

A Study on Renovation and Development of Old Districts in Modern Cities

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Abstract. Jinan has changed with each passing day due to accelerated urban construction steps, and the newly planned districts and newly constructed buildings show improvements of times on forms, colors and functions. However, old districts and old buildings composing them representing for urban contexts are ignored. Such old buildings have high historical research values; however, they often have ruined appearances and seriously missing internal functions due to reasons such as out-of-repair and capital failure. They have been disharmonious notes of city images and bottlenecks for regional economic development. The protective renovation and reuse of contiguous buildings and surrounding areas of old districts are researched in this article, to achieve both protection and economic development, so as to drive economy and humanistic revitalization of the region.

1. Introduction

The building groups left over in old districts area carriers of tangible and intangible cultural heritages, carrying historical and cultural accumulation of thousands of years. Today, with rapid construction in new cities, there are crisis such as historical building and traditional landscape destruction, as well as trends of loss of city memories and social network collapse^[1]. It is needed for us to reflect and solve related problems to avoid unplanned removal and construction of old districts in modern cities, to protect and inherit the precious historical and cultural heritages left by history. By taking Bianzhi Lane in Jinan as an example, this article conducts in-depth investigation in old buildings in old districts of Jinan and analyzes in a comprehensive way, so as to seek for the path for renovation and reuse of old buildings in old districts of Jinan, in order to drive the economic development of the whole region and continue the culture of the city..

2. Research Status at Home and abroad

The overall relevance transformation plan of excellent historical buildings has been implemented since 1980s in western countries such as those in America and Europe, and utilization of new materials, technologies and techniques has been encouraged^[2]. In addition, comprehensive optimal design has been conducted in combination of traditional regional context features, to achieve the lowest consumption in natural resources at the premise of meeting the use demands, and show local national culture with external walls of buildings, such as the wasted industrial park regeneration project in north Zurich of Switzerland, the ecological transformation project of the wasted iron and steel plant and surrounding environment of Ruhr region in Germany and the transformation regeneration project of the wasted wharf port in Darling Harbor of Sydney^[3].

The transformation of the New World of Shanghai is a relatively successful case in our country. By taking the mark of modern building in Shanghai, i.e., Shikumen building old area, as the foundation, it conducts appearance repair as well as changes original residence functions of Shikumen, to endow it with business operation functions in an innovative way. The original brick walls and roofing tiles are left for the appearance of Shikumen building groups of the New World, and

the interiors of each building are customized according to living styles, living rhythms and emotional worlds of modern city people of the 21st century, embodying atmosphere of modern casual living. Hong Kong Special Administrative Region Government has released the “reviving historical building partner plan” for protection and renovation of old districts and buildings, achieving good social effect. It is available to set specialized institutions and complete systems, and create “partner” relations and strengthen public participation by taking successful experience of Hong Kong as reference, so as to promote protection and renovation of historical buildings in mainland, so as to ensure healthy survival and development of excellent historical buildings. The mode has the following advantages: historical buildings are given to social institutions for operation under the supervision of governments and professionals, which reduces burdens of governments and ensures protection of historical and cultural values of historical buildings during operation. In addition, it improves attention to protection and renovation of historical buildings of the public, and can be adopted as a multi-win historical building protection mode. The transformation and reuse of historical buildings shall not be simple functional exchange and redevelopment; on the contrary, it is needed to establish a comprehensive method considering of the diversity of contents, to achieve a new space environments with both historical features and modern characteristics with the participation of social strength and governments. In this way, it can realize the co-existence of multiple factors such as historical building protection, sustainable development and reuse.

3. Districts Discussed in the Article

Bianzhi Lane district in Jinan is taken as the research objective of the research, which starts from Shuangzhongci Street on the north and reaches Quancheng Road on the south, and is adjacent to Shengfuqian Street on the east and Dusi Lane on the west. There are 2 courtyards of Chen Family, residence of Number One Scholar of Qing Dynasty, a relic protection unit in Jinan, gate towers during Daoguang Period and old buildings during the Republic of China and the initial post – liberation period. Such old buildings attract large numbers of tourists. However, due to improper protection, a lot of the old buildings are in danger of collapse at any time^[4]. At the same time, some other newly built buildings have huge building energy consumption due to low construction starting point and unfavorable energy conservation supporting facilities, with no heat insulation treatment to building envelope structures and decorative aesthetical treatment to external exteriors, leading to extremely high resident living cost and cultural and regional features which shall be reflected by buildings; not to mention accordance with surrounding old buildings on shapes and colors. Furthermore, some residents set up illegal buildings in open space in streets, which not only brings about hidden dangers about fire control but also clash against with adjacent excellent historical buildings, reducing the cultural atmosphere of the whole district^[5]. Such old buildings are symbols of city development in different stages, and are carriers of time and culture. The transformation and reuse of the district improve the city interface of the original district and strengthen the permeability between the old buildings and the local regional interface. It promotes interaction and dialogues between buildings and cities, and accommodates historical memory of the district, with deep memory in citizens. The protection and renovation of old buildings in old districts are conducted to achieve better compatibility and continuity of cultures of cities, playing positive roles in retaining memories about cities by citizens and recovering regional contexts and urban culture.

After corrosion caused by wind, rain and sunshine, the external walls of the old buildings have no original colors, with dangers of peeling-off of exterior walls and accessory structures, giving rise to severe influences on city orientation and gracefulness as pitiful abandoned old people. The original building image or the new building language is not the target of transformation, and the coexisting space integrated with new and original buildings is the final objective for architects. For this reason, the project plans to take old buildings and blocks of Bianzhi Lane in Jinan as research objectives, to conduct integrated transformation based on regional development integration, to make old buildings have new vigor and youth in combination of strain design.

4. Strategies

The renovation of outer walls, the strengthening of interiors of old buildings during the late Qing Dynasty and the Republic of China, as well as the clearance and renovation of courtyards and surrounding environments are known as age-reduction transformation of old buildings. It is conducted to reduce the age of buildings, to make old buildings have new vigor, so as to extend their life, and improve the comfort, health and security of buildings.

The buildings built during 1970-1980s in Bianzhi Lane and surrounding blocks will be existing during a long term due to reasons such as capital and urban planning. However, due to limitations of various conditions during the earlier stage of construction, no integrated design is conducted to residence, streets and regional environments; at the same time, there are extremely high energy consumption, damaged external walls and poor surrounding environment in existing old buildings, and multiple types of transformation are needed. However, single-point transformation by taking no overall strategy into consideration will lead to fragmented transformation, lack of entire beauty and coordination, out of the question of urban culture. The project conducts research on strain design of old buildings on aspects of building space, building appearance and surrounding environment beautification. In this way, the regional building groups can adapt to development and transition of times on space, use functions, aesthetics and building arts. The project tries to introduce the design philosophy of aesthetics and living organism evolution into building transformation (suitable for buildings at beginning of new China to 1980s of non-historical protection organizations but not historical protection organization). In addition, based on cultural transformation to external walls of buildings, it integrates with surrounding regional texture, to form unique fragmented regional cultural appeals, to achieve inter-infiltration between building space and city space, so as to continue the urban context and recover the regional cultural sense of identity. In this way, it tries to integrate between old buildings and surrounding buildings, to form integral and harmonious beauty in regions and have new vigor, to form city landscape modality with abundant layers and great changes. Besides, a set of feasible comprehensive design method suitable for transformation of old buildings is concluded in this article.

With respect to the appearance of old buildings in need of transformation (non-historical protection organizations), the shapes and colors of traditional buildings are extracted to match by means of concluding and organic innovation. In addition, regional cultures and aesthetical element symbols featured in Jinan such as springs, willows and Confucianism are integrated into the building appearance design schemes after steps such as extraction, conclusion, classification and times innovation. Local transformation on adaptation and comparability in interior and exterior of old buildings are conducted, to remove unplanned buildings in courtyards and plan for suitable space in courtyards or streets and plan for new buildings, to meet the required demands of old communities. It is required to not to renovate or repair old buildings with city heritage significance (such as Number One Scholar Courtyard in Bianzhi Lane and the frontage old buildings in General Temple Lane), or leave them in wind and rain (several residence buildings in General Temple Street during the Republic of China era are in a state of devastation and on the verge of collapse due to lack of positive maintenance; a Taoist Temple arch over a gateway during Daoguang Period is also ruined). It is need to conduct elaborate repair according to building styles of the times of the buildings.

It is available to construct new buildings in the style of ancients or combination between ancients and moderns for the space after removing illegal buildings (or buildings with no historical value and cannot meet modern residence or commerce functions), and break simple imitation and replication of traditional interface. It is available to conduct sustainable and organic innovation for regional elements in Jinan, to make them in accordance with both connotation requirements of ancient culture and development requirements of modern cities, with sustainable heritage characteristics.

5. Summary

It is available to repair and reinforce decaying historical buildings to make them full of energy again. In addition, some old buildings suitable for transformation and reuse can be delivered to social institutions for operation, so as to relieve burdens of governments and protect historical and cultural values of the historical buildings during operation. At the same time, it improves attention of the public to protection and renovation of historical buildings as a multi-win historical building protection mode. Besides, the reuse of historical buildings can drive the development of the third industry. Considering that most excellent historical buildings in Jinan (such as the Number One Scholar Mansion during Guangxu Period in Bianzhi Lane on the north side of Quancheng Road) are situated in tourist areas and downtowns, it is available to change idle (or bad) assets to high-quality assets by transformation and reuse of them, to promote development of tourism in surrounding old cities and drive development of surrounding service economy, so as to realize protection and development of the whole old district.

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