

Landscape Design of the Low-income Community: A Case of Sheshanxingcheng Residential Quarter (Phase 1) in Nanjing, China

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Abstract: - Economical functional dwelling quarters occupy a large proportion of the total amount of urban living quarter construction in our country. Sheshanxingcheng living quarter in Nanjing is the biggest economical functional dwelling quarter in Jiangsu Province. By analyzing the characteristics of the landscape design for this living quarter and by discussing the principle of the landscape design for economical functional dwelling quarters, the author offers useful help for the research into the landscape design of economical functional dwelling quarters and for the exploration of garden saving.

Keywords: - Landscape design; Low-income community; Residential area; Economical functional dwelling; Low cost landscape; Garden saving

1. Introduction

Nowadays, the real estate market in China is developing prosperous. This also means that the design of the landscape is carefully being considered too. Various types of high-income have lavish and thoughtful landscape environments. Yet the landscape of houses built for low-income, which are also taking great proportion in the total city community construction, is not as thoughtfully designed. Sheshanxingcheng residential quarter is the biggest residential quarter designed for low-income residents in Nanjing^[1]. This paper is derived from research about the first phase of this residential area.

2. Background and Overview

Sheshanxingcheng residential quarter is located in the northeast corner of Xianlin University Town, with Ningzhen Road in the north and Guishan Road in the south. Xianlin University Town, located northeast of the main city of Nanjing, has taken precedence in the development in this region since 2001. The total planning area is 80 square kilometers. Xianlin University Town mainly serves for the education, is an integrated university town with various functions as R & D center, business services, luxurious residential area, and new urban area. Matching the demolition of the resettlement project in Xianlin University Town, the first phase project of Sheshanxingcheng residential quarter is the super-large community with 600,000 square meters land

area. Within 6 groups, it can provide 7000 houses for resettlement residents.

3. Challenges

3.1 Low Cost in the Construction

Due to the limitation of profit in the low-income houses, it is difficult for a real estate developer to invest a large amount of money in landscape construction. Consequently, the cost must be taken into consideration. Initially there exist many limitations in the development of economical functional dwelling quarters: the cost of landscape construction is limited, and lacking funds of maintaining the landscape and plants. With these factors, community environmental quality is constrained.

3.2 Lacking awareness of maintaining

The community occupancy groups are mainly low-income people. The composition of Sheshanxingcheng is mainly the original local villagers. They lost their farm and their old houses were removed because of building Xianlin University Town. In general, they have a low income and a low level of education, as their living habits are still not urbanized. Thus they tend to develop their own vegetable fields or gardens on the lawn area.

3.3 Low-Skill landscape construction

The skill level of the landscape construction team is an important factor in the quality of the environment. Generally, they have a high level of professional ability, capable in developing a rich and aesthetic experience, such as the terrain manipulation, rock arrangement, plant arrangement, and routing a path. But the more professional landscape construction team is, the higher the fees for construction management and labor. Because of the low cost of the construction, the developers have to select low-paid teams, although the quality is not high and the technology is low. Sometimes, construction teams are even not professional, or selected by the municipal or other alternative construction team.

3.4 Limited efforts to maintain in late period

Management and maintenance are required, especially in the green spaces. For many sites in China, the green spaces are important. To some extent, the quality of the maintenance and management has significant influence on the effectiveness. Because of lower property management costs, the designer should take low-cost

maintenance and extensive management into account.

4. Landscape Design Principles

In the analysis of the landscape characteristics in the community, we developed some aspects of the following principles of landscape design:

4.1. Choose "economic" materials and design form

In the design, in order to reduce the cost, the key point is to control the price of materials and quantity. The general principle is to use cheap materials as major materials, while materials with higher price can be used as partial embellishment. Principles can be summarized as follows:

(1) Use fewer and better hard landscape features. Construct soft landscape to meet the basic function of the residents. (Fig.1, Fig.2)

(2) Rigid materials like matt brick, precast concrete, and block square bricks can be used repeatedly in the design owing to their low prices. Materials like granite, which possess higher costs, can be used as decoration in details other than large scale. In addition, through cheap materials combined in design, some ornaments and pavements can form various landscape views. (Fig.3)

(3) Use local materials as much as possible.

(4) Avoid making artificial waterscape with consideration of building cost and maintaining cost.

4.2. Pay attention to the "applicable" landscape

Human-oriented use is one of principles that must be followed in the living environment design. In the community, practicality of the landscape is main character. Different types of squares are created to meet various outdoor activity needs, such as the olds' exercises, children's playing, and youth's body building. (Fig.4) At the same time, we install benches and pavilions for rest. (Fig.5) We basically do not use landscape features like sculpture and ornamental walls.

4.3 Pay attention to the durability of landscape features

Because of the weak awareness of the maintenance, extensive management, not timely repairing of landscape features, the durability must be taking into consideration. Vulnerable and short-life facilities should be avoided.

4.4. Strategy on low-skill construction control

On account of the crude skills of construction teams, designer has to consider professional competence of the team. Even though some of them have good effect, some complex design thoughts should be discarded. The principles for the pavement and glories design are concise form, simple and easy.(Fig.6, Fig.7)

4.5 Emphasize the economic and low-cost management in the tree species selection

Try to simulate the natural ecology in the design, plant delicate plants as little as possible, create a good ecological environment through the natural growth of plants, rather than bring burden to the maintenance.

Do not select one-sided and luxury trees; focus on the effect of plant arrangement and spatial layers. Plants do not have differences in grades; hence, we should select plants that are cheap but good-shaped. Seedling standard can be lower to meet the future effect rather than current.(Fig.8) Trees which with high grade, price and large can be used as spots tree in the vision line.

5. Landscape area design

5.1 Central area landscape

Before land expropriation, residents are used to be villagers living idyllic life style, intimate outdoor chatting has always been important part of them. After that, they do not own jobs any longer and get new jobs from the government. The original form of the village was broken, instead, they have new community-style living. As urban residents who have just gone through a transformation, they still keep their inherent habits, the biggest character of outdoor activity is getting together, chatting, enjoying winter sun just like before the land expropriation. For such a specific reason, plazas have been set up in every center group. (Fig.9) Combined with flower beds around the plaza, a large number of benches have been placed to provide places for gathering and rest. Matt bricks are the main materials of the pavement, different colors of washed stones, pebble, and pieced marble are ornamented and become separation in order to form rich pictorial effects. In the middle or around the plaza, big trees are planted combined with flower beds to create a shadow space for the residents enjoy the cool air in summer. Architecture and pavilion are also constructed for small-scale and close chatting.(Fig10, Fig.11) The style of architecture should be concise and simple rather than complicated structure, so that this not only can

reduce the cost, but also can reduce the construction difficulty.(Fig.12, Fig.13)

5.2 Landscape nodes in traffic junctions and the corner

Landscape nodes in traffic junctions and the corner are usually at the focus of the vision line or the opposite of the scene, playing an important role with the spotting landscape techniques. By front, middle and back layers setting and a variety color and texture of different plants can create a beautiful scene. First, thicken the earthwork to increase the terrain to build a micro-convex terrain.^[2] Secondly, use good shaped big arbor or bamboo as the background, in front of them, plant little color trees or flower shrubs as the middle part, then, use isolated stone or group stones combined with small colored shrubs herbaceous perennial flowers as the front part.(Fig.14)

5.3 Homesite greenbelt and plant landscape of the road

Due to the first phase of the project are mainly multistory housing, considering the impact of lighting on the residents, defoliate trees and small evergreen trees are the dominate roadside trees in east-west residential street on both sides of the homesite greenbelt, like albizzia, goldenrain tree, ligustrum. Thereby, the arrangement of the evergreen and defoliate trees is reasonable and acceptable. In the spacious space of the home site greenbelt, plant economic forest, for example oriental cherry, palm, and red maple. Under the forest, plant flower shrubs or colored zone such as China loropetal and photinia are selected to make a rich scene rather than monotony.(Fig.15)

In south-north residential street on both sides of the homesite greenbelt, evergreen trees like Camphor Tree or southern magnolia can be selected according to the little affect of the lighting. Foliated flower shrub can be planted between the evergreen trees like Crape myrtle, Chinese flowering crabapple and Prunus persica. Forest or bamboo could be planted in the gable of the homesite greenbelt.(Fig.16) Under the forest, step stone chips could be used to create a scene of winding roads led to the quiet place.

5.4 Commercial environment design

Some of the first floors of the buildings are used as shops. In the design, both the traffic flow and the rest for people should be taken into consideration. Consequently, small-scale plazas are designed in front of the shops, flower beds are sited between the

plaza and road. Sitting sides are constructed on the plaza side to make rest space.(Fig.17)

6. Conclusion

Low-income community gardens are bound by low-cost. The basic principle of design is cost saving and achieve more. However, low cost does not mean simple and crude. The designer should develop high quality scenes with cheap and limited materials, not only care about how to decrease the construct cost and management cost. With the sustainable development theory wide spread, building resource-saving green space has become the consensus of this industry, low cost landscape is an important part of it. I hope the experiences in Sheshanxingcheng first

phase project could be beneficial to the resource-saving landscape.

References:

- [1] Nanjing Real Estate Company, Strive for constructing the biggest economical functional dwelling quarter in Jiangsu Province—Real estate in Xianlin, Nanjing. *Modern Urban Research*. Vol.6, 2006, pp. 10001-10001
- [2] Tongji University, Chongqing Institute of Architecture and Engineering, Wuhan Institute of Urban Construction, *Urban Green space Planning*, China Architecture & Building Press, 1982

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Fig.2



Fig.3



Fig. 4



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12



Fig. 13



Fig. 14



Fig.15



Fig.16

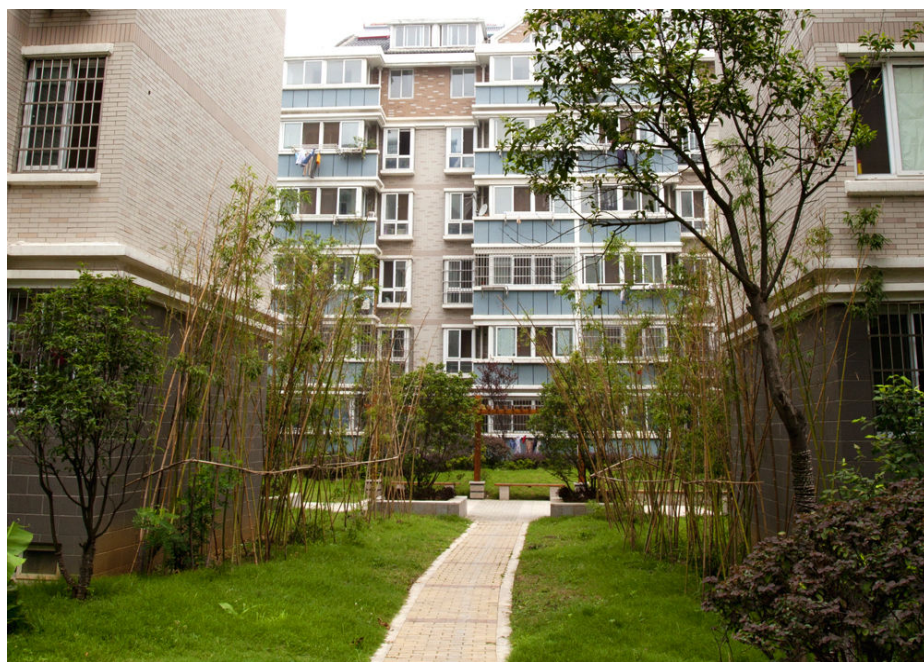


Fig.17

