



Proceedings of the International Conference
Preventive and Planned Conservation
Monza, Mantova - 5-9 May 2014

I contributi presentati al convegno restituiscono un'articolata panoramica di riflessioni e di casi studio, in cui emerge come filo conduttore la capacità di esprimere una visione di lungo periodo e di proporre una virtuosa integrazione fra strategie, spesso innovative, di conservazione e di valorizzazione.

PPC Conference 2014 è una delle attività di comunicazione e divulgazione previste dell'ambito dei Distretti Culturali "Monza e Brianza" e "Le Regge dei Gonzaga", esperienze che testimoniano come il patrimonio storico architettonico costruito possa ricoprire un ruolo nuovo e determinante nelle dinamiche di sviluppo locale.

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- 1 La strategia della Conservazione programmata.
Dalla progettazione delle attività alla valutazione degli impatti.
- 2 **Sguardi ed esperienze sulla conservazione del patrimonio storico architettonico.**
- 3 Protezione dal rischio sismico.
- 4 Metodi e strumenti per la prevenzione e manutenzione.
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A cura di **Stefano Della Torre**
Curatela editoriale **Maria Paola Borgarino**



Sguardi ed esperienze sulla conservazione del patrimonio architettonico

NARDINI EDITORE



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**POLITECNICO
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Sguardi ed esperienze sulla conservazione del patrimonio storico architettonico

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Sguardi ed esperienze sulla conservazione del patrimonio storico architettonico



A cura di **Stefano Della Torre**
Curatela editoriale **Maria Paola Borgarino**

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SAFEGUARDING HISTORIC URBAN WATERFRONT IN THE DEVELOPING COUNTRIES. MOSUL OLD CITY AS A CASE STUDY

Emad Hani Ismaeel, Nahith Taha Alkaymaqchi, Mumtaz Hazim Aldewachi

Mosul University, Coll. Of Engineering, Department of Architecture

Abstract

Waterfront redevelopments are still popular and part of the planning agenda in most countries. However, to cities on water of the developing countries, urban waterfront redevelopment is still mostly restricted with a range of strategy matters, questions and difficulties.

In this paper, the concept of Preventive and Planned Conservation based on the ten basic guidelines drawn by the Centre for Cities on Water in Venice are adopted to assess the proposals for waterfront of Old Mosul as prepared in Old Mosul Renewal Plan in order to make a comprehensive image of the current situation.

This paper attempts to situate waterfront of Mosul old city within a theoretical framework based on global trends. It aims to discuss the relationship between historic urban fabric and the water environment. It seeks to shed light on various approaches that were adopted to develop this river front. The relationship between the structure of Mosul city and its river front is regarded as a major criterion in evaluating these approaches and to conserve the main features of the urban scene.

Due to the historical amassing layers that formed by construction, ruination and reconstruction sequences, cities become the essence of diversity, invoking the raising of new urban forms and contribute in the creation of built heritage. In many countries around the world, waterfront conservation demands an array of trends that are in the progression of transformation the facade of cities on water. Urban waterfront redevelopment in cities on water of the developing countries is still generally constrained with a variety of strategy issues, problems and obstacles.

Mosul's river front represents the most ancient part of the city, with a unique urban panorama. A distinctive skyline could be observed through the river front. The near-water region of Mosul bears historical memories, demonstrates extensive heritage aspects, representing a composite integrated structure

that associated with the typical running of city functions. The problems and the potentials of Mosul waterfront traditional region are unparalleled and present unique planning and management challenges.

Urban Waterfront in the Historic Cities

Urban waterfront redevelopment is regarded as the most remarkable phenomenon all over the world, particularly in the last three decades. This following the decline of waterfront industrial areas and old harbour sites in many cities in the second half of the 20th century. According to Bruttomesso, waterfront revitalization is defined as a “genuine urban revolution” (Bruttomesso 1993, 10). In many cities, Waterfronts had been subjected to the most radical urban revitalization during the 20th century, which includes transformation in physical layout, function, and social pattern. Such attempts offer great opportunities to urban development projects. Here, the issue integration with the existing urban fabric became so urgent (Costa, 2002).

The most obvious attempt within this field has been achieved by the Center for Cities on Water in Venice, with a twenty-year of research and monitoring project, so a comprehensive image could be constructed with a multidisciplinary contribution. Internationally, this image become a general guideline for all waterfront redevelopment, which includes:

Principles for a Sustainable Development of Urban Waterfront Areas¹:

- Secure the quality of water and the environment which is a prerequisite for all waterfront developments. The municipalities are responsible for the sustainable recovery of derelict banks and contaminated water.
- Waterfronts are part of the existing urban fabric and should be conceived as an integral part of the existing city and contribute to its vitality, since it is a part of the urban landscape and should be utilized for specific functions such as waterborne transport, entertainment and culture.
- The historic identity of water and city gives character and meaning, hence, the preservation of the industrial past is an integral element of sustainable redevelopment.
- Mixed use is a priority by offering a diversity of cultural, commercial and housing uses. Housing neighborhoods should be mixed both functionally and socially.
- Public physical and visual access is a prerequisite, and public spaces should be constructed in high quality to allow intensive use.

- Planning in public private partnerships speeds the process, that it guarantee the quality of the design, supply infrastructure and generate social equilibrium, and to insure knowledge of the markets.
- Public participation is an element of sustainability and cities should benefit from sustainable waterfront development not only in ecological and economical terms but also socially.
- Waterfronts are long term projects that need to be redeveloped gradually so the entire city can benefit from their potentials. They are a challenge for more than one generation.
- Revitalization is an ongoing process. All master planning must be based on the detailed analysis of the principle functions and meanings the waterfront is concerned. Plans should be flexible, adapt to change and incorporate all relevant disciplines.
- Waterfronts profit from international networking , needs the involvement of professionals of many disciplines, and the exchange of knowledge in an international network which offers both individual support and information about the projects.

Since waterfront revitalization is a global phenomenon, all world cities experienced a similar process in a different time period. (Craig-Smith & Fagence 1995, 99). Basically, they were seeking for same purposes. Although every project has their own objectives depending on local conditions, they share some common goals such as redefinition of waterfront's position in the urban context, remaking the urban image and regeneration of the economy.

International Experiments on Developing Historic Waterfronts

When different cases of waterfront redevelopment are studied, it becomes clear that one of the main objectives of these operations is to obtain a high qualitative level, both in terms of the physical-functional aspects as well as the environment as a whole. The following cases are selected taking in consideration the variety of problems due to many reasons related to economical, social, historical and political factors.

- Amsterdam

The intricate inner city of Amsterdam, founded on the banks of the River IJ in the twelfth century, struggles to accommodate contemporary uses within its historic fabric. Because of this, Amsterdam is developing as a multi-polar city with different functions in different areas. The central aim for redevelopment

of the River Ij was to strengthen the prominence of the inner city, and to re-establish a relationship between Amsterdam and the Ij.

Waterfront redevelopment in Amsterdam occurs without a comprehensive plan. Rather, waterfront development is opportunistic and strategic. Areas that become vacant and free for development and do not require the construction of an entirely new urban infrastructure are used to advantage. This type of strategic intervention has had some positive results. The public support for this waterfront project has been relatively positive despite the enormous intervention in the area. Community organizations, the business community, and planning professionals have generally been supportive of the approach and the plans.

Housing is the major component of all development on the Ij-bank, and social housing equates to 40 percent of this. This housing, provided by the government, in many cases led the development of the area. Private residential development is encouraged because of the high quality of the social housing provided. In a densely populated city such as Amsterdam, it is desirable to put limits on the use of land. A century ago, the city democratically decided on a land-lease system. The city leases land but remains the owner of the property. In this way, the increased value of the land benefits the entire community and, in addition, prevents speculation. This allows the city to construct affordable housing in very desirable locations on the waterfront. This active land policy is an important instrument in determining rents and sale prices of units and avoids the unilateral composition of neighborhoods that might otherwise occur in a "free market" system.

The water uses are extensive. In the former inner docks, the space is used for houseboats, barges, historic ships, tour boats and water transportation. On the Ij, the nautical demands for the long-haul trade influence the design of the quays to accommodate sea and river cruise ships. The canal shipping trade is getting its clearance places, passage harbors have to be able to accommodate sea-sailing ships and historic sailing ships that go to the Zuyder Zee, while salon boats must be able to tour. In a few years, the Central Station commuters will be able to transfer quickly from a train to an express boat, to go to a concert or a workshop located somewhere along the Ij (Fig. 1).

- *Havana*

In the mid-1990s, tourism became a significant source of revenue for Cuba. The Master Plan for the Comprehensive Revitalization of Old Havana was set up at the end of 1994, at the request of the City Historian's Office. The inten-

tion of the plan was to study the problems of the historic center and propose the best alternatives for its renovation. The Spanish Agency for International Cooperation was a consultant and partial financial supporter of these initiatives. Havana bay has suffered from environmental pollution for some time. Currently there is a program with the United Nations Development Program/Global Environment Facility (UNDP/GEF) to reduce water pollution in the bay. Urban and industrial developments surround Havana bay, and these have a major impact on water quality.

The prime piece of Havana waterfront is the Malecn. The Malecn waterfront is almost seven kilometers long and links old Havana with the west through Centro Habana and Vedado. Issues of preservation and the appropriateness of development are critical on the Malecn. It was here that Sert proposed his massive intervention, which would have significantly altered the character of the Malecn skyline. Planning authorities are currently studying the area to understand if high-rise development is appropriate. The issue, given the historic nature of the area, is how new commercial developments might situate themselves within the fabric of the city. The development would be financed by income generated by new real estate investments in what would undoubtedly become one of Havana's prime locations.. What Havana needs is a way to conceptualize the identity of the city in such a manner as to prioritize the manipulation of the old fabric and the integration of the new. This would be well served by small-scale incremental approaches to the development of the city. Approaches that would suit the economic reality of Cuba and be flexible enough to adapt to changing circumstances (Fig. 2).

- *Ahmedabad*

Ahmedabad was established on Sabarmati river in 1411. Sabarmati has always been important to Ahmedabad As a source for drinking water, As a place for recreation and many other activities. Gandhiji built his ashram on the bank of Sabarmati in Ahmedabad. And yet, Sabarmati was abused and neglected. It became a place to dump garbage. Storm water drains spewed untreated sewage into the river. Sewage from the slums flowed directly into the river. Haphazard and dull development came up along the riverfront. The river became inaccessible to the public. The Ahmedabad Municipal Corporation AMC created a wholly owned company to develop the Sabarmati riverfront. Proposal for Sabarmati Riverfront Development 1998 includes:

- Physical Features of the River.
- River Hydraulics.

- Land Reclamation and Embankments.
- Land Ownerships.
- Water Retention.
- Ground Water Recharge.
- Land Use and Road Network.
- Infrastructure Services.
- Resettlement and Rehabilitation.
- Implementation Strategy.
- Project Costs and Revenue Potential.
- Financing , Structure of the SRFDCL.
- Development Management (Fig. 4).

The aims of the project are:

- Make the riverfront accessible to the public.
- Stop the flow of sewage, keep the river clean and pollution-free.
- Provide permanent housing for riverbed slum dwellers.
- Reduce risk of erosion and flooding in flood prone neighborhoods.
- Create riverfront parks, promenades and ghats to enjoy the water.
- Provide Ahmedabad with new cultural, trade and social amenities.
- Revitalize riverfront neighborhoods, rejuvenate Ahmedabad.
- Generate resources to pay for all of the foregoing.
- Stitch together East and West Ahmedabad.
- Create a memorable identity for Ahmedabad (Fig. 3).

	Principle	Amsterdam	Havana	Ahmadabad
1	The quality of water and the environment	●	○	●
2	Integration with the existing urban fabric	●	○	○
3	The historic identity	●	●	○
4	Mixed use	●	●	○
5	Public access	●	○	●
6	Public - private partnerships	●	○	●
7	Public participation	●	●	○
8	Long term projects	●	●	
9	Re-vitalization	●	●	●
10	The exchange of knowledge in an international network	●	●	●

Tab. 1 - An assessment of the three cities experience in waterfront development.

As it could be seen in Table.1, Amsterdam has achieved all of the ten basic guidelines with high efficiency, Havana, and due to many economical and environmental challenges has a lot of work to do, which high percentage of it is related to the nature of political regime. In Ahmedabad, an ambitious plan is achieved, but still the result of implementation not completed and to be assessed.

Preventive and Planned Conservation (PPC)

Preventive conservation is “all measures and actions aimed at avoiding and minimizing future deterioration or loss” (ICOM-CC, 2008). It is about avoiding damage or reduce its speed, understanding the risk that may cause the damage (Van Balen, 2013). It aims to preserve historic fabric avoiding or minimizing restorations. It requires care, knowledge and understanding, that is questioning and rethinking even those meanings which are usually accepted. Therefore it is a way to debate and to unlearn (Della Torre, 2009). Three levels of prevention are defined, to avoid the causes of damage; to monitor in order to get an early detection of the symptoms of damage; to avoid that damage in-

creases or create other damage once it is present (Van Balen, 2013). Preventive conservation is a natural development of the discipline of conservation. It utilizes the scientific and aesthetic principles of conservation to eliminate or modify conditions that foster deterioration, and includes any measures that prevent damage or reduce the potential for damage or loss (Texas Tech University, 2010).

While, **Planned conservation** is beside maintenance and monitoring, it is merging a large scale reduction of risks and a careful organisation of daily activities in building sector. It means setting a totally new scenario, posing questions about strategies and links between preservation activities and local development processes (Della Torre, 2010). It requires continuous education: new techniques enable to maintain even weak stones in polluted environment. New processes enable to prevent decay, or to perform early detection in order to minimize damage. It is the main way to make the investment on built cultural heritage more effective for a local development coherent with knowledge economy models (Della Torre, 2009).

PPC principles & Urban Waterfront Redevelopment

For safeguarding the built heritage, in general, three prevention levels are needed (Van Balen, 2013):

- External agents are difficult to control, especially when referring to building envelope, primary prevention therefore often “limited” to **managing the (most adapted) use**, besides **awareness**.
- **Condition survey** is a typical secondary prevention practice,
- **Prevention activities** to avoid the propagation of damage, which may include **maintenance**, that should be as less intrusive as possible, and It should allow for continuing **monitoring**.

Planned preservation that based on **information management, regular maintenance and control of environmental factors** is less expensive and more cost efficient (Della Torre, 2010). It requires **an initial investment** for setting up the plan, **an information system**, and a **network of competences**. That is, a cost of soft activities which are required by the strategy but which do not act directly on the building (Della Torre, 2010).

According to (Della Torre, 2009) “Preventive conservation and monitoring” stress some themes, like:

- **Care**: Planned Conservation implies daily care by different participants, it means high quality in any phase of the process.

- **Knowledge:** that goes beyond information. Planned conservation is a circular process pivoting around growing knowledge.
- **Understanding :** Planned conservation requires a long and quiet dialogue with the monument, so that refers less to the sense of sight, and more to listening, and understanding peculiarities.
- **Technologies:** Planned Conservation means monitoring and maintenance, so that there is a lot to do with new and traditional techniques.
- **Information technology** are of crucial importance to make some targets feasible. Planning requires data filing and data management.
- **Long-term vision** is needed to handle topics like sustainability.
- **Integration:** regarding to the Amsterdam Declaration, planned conservation requires a wide commitment to integrate resources, rules, attitudes.
- **Cooperation at regional level :** Conservation policies are more effective when they refer to a well defined territory, a “region” where it is possible to manage integration.
- **Endorsement by the people:** getting people involved is critical aspect towards preventive conservation.

Aforementioned, Preventive and Planned Conservation is a management strategy founded on: a long run vision, which includes carrying out of scheduled checks, preventive actions and few interventions; and on a fine integration between conservation and valorization. It concerns on the risk evaluation and to the mitigation of decay motives. It encompasses actions and procedures that seek to extend the life of a building by eliminating or slowing its deterioration as much as is possible. Various aspects are vital for understanding and implementing PPC: understanding of good management techniques, of the micro environment, and of basic materials science.

Thus, a correspondence between the main aspects of the “Principles for a Sustainable Development of Urban Waterfront Areas (SDUW)” and “Principles of Preventive and Planned Conservation (PPC)” could be highlighted as shown in Table 2:

	Principles for a Sustainable Development of Urban Waterfront Areas- SDUW	Principles of Preventive and Planned Conservation-PPC
1	The quality of water and the environment	<ul style="list-style-type: none"> - Care - Control of environmental factors - Prevention activities - Condition survey - Regular maintenance - Continuing monitoring
2	Integration with the existing urban fabric	<ul style="list-style-type: none"> - Integration
3	The historic identity	<ul style="list-style-type: none"> - Understanding
4	Mixed use	<ul style="list-style-type: none"> - Managing the most adapted use
5	Public access	<ul style="list-style-type: none"> - Endorsement by the people
6	Public - private partnerships	<ul style="list-style-type: none"> - Endorsement by the people - Awareness
7	Public participation	<ul style="list-style-type: none"> - Cooperation at regional level
8	Long term projects	<ul style="list-style-type: none"> - Long-term vision
9	Revitalization	<ul style="list-style-type: none"> - Cooperation at regional level - Integration
10	The exchange of knowledge in an international network	<ul style="list-style-type: none"> - Knowledge - Information technology - Information management

Tab. 2 - The aspects correspondence between principles both of SDUW & PPC.

The Case Study - Old Mosul River Front

In the aftermath of the fall of Assyrian Empire in 612 BC, the west bank inhabitants of the river Tigris congregated at the remains of an ancient Assyrian fortress, which used to guard Nineveh -the Assyrian capital. This settlement would later become the city of Mosul, which is today the second largest city in Iraq. Arab Muslims conquered the city in 638 AD, and the city was re-designed according to Islamic instructions. Mosul is fairly representative of medium-sized cities in the Middle East with a long urban tradition playing a considerable role in the region of which they are a part. Mosul creates its architectural and urban identity, which is characterized by the compact urban fabric with narrow and tortuous alleys and the prevalence of the inner courts as a response to climatic, social, and cultural circumstances (Fig. 5).

Mosul Riverfront

With a distinctive urban panorama and exceptional skyline, riverfront is the most ancient part of the Mosul city. The river Tigris represents the main nature feature of the city, in both recreational, social, economical and environmental aspects, beside the historical memories and extensive heritage of its districts. It is a source of drinking water, transportation routes and place for swimming and recreation in hot summer period. Today this is not the case, many problems arise which demand intelligent planning solution and represent a huge management challenge (Fig. 6, 7).

Urban Renewal Plan for Mosul Old Town ²

The Mosul Old Town Urban renewal plan will guide the development of renewal and conservation activities within MOT over the next 25 years. The Plan outlines goals, strategies and policies that will aid achieving the vision, and identifies Action Plans that will minimize or solve issues and problems faced by the Municipality of Mosul. Hopefully, the Plan will not only be useful for those involved in the planning and conservation of Mosul Old Town, but can set an example that can be used in other Iraqi cities that are rich in Urban Heritage.

One of the key objectives of the environmental action plan is to protect and improve the Natural River as the Main Ecological Corridor Within the Territory of Mosul: The Tigris River and its riparian ecosystem represent a fundamental component of the ecology of Mosul. It's ecological role is to facilitate the movement and migration of species towards a north-south Axes within the territory, where fragmentation, isolation and barriers take place.

A guideline to achieve such goal is the renovation of the river banks through the creation of recreational areas and tree lined walking routes in order to create an aesthetically pleasing old town waterfront, and at the same time protect the environment by creating a natural filter against urban activity disturbances. Also, individuation of nesting habitats and the creation of natural barriers, like grove of reeds or tree-lined areas, in order to isolate and preserve them.

- Riverfront Boundary

The riverfront is an area characterized by vast empty spaces. In particular, two large car parks are present in the area - one adjacent to the old bridge, and one in the northern zone that is also utilized as a warehouse/deposit car park.

- *Detailed Plan - RF01*

The present undeveloped area is sloping from the internal road, which is on an incline towards the river. In this place, a new type of building could be developed. This would be different from the characteristic ones of Mosul in terms of building height, type of ground attack, presence of alleyways and small squares, commercial frontages and internal courts. At the same time, it is necessary that all the new buildings are within easy reach by car, and that it is possible to park near the dwelling, shop or hotel. The area could be developed with a high percentage of tourism structures (hotels), but also with private residences, and service and commercial structures. The topography of the lot sloping towards the river permits a wonderful view overlooking the river from all the buildings. The route network planned permits frequent connections in an orthogonal direction to the river, between the riverfront promenade and the internal road.

A landmark building could be located at the far north of the riverfront in proximity with the north road, while a park area could be developed more to the south with the capacity of linking to other more internal park spaces.

- *Detailed Plan - RF02*

The area in proximity to the old bridge has a great strategic importance simply in terms of its position: its closeness to the main axes, to the river and to the souk zone. A link area of this importance requires that we create within it a significant building, like a big symbolic public building, maybe a museum or library. The circumstantial plan defines the position of this new monument-landmark that could be defined as a new "outline" built from the area pertaining to the building, which defines an inner and outer part that could be put to commercial use.

- *Detailed Plan - RF03*

This area is located in the middle of the riverfront between the old bridge and the north road. In this case, the detailed plan gives suggestions regarding the work necessary for the restoration of the existing urban grain, with regard to both the physical characteristics and the use destinations.

The plan gives indications on the position of the commercial frontages, on the possibility of opening up the private courtyards for public use, with possibilities of commercial use. Indications are given for the conservation of the building, in accordance with the intervention degrees estimated by the specific

plan. In particular, according to the specific role of this part of the town, the plan gives indications about the touristic use of the buildings.

Discussion

Its seen in proposals presented by Old Mosul Renewal Plan that many important terms which has been mentioned earlier as a basic guidelines are not taken in consideration here, hence, each one of the guidelines will be discussed fully:

- 1 - No adequate solutions are presented to ensure the quality of water, even there are some treatments for the environmental aspect.
- 2 - The issue of the integration with both of the existing urban fabric and the river has not given enough attentions. The proposal suggests the sub division of the area into three parts and deals with each one separately besides neglecting the feature of the existing tradition of urban fabric in each part.
- 3 - The proposal tries to conserve the aspects of the historic identity through building regulation, but a lot of attentions was given to tourists/commercial land use within ground floors.
- 4 - As a mixed use issue, the proposal was able to present a suitable solutions.
- 5 - Also, the proposal presents adequate plans for public access and public spaces.
- 6 - The public partnership has not discussed, which is a fundamental issue in any conservation or revitalization project. Iraqi experience within such field is too limited due to dominance of public sector in all such works.
- 7 - The public participation issue is also has not given its actual role. Again Iraqi experience in such matter is not grown enough.
- 8 - Long term projects as shown in the renewal plan have been given a proper attention with a various functions for both commercial, residential and also tourist purposes.
- 9 - The “revitalization” which is looking at as “an ongoing process”. Here in the renewal plan, there is a variety of purposes for building with a various suggestions and detailed plan for the riverfront and area beside. But no clear and operation of procedures are mentioned for future.
- 10 - There should be a comprehensive and worldwide connecting for getting advantages to the proposal as it was achieved by Iraqi-Italian partnership with various discipline.

Conclusion

Urban waterfront revitalization has become one of the most distinctive urban issues within the last decades, and with many successful cases, especially in the developed countries due to many factors. While, in the developing countries, including Iraq, this issue still in its infancy phase, which caused by many reasons on both socio-economic, environmental and legal aspects, besides the lack of experience in this field that requires a multidiscipline professions.

In this paper, the concept of Preventive and Planned Conservation based on the ten basic guidelines drawn by the Centre for Cities on Water in Venice are adopted to assess the proposals for waterfront of Old Mosul as prepared in Old Mosul Renewal Plan in order to make a comprehensive image of the current situation. The assessment shown that some basic guidelines were omitted in the plan, particularly those dealing with environmental aspects and contextual integration, while other guidelines are relatively included. However, the proposal plan does not satisfy all basic aspects for such historic and unique waterfront, and it needs several amendments to match the requirements of the conservation plan.

Notes

- 1 - These principles, previously developed by Cities on Water in collaboration by Wasserstadt GmbH, Berlin, in the course of international seminars, were approved in the context of the initiatives for the Global Conference on the Urban Future (URBAN 21) held in Berlin in July 2000 and in the course of the EXPO 2000 World Exhibition. Recently revised, they have been adopted by several institutions at international level and they are still a valid reference for waterfront redevelopment.
- 2 - Ministry of Municipalities and Public Works Directorate General of Physical Planning, The Urban Renewal Plan For Mosul Old Town Project , Reports(A, B, C, D, E, F), December 2008.

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Fig. 1 - Amsterdam waterfront.

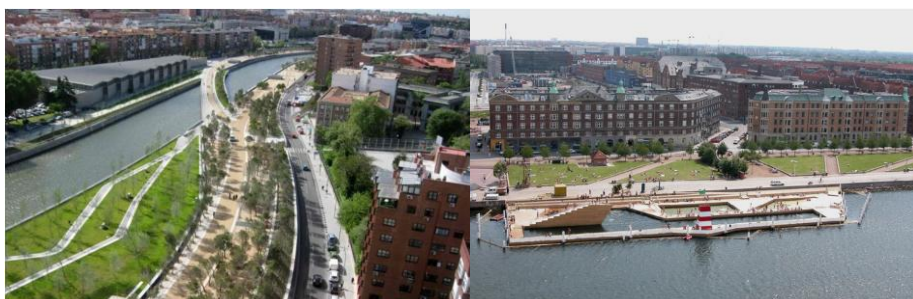


Fig. 2 - Havana waterfront.



Fig. 3 - Ahmedabad waterfront.

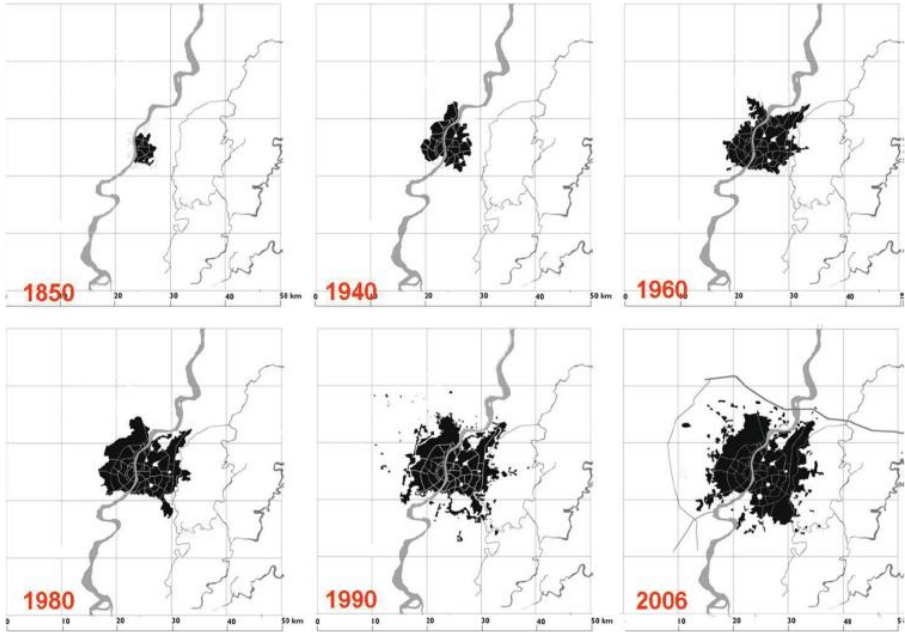


Fig. 4 - Ahmedabad master plan.



Fig. 5 - Mosul Old City.

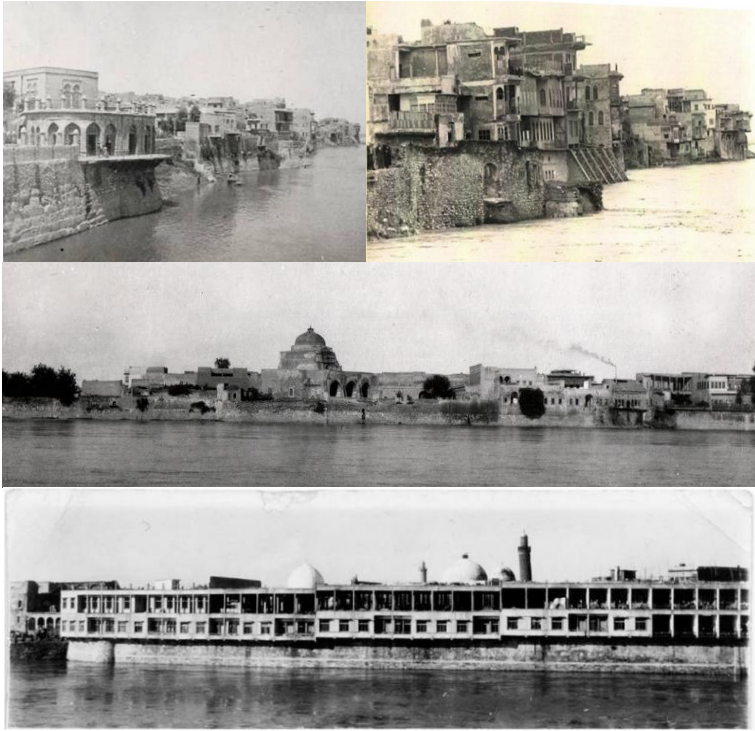


Fig. 6 - A Part of Mosul Riverfront 1939.



Fig. 7 - A Part of Mosul Riverfront Today.