

## RESEARCH ON THE WEAVING STRATEGY FOR THE RENEWAL OF HISTORICAL BLOCKS

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### ABSTRACT

*The historical block is a symbol of city civilization. Changes of the times and rapid development of economy have caused great changes in the form and space of historical blocks, and also their decay in different degrees. How to solve the contradiction between the decline of historical blocks and the development of urban modernization has become the key. The weaving design, originated from western urban planning, is widely used in the revitalization of historical cities. It inherits the context of the original block, restore the form and activates its potential by gradually embedding new elements in the space required for transformation, so as to adapt historical blocks to modern cities. This paper explores the strategy of weaving design in the renewal of historical blocks. Taking some contemporary renewal projects of historical blocks in Europe and China as main objects, the study analyzes and summarizes the weaving methods and strategies from three aspects of urban, architecture and tectonic, trying to make contributions to the renewal and development of historical cities in the future.*

*This paper is subsidized by NSFC project which is named as <Research on Time and Space Elements and Expression System of “Sharing Architecture” >, NO.51978468.*

*Keywords: historic block, urban renewal, weaving strategy, modern and tradition*

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### INTRODUCTION

With the advent of the information age and the development of economic globalization, the contradiction between the decline of historical blocks around the world and the development of urban modernization has gradually intensified. The rapid construction of the city has cut off its connection with tradition to some extent, so that many historical blocks have been demolished and abandoned. Nowadays, it has become the consensus of society to inherit the historical context and protect various historical and cultural heritages. To realize the revitalization of historical blocks, on the one hand, the remaining buildings should be protected. The outdated problems in terms of function, structure, and form should be solved in various ways. On the other hand, the new buildings used to weave the texture of the block need to be in harmony with the context of the overall environment. Many contemporary architects have paid great attention to the renewal of historical blocks. Through theoretical and practical research, they try to find a way to realize the harmonious coexistence of new and old buildings. They are committed to solving the contradiction between tradition and modernity to achieve the sustainable development of urban economy, structure and morphology.

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### BACKGROUND

Since the 1960s, the importance of historical areas and blocks in cities has once again been valued. The rise of historical conservation is largely related to the decline of modernism. Because modernism draws inspiration and power from the era of machinery and large industrial production, emphasizing the difference from the past. Early modernist urban planning was anxious to solve the dirty and crowded environment of the city. In this process, history was considered to be an obstacle to social development. Large areas of historical blocks were demolished, giving way to integrated development and efficient transportation system. After 1945, the need for urban reconstruction after the war gave modernism the first opportunity for large-scale practice. Compared with partial repairs and renovations, integrated development was a more efficient and popular way of urban renewal. But a series of problems caused at the same time also appeared. Europe and the United States have begun to rethink the large-scale development of urban construction methods. Representatives include Jane Jacobs and Herbert Gans. After the 1970s, with the development of the global economy, the rising

trend of environmentalism and deindustrialization, comprehensive development was no longer taken as urban planning policy, which also heralded the beginning of postmodernism.

Postmodernism expresses its appreciation of the value of historical cities and urban morphology. In *Collage City*, Colin Rowe criticized that modernist architecture lost attention to the external environment and historical context. Aldo Rossi's Neo-rationalism believes that history and modernity are continuous. History is the origin of the city, and the city continuously draws inspiration from history to obtain development and change. Postmodernism's emphasis on place sense and historical context has gradually become a consensus. For historical blocks, it is certain to affirm its value and protect it, but the way of preservation has always been a problem worthy of exploration. The structure and form of historic blocks can be continued through weaving design and gradual approach. However, how to deal with the relationship between the old and new buildings, and how new buildings reflect their own characteristics of the times are still urgent problems need to be solved.

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## METHODOLOGY

Through literature research and case method, the contemporary renewal strategies of historical blocks are analyzed from both theoretical and practical aspects. Relevant theories about the renewal of historical blocks and the application of weaving strategy of new buildings are summarized. This paper studies the contemporary cases in Germany, Denmark, China and other historic blocks which are regenerated through weaving design. Based on historical and environmental backgrounds, the cases are analyzed from three levels of urban, architecture, and tectonic, and summarizes the weaving design strategies for renewal of historical blocks.

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## FINDINGS

### **Related Theories**

There are usually two ways of architecture renewal of historical blocks. One is to renovate and transform the historical buildings by means of functional replacement. The other is to develop and build new buildings on the original site of the historical buildings that have been demolished due to lack of value, so the original texture could be weaved and sewed up. The paper mainly focuses on the second renewal method.

The new design must fully respect the texture and architectural features of the original historical blocks to achieve overall context harmony. As for how to achieve contextual harmony, Steven Thiesdell has mentioned in *Revitalizing Historic Urban Quarters* that there are three methods: contextual unification, contextual juxtaposition, contextual continuation. Contextual continuation reflects the ideas of postmodernism, and it is also a generally accepted view which means there is continuity between modernity and tradition, and history can provide impetus for development. However, unlike contextual unification, the imitation of form alone cannot stimulate the vitality of buildings and blocks. What is needed is the contemporary interpretation of tradition, in which elements in the traditional context are re-expressed through contemporary design methods, so as to truly continue the vitality of tradition in the present age.

Professor Chang Qing of Tongji University believes that preserving historical blocks does not mean keeping them in origin state. For new buildings in the historical environment, the local historical context needs to be inherited, but the ways are not only imitation. Because inheritance is not only to pass down the heritage itself, but also to connect the past with the future, so as to inspire the creation of today with the essence of heritage. In *Coexistent System of Old and New Buildings in Europe*, Professor Zhang Ming of Tongji University emphasized the continuation of the city and history based on a series of case study. In the rehabilitation and renovation project of the former residence of Yan Tongchun, which is current site of Jiefang Daily, Professor Zhang put forward the design concept of "Renovation through History", which means the purpose of architecture is not only to include the past, but also to transform the pasts into the future. This view is now widely accepted by the public.

## Contemporary Cases for Renewal of Historic Blocks through Weaving Strategy

Around the world, there are many cases of renovation of historic blocks through new constructions. Architects use different architectural languages to deal with the relationship between the old and new buildings in historical blocks, but there are also many universal rules and strategies. This paper attempts to analyze and summarize them from three aspects of urban, architecture, and tectonic.










<p><b>Urban</b> (urban context, street pattern, space system)</p>	 <p>A. James Simon Gallery</p>	 <p>B. Jixi Museum</p>	 <p>C. Lianzhou Museum of Photography</p>
<p><b>Architecture</b> (space, form, facade)</p>	 <p>D. Tsingpu Yangzhou Retreat</p>	 <p>E. Jishou Art Museum</p>	 <p>F. European Hanse Museum</p>
<p><b>Tectonic</b> (technique, material, color)</p>	 <p>G. Kannikegården Conference Center</p>	 <p>H. European School Copenhagen</p>	 <p>I. Kult Cultural History Center</p>

Figure 1 This is a table that shows contemporary cases for renewal of historic blocks.

(Source: A. ©Ute Zscharnt for David Chipperfield Architects, B. ©Li Zhe, C. ©Zhang Chao, D. ©Pedro Pegenaute, E. ©Tian Fangfang, F. © Werner Huthmacher, G. ©Anders Sune Berg, H. ©Adam Mørk and Hampus Berndtson, I. ©Brigida Gonzáles.)

### Urban: weaving the texture and sharing the city

The relationship between the new buildings and the historical blocks and cities needs to be comprehensively considered from three aspects: urban context, street pattern and space system. On the one hand, the new building should fill and sew the original structure and texture, and properly handle the relationship with the surrounding old buildings. James Simon Gallery is designed by British architect David Chipperfield, which is a new entrance for Museum Island in Berlin. While filling the gaps in the urban texture of Museum Island, architects took different approaches to face the two old museums in the classicism style. It is a direct physical connection with the Pergamon Museum on the north side, forming a continuity of the riverside interface. While with the Neues Museum on the east side, by extending the street-front colonnade, an internal courtyard open to the public is enclosed, separating the two museums. On the other hand, the new building also needs to be integrated with the external urban space. It can be shared with the city by means of reserving a distribution square, having sinking courtyard, and opening some space of the building to the city to increase its publicity, in which way to stimulate the vitality of the entire historical block. Jixi Museum designed by Li Xinggong continues the sequence characteristics of the local traditional Anhui architecture. Architect made a part of the space on the other side of the road to enclose a city square through walls as a "city hall", guiding people to stay here to maximize the integration of museum and city. The Lianzhou Museum of Photography is located in an ancient commercial street with a feature of traditional

Lingnan architecture. Architect retreated the boundary of the museum so that the pedestrian walkway beneath the arcades along the street could be continuous. The city square within the facade is completely open to the city, enhancing the publicity of the museum.

### **Architecture: extracting prototypes and making contemporary reinterpretation**

At the architectural middle level, the most critical issue is to find space and form prototypes from surrounding natural, historical, and cultural environments, and interpret them through contemporary design methods. Jishou Art Museum, designed by Yung Ho Chang, is located in the ancient city of Qianzhou in China Hunan Province. Architect took traditional Chinese wind and rain corridor bridge as the prototype and made an ingenious reinterpretation to this traditional infrastructure space. In this way, the museum inherits dual functions of transportation and public activities, so that people can not only pass through, but also stay. The space prototype of Tsingpu Yangzhou Retreat is the traditional Chinese quadrangle courtyard. Architect adopted a grid layout and separated the space with the essential "corridor" element in the classical garden. The form of the courtyard is a reinterpretation of the conception of traditional Chinese gardens. European Hanse Museum is located in Lübeck, an important port city in northern Germany. The whole building is a modern reinterpretation of the Lübeck gabled houses. In terms of facade design, the exquisite brick four-leaf pattern of the southwestern gables is derived from classic Gothic architecture, which integrates the new museum and Lübeck's centuries-old traditional buildings together.

### **Tectonic: inheriting materials and innovating construction techniques**

Through analysis, it can be found that many new buildings use traditional or local materials to continue the sense of place, but architects create a wonderful collision between the old and the new through innovative construction techniques and modern structures, which will bring people an impact and shock, generating greater attraction. As a finalist for the 2017 Mies van der Rohe Award, the Kannikegård Conference Center designed by Danish Lundgaard & Tranberg Architects is located in the center of the oldest city Ribe. Given the historical context of the conference centre, architects chose a pristine red brick that integrated harmoniously with the surrounding buildings. Architects hoped the structure of the new building to be significantly different from the original structure, so they developed a flat light brick surface that hung in overlapping ways like fish scales, simulating the original layout of medieval gable houses. The final effect is also a contemporary expression of the traditional technique of brick buildings. On the other hand, the clever combination of traditional and modern materials can also form a contrast. The European School Copenhagen, located on the site of the former Carlsberg Brewery in central Copenhagen, is an important part of Danish cultural heritage. Taking into account the history and environment of industrial buildings, architects continued the tradition by using decorative bricks. At the same time, in order to enhance the contrast of materials, part of the windows are wrapped with bright metal frame, which also reflects the characteristics of modern era. In addition, building exterior color is also very critical. Kult Cultural History Center is located in the town of Vreden in North Rhine-Westphalia, Germany. There are four old buildings built in different periods on the site. In order to distinguish the different historical periods of each building, the choice of bricks and stones presents subtle color changes. It realizes the unity of the whole building group to the greatest extent and expresses the diversity of its identity.

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## CONCLUSIONS

As modernism gradually turns to postmodernism, the protection and inheritance of human history, culture and heritage has become a consensus in society. Modernity and tradition are not antithetical, because history is constantly overlapping. The traditional culture is the symbol of the identity of the historical block, which needs to be protected and inherited. While the creativity inspired by this culture consisted with the rhythm of contemporary society is its endless vitality. Under the guidance of weaving strategy, contemporary architects can express the new buildings in the historic blocks at least at three levels of urban, architecture and tectonic. New buildings can be integrated with the historic blocks and urban environment through texture weaving and city sharing. Extracting the traditional prototype and reinterpret it through modern design. Using traditional and modern materials reasonably, and innovating construction techniques. Only when the new buildings continue the

historical context and reflect their own characteristics and values of the times can they inherit the past and promote the development and revitalization of entire historical blocks.

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