



NUL - New Urban Languages  
Conference Proceedings  
Milan, 19-21 June 2013

Planum. The Journal of Urbanism, n.27, vol.2/2013  
www.planum.net | ISSN 1723-0993  
Proceedings published in October 2013

## Chinese expression of the urban landscape

The contemporary spatial strategies of the traditional Chinese courtyard building

Zhu Tan

Politecnico di Milano

*E-mail:* bamboo.tan@gmail.com

---

The current unprecedented urbanization provides China an opportunity to rethink about its urban definition and reconstruct the scenery for the future. While as an independent, indigenous growth architecture, the traditional Chinese courtyard building architecture represents the main feature of the ancient Chinese cities and architectures. It establishes the harmonious relationship between the different living elements, satisfies spirit demands and aesthetic sense, and in a certain sense, becomes one of the the criteria to evaluate the living quality. The spatial essences which are carried by the unique architectural language not only could represent the Chinese identities but also could be the best instruments for people to deal with the issue of spatial organization and construction in contemporary circumstances.

**Keywords:** Chinese courtyard building; Chinese architectural essence; contemporary strategies

### 1. Introduction

Chinese courtyard building architecture acts as the main spatial language in the long history of China for thousands years. It is the basic unit to form the general connected architectural fabric which coordinate the different elements of the urban environment.

In the current process of urbanization, the contemporary Chinese cities under construction are facing many problems, because the unreasonable developmental mode ignores some necessary organic connection. In the meanwhile, we realize that the development and construction also provide China an opportunity to rethink and redefine the new and suitable urban structure and architectural spaces, and the traditional courtyard building is the most effective instrument to improve the living quality and achieve the sustainable development.

Hence, at the beginning, the article would like to make a brief introduction about the Chinese traditional courtyard building, especially to show its significances in establishing the relationship between the different elements as an integrated architecture. Then the article will analyze the problems which emerge during the current Chinese urbanization on the urban landscape, and propose some strategies by using the courtyard building as an effective instrument to improve them. Through the case of Chinese courtyard building, the article illuminates that the traditional architecture could do the great benefits on evolutionary development of the urban landscape in the contemporary time and the future.



## 2. Chinese courtyard building - an integrated architecture

Because of the geographical restriction, the Chinese tradition architecture formed an independent system and developed in parallel with the Western architectural system. Base on the agricultural civilization, in order to get the harmonious interaction with the circumstance, the Chinese courtyard building architecture is a type which could represent the relationship and transforms into a very rich system with series of various types. During the thousands years of development, some predominant essences are always been inherited, and will do benefit for the future.

### Design with the nature

China as a longstanding agriculture-based country, the nature elements played crucial roles in the process of generation and development of its architecture, while dealing with the relations between human and nature was also an important task of the architecture. The Chinese courtyard building was the best explanation of the people's consciousness feeling and respecting the nature.

*Tian Ren He Yi* (Harmony between nature and Human beings), the traditional Chinese philosophy, indicated that people believed that Nature and Human beings were integrated: man was not the conqueror of the nature, but one part of it. While according to *Tian Yuan Di Fang* (Round heaven - Square Earth), the ancient understanding of the geometrical pattern of the universe, the courtyard building got its shape: the residential rooms on the boundary to set the quadrate enclosure with an open space in the middle. People lived in a courtyard house as to integrate into the nature. Life and nature linked and interacted through the architecture.

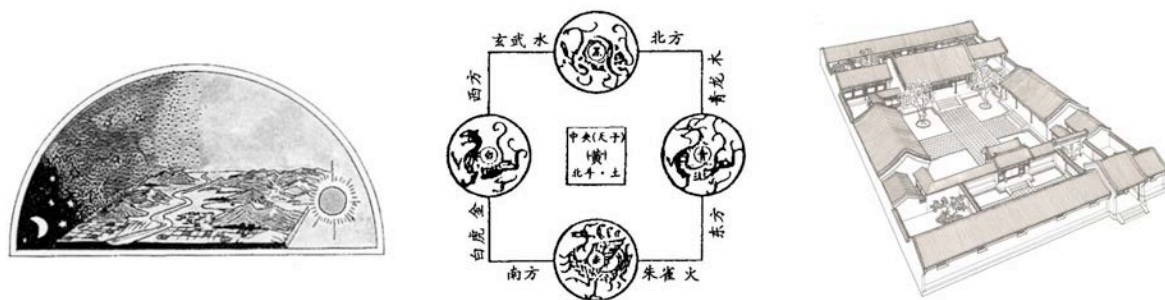


Figure 1. *Diagram of Tian Yuan Di Fang and the courtyard building architecture*

Furthermore, when constructing the buildings, people would like to adapt it perfectly to the local natural geographic ambiance and climate, and finally formed the special courtyard building fabric especially for the certain place. Therefore the courtyard building architecture has got various kinds of types due to the different natural conditions all over the country while sharing the same identity.

### Arrange for the society

Agricultural production and labor need some kind of organization and order, which gradually evolved into the basic rules of society. *Jing Tian Zhi* (Square-fields system) is an ancient farming system, which has a similar diagram with the Nine Squares Grid. This kind of division of farm lands was deriving from the daily agricultural production and life which surrounded the well as the water supply. The center grid was the public area while the surroundings were more private reflecting the link between individual and collective.

Confucian advocated that the social organization should follow the laws of nature showed the certain order, since people and society were nothing but the replica of the natural spirit while the man and nature were interlinked. Ritual institution, as the theories of Confucian-based philosophy, is the most important guide to regulate people's behaviors and thinkings to organize the society. It enriched the theory of

square-fields system, and aroused the ancient Chinese urban planning principles more than 3000 years before, in *Zhou li - Kao Gong Ji* (Rites of Zhou - Book of Diverse Crafts<sup>1</sup>).

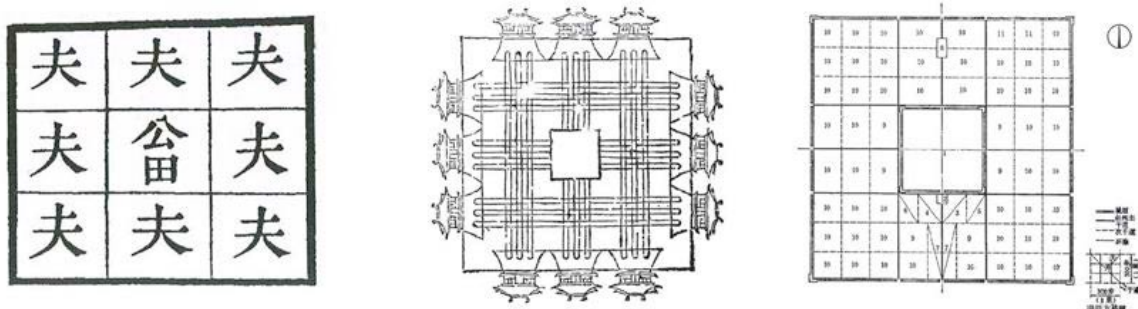


Figure 2. *Diagram of Jing tian zhi, Capital city in Book of Diverse Craft; Basic structure of the Capital city*

Under the influence of the ritual institution, following the diagram, the social organization showed a hierarchical order system from running the home to running the country: the single courtyard building which contain the single family, was the basic unite to constitute the district, then the city, and then the whole country. This structural system made the urban fabric looked like a huge continuous single architecture. It expressed a flexible scale - micro to macro or vise versa, and the relations between each part were organized and adjusted in accordance with the needs of the social and living order. Together with the principles of nature, the organization of courtyard building, as an artificial media, integrated people's life with the society and the nature.

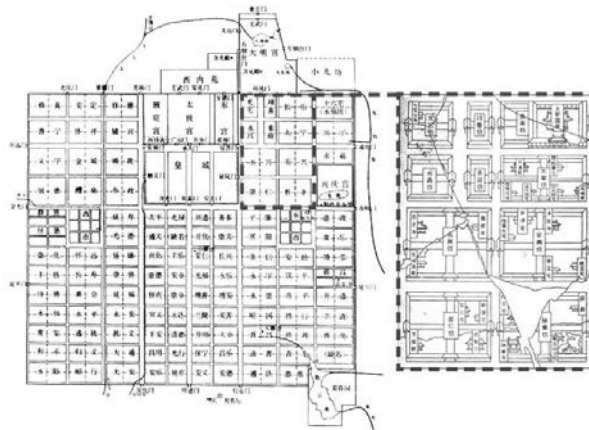


Figure 3. *Cang'an city, the capital of Tang Dynasty (AD 618-907)*

### A general connected urban fabric

The courtyard building architecture was constructed by the module system. It made the building easy to be “installed” and flexible for different usage. It could be utilized singly or in groups, for both public and private functions. Its layout was born for residence, but also well adapted and developed for palace, temple, mausoleum, government office, school, and so on.

Rites of Zhou, Book of Rites and the Etiquette & Rites, were the three ancient ritual texts (the "Three Rites") listed among the classics of Confucianism. They were the theoretical writings of the ancient ritual and etiquette culture, and made the most authoritative records and explanations for the ancient ritual institution.

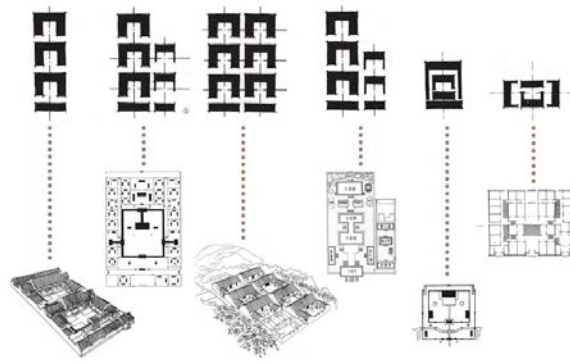


Figure 4. *Combinations of courtyard buildings: Series, parallel and nested connection*

According to its extensive adaptability, Chinese courtyard building architecture was the main spatial language in the long history of China for thousands years. It formed various architectural fabric. From single building to the whole city then to a large region, from one single family to the whole society, from the residential usage to other public functions, from the individual life to the organization of social and natural environment, the courtyard building architecture was able to coordinate the relations among different factors, and formed an organic integrated system.

### 3. Rethinking the contemporary Chinese urban landscape

Entering the 21st century, twenty years after the Chinese Reforming and Opening-up, the development of China got the abundant achievements. Furthermore, a series of important international events, such as hosting the Olympic games in 2008, provided China an opportunity to speed up the development and urbanization. Nevertheless, the current developmental mode has many problems. In order to achieve the sustainable development, the appropriate new urban landscape should be reconsidered.

#### About the historical architectural context

Different from the western architecture history, after the modern architecture movement, the backward China has never reached a uniform consensus on the choices between western classic, western modern, or Chinese traditional architecture. *What is the Chinese modern architecture?* The performance of the local culture has always been a popular topic in Chinese architecture circle.

Since 1850s, although the pursuit of *modern and Chinese* architecture caused many experiments with Chinese characters, they are mainly superficial imitation of the traditional building. We believe that the search of the Chinese traditional urban context should start from the reflection on architectural spaces rather than the simple imitation of the appearance. The structural and spatial strategies which inherent in the traditional cities and buildings should be explored as the Chinese architectural essences, that their practical value will be showed also today.

#### About the urban frame

The ancient Chinese urban frame payed more attention on the inhabitants' life. The urban structure was based on the courtyard buildings which could provide the comfortable living spaces. The roads were set according to the layout of the buildings, and were the public living spaces for the commercial and communication activities. The slow traffic mode ensured the adequate interactions within people, and between people and living facilities. The architecture helped people to enjoy the living spaces.

While the current Chinese urban frames consider more about the activity of cars. The urban planning system, from master plan, district planning, to regulatory plan, adopt the strict road network hierarchical system. The urban fabric is decided by the roads and its dimension, both roads and blocks in between, are much bigger than before. The buildings, no matter new or old, have to accommodate the urban street

network; and the strict planning regulations also serve the roads. The *Automotive City* is produced. In which, the broad street grids cut off the connections between the buildings; the surviving historic districts are isolated by the new road frames,... The original urban vitality is losing.



Figure 5. Henry Murphy, 100#building Ginling Women's University, 1922 (The fake Chinese structure is the decoration on the appearance)

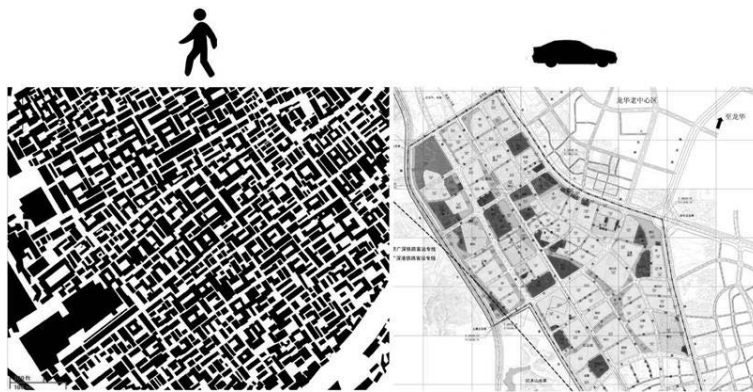


Figure 6. The comparison of the urban fabric

### About the high density fabric

The high-density development is an irreversible tendency worldwide. Especially in China, the problem of high density is supposed to be solved during the process of urbanization. Hence, the form of traditional courtyard building has been abandoned because it's considered to have low density. While, on the other hand, since the 1950s, the approaches of improving density usually are constructing the high-rise buildings, enlarging the depth of each building, and minimizing the interval distance between them. In this way, the layouts of the quarter usually apply as more as possible the slab apartments, or point blocks, forming a image of *the Radiant City*. These unwise measures which are very popular, plus the irrational urban planning regulation, lead to the current regretful Chinese cities' images: only high density, no living quality.



Figure 7. Monotonous slab apartments in parallel rows, Shijiazhuang

### About the urban architecture

The current regulation and codes of planning leads to the *City of Objects* where the urban architectures are isolated in the city. Yung Ho Chang once published an article titled *City of Objects* to question the way of transforming the horizontal city in the recent decades: the tower-like architecture are selected with no relations to the surrounding environment. And he predicted: “when the collection of objects complete, the *City of Objects* or rather the city disappears. Only the objects remain.” (Yung Ho Chang, 2005) The courtyard building-based continuous, harmonious, organic and horizontal cities, have been cut apart by the irrelevant and arrogant buildings, eventually turn to be *Inorganic Cities*.



Figure 8. Shanghai Lujiazui, City of Objects

### About the recourse and environment

For decades, the urban planning of Chinese cities has separated the functions: working, living, recreation are put in different districts/plots through functional zoning, results in simplistic urban blocks. Therefore, Large volume of traffic generated, caused the extravagance of energy and resources. Some implementations to develop low-carbon and green communities have been carried out, but they are mainly the high-tech green energy facilities applied in the buildings. The approaches of sustainable development should be considered and planned in the phase of city’s master plan; a rational strategy for urban planning, mixed-use community, can reduce the occurrence of unnecessary trips, save the recourses and do benefit to the environment. And the enclosure of Chinese traditional courtyard building architecture is the suitable reference to achieve the strategy.

#### 4. Reshape the future city

The sustainable strategies of the courtyard building architecture for the more reasonable urban landscape are definitely not copying directly the original form, but utilizing its essences or advantages for the current construction of living environment, and translating these properties into some techniques and instruments to deal with the new problems. These techniques are the inheritance of the traditional culture, respecting the local inhabitants' opinion about the high quality living spaces, and in the meanwhile, meet the requirements in the new context.

##### Return to the courtyard building style

One important reason of emerging the terrible outcome is the negative developmental mode destroy the connection between the elements. The way of spatial organization of the courtyard building could be used as the effective instrument to solve the problem of spaces arrangement, to relink the necessary elements, especially to rebuild the relationship with nature. Nature is a vital factor in the ancient Chinese cities. When people organize the living spaces with courtyard buildings, the introduction of the natural elements could help to weaken the direct conflict between the artificial construction and the natural environment, to emphasis the organic constitution.

In order to improve the quality of contemporary urban landscape, the courtyard building was first popular in the residential buildings, some projects imitate the spatial arrangement of the folk houses, for example the *Vanke Fifth Garden (2004)* in Shenzhen. It doesn't mean to make the copies, but follow the traditional spatial principle to coordinate living and natural spaces, enrich the living ambiance and provide diverse experiences for the inhabitants, eventually avoid the monotonous image shown as the prevailing slab apartment. Although the principles are from the past, the architectures are all construct by the updated technologies.

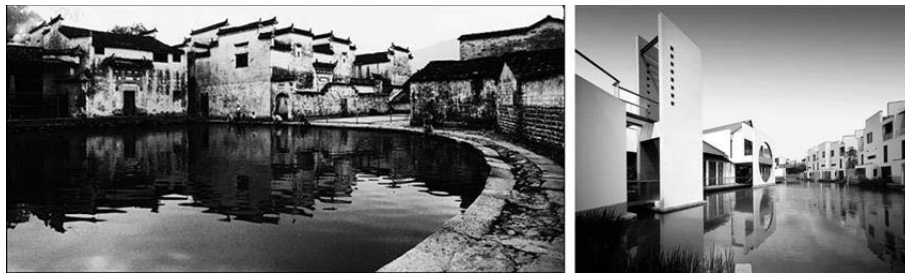


Figure 9. *Ancient villages in southern Anhui (Xidi) & Vanke Fifth Garden, Wang Ge, Shenzhen, 2004*

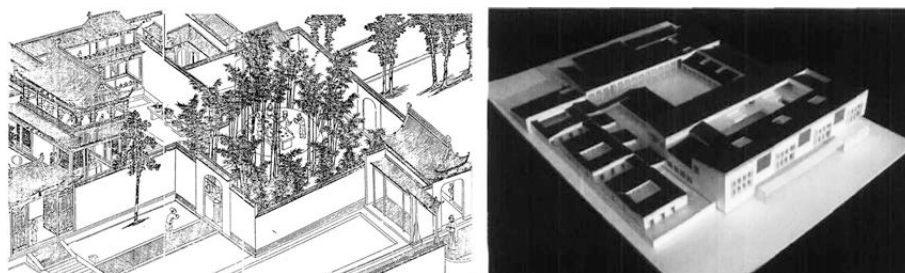


Figure 10. *Ancient painting of Huancuitang Garden & Liantang Town hall, Atelier Z+, Shanghai, 2010*

The strategy is also adopt in more and more projects of public building, like office, museum, hotel, etc., and form a method of "living mode" oriented design, for example *Liantang Town hall (2010)* in Shanghai. In these buildings, courtyards display the characteristics of nature, organizations, and public communications, produces a relaxed living atmosphere for public buildings.

By using the courtyard form, all kinds of architecture in the city could be represent by one language, compose a harmonious uniform system.

### Represent the communities

The traditional courtyard buildings are isogenous, sharing the basic identity. They adapted with the local conditions to enrich the typology when they diffused in the history, which made the courtyard building could meet the different social groups' requirements by changing into different types and scales. Therefore, by using the proper approaches to compose the appropriate courtyard buildings could serve the relevant society and its lifestyle.

For example, the single courtyard building near Shanghai area is small and usually serve a big family in group, while the dimension of single Hakka enclosure in Fujian Province is much big which contain the whole family inside together. *Urban Tulou (2008)* is a case that trying to utilize the Hakka enclosure in Fujian to contain a small but complete society for the social vulnerable groups.

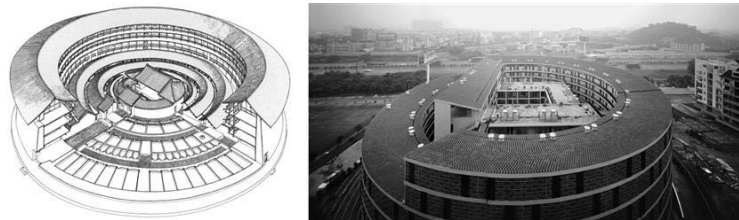


Figure 11. *Vernacular Hakka house in Fujian Province* & *Urban Tulou, URBANUS, Guangdong Nanhai, 2008*

The courtyard buildings could provide mixed-use spaces to form different kinds of community to connect the individual and society in the new by certain approaches. In the meanwhile, the multifunctional community which reduced the traffic and more compact could be proposed.

### High density, but livable spaces

*Beijing Image quarter (2003)*, is a high rise building community with livable spaces by using the courtyard enclosure. The architect surveyed the historic downtown's urban fabric and transplanted the enclosure organization of traditional courtyard building into this large dimension area.

The high-density development is an evitable choice for Chinese cities. But high density does not only mean high-rise building. In fact, to improve the land use efficiency and environmental quality is the main objective for Compact city.

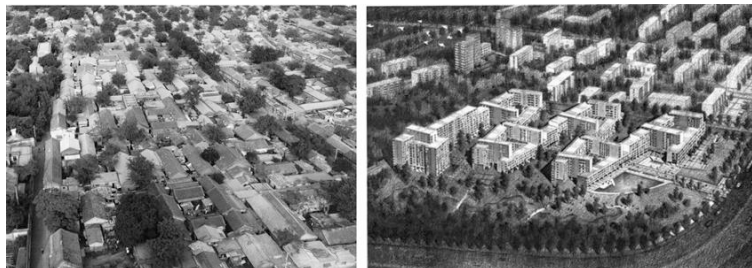


Figure 12. *The historic downtown of Beijing* & *Beijing Image quate, Otto Steidle+9.3 Group, Beijing, 2003*

Although the Chinese courtyard building architecture was regarded as low-rise, horizontal unit and not suitable for current high-density urban development, it indeed a high density typology. Compared with the detached house, it has more efficiency of land utilization. Both Chinese (Shang Kuo, Yang Ling-yu, 1982/05) and western research have proved this point, for example, in the research *Towards an Urban Renaissance* leading by Richard Rogers (Rogers R., 1999), three different layout of a quarter with the same density have been compared, and the enclosure one could help to create a vital community with well-serviced facilities and diverse open spaces.



### The flexible structure

Chinese traditional buildings are constructed by the module system. Therefore, follow the hierarchy, the grid fabric of Chinese ancient cities are also formed by equivalent modules(the courtyard buildings). The grid could be interpreted as a solid network of buildings and also a void one of the courtyard spaces and the streets. That it is, the standardized component set the connected frame while the interior spaces could realize the individual and customized design. The industrialization and standardized production is the irresistible tendency. In order to attempt to change the banal urban fabric with monotonous spatial images like the rows of slab blocks, the attribute of the courtyard fabric could be used to keep the connection and personality.

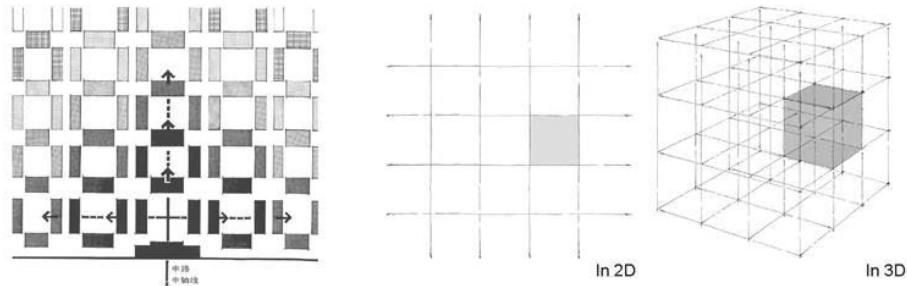


Figure 13. The developmental mode of Chinese ancient city, the grid diagram extract from the Chinese courtyard fabric



Figure 14. *Shanghai shared housing(idea)*, Kuu Architects, 2009

Figure 15. *Qianjiang Times (Vertical courtyard apartments)*, Amateur Architecture Studio, Hangzhou, 2007

For example, in Kuu Architects’s project, *Shanghai shared housing (2009)*, uses the standard space modules, as the equivalent courtyard buildings, mix and connect together to increase the land use efficiency, and provide the appartement containing different number of the units and combinations to different family. Wang Shu’s project, the *Vertical Courtyard Apartments (Qian-jiang Times) (2006)*, form a vertical courtyard-like connection which imitate the local traditional living spaces. Each family has a aerial yard where they could decorate by themself to show their personalities.

### 5. Conclusion

The Chinese courtyard building plays the essential role in the composition of Chinese urban landscape. Its system generated and evolved spontaneously according to the Chinese ideologies and coordinated with other related elements to build the integrated system. The landscape of the courtyard building fabric represent the attributes of integration, hierarchy and adaptability. The landscape displays the Chinese

identity. And the essences which are extracted from the past urban language could encourage the future definitions.

The current Chinese urbanization pays more attentions on the economic interest, while the honest caring about the inhabitants' life has been put aside. Some beneficial connections have been destroyed and some new relations are appear ahead. At this very moment, the past gives people the ideas to fix the problems and link the new newborn. The strategies representing the essence of the traditional architecture, keep the local cultural identity, accommodate the inhabitants custom and aesthesis, and are adopted by the update techniques. The solutions are new creations, and advanced evolutions of the indigenous landscape. When facing the future, the new urban language is under discussing, visualizing the past could help us to promote the imagination.

## References

- Yung Ho Chang, (2005), *Zuo wen ben (Yung Ho Chang Writes)*, Shenghuo-Dushu-Xinzhi Joint Publishing Company, Beijing.
- Rogers R., (1999), *Towards an Urban Renaissance, Final Report of the Urban Task Force*.
- Shang Kuo, Yang Ling-yu (1982/05), *Chuantong tingyuanshi zhuzhai yu dicing gaomidu (Traditional Courtyard houses and Low-rise High-density)*, in *Jianzhu Xuebao (Architectural Journal)*.