Figure 10. King Abdul Aziz fort in Duba	19
Figure 11. Historic seafront in Al-Wajh	20
Figure 12. Historic seafront in Umluj	20
Figure 13. Diagram showing the methodology of the thesis	21
Figure 14. Map showing Saudi Arabia and the Middle East at night from space.....	22
Figure 15. Map showing the location of the province of Al Madinah, Saudi Arabia.....	23
Figure 16. Map showing location of Yanbu in the regional context.....	23
Figure 17. Red Sea coast development strategy.....	24
Figure 18. Map showing the location of Yanbu Al-Bahr.....	25
Figure 19. Drawing of Yanbu dated 1761 AD	26
Figure 20. Map showing location of the Yanbu Al-Bahr historic seafront area	28
Figure 21. Map showing the land uses of Yanbu Al-Bahr historically.....	29
Figure 22. Map showing SCTA mixed-use proposal in Yanbu Al-Bahr historic seafront	30
Figure 23. Map showing the commercial services within ½ mile of historic seafront	31
Figure 24. Ottoman architecture represents the majority of the seafront buildings.....	33
Figure 25. Rawasheen is a type of projected wooden screen in Yanbu Al-Bahr.....	34
Figure 26. Population comparisons by cities and MSA (2013)	38
Figure 27. Aerial photo showing Baltimore's Inner Harbor before development	41
Figure 28. Map showing Baltimore Inner Harbor study area	42
Figure 29. Bird's eye view of Baltimore Inner Harbor today	42
Figure 30. National Aquarium	44
Figure 31. Baltimore World Trade Center	44
Figure 32. Promenade along the Inner Harbor.....	45
Figure 33. The primary recreation destinations in the Inner Harbor.....	49
Figure 34. Chart shows the proximity of the population to the Inner Harbor within a half mile	49
Figure 35. Aerial photo showing San Francisco waterfront in 1938	51
Figure 36. Map showing San Francisco Waterfront study area	52
Figure 37. Embarcadero Freeway physically disconnected the city with its waterfront	54
Figure 38. After removing Embarcadero Freeway and redesigning	54
Figure 39. Ferry Building in 1898.....	56
Figure 40. Map showing the Charleston waterfront study area	59
Figure 41. Residential and mixed-use development adjacent Charleston waterfront.....	61
Figure 42. Charleston waterfront had been used for surface parking before development	62
Figure 43. Charleston waterfront after development	63
Figure 44. Historic homes in Charleston waterfront areas.....	64
Figure 45. Charleston Waterfront Park	65
Figure 46. View North on Broad Street, from the Old Exchange, Charleston	66
Figure 47. French Quarter Charleston SC.....	66
Figure 48. Many commercial shops on East Bay Street, Charleston.....	67
Figure 49. The survey showed that 74 percent of the professionals contacted agreed with the mixed-use development strategy	73

Figure 51. Examples of the success of this strategy are seen in the removal of Embarcadero Freeway in the San Francisco and the transformation of surface parking into a waterfront park in Charleston.	74
Figure 52. The future perspective to restore the historic visibility with the seaport pier	74
Figure 53. The 79 percent of the Saudi architects and planners who responded to the survey encouraged using the strategy of public-private partnerships in the seafront projects....	75
Figure 53. State historic tax credits (HTCs) in the USA.....	76
Figure 54. Research and development expenditure (percent of GDP) is very low in the KSA	77

LIST OF TABLES

Table 1 Regional tourism assessment matrix.....	37
Table 2 Comparison table	39
Table 3. Top two destinations traveler summary in Maryland	48

GLOSSARY OF TERMS AND ACRONYMS

KSA	Kingdom of Saudi Arabia
USA	United States of America
SCTA	Saudi Commission for Tourism and Antiquities
3Ps	Public-private partnerships
REDF	Real Estate Development Fund
UK	United Kingdom
NBHC	National Built Heritage Center
MAS	Tourism Information and Research Center
BOOT	Build, Own, Operate, Transfer is a project funding model
ARAMCO	Saudi Arabian national petroleum and natural gas company
SABIC	Saudi Arabian Basic Industries Corporation
MD	Maryland State
CA	California State
SC	South Carolina State
MSA	Metropolitan Statistical Area
CBD	Central Business District
AIA	American Institute of Architects
BCDC	San Francisco Bay Conservation and Development Commission
MOMRA	Ministry of Municipal and Rural Affairs
D.A.D	Diversity, Accessibility and Distinctiveness
HTCs	Historic Tax Credit

CHAPTER I - INTRODUCTION

1.1 Statement of the problem

Quality urban design has been lacking in the Saudi Arabian historic seafront areas for many years. Some districts are undergoing revitalization but others are not, though they are in dire need of extensive urban design guidance and revitalization. This thesis will focus on Yanbu Al-Bahr's historic seafront and discuss the current urban design problems in this area. Historically, Yanbu Al-Bahr's seafront was the center of commercial activities. Unfortunately, one-fourth of the core seafront buildings have been neglected and the Yanbu port has taken over a large percentage of the seafront (Yeang & PLB Consulting Ltd, 2007, p. 22). The seafront demolition project has presented problems for people who use those areas for shopping and residential purposes. Moreover, this issue has further impeded the visual and physical connection between the historic core and the seafront (see Figure 1).

Urban design master plans are still not in place in the Saudi Arabian historic seafront areas, and there is still the need for strong legal powers that can compel municipality directors to implement urban design plans. Urban design elements are critical for development areas that are suffering from extreme neglect and a lack of municipal and public policies. Yanbu's municipality does not have any urban design guidelines or design standards for the Yanbu al-Bahr historic seafront (Y. Bin Gerid, personal communication, February 3, 2015). The introduction of quality urban design principles in Saudi's historic seafronts is imperative for their reuse for community improvement and economic development potential. Otherwise, these areas are at risk of being lost forever.

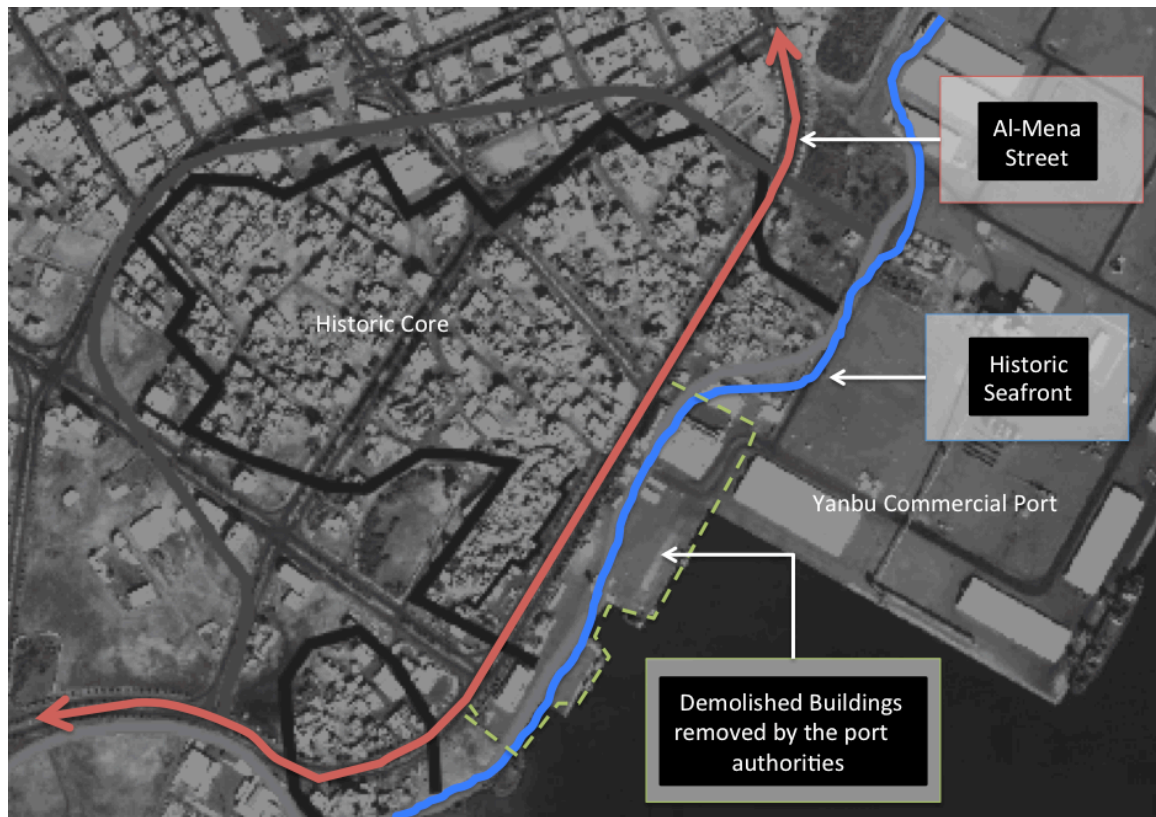


Figure 1. Map showing Yanbu Al-Bahr historic core and seafront
 (Source: Yanbu Al-Bahr Conservation & Design Guide, 2007, p. 11)

1.2 Research objectives

The main goal of this thesis is to identify the successful urban design principles that have resulted in the revitalization of historic waterfront cities in the USA and find the associated characteristics that are applicable to Saudi's historic seafronts along the North Red Sea. The objectives of this research are to:

- Transform historic seafronts in Saudi Arabia from neglected to viable areas and protect them from further deterioration
- Apply the successful professional urban design experiences from the USA to the KSA historic seafronts
- Develop urban design modeling to serve as a reference guide for the development of Saudi's historic seafronts

- Promote the revitalization and economic development in Saudi's historic seafronts on the North Red Sea
- Influence community improvement plans, and increase local citizen awareness and appreciation of historic seafront redevelopment and its applications
- Increase and support heritage tourism

1.3 Statement of the hypothesis

Successful urban design principles used at USA waterfronts can be replicated at KSA historic seafronts, along the North Red Sea. A design-modeling project based on successful waterfront revitalization in American cities can assist the Saudi Commission for Tourism and Antiquities (SCTA) in restoring the North Red Sea waterfronts to areas of prominence, making them competitive edge in the tourism industry regionally and nationally.

1.4 Research questions

This thesis will address many questions that will illustrate the role of governmental authorities and their efforts to develop the historic seafront in Yanbu Al-Bahr, Saudi Arabia. In the summer of 2014, this researcher met with the officials of SCTA in Riyadh and Madinah, Saudi Arabia. At the meeting, questions were asked about the future perspectives and the current plans to develop the study area. The multiple responses of those officials enabled this researcher to formulate and complete the remodeling plan. Below is the list of questions that the researcher will be addressing for the redevelopment of Yanbu Al-Bahr historic seafront:

1. Realizing that the tasks of the USA urban waterfronts are an applicable approach to Saudi's historic seafronts, what key procedures should be considered?

2. What are the existing conditions of historic buildings along the North Red Sea, in particular in Yanbu Al-Bahr's historic seafront?
3. What are the current plans for the development of the urban design principles in the Yanbu Al-Bahr historic district?
4. What are the future perspectives for revitalizing these areas from SCTA officials and municipal leaders in the KSA?
5. What are the incentives to create urban design plans for historic seafronts?
6. What do the owners of historic buildings need for redevelopment?
7. How will this revitalization impact and contribute to the economic resurgence of the area?
8. How will the above-mentioned project enhance jobs and economic opportunities for local Saudi citizens?
9. How can this project increase the gross national product and increase the tourism sector?

1.5 Research approach

This thesis aims to analyze urban design principles for the historic seafronts in the KSA along the North Red Sea using descriptive and analytical approaches. The descriptive approach will focus on the review of literature and urban design theories that relate to the research scope. It will also present the main urban design concepts and terminologies that illustrate the phenomenon of revitalization in waterfront areas. The analytical approach aims to compare three case studies in the USA (Baltimore, Maryland; San Francisco, California; and Charleston, South Carolina) with the Yanbu Al-Bahr's historic seafront in Saudi Arabia. More specifically, this thesis will analyze the urban design principles for the historic seafront areas that relate to the research hypothesis. Below is a list of urban design principles (D.A.D + 3Ps) that will be

addressed in the theoretical and analytical context.

1. Diversity: Mixed-use development
2. Accessibility: Connectivity to adjacent neighborhoods and surrounding areas
3. Distinctiveness: Respect of the historical roots and architecture of the region
4. Public-private partnerships (3Ps)

These urban design principles are significant for historic seafront redevelopment in the KSA where there is a practice gap between the written regulations and the professional practice. These principles are missing in seafront revitalization policies in the KSA; however, they are necessary for effective revitalization and the accommodation of human needs.

This will, of course, entail a comparative study of American and Saudi Arabian practices in terms of the role of urban planners in urban design projects in historic seafront areas. Based on these research approaches, the results will suggest the successful design principles that will be applicable for historic seafronts in Saudi Arabia. Consequently, this will prove the hypothesis of the research.

CHAPTER II - LITERATURE REVIEW

2.1 Key concepts

2.1.1 Seafronts

The American Heritage dictionary (1982) defines the word seafront as “a strip of land at the very edge of the sea”(p. 1105). The seafront or waterfront is often located in urban areas, thus integrating natural landscapes with urbanism. Some scholars define urban waterfront as “an urban area in direct contact with water” (Moretti, 2008, p. 10). The historical evolution of waterfront is grouped into four periods: emergence of waterfront cities, growth of waterfronts, deterioration of waterfronts and rediscovery of waterfronts (Timur, 2013).

2.1.2 Urban design

Urban design is a systematic plan for urban areas that involves a variety of professional disciplines including planning, architecture and landscape architecture (Australian Sustainable Built Environment Council Website, 2013). It is very important to understand the applications of urban design theories within a spatial context: “urban design operates at many scales, from the macro scale of the urban structure (planning, zoning, transport and infrastructure networks) to the micro scale of street furniture and lighting” (Australian Sustainable Built Environment Council Website, 2013, para. 3). This notion leads us to be more aware regarding the scale of design in the urban structure. In the historic seafront areas, this thesis will be more focused with the macro aspects in the seafronts’ design including public realm and the continuity between the sea and buildings, scale, urban form and appearance (see Figure 2).

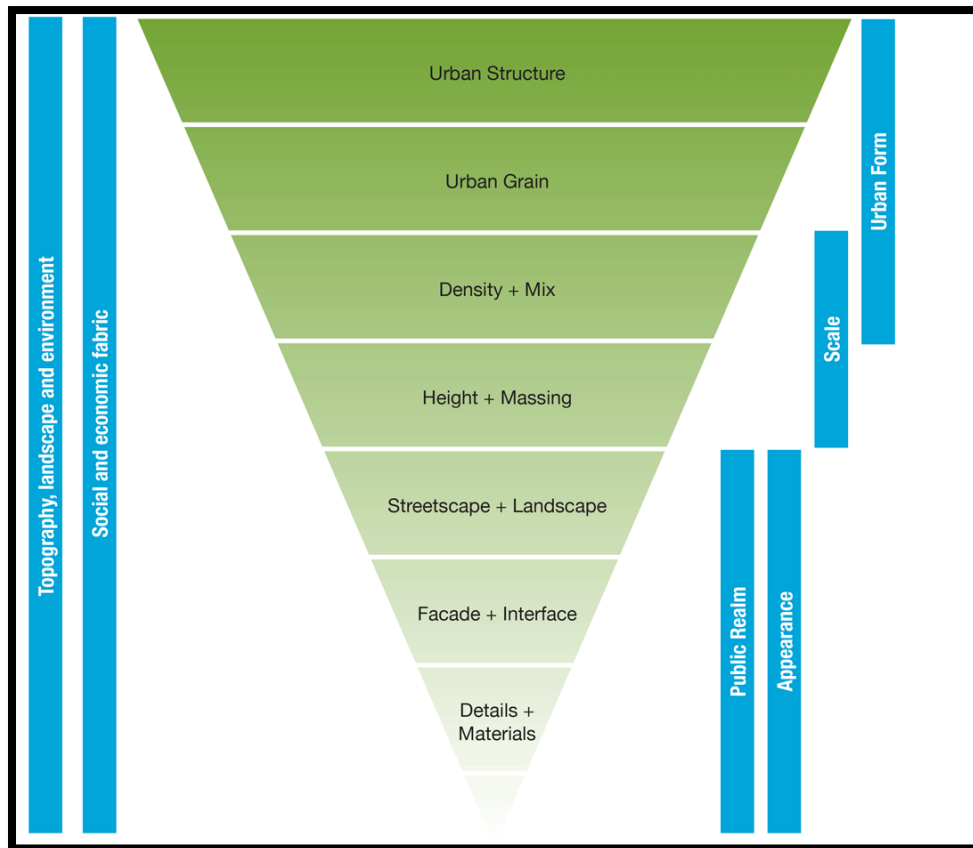


Figure 2. This diagram shows elements of urban design from macro to micro

(Source: <http://www.urbandesign.org.au/whatis/index.aspx>, retrieved on January 17, 2015)

2.1.3 Urban design principles

The city of Los Angeles defined urban design principles as “the urban design principles represent a set of values to be expressed in the built environment and set a direction for the city” (Urban Design Studio Website, n.d., para.2). These principles are about defining the space between buildings and not just the space within property lines. They are about enhancing the connections to and the transitions between buildings, modes of transportation and the public realm. These principles are helpful tools that assist the urban planners and city leaders to change the natural and urban environments to be more attractive and beautiful.

2.1.4 Successful urban waterfront principles

Another scholar, John Rosenberger, defines the success in an urban waterfront by applying Falk's theory (Rosenberger, 2004). This researcher investigates how the city of Bristol, in the United Kingdom, reformed its waterfront from an industrial harbor into an attractive and sustainable commercial hub. He also investigated what key characteristics waterfronts should possess in order to be successful. Rosenberger applied Falk's theory, "Principles of Successful Waterfronts" to two sites along the Bristol waterfront. The principles include (Rosenberger, 2004, pp. 8-9):

1. Spirit of the place

- Looks unique
- Provides a continuous, cared-for public realm
- Interprets and respects the past, while avoiding pastiche

2. Integration with the surrounding area

- Short pleasant walk from the rest of the town or city
- Offers attractions for all of the community
- Respects history and architecture

3. Resourcefulness

- Makes full use of the water for work, pleasure and living
- Attracts uses that get extra value from the views, security and tranquility that water provides
- Protects and improves the water quality, and with it natural life

According to Rosenberger, the planning principles in Bristol's Anchor Square were more successful for many reasons. It is located in a centralized location, it respects its industrial roots, and its waterfront connects with the city center. The lack of mixed uses at Bathurst Basin was the main difference between the two sites, as well as the lack of a natural environment (Rosenberger, 2004). Analysis of environmental and ecological waterfront conditions is one of the key components in successful waterfront revitalization (American Planning Association, 2006).

According to Planning and Urban Design Standards, the design elements that should

be involved in a waterfront design plan are as follows (American Planning Association, 2006, pp. 427-429):

- Open spaces: plazas, parks and piers
- Connections: paths, promenades, water connections for tourists, water connections as mode of transportation
- Development: working waterfronts, infill and adaptive use, recreation and tourist destinations, art and new mixed-use development
- Sustainability: ecological preservation and ecological design

Strong design principles can be generated by taking advantage of existing and available knowledge from the global initiatives that relate to waterfront revitalization.

Ten principles for the sustainable development of urban waterfront areas were presented at the Initiatives of the Urban Future Conference (URBAN 21) held in Berlin in July 2000. The 10 principles are as follows (Moretti, 2008, pp. 34-38):

- Secure the quality of water and the environment.
- Waterfronts are part of the existing urban fabric.
- The historic identity gives character.
- Mixed use is a priority.
- Public access is a prerequisite.
- Planning in public-private partnerships speeds the process.
- Public participation is an element of sustainability.
- Waterfronts are long-term projects.
- Revitalization is an ongoing process.
- Waterfronts profit from international networking.

2.2 Urban design theories

Many urban design theorists and practitioners have identified several successful urban design principles (Carmona, Tiesdell, Heath & Oc, 2010). These principles provide an understanding of the scientific linkage between urban design theories and the professional practice for successful waterfront revitalization. Below is a list of theories that relates to urban design principles (D.A.D + 3Ps) in the waterfronts area:

- **Diversity** (mixed use development)

Carmona (2009) indicates that diversity is one of 10 principles of sustainable urban design based on the concepts of theorists and professionals. The Commission of the European Community (1990) defines diversity as a mixed-use development (Carmona, Tiesdell, Heath & Oc, 2010). Ferry (1999), another theorist, also identified a hierarchy of services and facilities and the European Union Working Group On Urban Design And Sustainability (2004) also notes that diversity is not only a vibrant mix of uses but also connected streets (Carmona, Tiesdell, Heath & Oc, 2010).

Mixed-use development is a straightforward concept in the theoretical context however it involves more complexity in practical application. It requires that real estate development combine more than one land use (Herndon, 2011). Mixed-use development divides into vertical or horizontal mixed-use buildings. Vertical mixed use is residential uses located above retail, commercial or office uses, with the building height reaching more than three stories (see Figure 3). Horizontal mixed-use is single-use buildings, with the building height being two stories or less (see Figure 4). Some scholars recommend that mixed-use development should achieve the highest degree of compatibility among land uses (Herndon, 2011). Mixed-use developments also will improve accessibility for the community by creating a balanced use between

services and infrastructure and supportive public transportation nodes (European Union Working Group On Urban Design And Sustainability, 2004).



Figure 3. Vertical mixed-use waterfront buildings in Battery Park City, New York
(Source: <http://www.eekarchitects.com/portfolio/1-waterfronts/15-battery-park-city>)



Figure 4. Horizontal mixed-use in the historical center of Tønsberg, Norway
(Source <http://worldlandscapearchitect.com>)

- **Accessibility** (Connectivity to adjacent neighborhoods & surrounding areas)

Kevin Lynch identified five performance dimensions of urban design in his book “Good City Form” (Carmona, Tiesdell, Heath & Oc, 2010). Accessibility is one of these principles, which entails having the ability to connect with other persons, activities, information and other resources (Lynch, 1981).

Jacobs and Appleyard (1987) identified seven goals essential for the future of a good urban environment in "Toward an Urban Design Manifesto" (Carmona, Tiesdell, Heath, & Oc, 2010). Access to opportunity, imagination and joy is one of the goals that confirms that people should find a social place in which to build new friendships, relax and have fun. Jacobs and Appleyard said “There should be a place for community utopias; for historic, natural, and anthropological evocations of the modern city, for encounters with the truly exotic”. (Jacobs & Appleyard, 1987, pp. 116). Practically, any waterfront area has an excellent opportunity to be accessible with adjacent urban environments (see Figure 5).



Figure 5. View of Market Street is four miles away from the waterfront

(Source <http://loyaltytraveler.boardingarea.com/2013/01/21/san-francisco-panorama/>)

- **Distinctiveness** (Respect of the historic roots and architecture of the region)

Falk's theory says there are three principles for a successful waterfront: spirit of the place, integration with the surrounding area and resourcefulness (Rosenberger, 2004). The principle of spirit of the place means to have respect for the past, its architecture, its convenience and scenery to be a more successful waterfront (Falk, 2002 p.g.25). Distinctiveness means each place has a unique architectural character different from other places (see Figures 6-8). These physical qualities work to enhance the identity of the place and increase community awareness and a sense of belonging. Carmona (2009) indicates that distinctiveness is one of 10 principles of a sustainable urban design. The Urban and Economic Development Group, URBED, (1997) identified distinctiveness as sense of a place; European Union Working Group On Urban Design And Sustainability (2004) identified this principle as beautiful, distinctive, identity, sense of pride and respect for heritage. Jabareen (2006) notes that a principle of distinctiveness is a diverse architecture (Carmona, Tiesdell, Heath & Oc, 2010).



Figure 6. Historic Jeddah, Saudi Arabia

(Source: @honaarriyadh, 2015)



Figure 7. Santa Fe, New Mexico

(Source; <http://www.timesharespoints.com/villas-de-santa-fe-santa-fe-new-mexico.html>)



Figure 8. St Mark's Square, Venice, Italy

(Source: <http://www.telegraph.co.uk/travel/picturegalleries/8660201/Venice-to-introduce-tourist-tax-to-save-the-city-from-rising-sea.html?image=1>)

- **Public-private partnerships (3Ps)**

The 3Ps are defined as "a contract between a public sector institution and a private party, in which the private party assumes substantial financial, technical and operational risk in the design, financing, building and operation of a project" (Ong'olo, 2006,p.g. 9).The 3Ps concept is not a new phenomena: it began in the late 1980s when the UK and the USA nominated Prime Minister Thatcher and President Reagan to the top offices of their respective countries. Leadership both in America and Britain embarked on a new era based on the privatization of services, deregulation and new public management (Jütting ,2002) .

Public-private partnerships have contributed to urban revitalization in U.S. cities. The downtown retail markets have been negatively affected by the original population moving to the surrounding suburbs. These problems created new paths in urban management that have encouraged public-private cooperation due to urban economic and demographic shifts (Reuschke ,n.d). Many American scholars confirmed that public-private partnerships are one of the main strategies that help successful downtowns revitalization. Baltimore's Inner Harbor is a great example of public-private partnership and public entrepreneurship in the USA (Reuschke ,n.d).

Historic tax credits (HTCs) are an effective funding mechanisms and an excellent example of the 3Ps that represents the governmental role in encouraging the rehabilitation of historic buildings. HTCs are “ an indirect federal or state subsidy used to finance the rehabilitation of historic and older buildings” (the National Trust for Historic Preservation, 2012. p.11). Federal historic tax credits were established by the 1978 Tax Act for the rehabilitation of older buildings in the USA, and state historic tax credits have since been established in 35 states (Tyler, Ligiber, and Tyler, 2009). This financial incentive is granted based on the total rehabilitation costs. The

federal credit provides approximately 20 percent of the expenses, and the value of the state credits vary from state to state (The Virginia Department of Historic Resources, 2013). HTC programs are supportive strategy to rehabilitate historic buildings, to provide the community with a sense of place, and to encourage heritage tourism.

2.3 The revitalization theory

The revitalization of waterfront areas has been a phenomenon in urban design and planning disciplines since the second half of the 20th century (Butuner, 2006). According to Marta Moretti in her report “Cities on Water and Waterfront Regeneration,” the revitalization of waterfront areas has also contributed to urban renewal since the 1980s (Moretti, 2008). In the KSA, the revitalization of historic seafronts is a new trend in the 21st century. The Saudi government established SCTA in 2000, with its primary purpose to preserve and revitalize significant areas in the KSA. SCTA has created several initiatives aimed at stopping the current deterioration of historic buildings while increasing the awareness for the Saudi-built heritage. These initiatives include the National Built Heritage Center (NBHC) and a collaborative initiative with the Ministry of Municipal and Rural Affairs (MOMRA) (Al-Saud, 2013). In particular, the SCTA is responsible for planning and developing the seacoasts along the shores and Red Sea.

2.4 Historic seafronts in the KSA

Historic seafronts are often located contiguous to the core of the city (Obispo, 2011). “As most of the world’s big city centers are located on water’s edge, revitalization of waterfronts referred to downtown development” (Butuner, 2006, p. 3). There are many problems that have contributed to the pollution of these areas and diminished industrial activities as the seafront areas and old ports have been

abandoned (Timur, 2013). The Saudi kingdom blossomed in 1975, thanks to oil. What mushroomed from this boom were the Real Estate Development Fund (REDF) loans that led the original residents of the historic buildings to relocate their homes to modern dwellings (Al-Ghabban et al, 2010; Al-Saud, 2013).

The Saudi historic downtowns have undergone a rapid transformation over the past 40 years, from a viable flourishing area to an abandoned and neglected historic downtown (Al-Ghabban et al, 2010). “Over percent of the Kingdom’s historical and religious sites have been destroyed since 1985, according to the U.K.based Islamic Heritage Research Foundation” (Power, 2014). Dr. Mashary Al Naim, General Supervisor of the National Urban Heritage Center of SCTA, however, argued that Power’s assertion is questionable because he provides no data that validates his claim (Al-Naim, 2014).

The SCTA conducted a primary field survey that identified 1,985 urban heritage sites in the kingdom of Saudi Arabia, including villages, districts, historical centers, buildings and landmarks. There are currently 173 investment-grade sites that make up 9 percent of SCTA investments, according to a report of the Accomplishments and Achievements of the General Directory of Projects at the Saudi Commission of Tourism and Antiquities in 2009 (Al-Saud, 2013, p. 80). To date, SCTA does not have a comprehensive database of historic buildings along the North Red Sea in the KSA. The National Built Heritage Center is currently working to establish the National Register of Urban Heritage in Saudi Arabia (A. Al-Jaber, personal communication, February 1, 2015). This database will include “recording and documenting urban heritage that enables researchers, investors and interested parties to have access to all information and documents required to deal with urban heritage” (National Built Heritage Forum, 2015).

The Saudi government issued new regulations of “antiquities, museums and urban heritage” on November 2, 2014 (SCTA website, 2014). The new laws include a special chapter that focuses on a detailed system of provisions and rules to regulate the national architectural heritage and the rehabilitation of national urban heritage while promoting tourism and adding value to economic growth (SCTA website, 2014). In any historic district in the KSA, the SCTA is responsible for enforcing the regulations and architectural standards that apply to historic building systems. Some of the Yanbu historic seafront planning and design regulations prepared by the SCTA were previously adopted based on the experiences of a coastal city in South Africa similar to Yanbu Al-Bahr (Y. Bin Gerid, personal communication, February 3, 2015).

There are several historic seafronts including Yanbu Al-Bahr, Umluj, Al Wajh and Duba, located along approximately 480 kilometers (298 miles) of the North Red Sea coast. Most of the Red Sea heritage coastal seafronts are neglected due to the lack of interest and the absence of legislation to revitalize these historic seafronts. There is strong evidence that this contributed to the loss of numerous historic buildings in Saudi Arabia. Below are illustrations of these neglected areas located along the Red Sea coast (see Figures 9-12).



Figure 9. Bird's eye view of Yanbu Al-Bahr historic core area

(Source: <http://www.yanbufuture.com/vb/t544527.htm>, retrieved on January 21, 2015)



Figure 10. King Abdul Aziz fort in Duba

(Source: Al-Ghabban et al, 2010, p. 106)



Figure 11. Historic seafront in Al-Wajh

(Source: @mohmdsharif, 2014)



Figure 12. Historic seafront in Umluj

(Source: Marwan Al-Juhani, 2009)

CHAPTER III - RESEARCH METHODOLOGY

3.1 Case study methodology

The methodology for this thesis is to research multiple-case studies that describe circumstances similar to those found in Yanbu Al-Bahr's seafront area. Three cities in the United States were selected as the case studies for this thesis: Baltimore, Maryland; San Francisco, California; and Charleston, South Carolina. These cities all have unique stories of urban waterfront revitalization. This analysis will show how the urban design principles applied in the United States lead to the success of waterfront revitalization projects, and will conclude with an in-depth comparative study of the pre-revitalization and post-revitalization conditions in these waterfront areas (see Figure 13).

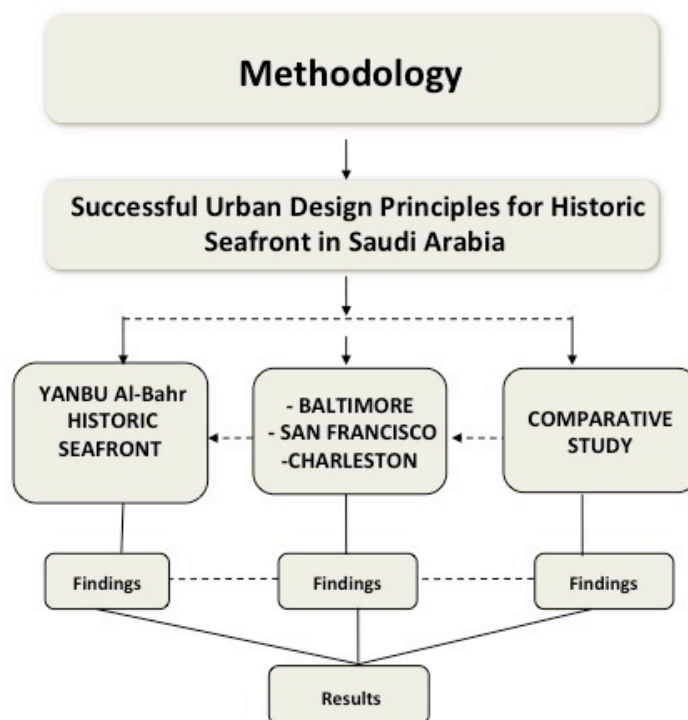


Figure 13. Diagram showing the methodology of the thesis

(Source: Naif Al-Anazi, 2014)

3.2 Yanbu Al-Bahr: Location

Yanbu is located on Saudi Arabia's Red Sea coast in the province of Al Madinah Al Munawwarah (see Figures 14 -16). Yanbu is approximately 300 kilometers (186 miles) northwest of Jeddah and 248 kilometers (154 miles) east of Al Madinah and includes three small towns: Yanbu Al Nakhl, Yanbu Al Bahr and Yanbu Al-Sinaiyah (see Figure 18). According to the Central Department of Statistics and Information, the total population in 2010 was 303,318 people. Its transportation network provides fast access to the major cities in the western region of Saudi Arabia (see Figure 17). Yanbu's commercial port is the nearest major Saudi seaport to Europe and North America, and contributes significantly to the city's economy.



Figure 14. Map showing Saudi Arabia and the Middle East at night from space
(Source: Vox, <http://www.vox.com/a/maps-explain-the-middle-east>, retrieved on November 15, 2014)

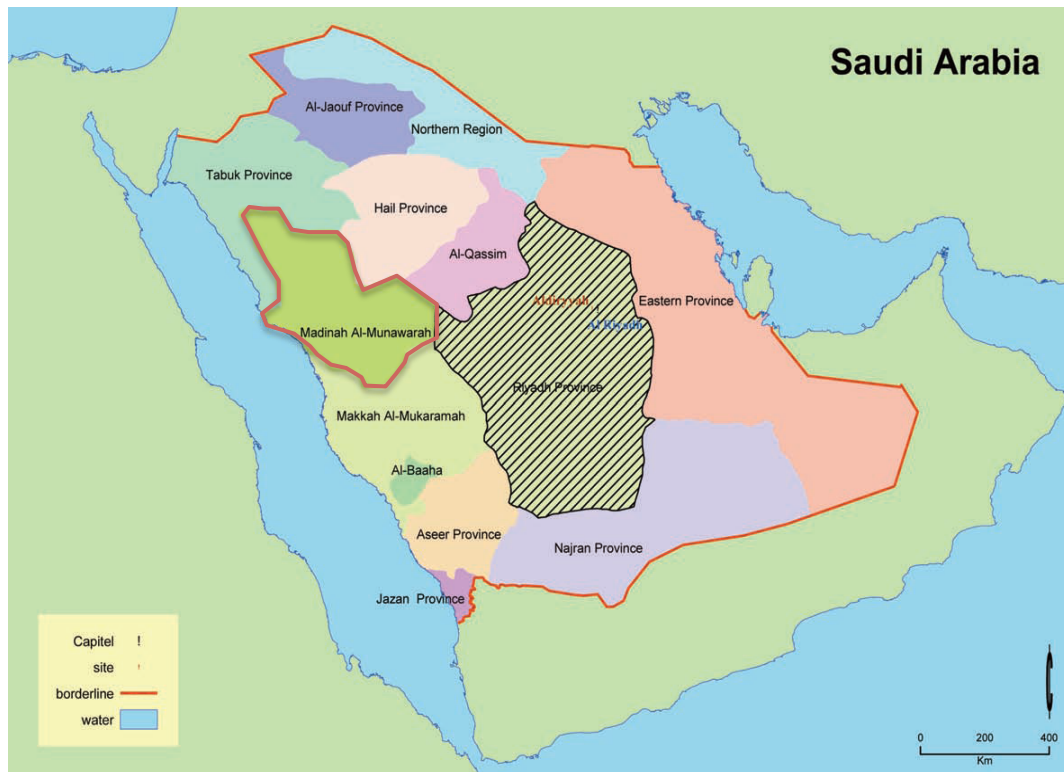


Figure 15. Map showing the location of the province of Al Madinah, Saudi Arabia

(Source: At-Turaif District in Ad-Dir'iyah Report, 2009, p. 13)



Figure 16. Map showing location of Yanbu in the regional context

(Source: Yanbu Region Municipality, provided by: Eng. Yaser Ali Bin Gerid, 2015)

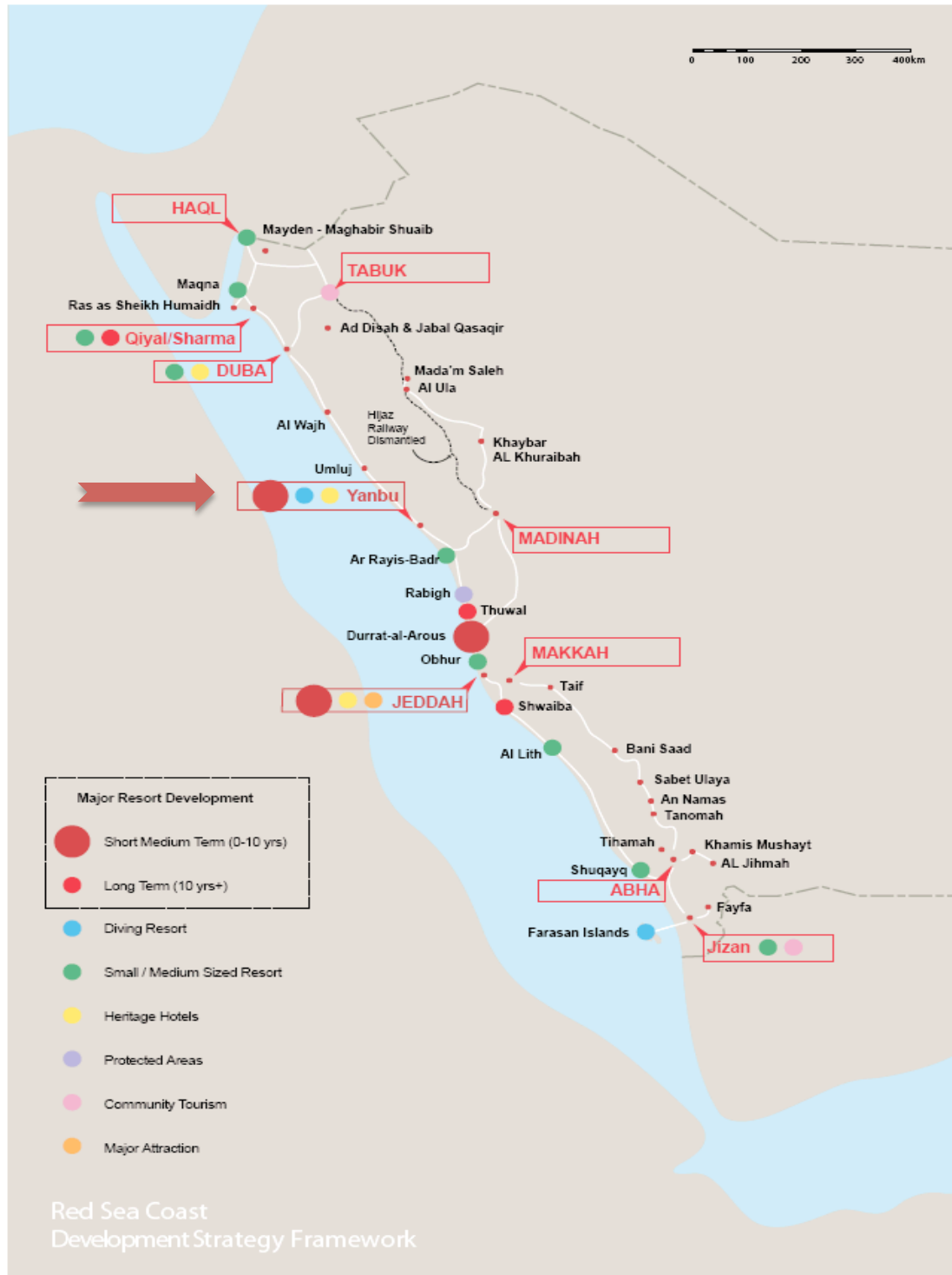


Figure 17. Red Sea coast development strategy

(Source: PLB Consulting Ltd, 2007, p. 2)

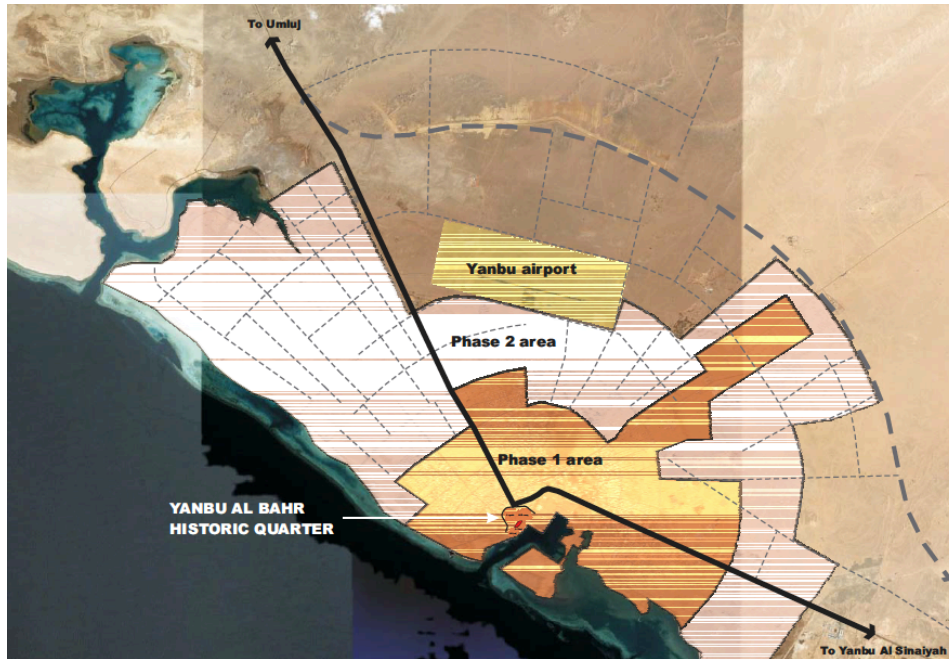


Figure 18. Map showing the location of Yanbu Al-Bahr
 (Source: Yeang, L and PLB Consulting Ltd, 2007, p. 19)

3.3 Historic background

Yanbu, classified as the first or second port on the west side of Saudi Arabia, serves commercial activity with Egypt, Syria, Palestine and Iraq (Al-khateeb, 2009). Yanbu also was an important roadway for the commercial caravans that used this path as a connection point in the Arabian Peninsula. According to historical sources, the Yanbu port became the gateway for pilgrims that visited the two Holy Mosques of Makah and Madinah during the early Islamic period. Most historic sources point to Yanbu Al Nakhl as the first settlement and Yanbu Al-Bahr a later settlement following a move down to the coast from the mountain oasis to which it remained linked” (Orbasli & PLB Consulting Ltd, 2007, p. 5). Portuguese sources noted the importance of Yanbu as a strong port for the Madinah district. There is an historic drawing, dated 1761 AD, which depicts Yanbu’s seafront surrounded by a series of tall towers. (see Figure 19)

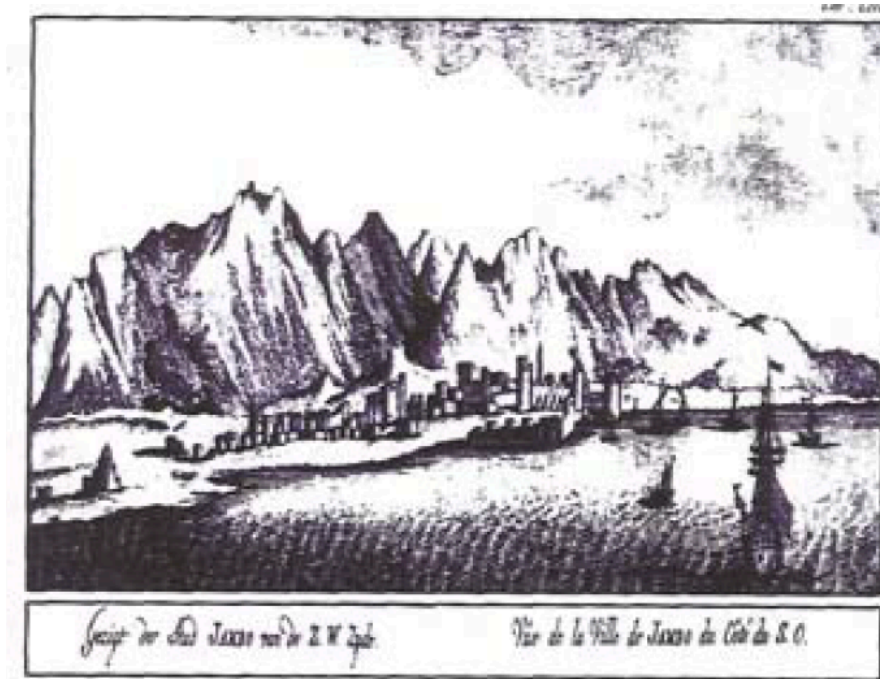


Figure 19. Drawing of Yanbu dated 1761 AD

(Source: Yanbu Al-Bahr Conservation & Design Guide, 2007, p. 5)

Another drawing shows one- and two-story dwellings around the seafront and the Ottoman Customs house, a prominent seafront building. The population of the historic area was approximately 3,000 in 1973. A description of the old town that year notes the old market streets were filled with cafes, offices of shipping agents and shops selling traditional goods (Orbasli, 2007).

3.4 Significance

The significance of the historic settlement of Yanbu is summarized in the following statement: “Yanbu is one of the few remaining settlements on the Red Sea coast with a substantial concentration of traditional houses of a high quality, and in part, buildings and urban form relating to the functioning of a major commercial and strategic port” (Orbasli & PLB Consulting Ltd, 2007, p. 10).

CHAPTER IV - URBAN DESIGN PRINCIPLES ANALYSIS

This study will analyze the urban design principles of the Yanbu Al-Bahr historic seafront and several U.S. waterfronts to compare the similarities and dissimilarities between the waterfront cities. More specifically, this research will present the urban design principles used to revitalize the U.S. waterfronts that are applicable to the Red Sea heritage coast. Interviews are one of the primary sources of information for Yanbu Al-Bahr historic seafront research because there is limited published information available, either in Arabic and English languages. Interviews were conducted with open-ended questions in a variety of settings, including face-to-face, by email and by phone. These interviews were conducted with the stakeholders of the Saudi Commission for Tourism and Antiquities and Yanbu Region Municipality. Those interviewed were:

- Dr. Adnan Abdullah Al-Jaber, Head of Information Department, Tourism Information and Research Center (MAS)
- Eng. Badr Al-Hamadan, Executive Director of Riyadh SCTA branch
- Eng. Awad Hamad Tarawneh, Consultant at General Directory of Projects and Development, Saudi Commission for Tourism and Antiquities
- Eng. Yaser Ali Bin Gerid, Manager of Technical Affairs at Yanbu Region Municipality
- Mr. Mousaed Al-Salim, the Governor of Yanbu Province
- Eng. Sultan F. Al-Gorry, Planning and Development Specialist at the SCTA affiliate in Al-Madinah Province
- Eng. Adel Osman. Project Manager at SCTA

4.1 Yanbu Al-Bahr historic seafront

Comprising an area of 40 acres, the Yanbu Al-Bahr historic seafront features the boundaries of King Faisal Street to the north, Al-Mena Street to the south, Ali bin Abi Talib Street to the west, and Abu Baker Al Siddique Street to the east (see Figure 20).



Figure 20. Map showing location of the Yanbu Al-Bahr historic seafront area

(Source: Google Earth map)

4.1.1 Diversity: Mixed-use development

A walking survey for the historic seafront neighborhood was performed in 2007. The survey included the core district of the Al-Sur neighborhood and found that 60 percent of the buildings are classified in good condition, 15 percent are in poor condition, and the remaining 25 percent are classified as ruinous (Yeang & PLB Consulting Ltd, 2007). The land uses in the historic area were for residential, commercial and administrative activities (see Figure 21). The majority of the land

uses are for residential purposes, including vacant or demolished houses (Yeang & PLB Consulting Ltd, 2007). Based on the observation and site visits, mixed-use development is absent, creating an unbalanced neighborhood. In 2007, SCTA had proposed a master plan to promote a mixed-use development strategy (see Figure 22). The south side of Yanbu Al-Bahr's historic seafront is undergoing revitalization, but this plan has not been implemented for the entire area. Approximately 25 percent of the proposed plan has been completed (A. Osman, personal communication, November 26, 2014).



Figure 21. Map showing the land uses of Yanbu Al-Bahr historically
(Source: Yeang, Llewelyn, and PLB Consulting Ltd, 2007, p. 25)

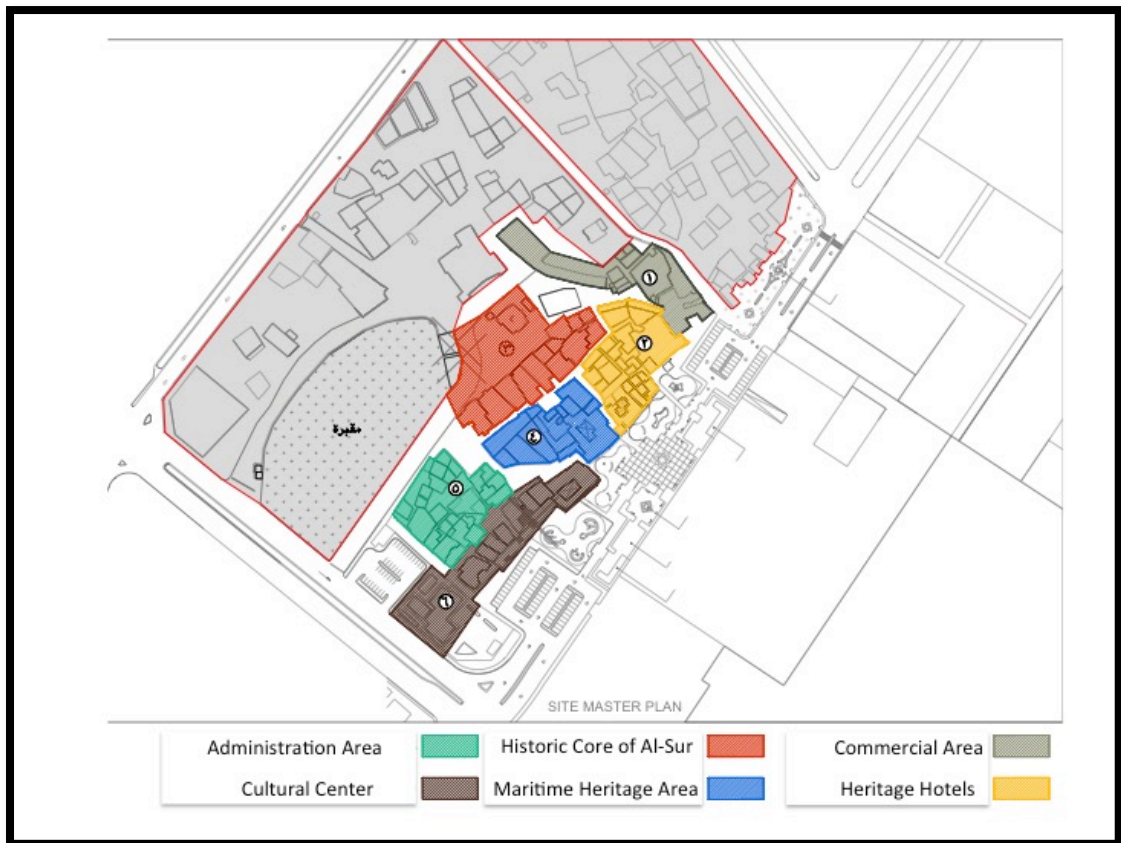


Figure 22. Map showing SCTA mixed-use proposal in Yanbu Al-Bahr historic seafront
(Source: Provided by Adel Osman, SCTA, 2015)

Most of the historic seafronts along the North Red Sea have suffered from a lack of mixed-use development. The potential demand exists, however, as a mixture of resort hotels, commercial, and recreational areas would improve the seafronts and serve as a catalyst for economic development in the region. Based on spatial data analysis using GIS, there is only one hotel (two stars) and a limited number of furnished suites within a half-mile walking distance of the Yanbu Al-Bahr historic seafront (see Figure 23).

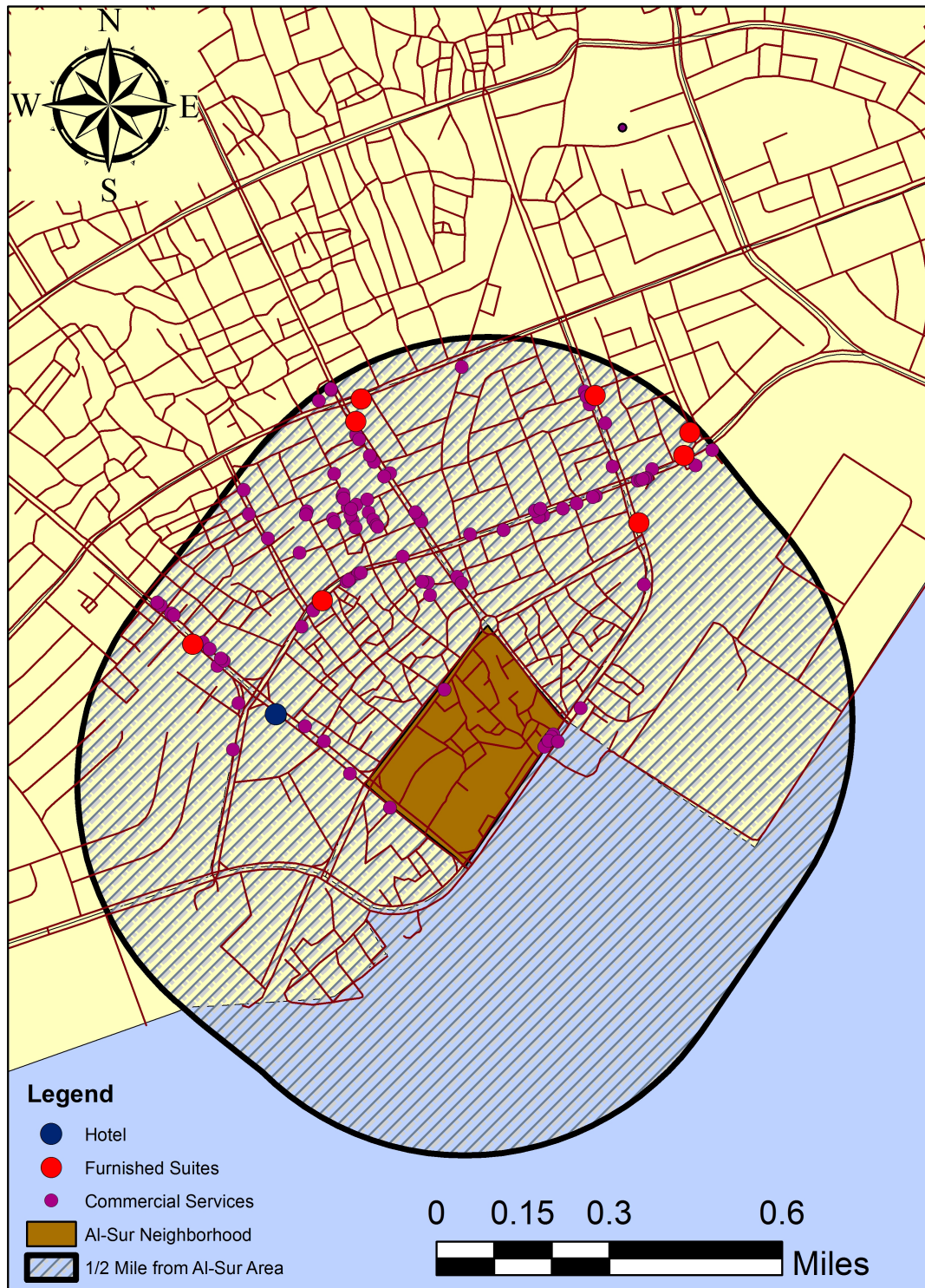


Figure 23. Map showing the commercial services within ½ mile of historic seafront

(Source: GIS map is analyzed by Naif Al-Anazi, 2015)

4.1.2 Accessibility

The main characteristics of Yanbu Al-Bahr are its historic buildings, its historic walls and its seafront (Orbasli & PLB Consulting Ltd, 2007). The majority of the seafront buildings have been demolished and the Yanbu port took over a large percentage of seafront areas (Orbasli & PLB Consulting Ltd, 2007). Yanbu's commercial port cut the connection between the historic buildings and seafront. Because of the disconnection created by the commercial port, Mena Street has become a barrier between the historic urban core and the historic seafront. The findings of SCTA's 2007 study recommended that Yanbu Al-Bahr's historic seafront buildings be integrated with the pier No. 1/2 in Yanbu port (Y. Bin Gerid, personal communication, February 3, 2015). The ability to implement this recommendation is dependent on an administrative decision by the Yanbu governorate (Y. Bin Gerid, personal communication, February 3, 2015). The port faces a number of challenges to reconnect the Yanbu Al-Bahr seafront with the surrounding areas.

4.1.3 Distinctiveness

Al Sur is the oldest neighborhood in Yanbu Al-Bahr's seafront. This area was built approximately 500 years ago (A. Osman, personal communication, November 26, 2014). The majority of the existing buildings feature Ottoman-style architecture, with the Ottoman Empire's "crescent and star" motif found inside many of these buildings (see Figure 24) (A. Osman, personal communication, November 26, 2014).



Figure 24. Ottoman architecture represents the majority of the seafront buildings

(Source: Photo by Adel Osman, 2014)

In 1953, British architect Derek H. Matthews noted that most of the historic buildings along the North Red Sea region shared many architectural characteristics from the 16th to the 20th century, which he called “the Red Sea Style” (Um, 2012). According to the *Programme Development for Yanbu Al-Sinaiyah and its Neighboring Historical Cities* report, most of the houses in Yanbu Al-Bahr have been abandoned and uninhabited for about 20 to 30 years (Orbasli & PLB Consulting Ltd, 2007). This report states that the major problems in this historic area are as follows:

- Decay and collapse of roof and floor timbers.
- Weakening of walls with the loss of floor plates and subsequent delamination or collapse.
- Collapse of floors caused by new additions that use heavier modern materials.
- Loss of structural members and destabilization caused by fires
- Tree growth in proximity of buildings.
- As parts of buildings are exposed to wind and rain, the rate of decay accelerates.
- Poor conservation practices and damage to the historic fabric.

There are three types of building materials found in the Yanbu Al-Bahr historic area: coral, mortars and timber (Orbasli & PLB Consulting Ltd, 2007). Yanbu's local builders used the area's natural lime and seashell, which they incorporated with sand to create mortar. The local timber was used to make doors and windows. Many of Yanbu's historic buildings are distinguished by projected wooden windows and balconies known as Rawasheen (see Figure 25) (Orbasli & PLB Consulting Ltd, 2007). The traditional use of coral as a construction material in many buildings creates a decor that is unique to the region. Even with the poor conditions of many of the seafront buildings, the great contribution of the Ottomans to the region's architecture is still clearly evident.



Figure 25. Rawasheen is a type of projected wooden screen in Yanbu Al-Bahr
(Source: Photo by Adel Al-Dawayan, Panoramio, 2009)

4.1.4 Public-private partnerships

KSA has many historic downtown areas that have unique architectural characteristics and priceless historic value. There are approximately 145 urban heritage sites in Al-Madinah's region, and SCTA's work is limited to seven investments sites, according to a report of the Accomplishments and Achievements of the General Directory of Projects at the Saudi Commission of Tourism and Antiquities in 2009 (Al-Saud, 2013, p. 80). SCTA classifies historic city centers along the North Red Sea as important sites to attract tourists to the western region of Saudi Arabia (Al-Ghabban et al, 2010). Yanbu Al-Bahr's historic seafront is one of the revitalization projects being carried out under the SCTA development program (PLB Consulting Ltd, 2007). The public sector is a key player in the implementation of rehabilitation projects. The majority of the seafront buildings are privately owned and SCTA purchased several of the historic seafront buildings from the owners through the build .own, operate, transfer (BOOT) finance system (A. Osman, personal communication, February 19, 2015). This contract gives the SCTA the right to build, own, operate, and transfer the historic buildings for 25 years. SCTA's vision for the future is to promote investments in the area and to encourage homeowners to improve their property. Major projects under development include (PLB Consulting Ltd, 2007):

- Designation of a conservation area to protect the historic core of Yanbu
- Local museum in the restored Babateen House
- Restoration of the historic market, to include craft workshops, modern display units and a tourist information center
- Historic coffee shops, seafood restaurants and retail units
- Conversion of a large historic building into an art gallery
- Boutique hotel
- Restored private houses

While the private sector's role in Yanbu Al-Bahr's projects is minimal, some leading Saudi companies, such as ARAMCO and SABIC, have assisted SCTA in the revitalization of historic buildings. The corporate-sponsored revitalization is seen as a social responsibility and represents 7 percent of the seafront area projects (A. Osman, personal communication, February 19, 2015). On February 2, 2015, the Saudi government instituted a new lending program to encourage and facilitate investors from the private sector to participate in the tourism development projects. This program is a motivational strategy to enhance the cities and their populations, which accounts for less than one million people. The lending program provides loan priority for tourism and hospitality projects in the Kingdom's less-developed cities and municipalities (SCTA website, 2015). The maximum loan amount for hotel and hospitality projects is 50 percent of the total construction budget and cannot exceed 100 million in Saudi riyals (SCTA website, 2015). Yanbu Al-Bahr will take advantage of this program, intended to help the private sector contribute to public-private partnership ventures in the historic seafront along the North Red Sea, to improve life in the city.

4.1.5 Results of an urban design principles analysis

SCTA has submitted a recommendation to increase the connectivity between the adjacent neighborhoods with the historic seafront, but Yanbu's commercial port and Mena Street present major obstacles to reconnect these two areas. This recommendation is still under study, waiting the final implementation by the Saudi Port Authority and other related government offices. Currently, there are no mixed-use developments in the Yanbu Al-Bahr historic seafront area, nor are there any urban design or landscape plans, and 40 percent of the historic buildings remain in poor physical condition.

Public-private partnerships (3Ps) are also is inactive in the Yanbu Al-Bahr historic seafront, as all the projects are funded by SCTA. The Red Sea Tourism Strategy and Action Plan created a regional assessment matrix in 2006 (PLB Consulting Ltd, 2007). This assessment gave the Yanbu area the competitive edge for economic development, revitalization and tourism development (See Table 1). Based on the assessment matrix, SCTA started historic preservation and revitalization projects in Yanbu Al-Bahr, which represent 25 percent of the historic seafront area. These projects are focused on how the development of Yanbu Al-Bahr's historic seafront can contribute to the tourism sector and the development of the local communities (A. Osman, personal communication, November 26, 2014).

<i>Location</i>	<i>Waterfront quality</i>	<i>Setting quality</i>	<i>Environmental sensitivity</i>	<i>Infrastructure provision</i>	<i>Ease of access</i>	<i>Heritage attractions</i>	<i>Commercial attractions</i>	<i>Events & activities</i>	<i>Development Potential</i>
Duba	Medium	Medium	Low	Medium	Medium	Medium	Low	Low	Medium scale development
Al Wajh	High	High	Medium	Medium	Low	Medium	Low	Low	Medium scale development
Umluj	Medium	Medium	Low	Medium	Medium	Medium	Low	Low	Medium scale development
Sharm Yanbu	Medium/ High	Medium/ High	High	Medium	High	High	Medium/ Low	Medium	Major scale development

Source: Red Sea Tourism Strategy and Action Plan

Table 1 Regional tourism assessment matrix

(Source: PLB Consulting Ltd, 2007, p. 10)

4.2 Waterfront case studies in the USA

This section will summarize the primary urban design principles used in three waterfront cities in the USA: Baltimore, Maryland; San Francisco, California; and Charleston, South Carolina (see Figure 26). These cities were selected for analysis and comparison to Yanbu Al-Bahr's historic seafront because, like Yanbu, each of these areas has suffered from neglect, a lack of opportunity and poor municipal intervention in their port environments. The case study cities also had similar problems which disconnected the waterfront areas from people, public use and modernization. (See Table 2). These U.S. cities were chosen as sample waterfront projects because the researcher was able to visit the waterfront areas to do field research and site reconnaissance.

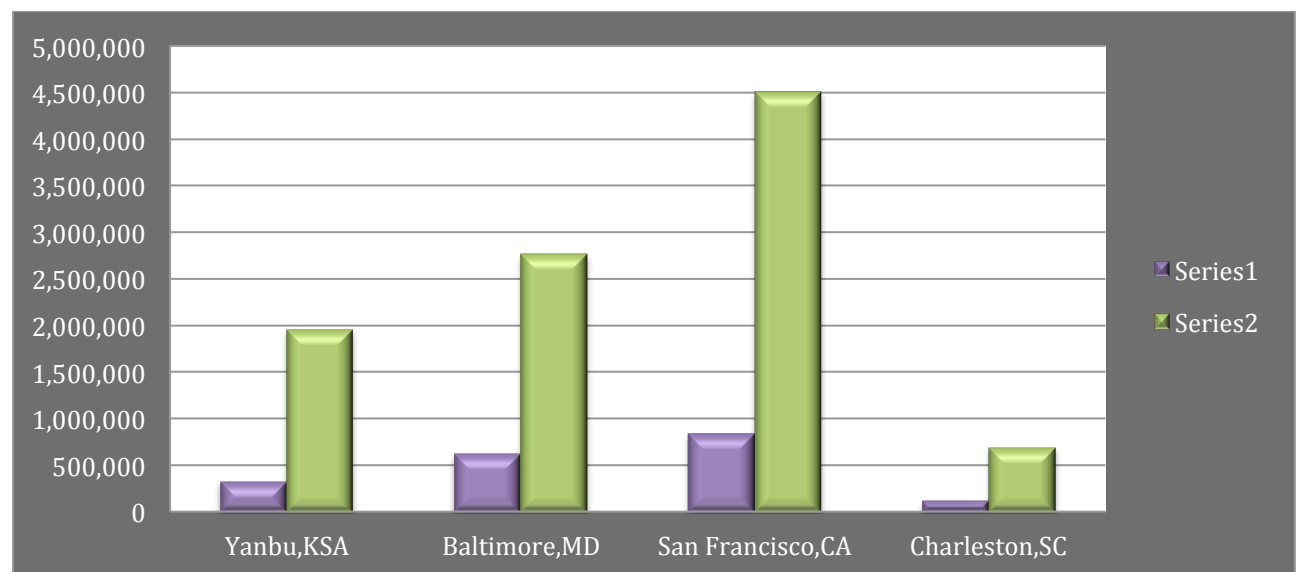


Figure 26. Population comparisons by cities and MSA (2013)

(Source: United States Census Bureau data, visualized by Naif Al-Anazi)

City	Issues	Population (2013)	Primary Transformative Actions
Baltimore, Maryland	<ul style="list-style-type: none"> ❖ The economic decline in the mid-20th century. ❖ Old harbors were abandoned 	<ul style="list-style-type: none"> ❖ City = 622,104 ❖ MSA = 2,770,738 	<ul style="list-style-type: none"> ❖ Master Revitalization Plan ❖ Promoting the waterfront area for public use ❖ Strong political leadership ❖ Mixed-use development
San Francisco, California	<ul style="list-style-type: none"> ❖ In 1906, a massive earthquake damaged the waterfront ❖ The Embarcadero Freeway cut San Francisco off from its waterfront 	<ul style="list-style-type: none"> ❖ City = 837,442 ❖ MSA = 4,516,276 	<ul style="list-style-type: none"> ❖ Public-private partnership ❖ The demolition of the Embarcadero Freeway ❖ The restoration of the Ferry Building ❖ Mixed-use development
Charleston, South Carolina	<ul style="list-style-type: none"> ❖ Part of the harbor was in ruins due to fire in 1955 	<ul style="list-style-type: none"> ❖ City = 127,999 ❖ MSA = 695,705 	<ul style="list-style-type: none"> ❖ Historic preservation ❖ Convert the wharfs to Waterfront Park

Table 2 Comparison table

4.3 Baltimore Inner Harbor, Maryland

4.3.1 Historic background

The Inner Harbor is located in the heart of downtown Baltimore along the shores of the Chesapeake Bay. It is located nearly 35 miles northeast of Washington D.C. and 75 miles southwest of Philadelphia, Pennsylvania (Leco, 2014). Inner Harbor has been one of the most important historic seaports on the east coast of the United States since the 18th century (Leco, 2014). It was an important hub for shipbuilding and supply-shipping during both World Wars. In 1904, a huge fire in the Inner Harbor destroyed more than 140 acres of the main business area: a great loss for merchants and retail owners, many of whom could not rebuild their shops (Pike, 1984) (see Figure 27). After World War II, the population of Baltimore began to spread into the suburbs, while the Inner Harbor area became abandoned and neglected (Waterfront Partnership of Baltimore Inc, 2015).

The first Inner Harbor revitalization project was the Charles Center, a 33-acre office development located between the existing retail and financial districts (Pike, 1984). In 1959, the Charles Center adopted an urban renewal master plan aimed at creating a base to revitalize the surrounding area in downtown Baltimore (Pike, 1984). In 1968, a public promenade was built to connect public spaces with recreation areas along the waterfront (Kostopoulou, 2013). In the last three decades, numerous other projects, such as the USS Constellation, Baltimore Convention Center and the National Aquarium, galvanized the strong connection between the waterfront and the Central Business District (CBD). According to the American Institute of Architects (AIA), Baltimore's Inner Harbor is "one of the supreme achievements of large-scale urban design and development in U.S. history" (Millsbaugh, 2003, p. 36).



Figure 27. Aerial photo showing Baltimore's Inner Harbor before development

(Source: Waterfronts in Post-Industrial Cities, p. 74)

4.3.2 The urban design principles of Baltimore's Inner Harbor

The boundaries of this approximately 75-acre area are East Pratt Street to the north, Warren Avenue to the south, Light Street to the west, and East Falls Avenue to the east (see Figures 28 and 29).



Figure 28. Map showing Baltimore Inner Harbor study area
(Source: Google Earth maps)

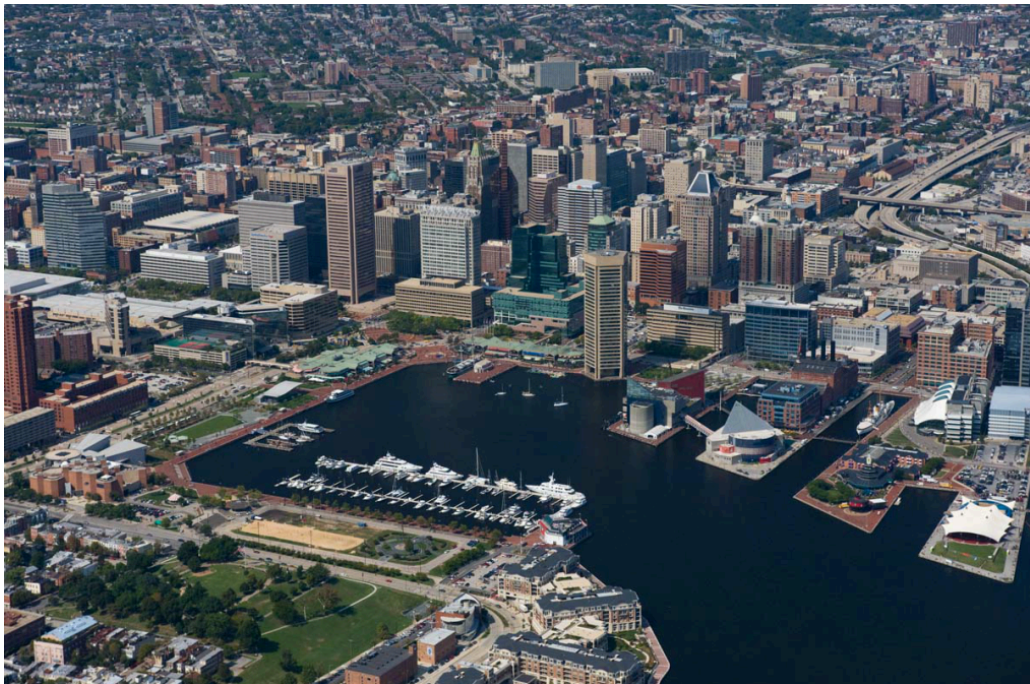


Figure 29. Bird's eye view of Baltimore Inner Harbor today
(Source: http://erictaylorphoto.com/#/aerials/aer_20080923_2842_2)

Diversity: Mixed-use development

This waterfront area features mixed-use development with historic ships, waterfront access, free entertainment and recreational activities promoted by strong political leadership (Kostopoulou, 2013). This area also includes a variety of uses and outdoor amenities that appeal to different age groups. At Pier 5, there are coffee shops, restaurants and a waterfront park connected with a brick promenade system. The National Aquarium located at Pier 4 is an ideal integration of marine life, conveniently located near a variety of fun and interesting tourist attractions, such as a walkway promenade, a children's water playground, shops, and restaurants (see Figure 30). The World Trade Center is a tall commercial building containing many offices on the north side of the Inner Harbor (see Figure 31). The quality of the design and landscape architecture is notable in the commercial and recreational buildings along the waterfront.

The majority of this mixed-use development is within walking distance of the waterfront and creates a pleasant atmosphere along the waterfront area. The new proposal for Baltimore's Inner Harbor, the "Harbor 2.0 Plan", outlines new urban design efforts to strengthen the entire waterfront. These ideas include: (Waterfront Partnership of Baltimore Inc., 2013):

- Creating clear thresholds and entry points to the harbor
- Developing new civic spaces and pedestrian connections within the public realm
- Identifying new destinations and programs
- Integrating green infrastructure systems
- Balancing the need for service and parking



Figure 30. National Aquarium

(Source: Naif Al-Anazi, 2014)



Figure 31. Baltimore World Trade Center

(Source: Naif Al-Anazi, 2014)

Accessibility: Connectivity to adjacent neighborhoods and surrounding areas

Baltimore's Inner Harbor is one of the most successful waterfront revitalization projects in the United States. The key element of this project was to connect the public to the waterfront and to engage citizens and merchants in its rebirth. Today, the Inner Harbor has become a vibrant and successful place for the local community and tourists (Kostopoulou, 2013). In 1973, the Inner Harbor public promenade was completed along the water's edge (Inner Harbor 2, 2013). The promenade along the shoreline served as a design tool to connect the harbor with the public realm (see Figure 32). This promenade created public access to the Chesapeake Bay and promoted walkability as well.



Figure 32. Promenade along the Inner Harbor

(Source: Naif Al-Anazi, 2014)

Distinctiveness: Respect for the historical roots and region's architecture

Within the study area, there is the Pratt Street Power Plant, built between 1900 and 1909 by Baldwin & Pennington architects (Woodyard, 2013). This building was listed on the National Register of Historic Places in 1987, and renovated and adaptively reused as a Hard Rock Café and Barnes & Noble (Woodyard, 2013).

Located on the south side of the Inner Harbor, Federal Hill is a historic park that dates to the War of 1812, has multiple levels of topography and offers panoramic views of the entire harbor. Four historic ships and a lighthouse the USS Constellation, USS Torsk, USCGC Taney, Lightship 116 Chesapeake and Seven Foot Knoll Lighthouse—are located within the study area and are all listed on the National Register of Historic Places (Visit Baltimore, 2015). The preservation of the historic waterfront environment has attracted creative industries which magnifies the unique qualities of the area.

Public-private partnerships (3Ps)

Most of Baltimore's Inner Harbor projects have involved public-private partnerships between the city and downtown businessmen. In 1964, the City Planning Council outlined a \$260 million plan to revitalize 230 acres of the Inner Harbor, and approved a loan of \$12 million and a federal grant of \$22 million to implement this plan (Hanlon, Short, Vicino, 2010). The Charles Center redevelopment project was one of the public-private partnership ventures (Marshall, 2001). The World Trade Center and Maryland Science Center were built with federal and state funding, Harborplace was built by the Rouse Corporation, and the National Aquarium was a city council project (Hanlon, Short, and Vicino, 2010). Total, the private sector funded 75 percent of the new projects (Marshall, 2001).

4.3.3 Results of an urban design principles analysis

The Inner Harbor, a large-scale urban development project, has resulted in a successful economic boom for the city of Baltimore. The redevelopment of the waterfront offers an alternative approach to urban cultural tourism and the regeneration of the urban economy (Kostopoulou, 2013). The revitalized historic waterfront is an attractive tool for the tourism industry. The urbanism and architecture were marketable features of the Inner Harbor, more so than the historic features. The historic power plant has been renovated for commercial use, but most of the buildings near the Inner Harbor feature modern architectural styles. Most of the buildings are privately owned and linked by various outdoor spaces and amenities. Therefore, there are no public restrooms in the Inner Harbor. In order to have successful public spaces and waterfront areas, it is important to include a completed sustainable design by providing all public services, including public restrooms, to accommodate human needs in the public place. William Byrd Park, for example, provides completed restroom services. These public-private partnerships spurred economic development and growth in the tourism industry and have created more than 21,000 jobs in the region (Inner Harbor 2, 2013). The Inner Harbor has become a regional tourism center, generating \$43.3 million for the city of Baltimore and \$58.7 million for the state of Maryland in 2012 (Inner Harbor 2, 2013). According to Longwood's International, 23.9 million tourists visited Baltimore in 2013 and spent \$5.15 billion (Warfield, 2014). Baltimore and Ocean City were the top destinations in Maryland in 2012 (Maryland Office of Tourism, 2014). The chart below shows the summary of tourism destination competitiveness in Maryland based on the numbers of visitors, average travel party size, trip length, spending per trip and top feeder markets (see Table 3) (Maryland Office of Tourism, 2014).

	<i>Maryland</i>	<i>Baltimore</i>	<i>Ocean City</i>
ESTIMATED SHARE OF VISITS	--	31%	13.0%
ESTIMATED PERSON-STAYS	44.8 million	13.9 million	5.8 million
AVERAGE TRAVEL PARTY SIZE	1.8	1.8	2.4
AVERAGE LENGTH OF STAY (DAYS)	1.3	1.2	2.7
AVERAGE SPENDING PER PERSON PER DAY	\$118	\$125	\$138
SPENDING PER GROUP STAY	\$276	\$270	\$894
TOP 3 DMAS OF ORIGIN	Washington, D.C. (32%) Baltimore (15%) Philadelphia (11%)	Washington, D.C. (29%) Baltimore (14%) Philadelphia (13%)	Baltimore (26%) Washington, D.C. (20%) Philadelphia (13%)

Table 3. Top two destinations traveler summary in Maryland

(Source: Maryland Office of Tourism, 2014)

Baltimore is the top destination in the state of Maryland with 31 percent of the estimated share of visitors, and the Inner Harbor is an ideal place for leisure, entertainment and recreational activities, which increase the tourism market in Baltimore. The urban design principles have increased the recreational opportunities and positively affected the character of the Inner Harbor (see Figure 33). The mixed-use development projects have provided effective space for living, visiting and working in the waterfront areas. It also has created a walkable environment by providing the brick promenade along the edge of the water. The accessibility and proximity to the Inner Harbor are among supportive factors that attract people to live close to the harbor, even though Baltimore's population has declined. The chart below shows that the population within a half-mile of the Inner Harbor has increased by 25 percent while the total population for Baltimore decreased 16 percent from 1990 to 2010 (see Figure 34) (HR&A Advisors Inc, 2013).

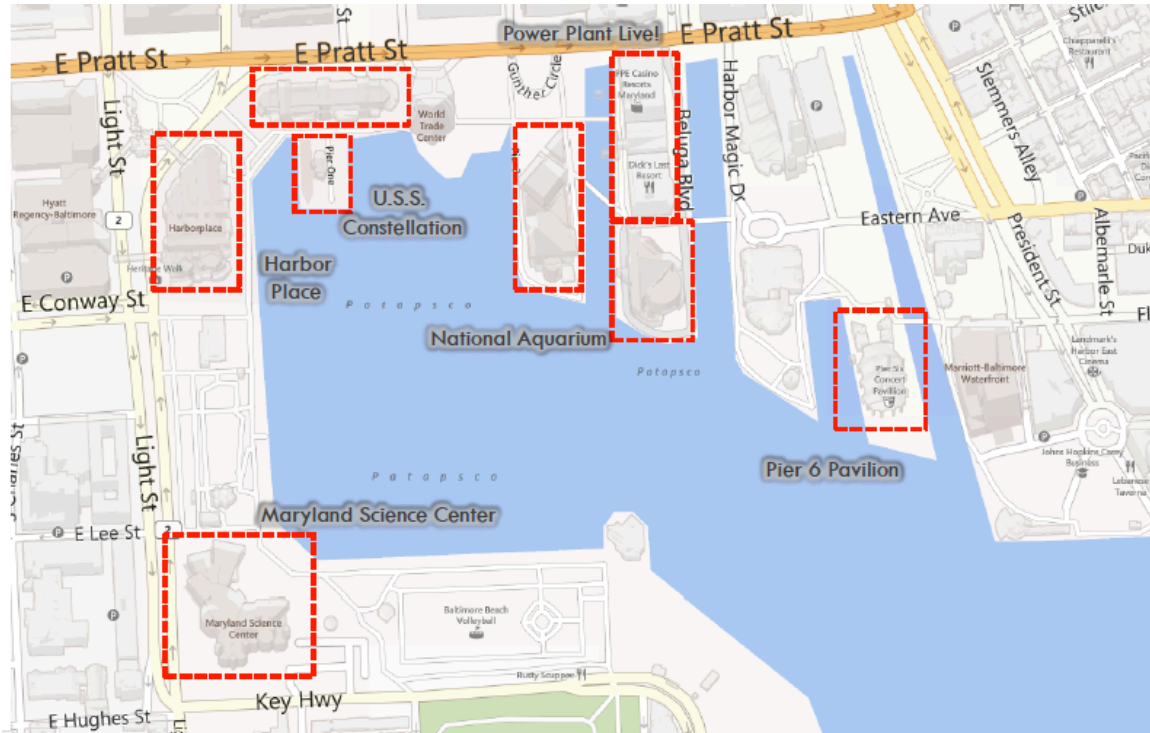
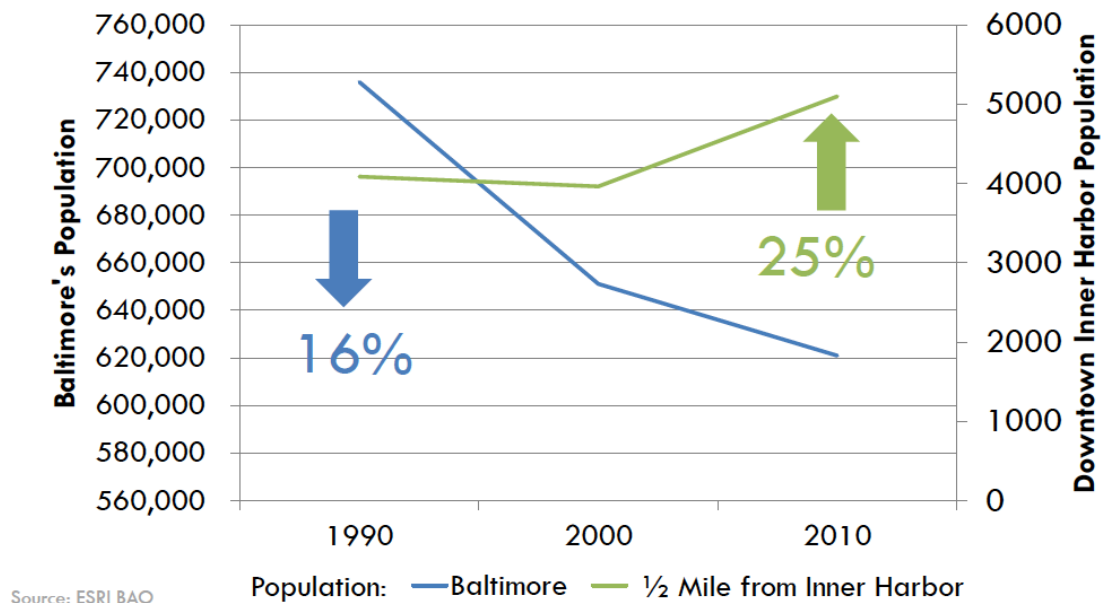


Figure 33. The primary recreation destinations in the Inner Harbor

(Source: HR&A advisors Inc, 2013)



Source: ESRI BAO

Figure 34. Chart shows the proximity of the population to the Inner Harbor within a half mile

(Source: HR&A advisors Inc, 2013)

4.4 San Francisco waterfront, California

4.4.1 Historic background

San Francisco, California, is one of the most important ports on the west coast of the United States. Its history dates back to the Gold Rush in the 18th century (San Francisco Waterfront, n.d). The waterfront was an industrial area with finger piers, railroad terminals, warehouses and military centers that served the troops with supplies during World War II (Port of San Francisco, n.d). On April 18, 1906, a massive earthquake occurred in San Francisco (The Center for Legislative Archives,n.d). This earthquake and resulting fires destroyed approximately 500 city blocks, caused approximately \$500 million in property damages and killed 3,000 people (The Center for Legislative Archives,n.d ; Dunn, 2013).The port's facilities and the piers were damaged and left in poor condition, but two waterfront buildings, the Audiffred Building and the Ferry Building, survived (see Figure 35) (Rubin, 1999 ;The San Francisco Waterfront ,n.d). Another earthquake shook the San Francisco Bay Area in 1989, killing 67 people and causing more than \$5 billion in damages (History.com staff, 2009).

The Board of State Harbor Commissioners adopted a plan for the redevelopment of earthquake-damaged areas, including the port's piers and facilities, from 1908 to 1938 (Port of San Francisco Embarcadero Historic District, 2006). In 1990, the local community worked on an initiative called the "Waterfront Land Use Plan" to revitalize the area (Port of San Francisco, 2015). The port created a master plan that includes mixed-use development and increases maritime operations, public access, recreation and open space along the waterfront (Port of San Francisco, 2015). This plan also proposed some sites for new commercial development to help to stop the deterioration of port property (Port of San Francisco, 2015).

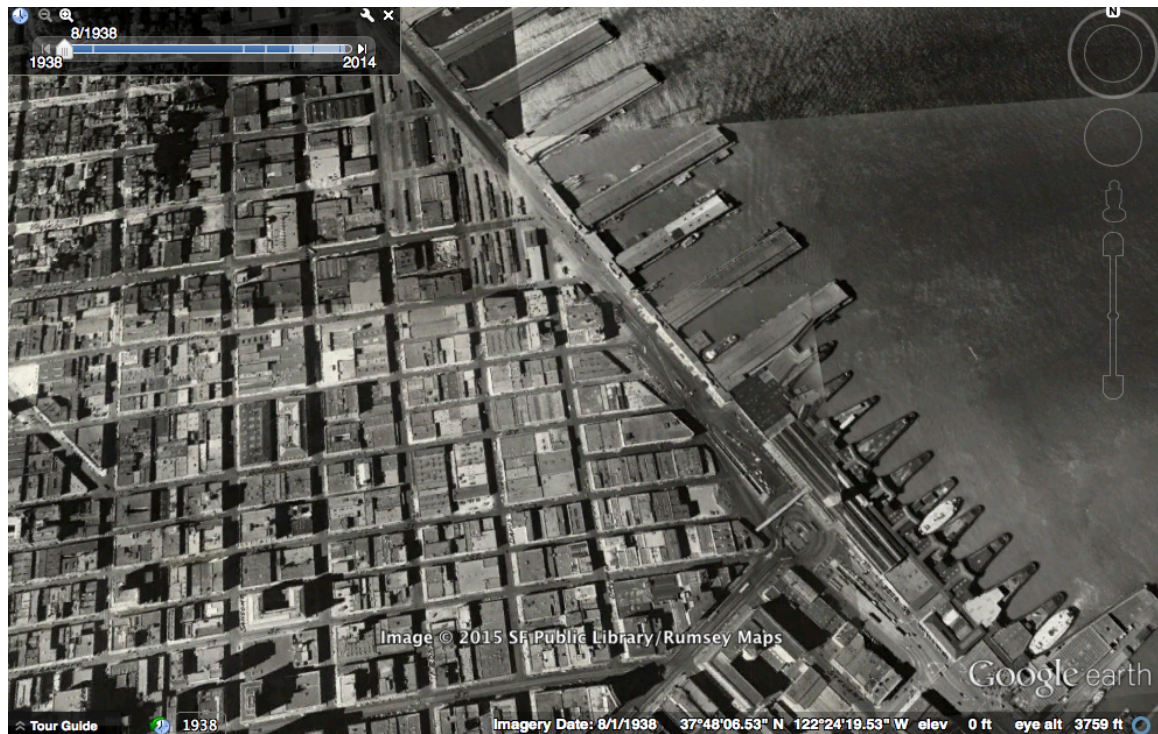


Figure 35. Aerial photo showing San Francisco waterfront in 1938

(Source: Google Earth, Historic Images)

4.4.2 The Urban design principles of the San Francisco waterfront

The boundaries of this approximately 53-acre area are Pier 9 to the north, Pier 14 to the south, Embarcadero Street to the west, and San Francisco Bay to the east (see Figure 36).



Figure 36. Map showing San Francisco Waterfront study area

(Source: Google Earth maps)

Diversity: Mixed-use development

The state of California owned the Port of San Francisco until 1969, when the Burton Act converted the port ownership to local control. A new land-use development strategy for the waterfront was adopted by the city and the San Francisco Bay Conservation and Development Commission (BCDC) (Rubin, 1999). The implemented plans included “the demolition of the Embarcadero Freeway; removal of dilapidated piers and replacement with the Promenade between Mission and Folsom Streets; appropriate balance between maritime and non-maritime activities, public access and open spaces at the Port” (Port of San Francisco Embarcadero Historic District, 2006). Embarcadero became a public place, allowing

the city to transform an industrial zone into a public space along the waterfront area (Gear & Scharnhorst, 2008). The plan also included a large number of public space projects at the water's edge, including (Gear & Scharnhorst, 2008, p. 3):

- A redesigned Embarcadero roadway
- The reintroduction of historic streetcars
- A series of new waterfront parks
- A pedestrian promenade marked by a continuous ribbon of light
- The renovation of Pier 1 and the Ferry Building

Accessibility: Connectivity to adjacent neighborhoods and surrounding areas

The Embarcadero in San Francisco is a great example of a complete street that connects the city of San Francisco with its waterfront. This was not always the case, however. The Embarcadero Freeway, which previously ran through this area, was completed in 1959 to connect the Bay and Golden Gate bridges via the waterfront (Seattle Urban Mobility Plan, 2008). The freeway was a double-decker highway that cut off the visual connection between the downtown and the waterfront (see Figure 37). The freeway was damaged in the Loma Prieta Earthquake in 1989 and was demolished in 1991, even though merchants in Chinatown did not agree with this decision (Seattle Urban Mobility Plan, 2008). Removing the Embarcadero Freeway reconnected the city to the waterfront and freed up land for new development and parks (Preservation Institute, 2007). The Embarcadero was designed as a complete street with bike lanes, a positive environment for pedestrians and a large promenade (see Figure 38) (Seattle Urban Mobility Plan, 2008).



Figure 37. Embarcadero Freeway physically disconnected the city with its waterfront
 (Source: <http://prologispier1.com/loma-prieta-earthquake-damages-embarcadero-freeway/>)



Figure 38. After removing Embarcadero Freeway and redesigning

Source:
http://www.spur.org/sites/default/files/events_pdfs/05.11.2011%20Port%20City%2C%20Mike%20Buhler.pdf

Distinctiveness: Respect for the historical roots and the region's architecture

The Ferry Building, designed by A. Page Brown in 1898, is one of the most significant historic buildings in the San Francisco waterfront (see Figure 39) (San Francisco Waterfront, n.d). Historically, the Ferry Building was the gateway that linked the city with people arriving by train from the East Bay, and was classified the world's second-busiest transit terminal in the 1930s (Bevk, 2012; The San Francisco Waterfront,n.d). At the end of the 19th century, this building featured a long wooden shed with a central tower along the waterfront (Hilyard, 2011). The Ferry Building and Embarcadero Freeway physically separated the industrial waterfront, with its finger piers for loading and storing cargo from ships and rail, and the city. (Hilyard, 2011). The fingers piers were industrial centers for loading and storing cargo from ships and rail (Hilyard, 2011).

After the earthquake of 1989, the damaged Embarcadero Freeway was demolished. Years later, in 2003, the Ferry Building was renovated and revitalized to be a permanent farmers market with its 65,000-square-foot area (The San Francisco Waterfront,n.d). The piers have been adapted into restaurants, offices, retail spaces and attractions for local residents and tourists because the historic piers are an important component of the waterfront revitalization (Hilyard, 2011). “The emergence of the waterfront as a major asset has created a public open space that redefines the edge of the city with a farmers market, marinas, historic trolleys, condominiums, and more. The waterfront is now lively and magnetic, filled with tourists, inline skaters, strollers and people just admiring the view and the setting.” (Rose, 2003, p. 87).



Figure 39. Ferry Building in 1898

(Source: <http://prologispier1.com/san-francisco-history-1849-1909/>)

Public-private partnerships (3Ps)

Within the study area, several historic rehabilitation projects occurred from 2007 to 2013, including Piers 1½, 3 and 5 (Port of San Francisco, 2014). San Francisco's historic Pier 1 was renovated as waterfront conference rooms by a private-public partnership between the Prologis Company and the Port of San Francisco (San Francisco Waterfront, n.d). These projects are great examples of public-private partnerships, and include extensive public-access walkways along the waterfront, new restaurants and cafés, new offices on the upper floors, a water taxi landing and guest boat dock at Pier 1½ and recreational boat berthing at Pier 5 (Port of San Francisco, 2014).

4.4.3 Results of an urban design principles analysis

The removal of the Embarcadero Freeway was a brave decision by the city of San Francisco. This freeway was replaced by a promenade along the bay, reconnecting the city to its waterfront and creating many economic opportunities for the Embarcadero area. The removal of the freeway created space for 3,000 new housing units, 2 million square feet of offices and 375,000 square feet of retail (Gear & Scharnhorst, 2008). As the result of the freeway removal, the real estate prices along the waterfront increased by 300 percent in 1991 (Preservation Institute, 2007). This transformation was a significant move that created the renaissance of the San Francisco waterfront (Preservation Institute, 2007). Indeed, urban design principles organized the framework of mixed-use development and physical connectivity in the San Francisco waterfront.

Numerous historic rehabilitation projects and the development of the Embarcadero attracted 16.9 million tourists to San Francisco in 2013, who spent more than \$9.38 billion at local businesses (San Francisco Travel Association, n.d).

4.5 Charleston waterfront, South Carolina

4.5.1 Historic background

Charleston is the second-largest and the oldest city in the southeastern state of South Carolina (Dataw Island Club, 2015). It was established in 1670 as Charles Towne in honor of King Charles II of England and, in the mid-eighteenth century, underwent several shifts from a colonial seaport to a unique historic city (The City of Charleston, 2015). Charleston's port was the state's primary economic center in the 18th century and the fourth-largest port in the colonies, behind only Boston, New York and Philadelphia (Cooper; Robertson & Partners, 2010). The economic base grew gradually from agriculture into trade and industry (The City of Charleston, 2015). Historically, the trade in indigo, rice, cotton and naval stores were a commercial force in the city. Over time, this trade led to a flourishing maritime commerce. The Navy Yard was constructed in 1904 and increased the development of the city in the 20th century (The City of Charleston, 2015). Charleston's waterfront suffered many transformations, going from an industrial area to an abandoned waterfront area (American Society of Landscape Architects, 2007). Historic Charleston's port facilities became vacant and ruined, as did the adjacent historic neighborhoods, and in the early 1980s, the waterfront was converted to surface parking (American Society of Landscape Architects, 2007). In 1989, Hurricane Hugo struck Charleston and caused over \$2.8 billion in damage, destroying many of the homes in Charleston's historic district and surrounding areas (Brown, 2010). After Hugo, the efforts to rebuild and restore the historic homes were combined with other urban renewal projects throughout the city, as Charleston become an important destination for heritage tourism (International Economic Development Council, 2011).

4.5.2 The urban design principles of the Charleston waterfront

The boundaries of this approximately 12-acre area are Vendue Range to the north, East Elliott Street to the south, East Bay Street to the west and Cooper River to the east (see Figure 40).



Figure 40. Map showing the Charleston waterfront study area

(Source: Google Earth maps)

Diversity: Mixed-use development

The study area is located in part of the French Quarter district, the center of Charleston cultural life, which features residential and mixed-use development (see Figure 41). Within the study area, there are numerous historic houses from the Colonial and post-Colonial eras, art galleries, boutique hotels, a waterfront park, a

harbor club and small shops. Vendue Range Street is located on the north side of the study area and includes a couple of hotels, small coffee shops, an ice cream shop and a restaurant. At the end of Vendue Range Street, there is a public park with multiple fountains that attract families with children. Most of the buildings are approximately three stories, and these heights are comfortable for human scale. The historic character of the waterfront buildings provides a vibrant mix of residential and commercial uses for this area. Historic East Bay Street is a commercial street located in the French Quarter of Charleston. This street includes many commercial shops such as a Wells Fargo bank, Courtyard Art Gallery, Charleston Artist Guild and Wagener Ohlandt Building. The waterfront park provides many recreational activities, such as strolling, jogging, fountains, covered bench swings and a fishing pier with a 400-foot wharf for fishing or relaxation (Urban Land Institute, 2004). The pier provides pedestrian walkways that allow for visitors to walk and watch Ravenel Bridge and huge cargo ships head to the nearby port terminals. The waterfront park has effectively attracted small businesses to the area. Based on the city's zoning map, most of properties are located within a limited business zone.



Figure 41. Residential and mixed-use development adjacent Charleston waterfront

(Source: Naif Al-Anazi, 2015)

Accessibility: Connectivity to adjacent neighborhoods and surrounding areas

The city of Charleston converted the waterfront land into a public park to strengthen the relationship between the city and the historic neighborhoods (SASAKI Associates Inc, 2015). The development of the Waterfront Park combined urban design principles and landscape architecture to create added value and to serve as a symbol of the city's transformation (American Society of Landscape Architects, 2007). The Charleston Waterfront Park is noted for preserving the water's edge and for enhancing waterfront properties for public use (American Society of Landscape Architects, 2007). The Waterfront Park reconnected the city and people to the water a making physical and visual connections to the Cooper River and the surrounding areas (American Society of Landscape Architects, 2007). This link created an active area to strengthen the connectivity to the city's edge and to extend the urban form,

increasing the sense of beauty in the waterfront areas (American Society of Landscape Architects, 2007). The design concept is to provide a social place of natural beauty and to create links between the Cooper River and the historic district. The spacing and rhythm of the waterfront buildings along East Bay Street provides easy access and increases the visual dimension along the waterfront areas. Streetscape improvements are seen along East Bay Street and Vendue Range Street. The park is a positive urban design principle that validated the role of open space in the revitalization of the historic waterfront area. The park also reconnected the waterfront area with French Quarter neighborhood (see Figures 42 and 43). The French Quarter has been flourishing for the last 20 years thanks to the Waterfront Park project (Cooper; Robertson & Partners, 2010).



Figure 42. Charleston waterfront had been used for surface parking before development

(Source: <http://www.sasaki.com/project/123/Charleston%20Waterfront%20Park/>)



Figure 43. Charleston waterfront after development

Source: <http://www.sasaki.com/project/123/Charleston%20Waterfront%20Park/>

Distinctiveness: Respect for the historical roots & architecture of the region

Charleston has a rich architectural history that was significantly shaped by its harbor and ports, and Charleston was a national pioneer in the preservation of historic buildings and neighborhoods (Cooper; Robertson & Partners, 2010). The study area located within Charleston's historic French Quarter district reflects much of Charleston's architectural heritage from the last three centuries. Historic buildings make a great contribution to the cityscape and the Charleston waterfront. The majority of the historic buildings are three stories in height and fit comfortably with the urban pattern in the Charleston historic district. The Old Exchange, also known as the Customhouse, is a historic building located on East Bay Street that was built in the 18th century (Oldexchange.org, n.d). This building was listed as a National Historic Landmark in 1973 (Oldexchange.org , n.d). The Old Exchange building has been renovated, becoming a living museum in 1981 (Oldexchange.org, n.d) . The Farmers and Exchange Bank, a National Historic Landmark, is a great example of Moorish

Revival architecture in the USA- a style which features horseshoe arches and the brownstone façade located in East Bay Street (nps.gov, n.d). In the 1990s, this building was rehabilitated for use as a restaurant (nps.gov, n.d). Spanish motifs and the elaborate plaster decorations are remarkable on historic East Bay Street buildings in the French Quarter of Charleston (nps.gov, n.d). Palm trees and horse-drawn carriage rides are shaped into the historical and natural interactive life.

Most of the buildings in the French Quarter entered the National Register of Historic Places on September 19, 1973 (The National Register of Historic Places, n.d). The South Carolina Historic Rehabilitation Incentives Act (Section 12-6-3535) provides a 10 percent state historic rehabilitation tax credit that can be combined with the 20 percent federal historic rehabilitation tax credit (The State Historic Preservation Office, 2015). The preservation efforts are reflected in the numerous European-influenced brick and stucco houses and narrow cobblestone streets in French Quarter and along the waterfront (see Figure 44).



Figure 44. Historic homes in Charleston waterfront areas

(Source: Naif Al-Anazi, 2015)

Public-private partnerships

Historically, the Waterfront Park was Brown's Wharf and Accommodation Wharf. This land was donated to the city of Charleston in 1976, and Mayor Joseph P. Riley created a waterfront park in this area (Poston, 1997). Charles and Elizabeth Woodward donated land to restore Adger's Wharf and create a small park (Poston, 1997). The master plan for the Charleston Peninsula includes many goals for public and private development to the waterfront areas. In 1990, the city of Charleston completed a seven-acre waterfront park with a 1,200-foot-long promenade along the water's edge (SASAKI Associates Inc, 2015). This park was designed by Sasaki's, with a total cost of \$14 million.

This project opened the opportunity for homeowners and developers to revitalize historic properties adjacent to the Waterfront Park and downtown (see Figures 45-48).



Figure 45. Charleston Waterfront Park

(Source: Naif Al-Anazi, 2015)



Figure 46. View North on Broad Street, from the Old Exchange, Charleston

(Source: Photo by Rkat, Panoramio, 2013)



Figure 47. French Quarter Charleston SC

(Source: Photo by Bobbe Wright, Panoramio, 2013)



Figure 48. Many commercial shops on East Bay Street, Charleston
(Source: Photo by ChasNative, Panoramio, 2005)

4.5.3 Results of an urban design principles analysis

Charleston’s waterfront was abandoned at the end of the 20th century, and the devastation of Hurricane Hugo in 1989 restructured the framework of its urban renewal and development. Historic preservation was an effective tool in the transformation of Charleston’s waterfront through the restoration and adaptive reuse of historic buildings. The waterfront buildings are well preserved and are distinguished by a variety of mixed-use developments in the French Quarter district.

The Waterfront Park is one of the significant projects that created the visual and physical connectivity between the historic neighborhoods and the waterfront. Partnerships between the city of Charleston and the private sector resulted in several historic preservation and urban design projects. As a result of these revitalization strategies, approximately 4.51 million tourists visit Charleston yearly with an estimated economic impact of \$3.22 billion (charleston-sc.gov, 2015). Charleston has received several awards, including “America's Most Friendly City” and also “the most polite and hospitable city in America” by Southern Living magazine (dataw.org, 2015). In all of the USA case studies, the waterfronts all developed in the mid-18th and 19th centuries, and were abandoned in the 20th century.

CHAPTER V - EVALUATION OF SUCCESSFUL URBAN DESIGN PRINCIPLES

5.1 Assessment methodology framework

The communicative planning model was selected as the evaluation tool for this thesis because it endeavors to give a voice to all participants in the decision-making process. The postmodernists classified the communicative approach as a builder of relationships between urban planners and the targeted community so they could express their opinions and concerns about planning problems (Brook, 2002). This electronic questionnaire was designed to solicit the opinions of professionals and practitioners in the disciplines of architecture and urban planning in Saudi Arabia. The aim of this questionnaire is to evaluate urban design principles used in the revitalization of waterfront areas in the USA and to determine to what extent they are applicable in the historic waterfront along the North Red Sea in the KSA. The survey was completed in February 2015.

5.2 Sampling characteristics and mechanisms

Architects, planners and urban designers were targeted because they are key partners in the planning process, and the sample tried to represent a balance between all of the agents in this process. The sample size was 75 participants, who corresponded via email, phone messages, and Twitter. In this survey, the primary question was about a hypothetical scenario: the mayor of your city gives you an opportunity to prepare an urban design plan for its historic district, which is approximately 500 years old and characterized by the following elements:

- The historical value of the buildings.
- The seafront historic area is located on the coast.
- The commercial port is adjacent to the historic area.

- Intensive projects for the restoration of buildings have been initiated by government bodies.
- There is a lack of connectivity between the waterfront area and the historic district because of the presence of a street (its width is almost 82 ft) and a seaport pier.

After the sample population read the design hypothesis, they answered the following questions:

- Will you apply the following urban design principles in the proposed scheme: mixed-use development, connectivity to adjacent neighborhoods and surrounding areas, respect the historical roots and architecture of the region, and public-private partnerships (3Ps).
- What is the most appropriate solution to rectify the interval at the street between the waterfront area and historic districts?
- What is the most appropriate solution to restore the historic visibility with the seaport pier?

5.3 Data analysis and interpretation

The survey frame is designed for identifying and contacting a list of architects and planners in the KSA. As the researcher was a former president of the student council at the College of Architecture and Planning from 2007 to 2009, he had access for a telephone book database for this group. Non-random sampling was conducted to collect data from this focus group. This technique is known as purposive sampling, which aimed to choose a specific population who work in urban planning and architecture in the KSA.

Architects, planners and urban designers have a role in most urban development projects in Saudi Arabian municipalities or related authorities. They also

have an extensive role in the planning and design process. The sample was focused on this targeted group and for the researcher to have accessibility to engage in the questionnaire. Landscape architects, civil engineers, developers and decision makers were not included because the developers and decision makers were SCTA officials and they were conducting the interviews. The responses were captured and converted into a machine-readable format.

In the questionnaire survey, the scenario was used for a hypothetical city, but it shares the same circumstances and planning problems as Yanbu Al-Bahr's historic seafront. This scenario examined how the targeted group made a decision based on this input. The sample was sent to 100 participants – 75 of which responded. The sample was sent to different age groups, and 93 percent of responses were men between the ages of 25 to 35. This result may be because the official statistics indicate that 80 percent of the KSA population is below 40 years old in 2007 (Central Department of Statistics & Information, 2009). Women are main partners in the development and they also were not included. The nature of work in the KSA and the rarity of planning programs for women make their representation very low in the municipal community. There are new trends currently underway to engage the women in engineering tracks, and moreover in the last five years, the new Saudi scholarship program is bridging the gap. This transformation will help the female society to engage in the planning and architecture sector in the near future.

Of those who responded to the survey, 57 percent are architects, 29 percent are planners, and 14 percent are urban designers. Well over half, 61 percent, work in the public sector and 39 percent work in the private sector. In responding to the first question, 74 percent agreed that mixed-use development principles would be applied in the urban design plan proposal, while 17 percent of those surveyed would not apply

mixed-use development in the historic waterfront and 9 percent were unsure (see Appendix. A).

It was noted that 96 percent of the respondents agreed that respect for the historic roots and architecture of the region would be applied in the urban design plan proposal, while 4 percent were unsure. Connectivity to the adjacent neighborhoods and surrounding areas question showed that 88 percent of the sampled population would apply this principle but the rest of respondents would not or were unsure. Seventy-nine percent of respondents agreed that public-private partnerships (3Ps) would apply to the urban design plan proposal while others would not or were unsure (see Appendix A).

Of the sampled population, 73 percent agreed to rectify the interval at the street between the waterfront area and the historic districts to create a completed promenade and corridor. Moreover, 13 percent wanted the street to be preserved as is without any additions, and 14 percent favored other options. Regarding the question about the most appropriate solution to restore the historic visibility with the seaport pier, 80 percent of respondents agreed that developing that seaport pier and connecting it with the historic district was an appropriate solution and 6 percent of the sampled population want the seaport pier to be completely preserved as is without any additions and the rest of respondents preferred using other options (see Appendix A).

5.4 The outcome

The input from sampled population has been positive and represents that successful urban design principles used at the USA waterfronts are applicable in the KSA's historic seafronts along the North Red Sea. The highest percentages of professionals surveyed agreed with the implementation of the design principles used in the United States. These principles have increased economic outcomes as well as

increased achievements in tourism and historic preservation. Additionally, they improved recreational opportunities and created aesthetic improvements in the USA waterfronts. Therefore, the hypothesis that American urban design principles are applicable to the revitalization of historic waterfront areas in Saudi Arabia was proven correct based on the results of the questionnaire.

Natural catastrophes such as the fire in Baltimore in 1904, the earthquake that shook the San Francisco waterfront in 1989 and Hurricane Hugo that struck Charleston in 1989 were indirect reasons to revitalize the historic waterfront areas. The results of the analysis show that Baltimore, San Francisco, and Charleston implemented similar urban design principles to successfully revitalize their historic waterfronts. These principles included mixed-use development, connectivity to adjacent neighborhoods and surrounding areas, respect for the historical roots and architecture of the region, and public-private partnerships. There are four historic seafront cities - Yanbu Al-Bahr, Umluj, Al-Wajh, and Duba - along the KSA's North Red Sea that have the ability and competitive advantage to be tourist attraction centers if the policymakers follow the same procedures of successful urban design principles used in the USA waterfronts.

CHAPTER VI - RECOMMENDATIONS

In the Kingdom of Saudi Arabia, urban design plans for historic seafront areas along the North Red Sea are lacking in the urban system. Therefore, the researcher is working to assist Saudi government planners and SCTA to change the urban design image of the Saudi Arabian historic seafront areas by a set of recommendations.

(D.A.D + 3Ps)

1. The successful urban design principles of the USA waterfronts - including mixed-use development, connectivity to adjacent neighborhoods and surrounding areas, respect the historical roots and architecture of the region and public-private partnerships - should be applied. To be sure, the image of the Baltimore Inner Harbor before its development in the 20th century mirrored some of the images of Saudi Arabian historic seafronts along the North Red Sea in the 21st century.

Diversity

2. The mixed-use development strategy should be used in the Saudi historic seafront areas. This model will result in increased tourism activities and recreational opportunities for the enhancement of the historic area and waterfront access for local and potential visitors (see Figure 49).

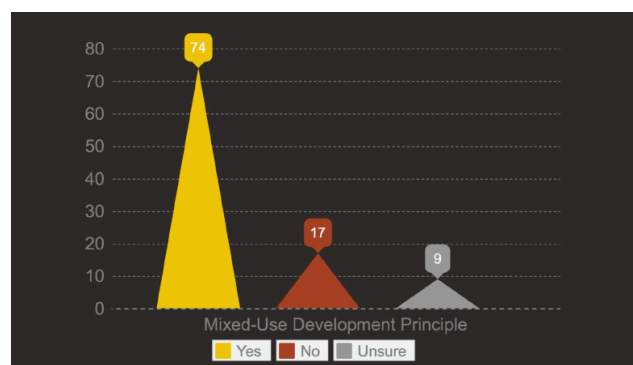


Figure 49. The survey showed that 74 percent of the professionals contacted agreed with the mixed-use development strategy

Accessibility

3. The study recommends that SCTA and the Yanbu municipality foster a working relationship with the Yanbu commercial port. This relationship must re-appropriate the approximately eight acres of land adjacent to the Al-Sur neighborhood for public use, which will increase the physical and visual connectivity between the city's historic core and the sea (see figures 51-52).



Figure 50. Examples of the success of this strategy are seen in the removal of Embarcadero Freeway in the San Francisco and the transformation of surface parking into a waterfront park in Charleston.



Figure 51. The future perspective to restore the historic visibility with the seaport pier

Distinctiveness

4. Support should be built between residents and businessmen to work together to encourage the port authority to change its current program of industrial growth along the historic waterfront. For the last decades, the port has taken historic buildings along the waterfront, impairing the visual connection between the historic core and the seafront.

Public-private partnerships (3Ps)

5. A public-private partnerships approach should be implemented. The majority of the Yanbu Al-Bahr historic seafront projects have been completed by the SCTA; the private sector's role in Yanbu Al-Bahr's projects has been minimal (see Figure 53). The public-private partnerships of the USA waterfronts are a great strategy and this approach represents approximately 50 percent to 70 percent of projects.

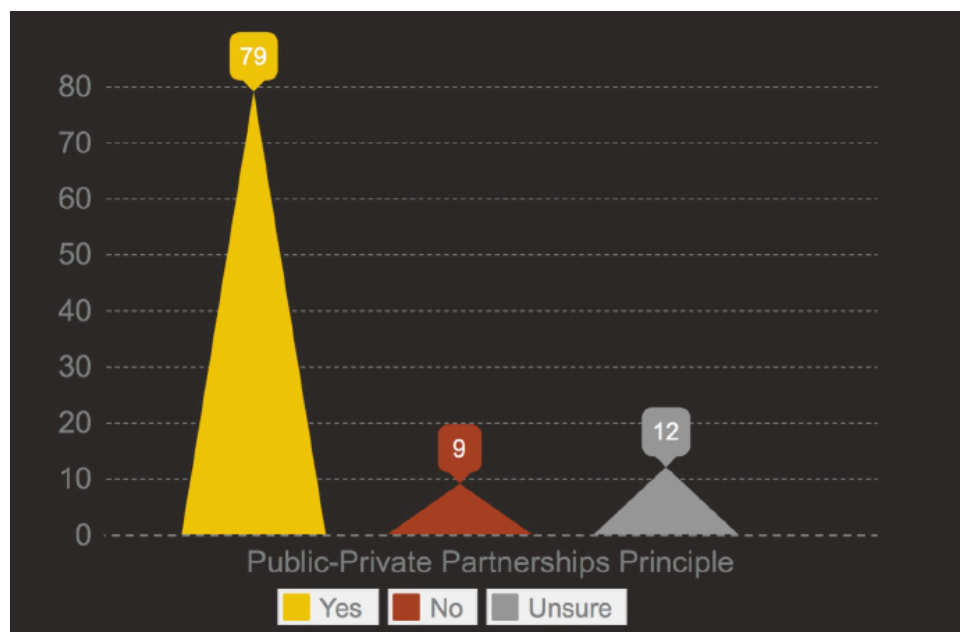


Figure 52. The 79 percent of the Saudi architects and planners who responded to the survey encouraged using the strategy of public-private partnerships in the seafront projects.

Public-private partnerships (3Ps)

6. The study recommends that the Saudi government provide stakeholders with financial incentives for the historic revitalization of Yanbu Al-Bahr seafront properties, similar to the USA historic tax credit program (see Figure 50). This program aims to encourage homeowners and investors to participate in the rehabilitation of historic buildings.

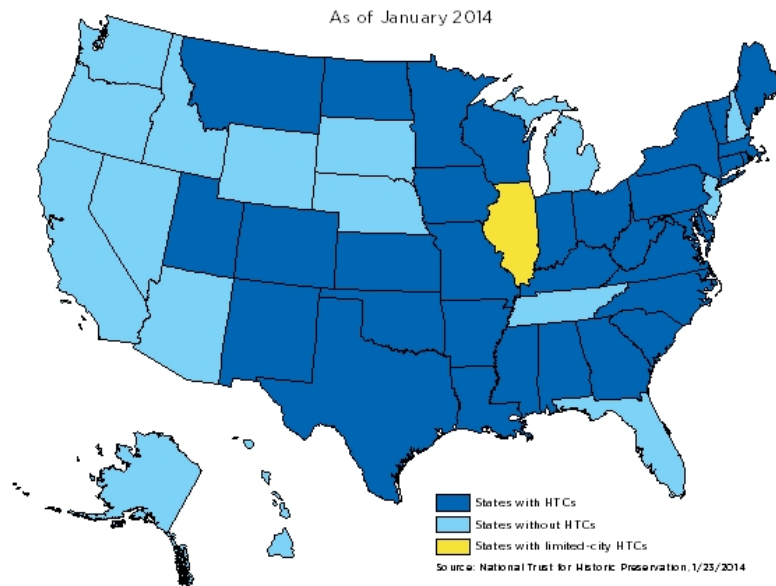


Figure 53. State historic tax credits (HTCs) in the USA.

7. A strategic unification program and a strong mentoring program to facilitate a better working relationship between all the sectors should be implemented to create a unified vision and goals for the Yanbu seafront. Poor coordination exists between the SCTA and relevant agencies related to the Yanbu Al-Bahr historic seafront projects, such as the port authority, Yanbu municipality and other public government services especially when it relates to implemented policies.

8. Research in the field of urban design should be encouraged in Saudi Arabia to provide access to information and financial support (see Figure 54). There are no financial support programs from any government agencies to fund this research, and access to successful urban design and revitalization projects involves traveling to locations to gain information and make first-hand observations.

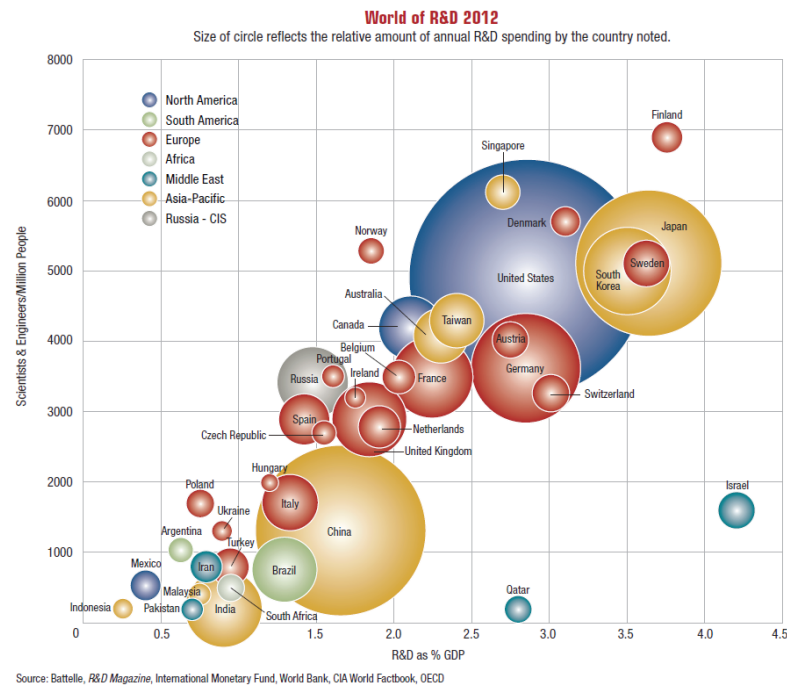


Figure 54. Research and development expenditure (percent of GDP) is very low in the KSA

9. Continuous professional development research and an in-depth study of the historic seafront along the North Red Sea in Saudi Arabia is recommended. There is a lack of research in the field of historic seafronts along the North Red Sea and limited information in Arabic and English. This thesis is one of the first to study historic seafront cities in the KSA, and planners and researchers should be encouraged and supported to continue this work and develop additional strategies for the future.

The implementation of the urban design principles observed in the United States, the implementation of strategic partnerships, and continued research and professional development will enhance lives and tourism will flourish, bringing an economic boom to the historic North Red Sea's historic waterfront communities.

Evaluation of **SUCCESSFUL URBAN DESIGN PRINCIPLES**



Assessment Methodology Framework



COMMUNICATIVE PLANNING MODEL

The postmodernists classified the communicative approach as a builder of relationships between urban planners and the targeted community so they could express their opinions and concerns about planning problems (Brook, 2002).



1

To evaluate urban design principles used in the USA in the revitalization of waterfront areas

2

To determine to what extent they are applicable in the historic waterfront along the North Red Sea in the KSA

The survey was
completed in



Electronic Questionnaire

Survey



This electronic questionnaire is designed to solicit the opinions of **PROFESSIONALS & PRACTITIONERS** in the disciplines of architecture and urban planning in Saudi Arabia.

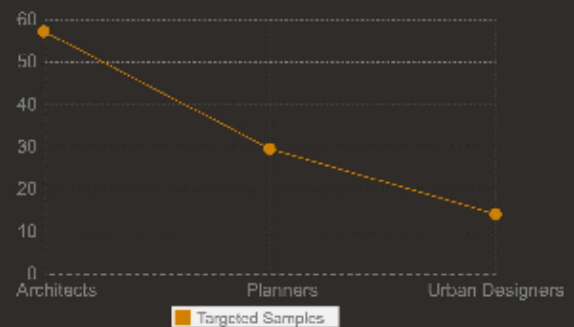
Sampling Characteristics and Mechanisms

PARTICIPANTS



Architects Planners Urban Designers

SAMPLING CHARACTERISTICS




There were 75 survey participants; 57% are Architects, 29% are Planners, and 14% are Urban Designers.

HYPOTHETICAL SCENARIO

The Mayor of your city

gives you an opportunity to prepare an urban design plan for its historic district which is approximately 500 years old and characterized by the following elements:

- 
- 1. The historical value of the buildings**
 - 2. The seafront historic area is located on the seacoast**
 - 3. The commercial port is adjacent to the historic area**
 - 4. Intensive projects for the restoration of buildings have been initiated by government bodies**
 - 5. There is a lack of connectivity between the seafront area and the historic district**

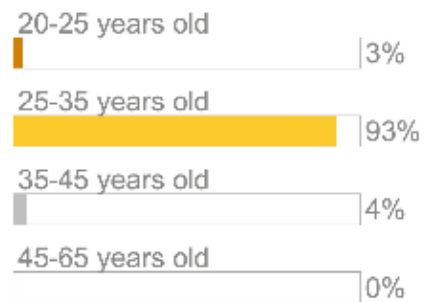
Data Analysis and Interpretation

SECTOR



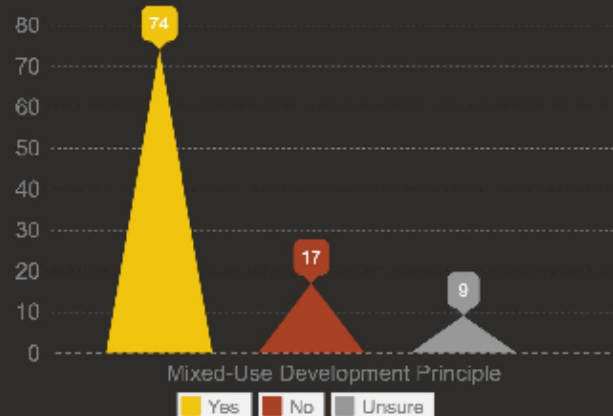
Public Sector (61%) Private Sector (39%)

AGE

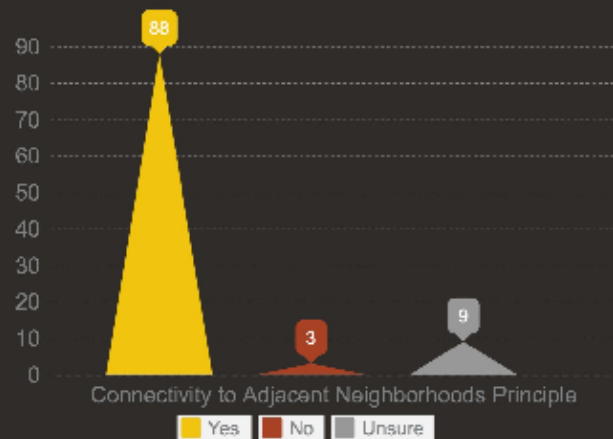


DESCRIPTION OF CHARTS

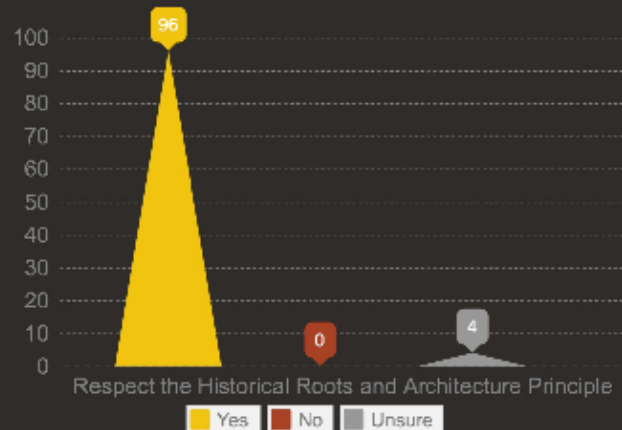
All of them were men who are 25 to 35 years old, representing 93% of the responses of this age group, and 61% work in the public sector and 39% work in the private sector.



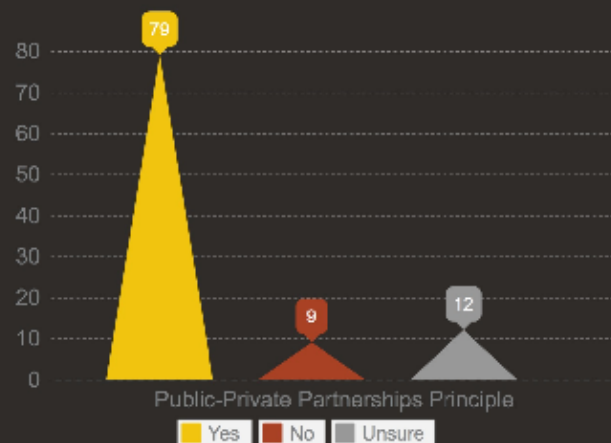
Q.1 Will you apply Mixed-Use Development principle in the proposed scheme ?



➤ **Q.2 Will you apply connectivity to adjacent neighborhoods and surrounding areas principle in the proposed scheme ?**



➤ **Q.3 Will you apply respect the historical roots and architecture of the region principle in the proposed scheme ?**



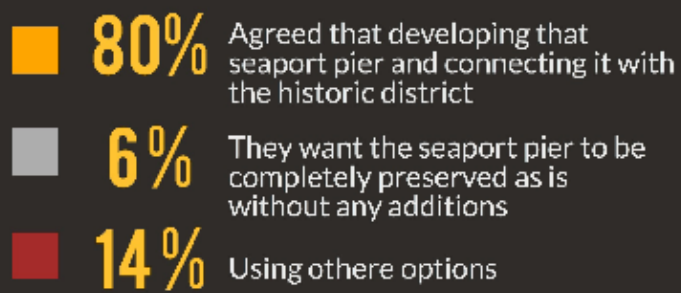
➤ **Q.4 Will you apply Public-Private Partnerships (PPPs) principle in the proposed scheme ?**

Data Analysis ▼

- **73%** Agreed to rectify the street and to create a completed promenade and corridor
- **13%** They wanted the street to be preserved as is without any additions
- **14%** Other options



➤ **Q.5 What is the most appropriate solution to rectify the interval at the street between the seafront area and historic districts?**



➤ **Q.6** What is the most appropriate solution to restore the historic visibility with the seaport pier?

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