

# *Values of the New Urbanist Neighborhood Planning Based on the Concept of Sustainability*

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**Abstract:** As the standard of living of Chinese residents continues to improve, more and more attention is being paid to community-based urban planning. The traditional planning model is no longer appropriate for residential planning because it goes against the concept of sustainable development of modern cities. This paper discusses the values of new urbanist neighborhood planning based on the concept of sustainability in this context.

## **1. Introduction**

With the advancement of urbanization on a global scale, sustainable urbanism has become an emerging model of community planning. The concept of sustainable cities not only focuses on the sustainable development of economy, environment and resources, but also addresses a series of social issues, including social and ecological crises. On the one hand, the concept of sustainable development achieves a balance between the environment, society and the economy by improving the sustainability of urbanization through high performance buildings and public facilities, so that people can voluntarily live in a more humane and less resource-intensive lifestyle.

On the other hand, the modernist city represented by residential neighborhoods has reached a dead end, and the lack of habitable residential neighborhoods has brought various real problems against sustainable urban development, and spatial competition has become a hot issue of social spatial justice. The goal of New Urbanism community planning is to realize the maximum convenience of residents' life under the premise of sustainable urban development. The community is the basic unit of urban space, and to achieve sustainable urban development, it is necessary to carry out just planning and rational allocation of resources to meet the human needs and realize the universal value of dignity, so as to build a sustainable city [1].

## **2. The meaning of New Urbanism**

Smart Growth, New Urbanism, and the Green Building Movement provide the foundation for the theory and practice of sustainable cities, and together these three important urban environmental movements are a practical guide to the theory of sustainable human and environmental development. Smart Growth embodies the environmental focus of sustainable urbanism, and the New Urbanism Conference, an organization of the sustainable building performance and certification movement initiated by the U.S. Green Building Council, is a symbol of the origins of improved sustainable urban planning.

Since the 1970s, New Urbanism has developed a comprehensive concept of different models of urban development, which is reflected in: addressing the problem of urban sprawl, reflecting a compact concept of urban spatial expansion and planning. Focusing on compact suburban development planning. Focuses on the design and planning of medium relational scales such as neighborhoods, communities and neighbors with a human-centered mindset, advocating the idea of a traditional community-neighborhood model. Implement a commuter transit-oriented development model with class travel equity. Emphasize the concept of integrating public transportation networks and place-based land use relationships at the regional level with neighborhoods as nodes. Approach to controlling urban sprawl. Define urban growth boundaries, control development within designated areas, clearly distinguish between urban and rural boundaries, and protect natural landscapes and agricultural areas. Efforts were made to create an ecological layout pattern and to design urban villages with walkable areas whenever possible. By the 1990s, New Urbanism had become the fastest growing mainstream development model for urban communities[2].

### **3. Principles of New Urbanist Neighborhood Zoning**

(1) The principle of compactness. The New Urbanist principle of compactness applies to all different areas from small towns to large cities, combining different building densities so that more buildings, homes, businesses and services are in close proximity to each other to facilitate walkability and allow for more efficient use of services and resources, creating a more convenient and enjoyable place to live.

(2) Diversity principle. Spatial diversity is the mix of stores, services, offices, apartments and freestanding homes distributed within a community, within a neighborhood or even within a single building; social diversity is the ability of residents of different ages, classes, cultures and races to live mixed within a community; and residential form diversity is the mix of multiple types, sizes and values of homes.

(3) Walkability principles. Access to major community spaces should be within a ten-minute walk from the home or workplace; a pedestrian-friendly street environment; fully pedestrianized streets in some cases; an interconnected network of roadway structures that are more conducive to dispersing traffic; a hierarchy of roadways, including paths, narrow streets, and thoroughfares; and a high-quality sidewalk system and public spaces that make walking enjoyable.

(4) Valuing the environment principle. Develop and maintain the environment with minimal impact on the environment. Apply eco-friendly technologies that respect the values of ecological and natural systems; efficient energy use, reduced use of limited petroleum resources, greater use of local products, and pedestrian-friendly designs that encourage greater use of bicycles, rollerblades, scooters, and walking as an alternative to driving for daily trips.

(5) High quality principles. Emphasis on beautifying public spaces with community centers under recognizable centers and boundaries; artistic design of high-quality public areas and public open spaces; comfortable humanistic design embodied in the arrangement of functional places including various requirements within walking distance; elimination of the boundary between natural and artificial scenery, with maintainable natural vitality and integration with building and street types to form a human scale The ecology of beautiful places, paying attention to the functions of municipal and public buildings and their location in the community; creating high quality living spaces to enhance and inspire the human spirit of residents[3-4].

### **4. Social Values of New Urbanist Neighborhood Planning**

The New Urbanist Community Plan under the Sustainable City Concept combines the social environment and human living requirements, spatial diversity and community equality, and

coordinates the relationship between the four to realize the residents' expectations of a realistic living environment, reflecting a healthy and equal human living environment. There are four main social values in the New Urbanism community planning under the concept of sustainable cities, namely, the harmony of social environment, spatial diversity, humanity, and equal use of community space, which are introduced below.

(1)Harmony of social environment. In today's social development process, economic development and sustainable development of the environment and the rational use of social resources have created a great conflict. In order to regulate the conflict between the three, urban architects and designers have proposed the New Urbanist Community Planning under the premise of the sustainable city concept. The New Urbanist Community Planning under the concept of sustainable city advocates the construction of a humane urban ecological community under the premise of fully respecting the harmonious development of human and nature. New Urbanist community planning always adheres to the principle of sustainable development and realizes the essential concept of harmonious development of people and resources, environment, economy and society.

(2)Spatial diversity. The spatial diversity of New Urbanism community planning under the concept of sustainable city fully reflects the fairness of social living environment and corresponding space. New Urbanism advocates the diversity of living space, which is reflected in two aspects: First, the diversity of living space functions of urban community residents, i.e., the unification of spatial functions of residents living, living, going to work, going to school, leisure and recreation within a certain range; second, the diversity of living classes of urban community residents, i.e., residents from all classes living in a community, which reflects the social living environment of This reflects the fairness of the social living environment and the fairness of the corresponding space, and reduces the spatial discrimination caused by spatial dislocation. The pursuit of spatial diversity is the difference in values between the new urbanist community planning under the concept of sustainable city and the previous urban community planning concept, which completely breaks through the ideological limitation of urban functional zoning from form to essence.

(3)Humanity. Under the concept of sustainable city, the new urbanist community planning discards the dregs of the traditional urban planning concept and draws the essence, putting forward the principle of people-oriented planning, which is reflected in three aspects: First, the new urbanist community planning focuses on achieving the convenience of human life and living, combining life and work, leisure and recreation, and sports facilities. Firstly, New Urbanism community planning focuses on the convenience of human life and living, combining living and working, leisure and recreation, public transportation, sports facilities, etc., and fully considering the impact of social ecological environment, air quality, social network and social employment on human living and living, and striving to build a more reasonable and healthy living environment. Secondly, the New Urbanism community planning focuses on public participation and closely integrates the power of people from all walks of life to realize its design concept.

(4)Equal access to community space. The spatial equality of New Urbanism community planning under the concept of sustainable cities advocates equal access to public facilities and services for all classes, which is reflected in two aspects: First, convenient and accessible public transportation, such as public transportation, increases the commuting flow of people from all classes, eliminates the social space discrimination gap to the greatest extent, and helps promote the harmonious development of relationships among people from all classes. There are also public recreational facilities such as community parks, which reflect the concept of community integration in New Urbanist community planning. Secondly, the New Urbanism community planning has built housing with different prices, which can be paid by different classes of people, and has improved the accessibility of social living space for all classes of people[5-6].

## 5. Spatial Values of New Urbanist Neighborhood Planning

(1) Emphasis on equal class accessibility to public areas. New Urbanism has always made it a cross-cutting design philosophy that urban development must place the importance of the public realm above private interests. This is expressed in two ways: First, communities should prioritize public space and public buildings, provide community activity spaces in neighborhood centers, and make central commercial streets as pedestrian-friendly as possible to increase the level of spatial interaction for all residents. Secondly, we advocate the construction of urban public transportation networks with community nodes to improve the commuting flow of the low-income class and reduce the spatial discrimination brought by the "community dislocation" to them.

(2) The livability of socially egalitarian spaces of mixed living. Community mixed-living planning has been a common model of community planning in all schools of New Urbanism, and has been used as a sign of livability in spaces of class integration. The practice of mixed community living in various countries has also created many cases that try to convince people to recognize its values, which are still controversial.

(3) Emphasis is placed on the equal accessibility of all classes in the public areas of the community. Spatial mismatch refers to the unreasonable spatial setting of residents' living and working places, i.e., mismatch. Under the influence of the urban economy, communities are built in favor of the living space of the middle and upper classes, while the living space of the lower classes is "deprived" by the middle and upper classes, resulting in spatial injustice in the construction of urban communities. New Urbanism advocates the concept of building public transportation in the city as a community node to minimize the spatial discrimination of residents due to spatial mismatch, so as to reduce the transportation expenses of low-income residents, increase the traffic flow of low-income residents, and emphasize the equal accessibility of all classes in the public areas of the community.

## 6. Example Analysis of Innovative Practice of New Urbanist Residential Planning

### 6.1. Overview of Instances

This paper takes the example of Tianjin Huaming Model Town. In the context of accelerating the construction of small towns and promoting the urbanization of rural areas, the demonstration area of Huaming Town is influenced by the new thinking of "respecting farmers' voluntariness and exchanging residential bases for housing", and the planning and design take into account local farmers' housing needs and cultural traditions. Huaming Town is located in the middle of Dongli District of Tianjin, adjacent to the central city and Binhai Zhengda Industrial Park. The planning area: east to Chihai Road, south to Jinhan Highway, west to the planned Huaming Town Industrial Park and the formerly planned Jinchuan Highway, and north to Beihuan Highway. The total planned land area is 5.618 km<sup>2</sup>. 1.425 million m<sup>2</sup> of farmer resettlement housing and supporting public buildings are planned to be built in the demonstration area, involving 12 villages, 13,000 households and a total of 45,000 people.

### 6.2. Planning Objectives

With the construction of the industrial park, 90% of the farmers in the former Huaming town have been transformed from agriculture to processing service industry, and there is a growing demand for improving living and living conditions. Therefore, the planning of the demonstration area is closely integrated with the needs of the residents, and it is positioned as a "demonstration town of home base for housing". At the same time, the design adopts new concepts, new

technologies and new energy to achieve a new model of civilized and ecological town settlement. As shown in Figure 1.



Figure 1 Planning plan of Huaming Town

### 6.3. Planning specific analysis

#### 6.3.1. Spatial Structure

The spatial layout of the demonstration area of Huaming Town is based on the idea of linkage and integrated development of residential area, business industrial park and agricultural industrial park, which is divided into four parts, namely, farmers' resettlement area, commercial residential and business area, industrial functional area and facility agricultural area. The spatial structure of the master plan is creatively based on the traditional farming pattern and natural tree texture of Huaming Town, and divides the planning elements such as functional layout, road system and group scale, with the ultimate goal of building and sublimating a vibrant and scenic idyllic landscape. At the same time, the public services and open spaces of the neighborhood, community and settlement are integrated to create a living environment with convenient transportation, quiet simplicity and ecological comfort advocated by the new urbanism.

#### 6.3.2. Traffic Organization

Huaming Town area has obvious transportation advantages, and the complete transportation facilities make it an important hub connecting downtown Tianjin with Binhai New Area, the international airport, the capital Beijing and the three northeastern provinces. In the transportation planning of the demonstration area, the current situation of regional transportation is fully considered on the one hand, and on the other hand, the concept of green environment protection is combined to facilitate residents' travel. The roads in the zone are equipped with electric vehicles, which can provide free services for residents within the small town.

#### 6.3.3. Landscape System

The landscape planning of the demonstration area tries to introduce the advantages of the town while preserving the inherent advantages of the countryside, with special emphasis on the creation of social and cultural environments such as folk customs and folklore, and strives to reflect the characteristics of ecological livability, as shown in Figure 2, to achieve the harmony and unity between man and nature, and to avoid as much as possible the use of excessive development and unreasonable design. For example, based on the original wetland in Huaming Town, the lake was



renovated and a street park was built, which not only makes full use of the existing greenery and retains the majority of dry willows and fruit trees, but also forms a beautiful natural landscape and a good ecological environment. Moreover, the design makes full use of native materials, suitable for the land and trees, planting ornamental trees and flowers suitable for local growth to highlight the idyllic characteristics of Huaming Town.



Figure 2 Outdoor landscape environment of Huaming Town

#### 6.3.4. Ecological Strategy

Many sustainable designs are fully considered in the demonstration area of Huaming Town, and green technologies such as passive energy saving, barrier-free design, new energy-saving materials and renewable energy are fully applied. In this demonstration area, an ecological water system is established based on the natural ecological concept, and an artificial wetland for sewage treatment is set up to meet the water replenishment and other water needs of the small town. The rooms and semi-underground storage rooms are designed to be fully lit, making full use of natural ventilation and lighting, and reducing energy consumption during building use; considering the elderly families among the residents, the elevator small high-rise provides them with convenient living, and adopts barrier-free design in locations where there is a height difference between the building and the environment. In order to achieve the standard of "three-step energy saving", green materials and new technologies are applied to the outer envelope of the residential units, so that the overall energy saving reaches more than 65%; solar water heater is pre-installed to make full use of natural light and heat energy, which is energy saving and environmental friendly, and also reduces the living expenses of residents.

#### 6.3.5. Residential Design

The design of the house type and façade of the demonstration area takes the needs of farmers as the starting point, as shown in Figure 3, and respects the traditional living habits and customs of farmers: the design emphasizes saving energy resources, protecting the environment, and creating healthy and comfortable living conditions; for all aspects of the whole life of the building, various design techniques and technical means are used to reduce energy consumption, so as to realize the ecological construction of Huaming. The exterior design tries to show the Huaming style which is simple, friendly, unique, energy-saving and zero-consumption. The space design is functionally rational and the physical performance of the indoor space is optimized.



Figure 3 High-rise buildings in Huaming Town

The residences are arranged in a north-south direction, forming a 45-degree angle with the road, and enclosing a number of neighborhood courtyards four neighborhood units to form a community group, sharing the public square and secondary public building configuration. The house types are basically designed with full brightness, and at least 2 rooms are facing the sun, and the interior space is reasonably designed with large openings and small depths, and the kitchen and bathrooms are naturally lighted and ventilated, and the functional flow is reasonable and convenient. The multi-story houses have semi-basement, and each household can be allocated 5 m of storage space, which solves the problem of placing agricultural tools and miscellaneous things. The façade highlights regional characteristics, with simple lines, while paying attention to the details. The materials are rustic, mostly local materials suitable for northern towns, energy-saving and environmentally friendly; the colors are harmonious, mainly white, light gray and brick colors, combined with different hues. The balconies and roof retreats are closed design, eliminating the situation of private building after the farmers move in.

## 7. Conclusion

The values of New Urbanist community planning are reflected in spatial and social forms. Spatial values involve social equality values based on mandatory livable environments, the livability of socially equal spaces dominated by mixed housing, and the emphasis on the equal accessibility of all classes in the public areas of the community. Social values include the harmony of the social environment, spatial diversity, humanity, and the equal use of community space. By discussing these two values separately, this paper highlights the relevance of New Urbanist community planning in today's urban development planning.

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