

# Review of the Protective Renovation of Yantai Street Historical Block in Dalian

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## Abstract

As witnesses to a city's past and the development of different eras, historical districts are not only preserved as representations of urban history, but more importantly, they need to be reintegrated into contemporary urban life. This article takes Yantai Street Historical District—the earliest residential area in Dalian—as an example. It first briefly reviews its development history, then describes the protective renovation planning and implementation process for Yantai Street Historical District and its historic buildings, exploring the feasibility of transforming a declining residential district into a new urban area with commercial, cultural, and recreational functions through functional conversion. Finally, it summarizes the issues and prospects of this renovation project. Especially today, as China enters an era of urban stock renewal, the functional transformation and reuse of historical districts have become important topics, and the Yantai Street project can serve as a model for achieving the sustainable development of modern historical districts in Dalian.

**Keywords:** Historic districts, protective renovation, functional regeneration and utilization, Dalian city, Yantai Street

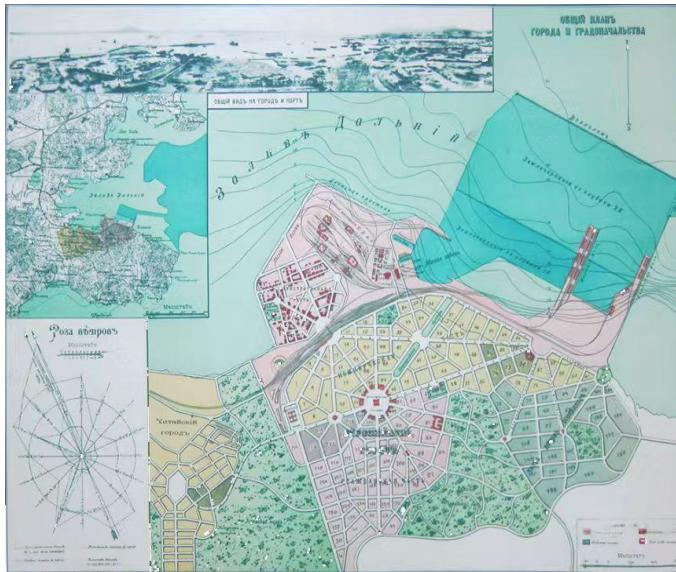
## 1 Introduction

Historical blocks are witnesses to a city's development process, and their planning and architecture can reflect historical and social characteristics. Over the past decades, with the transformation of China's economic and social structure, the demand for urban land has been constantly changing, leaving many historical blocks in city centers facing the difficult choice between preservation and demolition. In the process of urbanization, Dalian, like other cities in China, has seen many of its modern historical blocks in the city center gradually disappear. Built and developed since the late 19th century, Dalian is an emerging port city with a colonial past and typical urban features of modern Europe. As the oldest existing residential block in Dalian's downtown area, Yantai Street still retains the spatial layout that embodied the internationally advanced planning concepts of its time. The practice of protective renewal of this block may serve as a sound starting point for Dalian's modern historical blocks to achieve the sustainable development of the city center through functional transformation.

## 2 Historical Evolution and Renewal of Yantai Street & North Shengli Bridge Area

### A. Historical Evolution

Yantai Street is located in the area north of Shengli Bridge in Dalian, and its history is closely linked to the modern colonial history dating back to the city's founding. In 1898, the Russian government seized Dalian by virtue of the Convention for the Lease of the Liaodong Peninsula, opened it as a trading port and built a city around the harbor. As Dalian's first mayor, Russian engineer Sakhrov was responsible for the planning and construction of the port and the city itself, and he also invited two German engineers to participate in Dalian's overall urban planning [1]. The initial urban planning of Dalian was based on the most advanced urban planning concept of the time—the Garden City Theory—and modeled on the urban morphological characteristics of the Paris Renovation Plan (Figure 1). According to the plan, the city was divided into several functional zones, including a port area adjacent to the harbor, a commercial and trade district with two railway stations, a coastal administrative block, and a residential area for Chinese residents [2].



**Fig. 1** Overall plan of Dalian City during the Russian colonial period in 1898 (Image source: Dalian City Archives)

The area east of today's Qingniwa (now the Dalian Railway Station area) and north of Shengli Bridge was designated as the urban block of "Dalniy" (a transliteration of the earliest Russian name for Dalian, "далний"). Before Japan's occupation of Dalian, Russian urban construction efforts lasted less than five years. In addition to building transportation infrastructure such as ports, railways and roads, the Russians completed the construction of the coastal administrative block—the area north of Shengli Bridge (covering approximately 45 hectares) [3], which included the residential area for the staff of the Chinese Eastern Railway (now the vicinity of Yantai Street). This area thus became the earliest built urban block in Dalian (Figure 2).



**Fig. 2** Urban planning of the administrative streets north of Victory Bridge in Dalian during the Russian colonial period (Image source: Dalian City Archives)

In accordance with the urban planning formulated during the period of Russian colonial rule, the area north of Shengli Bridge, which served as the administrative district at that time, was relatively independent. It was connected to the main urban area only by a bridge spanning the railway (now Shengli Bridge) and stood in distant correspondence with Nikolayev Square (now Zhongshan Square) in the city center. Today's historical block north of Shengli Bridge stretches westward to Yantai Street, eastward to Shanghai Road, southward to Shengli Street, and northward to Beihai Park. Centered on Tuanjie Street (now Russian Style Street), it houses most of the important buildings featuring a typical modern Eclectic style. For instance, at the northern end of Tuanjie Street stands the Dalniy Municipal Hall from the Russian colonial era, and adjacent to its west is Sakhrov's official residence (now a railway technical school); to the east of the southern end lies the Chinese Eastern Railway Steamship Company (now Dalian Art Museum). Facilities such as municipal halls, banks, offices, commercial establishments, hospitals and gardens were all within walking distance of the Russian residential area, and the functional layout of the entire block clearly embodied the "Garden City" concept.

By 1903, during the period of Russian colonial rule, the German engineers invited to Dalian planned the residential area north of Shengli Bridge following the urban planning methods of German cities. Among them, a total of 25 residential buildings for the staff of the Chinese Eastern Railway were designed and constructed in the block of today's Yantai Street (west of Tuanjie Street). The buildings flanking Guanghui Alley were designated as residences for the technicians of the Chinese Eastern Railway, while the others were collective housing for the general staff of the railway [4]. The mainstream architectural style was Eclecticism, with details incorporating elements of German vernacular architecture.

After the Russo-Japanese War in 1905, Japan began its colonial rule over Dalian, and the land along the Chinese Eastern Railway became a subsidiary territory of the South Manchuria Railway Company (SMR). Yantai Street remained a residential area, housing the technicians and staff of the SMR, while the former official residence of Sakhrov was repurposed as the official residence of Shinpei Gotō, the then president of the SMR. By 1910, Japanese designers had added three more staff residential buildings here, which adopted a Japanese-Western eclectic architectural style.

After the liberation of Dalian, the area around Yantai Street north of Shengli Bridge was placed under the jurisdiction of the railway department and has been used as a residential area for the families of railway employees for over a century (Figure 3).



**Fig. 3** Aerial view of Yantai Street in 2010

## B. Renewal Process of the Area North of Shengli Bridge

In the late 1990s, the historical value of Dalian's modern historical building complexes, including the area north of Shengli Bridge, had attracted widespread public attention. With the rapid development of the city's tertiary industry, the Dalian Municipal Government decided to redevelop the area north of Shengli Bridge, intending to transform it into a new commercial center with a unique European style. Given Tuanjie Street's location as the central axis of the block and the distinct European architectural style of the historical buildings flanking it, the municipal government prioritized Tuanjie Street for renovation and renewal. The historical buildings lining both sides of Tuanjie Street underwent thorough reconstruction and renovation: their original facades, which featured a diverse mix of European, Siberian and Japanese architectural styles, were crudely and uniformly remodeled into a typical Russian style. The interiors of the buildings were also reconstructed and redecorated to suit new commercial and leisure functions. After the renovation, Tuanjie Street was designated a pedestrian-only zone, evolving into a commercial pedestrian street integrating culture, entertainment, shopping and leisure with a distinctive Russian style, locally known as Russian Style Street. Regrettably, due to various factors such as the surrounding environment and traffic conditions, the commercial development of Russian Style Street fell far short of expectations. Moreover, the reckless renovation of the buildings on both sides of Tuanjie Street completely destroyed the original character of the historical block, exerting a profoundly negative impact on the preservation of the historical area north of Shengli Bridge.

In August 2007, the redevelopment plan for Yantai Street in the area north of Shengli Bridge was put on the agenda. The scope of the redevelopment covered the area adjacent to the west side of Russian Style Street—namely the vicinity of Yantai Street. Dalian Railway Real Estate Development Co., Ltd., a state-owned real estate enterprise affiliated to Shenyang Railway Bureau, secured the development qualification. Unlike the previous reckless redevelopment approach, the developer of Yantai Street opted for a development model conducive to the protective renewal of historical blocks. Drawing on the experience of transforming Shanghai's shikumen (stone-gate) houses into "Xintiandi", the developer invited Benjamin Wood, the American architect behind the Shanghai Xintiandi project, to conduct the planning and design for this plot. A planning proposal named "Dalian Xintiandi", modeled after Shanghai Xintiandi, was put forward. However, this plan was ultimately abandoned due to issues such as the inconvenient transportation in the area north of Shengli Bridge, the difficulty in integrating the poor surrounding environment, and unfavorable investment promotion outcomes.

In 2009, with the support of the municipal government, Shenyang Railway Bureau decided to carry out protective redevelopment and utilization of Yantai Street while fully preserving all 28 of its old buildings. In 2010, Dalian University of Technology was commissioned to conduct planning and design research for the renewal and transformation of this historical block [Note 1]. According to the initial plan, the renovated area was to serve as a training center for Shenyang Railway Bureau. Later, based on market forecasting and analysis results, it was ultimately positioned as a boutique hotel with historical charm. The historical block of Yantai Street referred to in this paper denotes the area between Yantai Street and Russian Style Street (Tuanjie Street) (excluding the already renovated buildings on the west side of Russian Style Street).

### 3 Protective Renewal Planning of the Yantai Street Historical Block

From reckless destructive renovation to conservation-conscious redevelopment, China's urban renewal philosophy toward the protection of historical blocks and buildings has undergone a dramatic transformation. The protective redevelopment plan for Yantai Street differs both from the reckless renovation of Russian Style Street and the renovation model of Shanghai's shikumen (stone-gate) houses. Instead, it places greater emphasis on the fundamental principle of the holistic protection and adaptive reuse of historical blocks. In the early stage of planning discussions, the basic concept of historical block renewal was first established: renewal is the goal of protection, while protection serves as the prerequisite and means for the renewal of historical blocks. The objective of historical block protection is not to seal old buildings away as historical relics, but to inject new vitality into them through functional transformation, thereby preserving the city's historical spaces and cultural values, maintaining its unique historical character and features in the long run, and enhancing citizens' sense of belonging.

The main objectives of the protective renewal of Yantai Street are as follows: to establish an urban historical block protection model supported by state-owned enterprise funding and government policies; to transform the block into a new urban central area integrating culture, leisure, entertainment and accommodation; to preserve and inherit the urban structure and the overall historical architectural style of Dalian's modern historical blocks; and to explore the sustainable development of historical blocks in urban centers through functional transformation.

At the initial stage of renewal, the primary considerations were how to define the position and function of the historical block within the city and how to make adaptive use of the dilapidated historical buildings in the block. After multiple rounds of consultations among various stakeholders and expert evaluations, Yantai Street was designated as an important modern historical block in Dalian. In terms of functional positioning, from a macro perspective, Dalian is a renowned summer resort and popular tourist city in China; from a micro perspective, Yantai Street boasts a superior geographical location adjacent to the new port area and the city center, offering enormous potential for future economic and tourism development. Therefore, the functional renewal of this historical block is reflected in two aspects: on the one hand, in accordance with the functional requirements of a boutique hotel, the interiors of historical buildings are renovated, and supporting facilities such as reception areas, conference halls, catering services and leisure spaces are appropriately added to meet hotel operational needs; on the other hand, as an open block showcasing the city's modern historical and cultural heritage, its overall form is protected and restored to provide free exhibition and sightseeing spaces for the public. After renewal, the area around Yantai Street is no longer a purely residential block, but has evolved into a new urban historical block with a mixed-use function integrating culture, leisure and entertainment, and hotel accommodation (Figure 4).



**Fig. 4** Yantai Street Historic District Protection Master Plan

In response to the above considerations, this round of protective renewal planning is carried out at two levels: detailed construction planning and historical building renovation, with the corresponding basic principles of protective renewal defined. At the planning level, to protect the character of the historical block, the following principles are strictly observed: protecting the original road network structure and street space scale; preserving the building layout and external spatial form (Figures 5-7); safeguarding the greening and landscape features within the block; and comprehensively upgrading the infrastructure based on the new functional positioning.



**Fig. 5** Bird's-eye view of the southeast perspective of Yantai Street Historic District Conservation Plan



**Fig. 6** Design Concept: Perspective of Ocean Alley



**Fig. 7** Design Concept: Perspective of Guanghui Street

In accordance with the original road structure of the block, the area is divided into 6 cluster plots. By demolishing the unauthorized temporary buildings constructed in later periods, the original street-facing building layout and street spatial form are restored. A street square is reinstated at the road intersection within the block; the original courtyard spaces are retained inside each cluster. As recounted by some railway employees who have lived here for nearly half a century, “The inner courtyard of each building covers an area of approximately 15 to 20 square meters, and the landscape planting in the courtyards has changed over time. During the period of Russian colonial rule, plane trees were planted; during the Japanese colonial rule, pagoda trees were grown; and in later years, Chinese toon trees were introduced” [5]. Therefore, the new landscape plan will also strive to preserve the original trees and vegetation as much as possible.

The renovation of infrastructure and the adoption of advanced green transportation concepts form the foundation of the historical block renewal plan. After over a century of use, the existing roads and underground pipeline facilities are no longer capable of meeting the demands of modern urban life (Figure 8). In response to the new functional plan, the municipal infrastructure within the block has been fully reconstructed. In the traffic planning and design, pedestrian traffic is prioritized as the primary mode of transportation in the block, which is reflected in the specific design and layout of roads and street furniture. Pedestrianization measures will also be introduced in the block: the original bluestone slab roads are restored, and vehicle speeds are restricted to ensure the priority and smooth flow of pedestrian traffic. This also lays the foundation for restoring traffic connectivity with the existing Russian Style Street in the future. In addition, further restrictions on the driving and parking of motor vehicles within the block will be imposed through road design and strict traffic management measures.



**Fig. 8** Current Status of Municipal Facilities in Yantai Street Historic District in 2010

## 4 Protection and Renewal of Historical Buildings

The preservation of a historic district's distinctive character relies on the conservation and restoration of its individual heritage buildings. Based on a scientific assessment of existing structures—considering their historical, artistic, and socio-cultural value as well as deterioration levels—the design plan categorizes these buildings into three grades and formulates corresponding conservation and adaptive reuse principles:

**Grade I Protected Buildings:** Structures of high historical and cultural significance. They must be strictly conserved and restored in full accordance with architectural survey drawings, including detailed components.

**Grade II Protected Buildings:** Structures that embody the district's overall character and hold notable cultural value, with their structural integrity largely intact. Their external form (including details) requires restoration and preservation, while internal spaces may be moderately adapted to suit new functional needs.

**Grade III Protected Buildings:** Structures of general cultural value with poor structural preservation. Appropriate extensions or renovations to both internal and external spaces are permitted, provided they do not compromise the district's overall historic character.

The final plan designates 9 Grade I, 15 Grade II, and 4 Grade III protected buildings, all of which must be conserved and renovated in strict compliance with the aforementioned principles and measures. (Figure 9)



**Fig. 9** Yantai Street Historical Building Protection Classification

### A. Preservation and Restoration of Architectural Forms

The 28 buildings within Yantai Street vary in form and feature characteristics of Russian, German, and Japanese residential styles. These buildings, used as residences, have compact floor plans, small room widths, and simple interior decorations. Based on the historical value assessment of each building, careful restoration and renovation of the facades and interiors are carried out. The external facades, while maintaining the basic principles of

the original architectural style, aim to restore the original appearance and detailed effects as much as possible, repair decayed architectural components, and consider appropriate updates to doors, windows, and other building elements according to new functional requirements. Any extensions or newly built parts of the original buildings should, depending on their function, adopt design elements that reflect contemporary characteristics, achieving a creative harmony and integration with the historical architecture. Internally, while ensuring the original wooden roof structures remain unchanged, steel or reinforced concrete frameworks will be used for reinforcement to enhance the safety performance of the original brick-concrete structural system.

### B. The Historical Evolution of Neighborhood Functions

The residential buildings in the Yantai Street area have a history of over a hundred years. With the changes in residents, their usage modes and functions have been constantly evolving, and their external forms and interior decorations have also taken on diverse appearances. During the period of Russian and Japanese colonial rule, most of these residences were single-family dwellings. After the liberation, they were converted for occupancy by railway workers, with each small building housing 2 to 3 households. Later, as the number of households or family members increased, some residents, in order to expand their living space, not only re-divided the indoor space and altered the original internal layout of the buildings, but also added extra rooms around the original residential structures, which exerted a great impact on the original building facades. Since the 1980s, residents began to put up small structures called "bungalows" on the open spaces between the buildings. By this time, it had become difficult to distinguish the original neighborhood layout and historical style. In the late 1990s, the economic conditions of railway workers improved, and they gradually moved to better-equipped housing. This area then gradually became disconnected from the city center, with large wholesale markets springing up around it, and the vacant houses were rented out to migrant workers from other cities. Subsequently, the living conditions, sanitation, and public security of this area deteriorated further, and Yantai Street gradually turned into what was known as a "slum" (Figure 8). Entering the 21st century, in view of Yantai Street's advantageous geographical location adjacent to the port and the city center, the original positioning as a residential area could no longer meet the needs of urban development. New functions were thus required to supplement the area, so as to improve and enhance the neighborhood's environment and vitality.

### C. New Function Replacement

Based on the basic concept of protective renewal planning and design, the functional transformation of historical buildings and the preservation of their historical style within the block are the key elements of historical block renewal. The replacement of functions and the preservation and renewal of the internal and external forms of buildings interact with and restrict each other.

In accordance with the planning and design scheme, the first building on the left side of the south entrance of Guanghui Alley (Figure 7) will be renovated into the Dalian Modern History Archives (Figure 9). The original external form of the building will be preserved through maintenance and renovation, while appropriate adjustments and transformations will be made

to its interior according to the needs of functional adjustment. After renovation, the Modern History Archives will not only collect and preserve historical pictures, written records and other modern historical documents related to the Shengli Bridge North Historical Block and even the entire initial stage of Dalian's establishment as a city, but also display removed historical relics such as fireplaces and window lattice. The archives will be open to citizens and tourists free of charge.

Building No. 13 of Guanghui Alley was constructed in 1899 during the Russian occupation period as the "Chinese Eastern Railway Hospital". After the Japanese colonial rule took over, it was renamed the "South Manchuria Railway Hospital" in 1907. Previously, it served as the Shengli Bridge North Outpatient Department of the Affiliated Hospital of Dalian University (Figure 10). According to the planning and design, it will be transformed into a hotel lobby (Figure 11).



**Fig. 10** Modern Historical Building Data Center Effect



**Fig. 11** H ption Center Effect

The eastern side of the entrance to Guanghui Alley is the key area of this renewal and renovation project. To meet the basic functional needs of the characteristic hotel (such as conferences, catering, parking, etc.), the three-story buildings on both sides will be partially demolished, and a new three-story conference, catering and reception center with a basement (New Building 1) will be constructed. Its main functions will include a multi-function hall, Chinese and Western restaurants, a Japanese restaurant and a multi-function hall, with an underground parking garage capable of accommodating 65 vehicles arranged in the basement (Figures 12 and 13).



**Fig. 12** Design Concept for the Catering and Conference Center (New Building 1)



**Fig. 13** Catering and Conference Center (New Building 1) Rendering

In terms of scale control, to avoid damaging the scale of the entire block, the local height will be four floors, and an open square space will be designed in front of the entrance, set back a certain distance from the adjacent historical buildings. In terms of architectural form, modern elements such as steel and glass will be adopted to weaken the volume of the new building, reflect the characteristics of the times, and strive to form a contemporary contrast and integration with the surrounding buildings. The three-story buildings connected to both sides of this building will basically retain their original architectural style and form, with proper treatment at the joints, and their interiors will be renovated accordingly to serve as auxiliary functions such as offices and staff dormitories.

For other historical buildings in the block, in accordance with the principle of protective renewal and considering their architectural characteristics as mostly two-to-three-story independent small residences, their internal spaces will be adjusted into high-quality courtyard-style characteristic hotels on the basis of renovating and preserving their external style. Similar characteristic hotels have already achieved successful cases in cities such as Shanghai and Beijing, and are still in the emerging stage in Dalian at present. This functional positioning not only meets the needs of historical building protection, but also satisfies the functional needs of the renewed urban center, and is expected to have good economic value. In addition, combined with the functional positioning of the new urban center, the historical buildings on both sides of Guanghui Alley may also be successively transformed into characteristic restaurants in the future.

## 5 Implementation and Progress of the Renewal Plan

The renewal plan for the Yantai Street area follows the principles of grouping, phasing, proceeding from the whole to parts, and advancing in a gradual manner. Based on the original road network, the entire block has been divided into 6 groups. Renovation and reconstruction of the buildings within each group are carried out sequentially from southeast to northwest.

The implementation process is mainly divided into the following stages: Preliminary Preparation Stage – Improve the environment and restore the basic original appearance of the block. First Stage – Upgrade the infrastructure such as roads within the block. Second Stage – Renovate and construct the conference and catering center as well as its associated square at the block entrance. Third Stage – Renovate the facades of street-front buildings section by section, and carry out interior renovation and reconstruction of the buildings in sequence. Fourth Stage – Complete the transformation of buildings, courtyards, landscapes and other components within each group one by one in accordance with the detailed design.

The preliminary preparation stage includes the following tasks: relocating existing residents; demolishing the temporary structures built in later periods to restore the original historical style of the buildings; conducting surveying, mapping and positioning of all buildings in the block, and carrying out research on the protective renewal and reconstruction plan; and completing the overall construction detailed planning and design as well as the individual design of the conference and catering center and the entrance square.

After nearly two years of work, the preliminary preparation stage has been completed, and the subsequent three stages of the Yantai Street renewal and reconstruction project have been launched in sequence, initially presenting a new look of the entire block. Upon the completion of the renovation and reconstruction of street facades, main roads and landscapes in the third stage, some areas and buildings will be the first to open to the public for sightseeing. Subsequently, the renovated public facilities will be gradually opened to the public in accordance with the progress of the later-stage work.

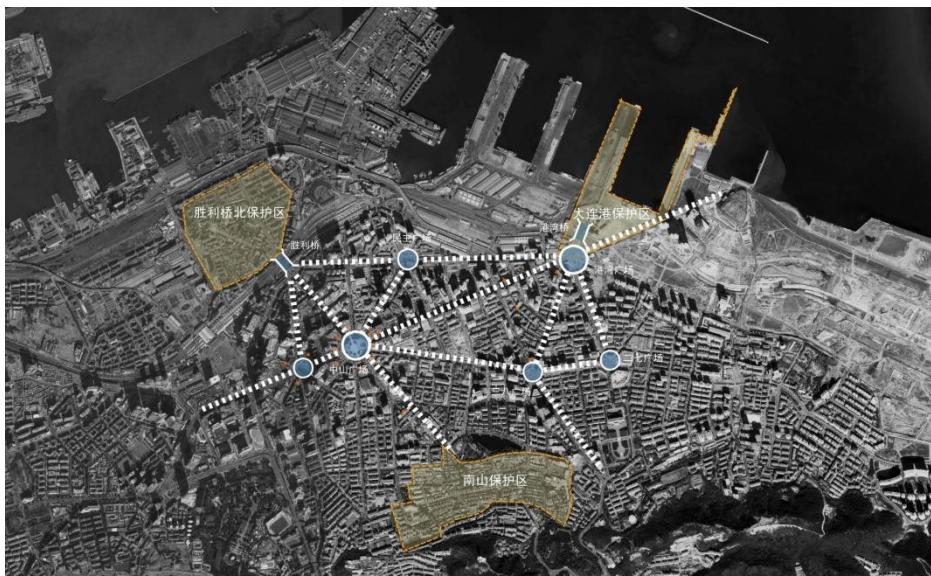
## 6 Conclusions, Problems and Prospects

The protective renewal of urban historical blocks reflects a city's profound history and has also become a symbol of urban civilization. The process of protective renewal of the Yantai Street Historical Block is a microcosm of the tortuous course of planning and construction of Dalian, a modern city.

Restricted by factors such as materials, craftsmanship and time, as well as the balance of interests among various parties, the extent to which the new renewal plan can be implemented, and what new look this historical block—the earliest part of Dalian when the city was founded—will present in the future, remains to be answered by time<sup>4</sup>. Meanwhile, the openness and transparency of planning and construction information, as well as smooth and efficient communication among all stakeholders, are of great importance at the initial stage of historical block protection in Dalian where there is a lack of historical experience to draw on. As a truly complete attempt to implement the concept of protective renewal of historical blocks, regardless of the outcome, such an attempt to advocate the concept of protective renewal and restore urban historical memory is of extraordinary value and significance at a time when the sound of "demolition" echoes across cities and historical memories

are being lost.

Nowadays, for the protective renewal of urban historical blocks, on the one hand, focusing on utilization has become an important issue, and their operation and maintenance are also the key to the sustainable development of historical blocks; on the other hand, the establishment of an overall urban protective renewal system has been put on the agenda. (Figure 14)



**Fig. 14** Modern Historical Preservation Districts in the Central Urban Area of Dalian

The protective renewal of the Yantai Street Historical Block is of milestone significance for the protection of Dalian's modern historical and cultural heritage. Whether it succeeds or not will not only bring new opportunities for restoring the original historical appearance of the adjacent Russian Style Street and the modern historical blocks in the Shengli Bridge North area, but also pave the way for the protective renewal of other modern historical blocks in Dalian urban area. This protective renewal plan based on functional transformation also provides Dalian with a new symbol and model for preserving and inheriting the city's modern historical style and features. Thus, through the integration of respect for history and modern technology, the sustainable development of the city will have a realistic possibility of success.

## DECLARATIONS

### Notes

[1] The research project related to this paper, Research on the Conservation-oriented Regeneration Planning and Design of the Modern Historic District of Yantai Street in Dalian, is a research achievement commissioned by Dalian Railway Real Estate Development Co., Ltd. and undertaken by the Institute of Environmental Design, Dalian University of Technology, with the implementation period from August 2010 to December 2011. Project Leader: Lu Wei; Research Team Members: Liu Lianlian, Deng Xi, Wang Lin, Wu Liang, Zhang Shiqian, Lin Jia, Li Fangsheng, et al.

[2] All the unmarked images in this paper are provided by the Institute of

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