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**Urban Renewal in Historical Cities in
China: Exploring Methods based on
Urban Form Studies**

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Abstract

With unprecedented urban extension in China, issues concerned with urban renewal have drawn wider attentions than ever before especially in historical cities. However, an unreasonable short-term process including investment, demolition and redevelopment which accords with neither the status quo in China nor the objectives of urban renewal, has taken place in many Chinese cities for years. The main purpose of this paper is to find a solution to problems during the urban renewal in historical cities in China.

By utilizing a morphological approach based on historic-geographical environment which is developed by Conzenian Schools, this paper first conducts a series of urban form analysis of three figures involving ground plan (including sites, streets, plots and the ground-floor plan of the buildings), building fabric (especially building types) and land use in the case study of Ayidun area in Yi'ning of China. Then, a composite map of urban landscape units is drawn based on the three figures above and historical maps (i.e. 1958, 1978, 2003, and 2013). The hierarchy of priority for conservation is delimited by studies upon the landscape unit map afterwards. Moreover, a series of recommended management for urban renewal about each landscape unit is tentatively laid out, which can be adopted by the authorities in future managing affairs. In the end, how to involve more public participation in the process of urban renewal is also discussed.

Keywords: Urban Renewal, Urban Form, Historical Cities, Yi'ning of China

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*Hao Wu is the first author of this paper and Wenyong Tan is the corresponding author.

Introduction

China has witnessed unprecedented urbanization ever since the reform and opening up to the outside world in 1979, especially since the late 1990s. The economic development and urban expansion reflects to some extent the prosperity of a nation. However, with the surge of large-scale urban construction across China, the conflict arises between the old and the new area of a city, especially in historical blocks. The wonderful opportunities in the new area attract original residents in the old area to swarm in. Consequently, the absence of management in the old area leads to its loss of the urban functions. Desolate buildings, environmental pollution and traffic congestion become the symbol of the old area. All these problems restrain the urban development.

Facing the situation, the whole country makes theoretical and practical exploration into the urban renewal. But due to the lack of mature theoretical guidance, well-equipped watch-dog system and the awareness of preservation, the historical cities have been somehow damaged by human force. In particular, some remote and underdeveloped areas misunderstand the urban renewal as the transient process of investment-demolition-reconstruction. On the surface, the practice renews the old areas, nevertheless, the fast transformation from demolition to reconstruction cannot solve the fundamental problems once and for all. What is more, its far-reaching impact is massive: the historical and cultural link as well as the urban cultural context is destroyed in the old area. In this sense, it is urgent for the Chinese urban designers and planners to search for an effective and sustainable measure to protect the old area.

Historical Cities in China

How to Define Historical Cities?

In the broad sense, any city with historical value can be called the historical city. China is an ancient civilized country with a history of over 5,000 years. The past cultural heritage, historical relics and traditional customs are passed on from generation to generation. As early as in the 1960s, scholars and policy makers in China recognized the importance of preserving the cultural relics, but it was not until 1982 that the protection system of cities was established. The Law of the People's Republic of China on the Protection of Cultural Relics implemented in 1982 saw the appearance of well-known historical and cultural cities. "Well-known historical and cultural cities refer to those that enjoy rich cultural relics and are of great historical and revolutionary value." Then, 99 well-known historical and cultural cities, in total, were designated by the State Council in 1982, 1986 and 1994. Plus the irregularly added cities, the well-known historical and cultural cities have amounted to 124 up to the year 2013.

Overview of the Progress on the Protection of Historical Cities

In the recent 30 years, the protection and planning of historical cities in China has undergone four stages. The first three stages (Wang, Ruan & Wang 1999) can be summarized as ① from isolated protection of cultural relics to the overall protection of cities with the instances of Xi'an and Suzhou, ② from the overall protection of cities to the deep and detailed protection such as Ji'nan and Luoyang, and ③ the comprehensive and standard protection with an example of Wuhan. Suzhou becomes the first city to propose the requirement of comprehensively maintain the features of the old cities by exploiting new areas to reduce the burden of the old area; Ji'nan is characterized by its springs which stream along the streets and buildings; Wuhan has the characteristic of hierarchical protection and its corresponding systems. In 1994, Compilation Requirement on the Protection and Planning of Well-known Historical and Cultural Cities was issued by the Ministry of Construction and State Administration of Cultural Heritage. It marked that the protection and planning of historical cities stepped into the systematic and standard practice. Wuhan is a good case in point. The fourth stage from the early 20th century up to the present day comprises the rational exploration period of protection and renewal of the historical cities in China. Foreign designers of urban planning start joining in the research of the protection of the Chinese historical cities, such as Beijing and Guangzhou. They bring in some advanced beliefs like the Conzenian School. It can be testified by the protection and planning of the historical Zhishanmen area whose graphic morphological unit of blocks and priority protection layer, through urban morphology studies, lays a solid foundation for the renovation of the old area (Whitehand & Gu, 2007).

Problems

Despite the progress in the urban renewal, the old areas of cities in China are still beset with some problems. From the theoretical perspective, it is still a common phenomenon to emphasize the significance of the protection of heritages like traditional buildings but to neglect the preservation of the urban cultural context. Compared with the circumstances in the 1950s, much advance has been made. However, the urban renewal does not start with cities and blocks. Plus the inadequate field survey, some regions have no enough evidence to determine the zone of the protected historical blocks, resulting in the vague boundary or even severe bias. From the perspective of implementation, the lack of monitoring of the policy makers leaves with them excessive power, leading to implausible renewal. Some regions even transform the urban renewal into the real estate development of mass demolition and mass reconstruction. As a consequence, the practice goes against the theoretical output. From the perspective of public participation, the public, especially residents with low economic and cultural level, has no consciousness to join in the urban renewal. Moreover, the policy makers provide insufficient guidance and material support for the public. Thus, a multitude of the urban renewals change into a competition between urban planners and administrators. All in

all, the urban renewal without the participation of citizens inevitably cannot reach its prime.

Research Methodology

Overview of Urban Morphology

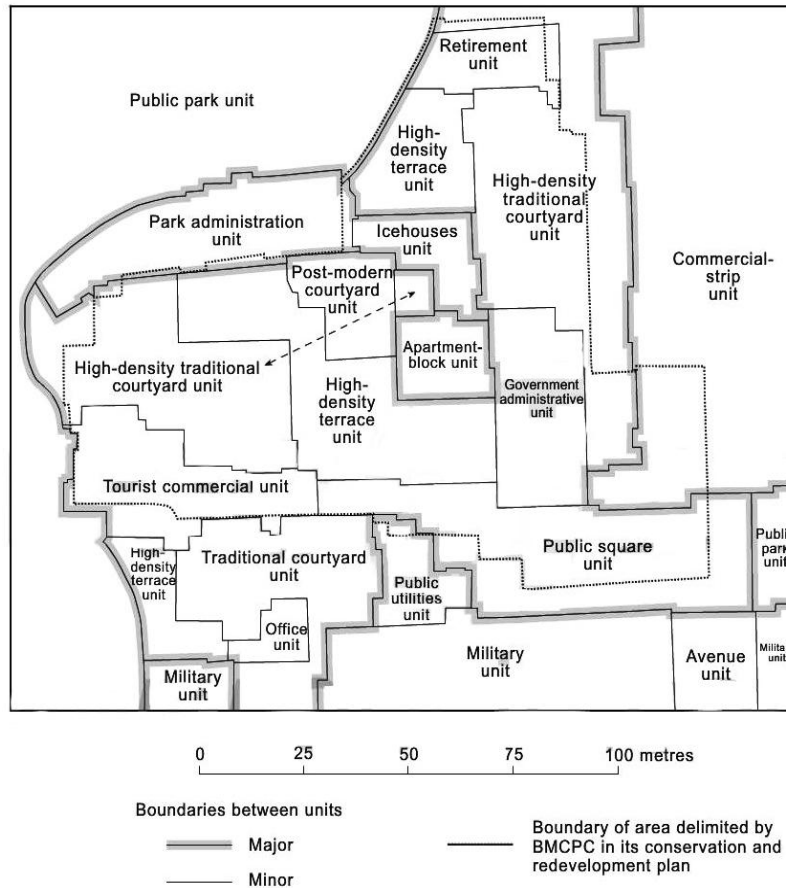
The research of morphology can date back to the research of human body form in the Ancient Greece; while the earliest urban morphology originates from the paper *Town Plan Analysis* by Schluter in the year 1899 (Whitehand, 2001). In the western countries, the research of the urban morphology has been carried out for many years. It has evolved into a discipline concerning many items of geography, history, architecture, economy and culture. And it has abundant research perspectives and content, and different research schools. Some of the prominent ones are: the Conzenian School emphasizing the analysis of historical maps and geography, the Muratori-Caniggia School mainly analyzing the architectural typology and the Versailles School valuing the research of architectural and urban history as well as the political economics. It is the multi-disciplinary nature that makes the urban morphology prominent during the urban renewal (Duan & Qiu, 2008). A large number of scholars have applied it into the renewal and protection of the historical cities (Whitehand & Gu, 2007; Whitehand & Zhang, 2011 etc.).

Urban Morphological Analysis Based on the Historical Geography

Originating in Germany and developed in England, the Conzenian School, based on the clue of historical maps and geography, makes morphological analysis of several medieval cities in Britain such as Alnwick and Ludlow. In the case study of Ludlow, Conzen (1988) mentions the conservation of townscape. He drew unit diagram of the townscape by delving into the ground plan units, building typology and the use of land. It works as the basic framework of urban conservation.

The urban morphological analysis of Zhishanmen area in Beijing which was conducted by Whitehand and Gu (2007) can be shown in the figure below (see Figure 1). The urban renewal in China can also profit from the urban morphology of the Conzenian School.

Figure 1. *Landscape Unit Map of Zhishanmen Area in Beijing (Whitehand & Gu 2007)*



A Case Study

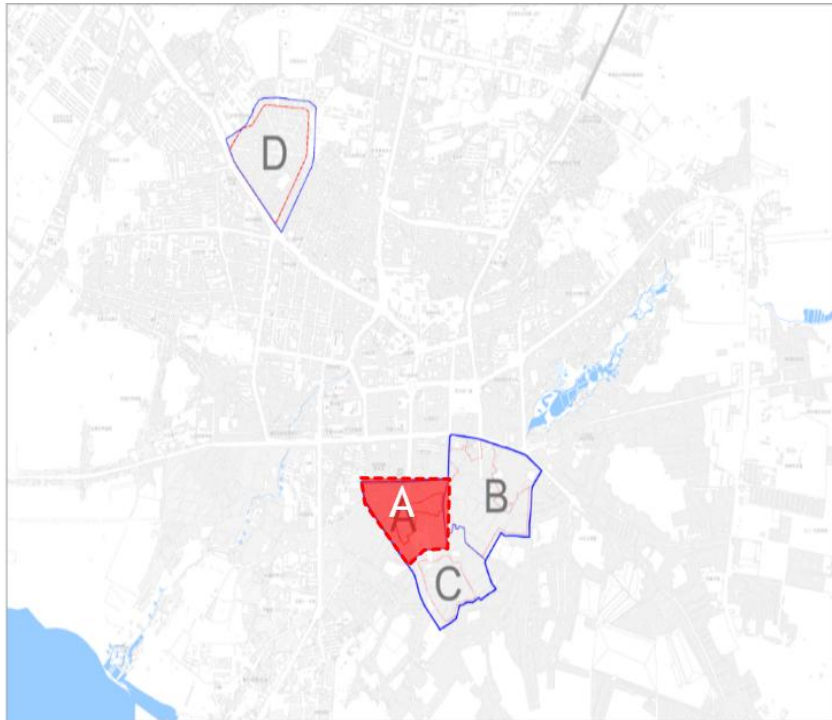
A Brief Introduction to Yi'ning City

Located in the northwest of Xinjiang Autonomous Region, Yi'ning city was once the residing plot of the commander of Yili in the Qing dynasty. And some ancient walls are still left there. Because of the advanced water system, it enjoys the fame of an abundant place of resources beyond the Great Wall. The current case study chooses the Ayidun historical blocks (with an area of approximately 30 hectare) of the Kazanqi district in Yi'ning city, named as the well-known historical city in 2013.

In 2010, China Academy of Urban Planning & Design made Overall Planning of Yi'ning City (2012-2030), clarified the meaning of its historical built environment and more importantly, amended Conservation Planning of Well-known Historical and Cultural City in Yi'ning City (2010-2030). One of the four protected areas is Ayidun historical blocks (see Figure 2). The Planning defines the two-layer protected area: core preserved area of history and culture, and construction controlling area of historical and cultural blocks.

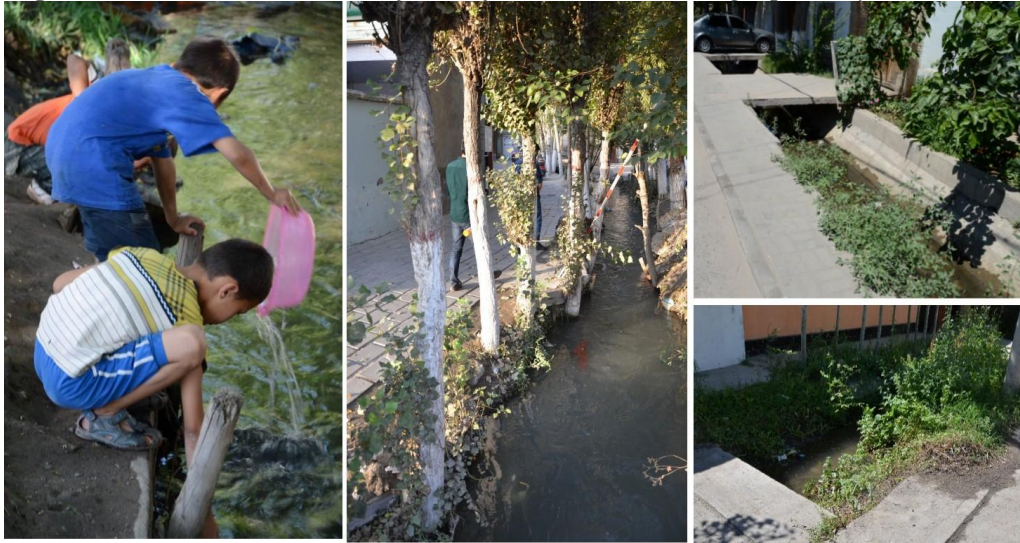
Meanwhile, 9 courtyards within the range of the blocks are designated as historical buildings of Yi'ning. It is stipulated that new buildings are forbidden within the core preserved area, and those newly-built or reconstructed houses within the controlling belt should be in accordance with the features of the historical blocks. Additionally, the building height should be limited.

Figure 2. Overall Plan of the Four Historical Blocks in Yi'ning, A# is Ayindun Block (from *Conservation Planning of Well-known Historical and Cultural City in Yi'ning City (2010-2030)*)



The scheme of the Planning works as a guideline for the preservation of historical blocks of Yi'ning, but it is restrained with some drawbacks. From the angle of border clarification, it relies on the main road to determine the conservation zone rather than integrating all the historical buildings and important surroundings. As a result, the external walls of many historical yards are exposed to the controlling belt. From the angle of the protected subject, man-made canals of local specialties and historical value are not included (see Figure 3). From the angle of practical implementation, the Planning only aims at the future development of historical blocks, and does not contain methods and measures to preserve the specific townscape.

Figure 3. *Man-made Canal in front of Residence (Photographed by Author)*



Urban Morphological Analysis

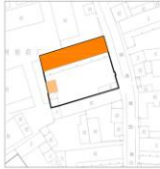
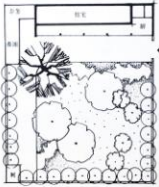


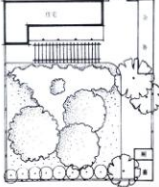


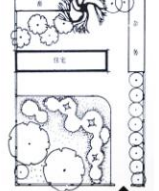

Through the field survey and collection of historical resources, we analyze the ground plan unit of Ayidun historical blocks, building typology and the use of land (see Figure 4, 5, 6). Considering the natural and geographical conditions as well as the characteristics of the local residential buildings, we classify the type of the ground plan unit (see Figure 4) into ordinary civil residence, residence with large yards, residence in front of canal, terrace residence, plot infilled with collective residential, plot infilled with high-density public buildings, plot infilled with low-density public buildings and idle block.

Figure 4. *Ground Plan Analysis of Ayidun Block (Based on Field Survey by Author in 2013 and Historical Maps of 1958, 1978, 2003, 2013)*



In addition, the traditional residential buildings in the blocks are diverse (see Table 1). To note, residential buildings near the water form the unique feature of Yi'ning city. Unfortunately, they are suffering serious damage from human and natural effect. Plus the above-mentioned fact that the Overall Planning leaves them out, we cannot wait in protecting these buildings and their surroundings. Besides, terrace residence also needs special treatment, because it echoes the economic and social circumstances of some historical period. Owing to its particular architectural form and social and economic background, employees' Apartment of Fur Factory should be renovated instead of being pulled down, though it was built in the 1970s.

Table 1. *Types of Layout of Residential Yards (Sorted by Author)*

| Cases | Layout | Boundary of yards | Model of layout | Photos |
|---|------------|---|---|---|
| No. 2 residential in Valley 4, Ayidun Str. | "—" type |  |  |  |
| Kasenmu Aji's house, Qianjin Str. | "U" type |  |  |  |
| No. 12 residential in Valley 4, Ayidun Str. | Mixed type |  |  |  |

In the analysis of building typology (see Figure 5), we divide the cycle into two phases: the year before and after 1978¹. The building type before the year 1978 comprises ordinary civil residence, terrace house and public and service buildings. In addition to these three types, the building type after the year 1978 consists of office buildings and multi-floor residence. Among the types of civil dwellings, 9 are the officially decided protected yards, like the No. 25 house in Valley 4 of Ayidun Street having a history of over 100 years. Through the comparison of historical maps, we can see clearly the built era of every historical yard or the morphological evolution of some plot in the history. It is of great significance to divide the conservation zone and make conservation measures.

¹Literature review enables us to determine the year 1978, the first year of reform and opening up, as the watershed in dividing the time period.

Figure 5. *Building Type Analysis of Ayidun Block (by Author, Sources Like Figure 4)*



The use of land (see Figure 6) falls into the following categories: for residence, for commerce, for administration, for community service, for open space and for idle use. The land for residence accounts for 82.9% of the total land. The analysis of historical maps illustrates that the land of wholesale department of the pharmaceutical company in 1958, located in the southeastern conjunction of Aiyidun Street and Orchard Street (see Figure 7), changes into Yili District Pharmaceutical Factory in 1978 and then into the multi-use land with residence from 2003. Its original functions as factory nearly become invisible. In the Ayidun historical blocks, the changes of the nature of the land use and the possession right emerge in many parts. Via the nature of historical maps, we can make certain the development of the historical blocks, and benefit the determination of the conservation zone.

Figure 6. *Land Use of Ayidun Block (by Author, Sources Like Figure 4)*

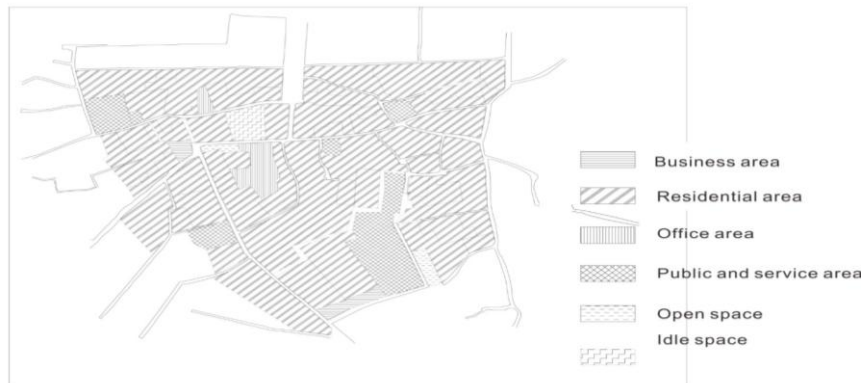
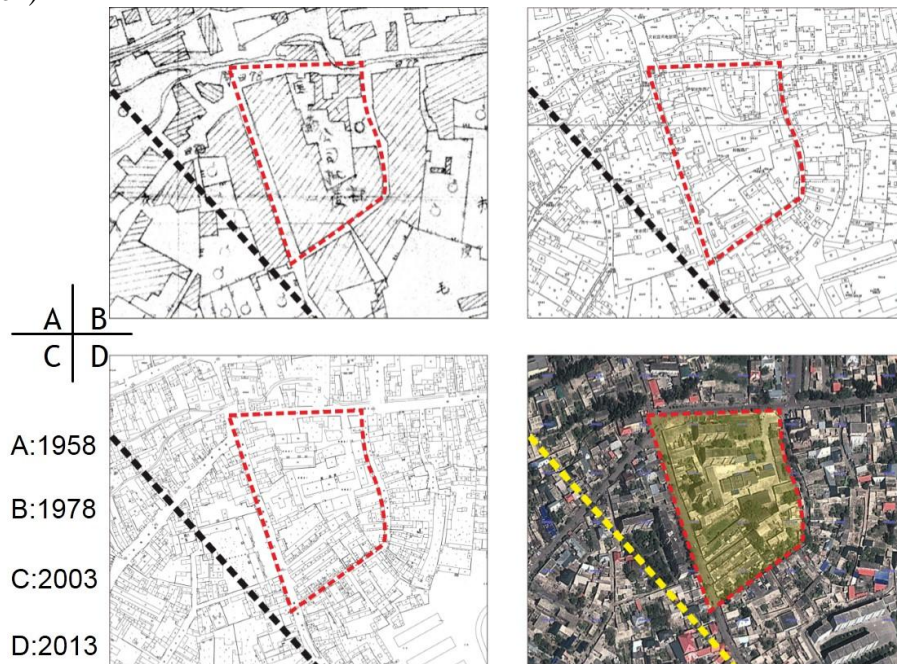


Figure 7. Land Use Transformation in the Pharmaceutical Factory Block (by Author)

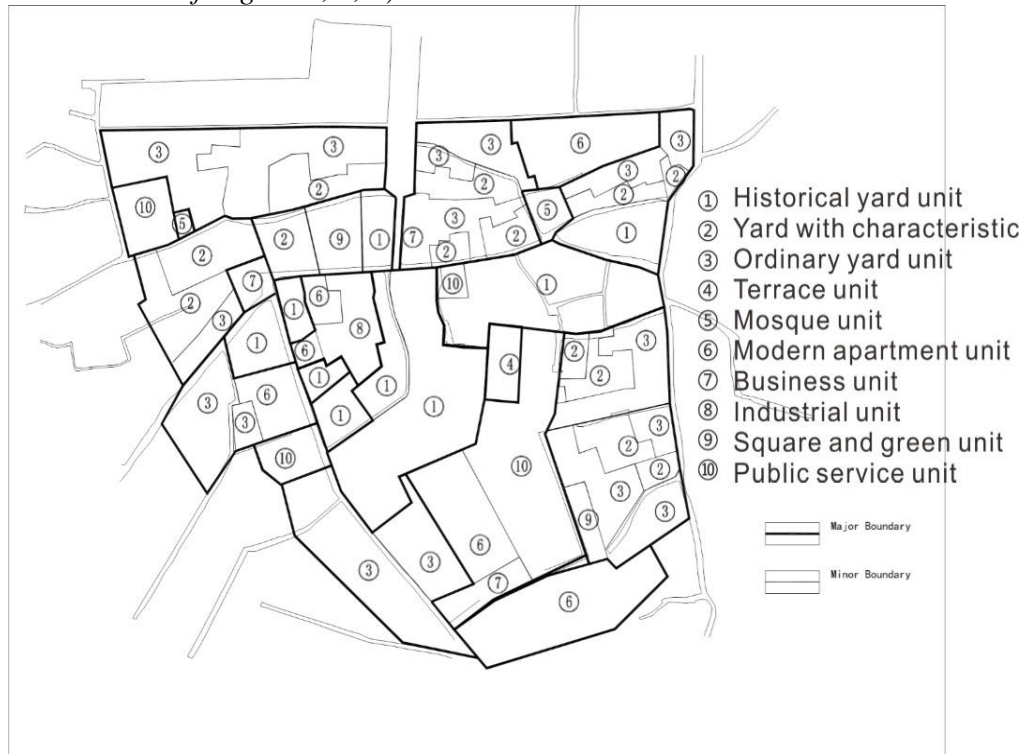


Conclusions

Priority of Protection and Sub-districts of Urban Landscape Unit

Based on the above three figures, we incrementally draw the map of urban landscape unit of the Ayidun historical blocks (see Figure 8). It is made up of historical yards, yards with local features, ordinary yards, terrace residence, mosque, modern residence, business area, industrial area, square, greening area and public service area. According to the properties of each sub-district and the situation of the surrounding built environment like road, greenland and quality of building, the neighboring morphological units are integrated as a whole to be protected. In this way, the first-layer of protection is formed. This upper-level also contains many sub-districts (second-layer) based on the landscape unit.

Figure 8. *Landscape Unit Map of Ayidun Block (by Author, Based on a Combination of Figure 4, 5, 6)*



The division of layers of protection can help make policies by confining the range, avoiding the range bias due to aimless and unscientific evidence. Apart from that, the more detailed and appropriate policies can cater for each morphological sub-district.

Measures Based on the Specialties of Sub-districts

In deciding the first-layer conservation zone, we need to consider the connection between buildings and the peripheral built environment, as well as the interests of local residents. Take the sub-district of pharmaceutical factory for instance. Its primary border line covers both industrial area and modern residence area. The field survey and document demonstrates that residents of the sub-district are the staff of the then pharmaceutical factory. Because of the industrial restructuring, the original functions of the factory almost get lost, and the vast majority of the workshops are abandoned, albeit with sound quality. In its renewal, we cannot just pay attention to the improvement of the living standards of the residents but demolish all workshops; similarly, we cannot just value the renovation of industrial heritage but ignore the interests of the factory workers.

Factory workers feel affinity to the factory that they once worked at. In the restructuring of the industrial heritage, we should put first the interests of the local citizens. As many former workers as possible should be reemployed to the factory with the method of renovating the workshops and transforming the

industrial structure. The practice can to some extent ameliorate the employment pressure, meanwhile create the sense of belonging.

Discussion

Many reasons cause the problems of the urban renewal, therefore, the solutions should be strived for from more than one aspect. Causes like society, economy, culture, city and constructions are vital to making the strategies of the urban renewal. For one thing, the importance should be attached to the role of urban designers and administrators; for another, the interests and participation of citizens—the host of a city—should never be ignored. A balance should be struck between the two parties. The scientific planning and design, and the appropriate monitoring mechanism are also essential to solving problems incurred by the urban renewal. In addition, economic factors should be considered, like the phenomenon of distortion brought by the funds infusion and source of investment in the poor and underdeveloped area.

The urban renewal will accompany the economic and social development all the time. The article, with a case study of Ayidun historical blocks, explores the renewal method, especially the old blocks in the well-known historical and cultural cities. The urban morphological approach brings new thoughts to the protection of these cities. It can gear the urban renewal towards the reasonable and effective direction by including the urban landscape units. This approach remains to be seen to be applied into the future urban renewal process.

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