THE HAI RIVER WATERFRONT --
A FRAMEWORK FOR REVITALIZING
THE FOREIGN CONCESSION LANDSCAPE IN TIANJIN

A CREATIVE PROJECT
SUBMITTED TO THE GRADUATE SCHOOL
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FOR THE DEGREE
MASTER OF LANDSCAPE ARCHITECTURE

BY

QI LU

MALCOLM D. CAIRNS – COMMITTEE CHAIR

BALL STATE UNIVERSITY
MUNCIE, INDIANA
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CHAPTER 1. INTRODUCTION

1.1 Problem Statement

1.1.1 A Cultural Landscape

This creative project focuses on a particular waterfront in the city of Tianjin. As one of the largest coastal cities in China, Tianjin is located along both sides of the Hai River, which belongs to the largest water system in North China. Historically, colonists from the West settled in Tianjin along the Hai River in separate landholding “concessions”. As a result of the long-term colonial occupation, Tianjin has a rich historic heritage reflecting their varying cultural backgrounds. The waterfront especially seems to retain a striking resemblance to European cities reflected by “concessions”.

Historic Preservation is a crucial issue to a place that has considerable historic cultural landscapes. Urban Planning Department of Tianjin announced thirteen former concession districts along the Hai River as protected historic zones (Bureau of Urban Planning of Tianjin Municipality), but the entire waterfront area within the concessions or the river itself is not specifically included. However, if the Hai River represents a combined work of nature and of man and associates with historic events (UNESCO 14), the Hai River waterfront should also be identified as a cultural landscape that needs to be preserved.

1.1.2 Significance of The Project

Colonists (British, French, German, Italian, Russian, Japanese, Austro-Hungarian and Belgian) built up their concession territories on the land ceded by Chinese government within the
city of Tianjin, using an exotic mix of architectural styles along the Hai River. All the concessions in Tianjin have been formally returned to China by 1948 (Grant 130). People know those architectures and landscape are the reflection of that era, but we cannot ensure people are conscious of the historic significance of them, or keeping them in good condition.

Historical value resides in the historical element itself. One historic cultural landscape will be more valuable if it is appropriately treated and celebrated (CTB). Overall, the project is to explore how the Hai River reveals an aspect of the city’s origin and urban development through its stories, form, features, and the ways it was used, therefore, eliminate the neglect of Hai River history. After understanding of the history, the project creates a landscape framework plan to better preserve and revitalize this significant cultural landscape.

1.1.3 Research Questions

In view of the above-mentioned reasons, this project conceives a landscape framework plan that provides a strategic direction as well as an implementation guideline for the Hai River waterfront. Essential research helps the project find design solutions, and research questions include:

1. Main question:

How to reemphasize the history along the Hai River waterfront

2. Sub-questions:

1) How can a landscape framework plan be used to preserve cultural landscape history?
a. What is a landscape framework plan?

b. How does a landscape framework plan work?

c. What history does the cultural landscape reflect?

2) How did Hai River interact with the foreign concessions during urban development?

3) How can the riverfront be redeveloped to preserve the unique characteristics of past concession era?

4) How to enhance public interaction with history?

5) How to create an educational interpretive system about the knowledge of history for people?

1.2 Methodology

The following is the methodology used herein to explore the city history, Hai River formation and cultural background about foreign concession to address historical preservation issues concerned with the landscape framework plan. It mainly involves literature review, case study and field study.

1.2.1 Literature Review

The literature review focuses on substantive findings during processes of reading books, journals and research articles, analyzing their theoretical and methodological contributions to my topic (Cooper). The literatures primarily provide historic facts and methods for further design.

The historic facts involve historical research on the city of Tianjin, concessions in
Tianjin and the Hai River. Additionally, map study is essential to historical research and the maps are most visualized information for developing a plan.

1.2.2 Case Study

The case study research specifically focuses on large-scale projects built by a landscape framework plan and waterfront projects celebrating historic heritage. It involves detailed examinations of some successful projects and their related contextual conditions. As a result, the case study provides an analytical frame to the selected site of this waterfront project.

1.2.3 Field Study

The field study emphasizes original experimental work and includes direct observation, informal interviews, participation in the life, self-analysis and taking field notes. The field study also explores existing problems, strengths, limitations and potential opportunities within the selected site that builds up a basic understanding of physical conditions and cultural context for a general planning and design concept. On-site observation and walking experience comprehensively enhance the understanding of the current conditions, positioning local needs and preference. All these qualitative studies assist this project in going through site inventory and analysis.

1.3 Assumptions

1. This project assumes local government will support the proposed design and set it as a
strategy into a long-term regional planning.

2. This project assumes reserved areas and vacant land can be used for the proposed design.

3. This project assumes observation and interview results reflect residents’ daily life and expectations from most of the residents and visitors.

1.4 Delimitations

1. This project only focuses on a part of the Hai River hydrological system.

2. The project does not involve the discussion of cost estimation and funding issues.

3. The research does not include policies of general planning of Tianjin City.

4. Land rights and property ownership issue are not involved in this project.

1.5 Definition of Terms

Concession: A concession is a territory within a country that is administered by an entity other than the state, which holds sovereignty over it (Chisholm).

   Usually it is formally conceded, tacitly allowed, or even surrendered by a weaker state to a stronger power (Quigley). In some cases of China where the terms of the contract (a treaty between states) provides for similar terms as a property lease, but in fact the give-and-take is unequal.
**Cultural landscape:** A cultural landscape is a geographic area, including both constructed and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. Cultural landscapes can range from thousands of acres of rural tracts of land to a small homestead with a front yard of less than one acre. (NPS)

**Tientsin:** “Tientsin” is “Tianjin” written in postal system. Postal system, a system of Latinizing the modern Chinese written language devised to translate and simplify Chinese characters for the West. It had been used since 1906 and it was replaced by Pinyin system (Perrins 483).
CHAPTER 2. LITERATURE REVIEW

2.1 Cultural Landscapes Preservation Strategies

Charles A. Birnbaum discusses a general preservation process in *Focus on Landscape Preservation*: preparing Cultural/Historic Landscape Reports; Developing a Historic Preservation Approach and Treatment Plan; Developing a Preservation Maintenance Plan and Implementation Strategy; Recording Treatment Work and Future Research Recommendations (Birnbaum 36). Historic research, period plans, current site inventory and analysis are essential preparation works prior to undertaking any treatment. A careful report for those preparation works helps prevent irreparable damage to a cultural landscape.

Four primary treatments could be considered as preservation strategies to achieve the historic preservation goal of this creative project:

1. **Preservation** is an act of applying measures and remediation to sustain the existing condition and historic integrity of a historic property.

2. **Rehabilitation** is a process of making a historic property compatible with current needs via alterations and additions to convey its historical values.

3. **Restoration** is defined as an act of restoring the character or the function of a property as it appeared at a particularly past period of time.

4. **Reconstruction** is a process of rebuilding a new construction that reflects details of a non-surviving site for the purpose of depicting its historic appearance (Birnbaum).

Additionally, Landscape Interpretation is a process of providing visitor with widely
various tools to experience the landscape. This process may include exhibits, self-guided brochures, freestanding signs and docent service etc. and its goal is to educate the visitors about the landscape’s themes or more historical, social and physical contexts (Buggey 3).

2.2 Landscape Framework Plan Development Strategies

*The West Philadelphia Landscape Plan* describes that a framework plan addresses some environmental, cultural and economic issues which greening projects alone cannot solve. A framework plan considers how the local landscape is naturally formed and where human activities take place. It includes considerations of the history of a piece of land, land uses, topography, urban development and transportation etc. that are more comprehensive than parks or street trees. Those analyzable spatial data are visualized on maps respectively based on the wide scope of analyses (see fig. 2.1).

For the next steps, the landscape framework plan states what is the vision of the future and what is the rationale to establish the vision by providing design recommendations and options (see fig. 2.2). Landscape improvements are then developed to transform visions for this place.
Fig. 2.1 Considerations of the Landscape Framework Plan (The West Philadelphia Landscape Plan, 1991)

Fig. 2.2 A design recommendation for vacant land in West Philadelphia (The West Philadelphia Landscape Plan, 1991)
2.3 The History of Hai River and Tianjin

Tianjin is a metropolis in northern China in terms of urban population (11,524,238) and it ranks the fourth largest in China (National Bureau of Statistics 2010). Tianjin is also the largest coastal city in northern China and geographically the city is bounded to the east by Bohai Bay (see fig. 2.3).

![Fig. 2.3 Location of Tianjin & Bohai Bay (Bing Maps, 2015)](image)

![Fig. 2.4 Hai River system (Baidu Encyclopedia, 2012)](image)

The Hai River flows through Tianjin before emptying into the Yellow Sea at the Bohai Bay. The part of Hai River at Tianjin is formed by the confluence of five rivers, the Northern Canal, Yongding River, Daqing River, Ziya River, and the Southern River (see fig. 2.4). The Hai River is 826.8 miles long measured from the longest tributary, but the Hai River is only 43.5 miles from Tianjin to its estuary.

The geographic change of the Hai River basin has had profound impact on the cultural background and history of this area. In “Collection of historic maps of Tianjin”, the editors
demonstrate that retracing back to 20,000 years ago, eastern Asian islands, peninsulas and mainland were one intact continent. Marine transgression roughly 8,000 years ago shaped Yellow Sea, which is a semi-enclosed shelf sea between China and Korean (Kim 71). The Hai River basin gradually formed in 600 B.C. Several tributaries collected at one place and transformed the estuary of Hai River into the only water gateway to this hydrologic system (see fig. 2.5).

![Fig. 2.5 Geographic changes through 20,000-1000 years ago](image)

Traditionally rivers play an important role in all that is considered as the source of life
and fertility. Human beings engaging in fishing and salt evaporation have emerged at some places that have convenient transportation along the Hai River since 106 B.C (Liu 10).

The Grand Canal, which is the longest artificial river in the world, starting from Beijing, passed through Tianjin during the Sui Dynasty (581—618 A.D.). It promoted Tianjin as a trading center at one intersection of the Grand Canal and the Hai River (fig. 2.6). Thus the Northern Canal, one of the five tributaries of the Hai River, is the only waterway from the sea to the Capital Beijing. In 1404, it was said when Yongle Emperor of the Ming Dynasty was passing through this spot, he renamed this place “Tianjin” meaning “the ferry site of the emperor”. Afterwards Tianjin was administratively settled as an important city in China (Bian 11), and started to build up urban setting inside of walls (see fig. 2.7).
The old Tianjin City was built on the western side of Hai River near a junction of three tributaries. It was a rectangular inner city with walls surrounded by some rural areas. Following a traditional grid pattern, streets in the inner city were perpendicular to each other and the walls (see fig. 2.8). Though the old urban setting already changed and walls were torn down during wartime in 1900, the grid pattern has remained until today (see fig. 2.9). Therefore, before colonists came in, Tianjin was a typical Chinese city with a grid pattern and Chinese architectures inside (see fig. 2.10, 2.11). Those traditional elements would sharply contrast with concessions developed by the colonists in days to come.
2.4 The History of Concessions in Tianjin

2.4.1 Knocking on The Door of Tianjin

The First Industrial Revolution began in Great Britain, driving a transition to new manufacturing processes in the period from approximately 1760 to 1840. With new-established advantages in technologies, Britain was in urgent need of expansion for overseas markets. Britain and France, which was another developed country, benefited from the Industrial Revolution and started to colonize other places around the world for purposes of land, abundant resources, and economic interests (Landes 40).

In the period of early 19th century, the Chinese government of Qing Dynasty strictly controlled import tariffs, and limited European trade to only Canton (Guangzhou City) and Macao. This severely affected expansionists’ schemes, so the British and French were continuously seeking diplomatic exceptions of the prompting conflicts with Chinese. Following a series of military defeats, Qing was compelled to permit extraterritorial zones or even cessions of sovereignty for foreign nations (The Treaty of Nanjing).

Tianjin’s position at the intersection of the Grand Canal and the Hai River, the only waterway to Beijing, always attracted attention. In 1860, British and French naval force landed at the Hai River estuary, located only 37 miles southeast of the Tianjin urban center, and captured Taku Fort guarding the mouth of the Hai River. It was the first decisive defeat for China in that series of battles. As a result, foreign trade was approved in Tianjin created by the signing of an open port and the constrained cession of territorial sovereignty led Tianjin to a semi-colonial
society. British and French began to build up concessions with their own consulates, barracks, prisons and hospitals etc. along the Hai River (see fig. 2.12, 2.13).

2.4.2 The Development of Foreign Concessions

Politically, Chinese territory was depicted as a carved pie from 19th century (see fig. 2.14). Since some countries demanding for expansion had seen the earnings of British and French from China, they were looking for new opportunities. Eventually the western countries
found one in 1898: Chinese peasant movement “The Boxers (Yi He Quan/ Militia)” first took place in North China because of international tension and domestic unrest. They resisted things from the West and attacked foreign missionary community of Liyuantun Village where a Chinese temple had been converted to a Catholic church. As Qing government partly supported the Boxers to do that, the western assembled an Eight-Nation Alliance consisting of Austro-Hungarian, French, German, Italy, Japan, Russia, British and American (see fig. 2.15) to repress the Boxer Rebellion (Schoppa 118). In 1900, the alliance entered Chinese mainland from the Hai River again and intervened in the North China by this chance.

Following those events, troops of the Eight-Nation Alliance stationed in Tianjin to watch the capital Beijing constantly. Besides the Great Britain and France required more lands
for expansion (see fig. 2.16), other countries also forced Chinese government to cede extraterritorial rights for establishing new concessions along double sides of the Hai River (see fig. 2.17). Belgium didn’t join the alliance at this point but entered Tianjin in 1900; the United States didn’t request and receive extraterritorial right in Tianjin, and never formally established a part of concession (Wilson).
Fig. 2.18 Concessions in Tianjin (Collection of historic maps of Tianjin, 1945)
2.4.3 The Returning of Concessions

Chinese government had begun to reclaim concessions of Tianjin since 1917 (see fig. 2.19) and spent 30 years on taking them all back. There are four stages in that long-term and complicated reclamation process (Rasmussen).

1. China announced joining Allied Powers in 1917 and reclaiming Austro-Hungarian concession and German concession because of different camps.

2. Belgium and Russia returned their unprosperous concessions to China during 1920-1930.
3. Following the end of World War II (1939-1945) and the victory of Anti-Japanese War (1937-1945) in China, Chinese government reclaimed concessions from two opponents: Germany and Japan.

4. Chinese government reclaimed British concession and French concession via a series of negotiations in 1940s. German army occupied France in World War II in 1940, so the government of Vichy France was not able to care about the distant concession in Tianjin. Therefore, French has begun to abandon their concessions in China since 1943 and finally evacuated from Tianjin in 1945. Meanwhile, Japan, which is another member of Axis Powers, controlled a large area of China, blockading British concession of Tianjin in 1941 (Axelrod 659). In 1945, Chinese government reclaimed the British concession, which had been stagnating for years.

   With the last piece of returned concession, the concession era came to the end (see fig. 2.20), but it left a different urban texture and landscapes on the city of Tianjin. Concession history and culture have permeated almost every facet of Tianjin. (See overall timeline in fig. 2.21)
Fig. 2.20 A map of Tianjin in 1947 after all the concessions returned

Fig. 2.21 Timeline of Foreign Concessions in Tianjin

<table>
<thead>
<tr>
<th>Country</th>
<th>1860</th>
<th>1870</th>
<th>1880</th>
<th>1890</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
<th>1940</th>
<th>1950</th>
</tr>
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<tbody>
<tr>
<td>Austro-Hungary</td>
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<td></td>
<td></td>
<td>1900</td>
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<td>1931</td>
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<td></td>
<td>1860</td>
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</tr>
</tbody>
</table>

- Foreign concession first appeared in Tianjin after the military victory of British-French Allied Force
- The Eight-Nation Alliance entered China in 1900. Foreign concessions were rapidly developed

World War I  World War II
2.4.4 Historical Research on Foreign Concessions

**Austro-Hungarian concession**

Austro-Hungary gained their 170-acre concession area in 1902, and then equipped their self-contained concession with its own consulate, court, theater, pawnshop, barracks, prison, cemetery, school and hospital. Though this concession zone has been returned to Chinese government since 1917, its relatively short appearance has left Austrians footmark on that area of the city (see fig. 2.22). A wealth of Austrian architectures and streets stand there to this day (see fig. 2.23).

![Fig. 2.22 Austro-Hungarian concession (Old photos of Tianjin, 1917)](image1)

![Fig. 2.23 Austro-Hungarian Consulate, 2014](image2)
Belgian concession

Belgium did not send their army to China during the wartime. However, Belgium did keep pace with the aftermath of wars and gained a 120-acre concession zone at the southeast corner of Tianjin rural area. The remoteness and desolation made that land nominal and little value so Belgian and other related business communities did not invest in development and the concession was returned in 1931 (Chisholm). It is much more important that Belgium and China signed contracts involving tramways and electric power systems built by a Belgian company in 1904 (see fig. 2.24, 2.25). The network upgraded Tianjin to the first city in China with a modern public transportation system in 1906; however, all the tramcar routes were closed by 1972 and cannot be seen today.

Fig. 2.24 Tramcar on the way (Old photos of Tianjin, 1906)  
Fig. 2.25 New tramcars that wait for operation (Old photos of Tianjin, 1912)
British concession

The British concession, which was located on the south bank of the Hai River, was the first concession in Tianjin. It began with a 75-acre small ground in 1860, and expanded to nearly 948 acres by the end of 1903 (Bickers 276). As one of the biggest colonists in 19th century, British had been formally keeping developing the concession zone in different aspects since 1870, and promoted their port area, where 69 ships were berthed at peak-hours, to a trade center on the Hai River in around 1895 (Bickers 248; see fig. 2.26). British set up a municipal council in 1862, bringing a British management system into Tianjin. Besides, they established a number of functional buildings, such as barracks, churches, factories, banks, school, hotel and clubs (see fig. 2.27). On behalf of the positive role of colonization, British concession development greatly enhanced the economy and industry of Tianjin. The concession was returned to Chinese government in 1943.
French concession

French and British entered Tianjin at the same time, but French were not aware of the safety of a signed concession until their missionaries clashed with local Chinese in 1870 (Tang 6). Initially, they put up a consulate, a cathedral (see fig. 2.28) and some residences nearby the intersection of the Hai River and the Northern Canal, which was outside the concession boundary. As more Europeans settled into concessions after the clash of 1870, French concession achieved a remarkable economic progress. Up to now, Binjiang Pedestrian Street with shopping malls, which was originally developed by French, is still one of the biggest commercial districts in Tianjin (fig. 2.29). The French returned the concession zone to China in 1946 (Chisholm).

Fig. 2.28 Wanghailou Cathedral (Old photos of Tianjin, 1869)
Fig. 2.29 A commercial street in French concession (Postcards of Tianjin, 1932)
**German concession**

The German gained a concession zone in Tianjin a few years before the Eight-Nation Alliance’s arrival and took occasion to extend when other countries were asking for land. They developed many industries in Tianjin, for instances, real estate (see fig. 2.30), entertainment, and the earliest electricity in North China. In 1917, Chinese government withdrew the 380-acre German concession after Germany declared the First World War (Brown 27).

Fig. 2.30 German residential zone (Postcards of Tianjin, 1912)
Italian concession

Italy was granted a 127-acre concession zone from Chinese government in 1901, and returned it in 1947. This relatively small concession situated between the Austro-Hungarian and Russian is a well-preserved cultural relic (see fig. 2.31, 2.32). Its preserved architectures are recognized as the greatest cluster of Italian colonial buildings in the world. Most of those buildings were private residences (Marinelli 404), but now they are developed into mixed-use zone including residence, catering and commerce.

Fig. 2.31 Italian architectures & Marco Polo Plaza in Tianjin (Postcards of Tianjin, 1935)

Fig. 2.32 Italian concession is in good condition, 2014
Japanese concession

Japanese concession was a small settlement zone lying on the southeast of the old town of Tianjin in 1898. Following the military success of the Eight-Nation Alliance, the Japanese expanded the concession to 355 acres and began to develop real estate, entertainment, and overseas trade (see fig. 2.33, 2.34). To serve its own needs, Japanese concession port primarily exported raw materials like cotton to Japan. Chinese government retrieved the concession area in 1945.

Fig. 2.33 Japanese concession (Postcards of Tianjin, 1930s)
Fig. 2.34 Japanese shipping on the Hai River (Old photos of Tianjin, 1937)
**Russian concession**

The Russians gained a 983-acre concession in 1903. That area was quite large but was never completely developed (Chisholm). Based on its adjacency to Hai River and Tianjin Railway Station (see fig. 2.35), the Russian concession became a port of distribution. Oil storage tanks, granaries, factories and different types of manufacturers bestrewed the eastern riverbank of Hai River (see fig. 2.36). In 1920, Chinese government retook the Russian concession.

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Fig. 2.35 Tientsin Railway Station and Russian Street (Postcards of Tianjin, 1910s)  
Fig. 2.36 A Russian port (Old photo of Tianjin, 1900s)
2.5 Historical Analysis

2.5.1 The contributions to the city

The city of Tianjin has changed distinctly over the past nearly 70 years, but the eight former concessions have left their stamps. The colonists shaped the city with something they introduced from their hometowns and something they developed after settling down in Tianjin. Their contributions transforming the city could be primarily classified by different industries (see fig. 2.37) and they are historic clues for the studies in following chapters.

Each of the concessions was developed individually. The government of Tianjin didn’t
have a master planning and also didn't have rights to manage the development of concessions.

There wasn’t any visible border between two concessions or between a concession and the old town of Tianjin. Chinese people and foreigners were allowed to freely go through any concession. Local inhabitants living in the concession areas were staying at where they were, but under the administration of a foreign institution (Land and General Regulations). Colonists changed the lives in Tianjin by sharing their technologies, cultural tradition and customs during the concession development.

2.5.2 The waterfront

The Hai River waterfront was a central axis of urban development in Tianjin as everything new originated from it. According to the historical studies, the old town of Tianjin initially formed at that spot because of transportation advantage of river junction, and then foreign concessions were built along the Hai River. As a result of concession development, the economic center of Tianjin moved from the old inner city to British and French concession, and the new setup of Tianjin has formed since 1900s. (See fig. 2.38)

Tianjin’s urban area has already expanded several times, but the waterfront area within the former concessions could definitely be the most historically significant of the urban area. So many stories happened on the waterfront. Stories about natural streams and the man-made canal, the old town and the concessions, wars and welfare. All of these constituted the particular landscape on the waterfront.
Fig. 2.38 The urban development of Tianjin
Fig. 2.39 Timeline of the changing Hai River & the city of Tianjin
2.6 Case Studies

2.6.1 Urban Riverfront Development

As an important part of San Antonio’s urban fabric, San Antonio River Walk is an excellent precedent for the Hai River Creative Project. The river walk project began with a flood control plan in 1921 and a river beautification plan was then developed in 1938 to explore an evolution of the river walk.

Today the San Antonio River Walk is a successful case of riverside pedestrian street lined by bars, shops and restaurants and became a tourist attraction network drawing people from its nearby mall, theatre, museum and park etc. (see fig. 40).

Fig. 2.40 San Antonio River Walk (Julia A. Hitz, 2011)
2.6.2 Cultural District Development

Indianapolis Cultural Trail is an enormously successful urban path project that seamlessly connects six designated cultural districts and their adjacent neighborhoods. It serves as a downtown greenway system for both urban bike and pedestrian (see fig. 2.41).

11.25 acres of new trail pavers and iconic signs provide a strong sense of wayfinding. Bike sharing, stormwater planters and Public Art features serve as entertainment amenities making the trail participatory (see fig. 2.42). The Indianapolis Cultural Trail could be an inspiration for the Hai River waterfront project since Tianjin urban area has many explorable historic districts to consider.

Fig. 2.41 The Indianapolis Cultural Trail connects six cultural districts (Indy Cultural Trail, 2009).
Fig. 2.42 Bicycle racks, planters and trail signs are everywhere along the trail (Walk Indianapolis, 2015).
CHAPTER 3. SITE INVENTORY & ANALYSIS

3.1 Current Site Context

Today’s Tianjin is a dual-core city with its main urban area and Binhai, which is a new growth core located east of the old urban area on Bohai Bay. Industry has been the theme of city development since concession era ended and now the city is defined as a hub of industry and financial activity in China (World Economic Forum). Although the urban area of Tianjin has been enlarged to 43,243 areas (Chinagate), the 3544-acre urban area developed by foreign concessions is still the most densely urbanized zone in this region (see fig. 3.1).

Fig. 3.1 The urban area of Tianjin & Binhai Region (Bing Maps, 2014)
3.2 Site Location

To explore the richest historic heritage, the waterfront within the 3544-acre old concessions is selected as a study area of this creative project (see fig. 3.2). The study area uses two primary roads as boundaries on the east and west side to integrally include a 4.5-mile long watercourse of the Hai River, river walks on both banks, adjacent urban blocks and inside street network. In this area, the waterfront project is a start for historic preservation of Tianjin and a framework that can be applied for the rest of former concession area.

Fig. 3.2 Site Location
3.3 Land Uses

The site has been redeveloped after the concession era, but it remains what concessions mainly developed in each division. Current land uses generally vary from commercial, residential, mixed-use, business, and open space to reserved land (fig. 3.3).

Fig. 3.3 Site Land Uses
Design Consideration:

‘Trading via the river’ and ‘tramway system’ are missing from the city in comparison with what colonists developed in their concessions (see fig. 3.4). Rehabilitation is a considerable approach to revitalize the historic waterfront area. It encourages bringing some disappeared elements back. For this project, water and ground transportation are design elements since public transportation is valuable to this city.
3.4 Historic Heritage

This varied concessions left a mixed heritage. The heritage is not only the history of urban development but also architectural traces. Many blocks within the project site resemble exotic and eurotic appearance, but lots of them were built after the concession period to imitate an overall sense of past time.

To seek for the most valuable historic heritage on site, this project traditionally identifies historic integrity of properties, constructions, and miscellaneous objects. “Historic integrity is the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's prehistoric or historic period.” (NPS) In this study, location, materials, design, setting, workmanship, feeling, and association are examined. Twenty-seven items are finally selected as legacies that retain good historic integrity and are mapped in red in figure 3.5. The twenty-seven items are two steelwork bridges, a cluster of Mediterranean buildings, one plaza, one garden and twenty-two individual buildings (see table 3.1).

Design Consideration:

Historic elements are extensively distributed in Tianjin urban area. An organized network will facilitate the historic preservation by building connections between different elements.
Fig. 3.5 Locations of historic heritage
<table>
<thead>
<tr>
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<th>Style</th>
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<td>commerce</td>
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<td>entertainment</td>
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<td>The former residence of Zhang</td>
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<td>Eclectic</td>
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</tbody>
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Table 3.1 Summary of historic constructions and architectural styles
3.5 Architectural Guide

Constructions in this study area can be basically classified into five categories by design features: traditional Chinese constructions, European classic renaissance styled constructions, eclectic styled constructions, dwelling houses of common people, and modern architectures. This study focuses on the European classic styled and eclectic styled constructions, which are mapped as historic heritage of concession era (see table 3.1).

The European classic renaissance styled construction demonstrates a conscious revival and developed some material culture and elements of ancient Greek and Roman thought. Renaissance style emphasizes on geometry, symmetry, proportion and regularity (Fletcher). For instance, I&C Bank of China-France is an arc architecture constructed in 1930s. It has many symbols of the renaissance style: symmetric structure and orderly arrangements of Corinthian Columns and stone-facing lintels (see fig. 3.6, 3.7).

Fig. 3.6 I&C Bank of China-France, 2014  
Fig. 3.7 Corinthian Columns of the bank, 2014
Eclecticism is an architectural style in which a piece of work incorporates a mix of elements from previous historic styles to create something that is new and original. The eclectic styled constructions in China are combinations of architectural modeling and patterns with both the Chinese and Western styles (Hong). Old French barrack is an example that has a Chinese quadrangle layout and wooden structural roof and pillars, but overall it shows a sense of western architecture with decorative bricks and iron-art handrails (see figure 3.8, 3.9).

![Old French barracks](image1)

![Iron handrail in French barrack](image2)

**Figure 3.8 Old French barracks (Li, 2011)**

**Figure 3.9 Iron handrail in French barrack (Zol, 2011)**

**Design Consideration:**

Recording those architectural elements is a start to understand and respect history. A historic preservation project aims at popularizing historical research results to the public.
3.6 Street Network

3.6.1 Street Hierarchy

In Tianjin urban area, four levels of street hierarchy lay out road networks (see fig. 3.10).

At the highest level of the hierarchy, expressways of Tianjin are three elevated circles and some crisscross highways. They are designed for high-speed vehicular traffic, but have low permeability to the urban area.

Primary streets are major through roads that carry large volumes of traffic. They compose the main structure of road network and connect different areas in Tianjin.

Secondary streets are designed for traffic-distribution between primary streets and tertiary. They form grid patterns by dividing lands into blocks and have both superior permeability and connectivity.

Tertiary streets usually serve communities and have the lowest speed limit. They have highest permeability but limited connectivity.
Fig. 3.10 Street Hierarchy
3.6.2 Traffic flow

The actual traffic condition sometimes is not that optimal due to differences of resident population density and commuters’ destination etc. Figure 3.11 illustrates a daytime traffic condition by indicating high, medium, and low traffic.

Within the project study area, there are paved river walks along both sides of the Hai River. Vehicles are not allowed to drive on the walks, which vary in width from 12’ to 55’. Besides the river walks, the former Italian concession has been redeveloped as a pedestrian friendly commercial zone since 1998. Green lines indicate existing pedestrian routes in Figure 3.11.

Design Consideration:

A well-organized network permits people to touch those historic heritages. High-permeability street encourages movement on foot, so it will be developed into pedestrian network with the existing pedestrian routes. According to the real condition, high traffic street should be excluded from the pedestrian network. Meanwhile, High-connectivity road is potential to be a part of public transportation route of the city.
Fig. 3.11 Traffic flow
3.6.3 Paving & Materials

China didn’t have automobiles until 1901. People were walking or riding horses on dirt roads. So far in the study area, all dirt roads have been covered by asphalt after Italian concession cooperating with ExxonMobil built up the first asphalt road in 1914 (Rasmussen). Now on both sides of each asphalt roadway, there are associated sidewalks made of brick, concrete, or slab. Hard pavement does visually impact on outdoor space, however, the current paving patterns vary a little irrationally. For instance, different patterns randomly appear on sidewalks, varying from Running Bond to Stack Bond, or from Herringbone Bond to Circle Pattern (see fig. 3.12).

Fig. 3.12 Current condition of paving patterns, 2014
Design Consideration:

Current paving of the study area needs a rational replacement in accordance with the historical elements. Paving Design should strengthen sidewalk identification, wayfinding and functionality.

3.7 The River

The canalized Hai River has been reconstructed several times during the concession era. To gain an efficient waterway that carries vessels transporting goods and people, the colonists dredged the bottom of Hai River and reinforced the riverbanks (see fig. 3.13).

Modern construction technique and canalization have modified the urban part of Hai River. The riverbank now has two levels of promenade. It prevents the city from flooding and provides people more chances to touch the water. The Hai River is 300 ft. wide on average with
some slight changes and the depth of water within the Hai River urban part is kept around 13 ft. by two locks, so the water body rarely swamps the riverside banquette (see fig. 3.14).

Design Consideration:

This surviving canal is still able to service a 2000-ton ship though it is not necessary to develop transportation industries today (Zhang). However, some abandoned docks along the riverbanks provide more possibilities regarding a rehabilitation of water transportation (see fig. 3.15).
3.8 The Vegetation

Tianjin features a typical monsoon-influenced climate with cold and dry winters, and hot humid summers. Some missionaries did plant exchange between China and Europe. They introduced their plants to Tianjin and brought some excellent species back to Europe. Those colonists have built their architectures in Tianjin, but they could not totally copy their landscapes from oceanic climate zone or Mediterranean.

Native trees such as Chinese ash, Pagoda, red pine, and weeping willow are commonly used along the Hai River. Ornamental trees and big shrubs add interests to the waterfront (see fig. 3.16). Additionally, there are a number of common-used plants like oriental plane, gingko, boxwood, and bluegrass that grow well in Tianjin and also can be found in some European regions (see fig. 3.17).
Fig. 3.16 Plants (Deciduous trees, ornamental trees, shrubs, evergreen, groundcover, perennials) that are native to Tianjin region

Fig. 3.17 Plants that grow in Tianjin, East Asia, Europe, and North America
Tianjin is not a ‘Green’ city due to a low Green Area Ratio. Shortage of street tree led to some unshaded sidewalks. Monoculture and overmuch hard paving on the riverbanks are noteworthy issues besides lacking of trees (see fig. 3.18).

Design Consideration:

Appropriate trees and vegetation species should be added into the urban setting to enhance both concession identity and urban ecology.
3.9 Human Activities

As the project emphasizes revitalization for the waterfront, various human activities are considerable elements along with those historic heritages. Besides of urban commute, fishing, bicycling, swimming, Tai Chi and Aerobics are the most common activities happening along on the waterfront area (see fig. 3.19).

![Fig. 3.19 Outdoor activities along the Hai River, 2014](image)

Design Consideration:

This project continues to develop the river walks into a public activity place and it differentiates movement space and gathering space. The optimized public space will attract more people to be involved with the waterfront. However, it doesn't suggest swimming in the river due to safety and hygiene issue.
CHAPTER 4. THE VISION

4.1 Establishing The Vision

4.1.1 A Historic Waterfront

Goal: Ensure a comprehensive Historic Preservation Plan for Hai River and the waterfront.

Objective 1: Map all the qualified historic sites in the project study area (see fig. 4.1).

Objective 2: Categorize those historic sites by their historic background and current conditions.

Objective 3: Design an educational tour system providing landscape interpretation (see fig. 4.1).

4.1.2 A Cultural Journey

Goal: Enhance the unique Concession Culture Identity of Tianjin urban area by connecting historic sites or broader historic districts.

Objective 1: Select potential routes to historic sites according to the street network analysis and current traffic condition.

Objective 2: Design a Cultural Trail connecting extensive historic sites by utilizing sidewalks and river walks along the selected routes (see fig. 4.1).

Objective 3: Adjust the width of drive lanes to save space for a newly specified bicycle lane (see fig. 4.2).

Objective 4: Replace those selected sidewalks, river walks and riverside banquettes by coherently new pavers.
Fig. 4.1 Historic sites and the proposed Cultural Trail
4.1.3 A Transport Corridor

**Goal:** Rehabilitate the historic modes of transportation in order to strengthen the function of this linear waterfront area.

**Objective 1:** Provide a tramway circulation around the waterfront to enrich public transportation in this area and meanwhile recall the memory of Belgium tramway history in Tianjin (see fig. 4.3, 4.4).

**Objective 2:** Provide a cruise service as a tourist attraction on Hai River and reemphasize the
original function of this historic canal (see fig. 4.4).

**Objective 3**: Reuse abandoned docks along the Hai River and set up tramway stations according to locations of historic elements and residential areas (see fig. 4.4, 4.5).

Fig. 4.3 Existing road with a narrow river walk (upper) & proposed adjustment for tramway and bicycle lane (lower)
Fig. 4.4 The Urban Transport Corridor
4.1.4 A Renewal of Landscape

**Goal:** Develop the Hai River waterfront into a vital and dynamic part of Tianjin urban setting by updating its landscape and public spaces.

**Objective 1:** Reinforce concessions’ identity by growing appropriate plant species, which reflect exotic landscape design, around historic sites.

**Objective 2:** Bring sustainability into the waterfront life by enriching its street landscape and applying more Green Infrastructures along the Cultural Trail.

**Objective 3:** Develop public spaces that are designed to support distinct needs of local residents.
and visitors.

4.1.5 A Walking Experience

**Goal:** Provide a unique walking experience on the Cultural Trail via distinctively old foreign concessions.

**Objective 1:** Select street elements (plant, flag, banner, street light, seating, decoration, paving etc.) that impact on streetscape feature design (see fig. 4.6).

**Objective 2:** Apply street elements from those foreign countries on the trail to differentiate the belonging to each old concession.

**Objective 3:** Focus on the invisible boundaries between two concessions to enhance the sense of arrival, transition and contrast.

Fig. 4.6 Street elements
Fig. 4.8 Transition spots between two concessions
Fig. 4.8 Overlaid map layers that present the framework plan
4.2 Delivering The Vision

Once a vision of the future has been established, the project should provide key moves to deliver the vision or guides for future ongoing implementation. Building map layers graphically is a good approach to store, process and present large amounts of spatial data for a macroscope (McHarg 13), so this project visually displays its design process through the use of map overlays (see figure 4.6).

Secondly this project specifies one historic site as an interpretive model that illustrates the Hai River waterfront revitalization step by step. Tianjin Astor Hotel has been built in British Concession since 1863 and today it still remains its historic appearance and function. Astor Hotel is the interpretive model due to its historic integrity and significance.

Fig. 4.9 The location of Astor Hotel
Step 1: Reading the context

• Understand the historic background of the site

• Analyze the existing conditions of the site

• Map all the qualified historic heritages
Step 2: Establishing the connections

- Select potential routes for the Cultural Trail
- Adjust traffic lanes and add a bicycle trail
- Create a pedestrian friendly Cultural Trail that connects the historic heritages
Fig. 4.12 Rehabilitating the loss

Step 3: Rehabilitating the loss

• Study concessions’ contribution to Tianjin in the past

• Analyze what historic elements should be reemphasized

• Rebuild tramway system accordingly

• Reset water transport system on Hai River
Step 4: Updating the landscape

• Realize native plants and appropriate exotic species in Tianjin urban area

• Provide more canopy trees to shade the hard pavement of pedestrian zone

• Incorporate new green infrastructures with existing vegetated areas
Fig. 4.14 Designing for its user

Step 5: Designing for its user

• Enhance the educational meaningfulness of the Cultural Trail by adding landscape interpretation to historic sites

• Provide more public spaces for existing outdoor exercises

• Create new courts for diversified street entertainment along the trail

Final Step: purposefully apply similar processes with the same design rationale to each historic site in the former concession area of Tianjin for conceiving a final Concept Plan (see fig. 4.15).
CHAPTER 5. CONCLUSION

This creative project provides a framework landscape plan for a certain area of Hai River waterfront of Tianjin and it comprehensively addresses historic consideration, current issues and a vision of the future.

As some literatures have shown, the Hai River consistently defines the city positioning and development throughout history. The river bred the city and shaped the city, and it will interact with the city in the future. One of the goals of the research in the previous chapters was to corroborate the historic significance of the Hai River, which should be listed as a cultural landscape. Beside that concern, the historic heritage of Tianjin foreign concessions is an integral part of educational resources. Those architectures, gardens and even alleys in the concession zone deserve a good historic preservation.

Furthermore, the analysis and design part are conducted based on a full understanding of the history in Tianjin. The proposed Cultural Trail and rehabilitated transport systems give the historic waterfront a strong identity. The Cultural Trail is a connection that unifies separated historic sites, unstructured movement corridors, different entry experiences in concession realm, rather than just a pedestrian or bicycle path.

Additionally, this project also upgrades the ecologic and living environment along the Cultural Trail. It provides a coherent landscape and increase greenery coverage for the city to make the contemporary landscape meet the current and future needs of local communities and visitors.
However, the scope of this project is limited by available time, Chinese private data and inability to work on site. A broader scope of this project is to continue extending the framework to the rest of the former concession area. If there is any further research or redevelopment opportunity, it shall consider developing details of landscape improvement such as trail pavers that reinforce the concession identity, and exotic species brought from foreign countries by colonists or missionaries.
REFERENCES


