The New Urbanism as a Theory and Its Contemporary Application in China
Redesign a Residential Project in Beijing

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Abstract

The New Urbanism is one of the most influential planning movements since the late 20th century. The planning ideas and successful projects of New Urbanism are leading us to pursue the better living conditions. Under the influence of globalization, as the world’s fastest growing countries, the urban construction of China inevitably affected by the impact of new ideas. Meanwhile, during the process of construction emerged some urban problems.

In the growing process of urbanization and suburbanization, the planning of Chinese residential areas still remain the mode of function division and sprawl development. Therefore, the application of advanced new ideas to improve the planning of Chinese residential area is well worth researching.

This paper starts with issues about Chinese contemporary residential community planning, and then confirms the research question. After that, this paper introduces the related concepts to define the objects of research. Through the theoretical study, extract the New Urbanism community design concepts. And then, analysis the design concepts, study three practical cases of New Urbanism residential community and two cases of Chinese residential community, combining with the site observation, summarize the possibilities and opportunity of residential community planning in China. Meanwhile, proposed the planning ideas, which is on the basis of the research before, and design a proposal in Beijing to implement the research question. Finally, evaluate the proposal and clarify the research result, points out the problems that need further investigation.

Key words: residential community, New Urbanism, application
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CHAPTER 1 INTRODUCTION

1.1 Background

New Urbanism is one of the most influential planning movement which initiated by the United States since the late 20th century’s. New Urbanism in the spread of world-wide on the one hand shows the influence of American culture, on the other hand shows the direction of development of the contemporary urban design theory (Cao, 2011, p197). It mainly pursues with an ideal living lifestyle, but also the sustainable development model can applicable to various urban scales. Lots of successful New Urbanism projects attract many countries to study and discuss, especially in China.

China as the world’s fastest growing countries, inevitably affected by the impact of new ideas, and has become the testing ground in the world. But normally copy with the new idea and mode during the process of urban construction.

Due to the excessive pursuit of economic and constructive speed, led to the urban construction neglect human basic needs. The original urban fabric are almost disappeared, the skyscrapers and many copied residential buildings spread throughout the metropolitan area. Along with the process of urbanization and suburbanization, the urban population explosion, different class polarization, shortage of construction land, traffic congestion, environmental degradation. Whether the “New Urbanism” can provide the positive impact on the Chinese urban construction is still need to explore.

1.2 Problems and Possibilities

1.2.1 Problems

Although the Chinese contemporary residential community planning was impacted by several advanced theory and ideas, but there still existing many serious problems. First, the construction of residential community is lack of consider the human needs. Second, the polarization and segregation of different class is getting more and more serious, lack of interaction and communication in the community. Third, the green space is below standard. Fourth, in the planning process of residential community is lack of consider the influence on urban development (Dong, 2010).

The reason of these problems is that too much pursuit of the physical space construction and economic benefits in the planning process. The residents do not have the right to participate the community planning and design. The different grades of residential communities are isolated each other, thus lead to the class polarization issues getting more serious.

In the developing process, due to the developer pursue the maximization of the
profits, the result is the green space are replaced by the residential buildings. In the process of development and design, especially the residential communities at the edge of the city are lack of the necessary education and cultural facilities for inhabitants, emerge the detachment phenomenon, which means the residential community is disconnect with the urban functions, meanwhile, the social problems and crime rate are increasing (Dong, 2010).

1.2.2 Possibilities

There are some useful methods that can be researched to solve the problem and also some good examples which showed the opportunity of the Chinese residential community planning.

First, compare of the New Urbanism community construction principles and Chinese residential planning ideas. Improve and optimize our mode of residential community planning. Second, learn some good experience from the practical cases from the U.S. The New Urbanism theory generates the positive influence on the suburbanization and other urban issues in the U.S.A, variety of successful cases explain the improvement and changing of the community construction mode. Although facing the different urban problems, the planners can still proceed from the reality conditions and needs, to explore and research the direction to solve the problems. Since China and the entire society are increasing emphasis on the sustainable urban development and the environmental issues, our urban construction will follow the trend to reform. This is also an opportunity and challenges for changing the mode of residential community planning.
CHAPTER 2 AIM AND RESEARCH QUESTION

2.1 Aim and Research Question

2.1.1 Aim
Implement the New Urbanism as a theory for redesign of contemporary Chinese residential community.

2.1.2 Research Question
1. Which part theory of New Urbanism can influence on the Chinese residential community planning?
2. How to compare with the residential projects in the U.S.A and China?
3. How to implement a proposal which practice the theory of New Urbanism, specific on reforming the original mode of a residential community in Beijing?
2.2 The structure of the thesis

INTRODUCTION

1. Proposed research question, clear research object.
2. Confirm the research structure and method.

METHODOLOGY

1. Definitions and analysis of related concepts.
2. Extract and summarize the New Urbanism community design ideas and practice mode.
3. Analysis and comparison of the design ideas and cases between the New Urbanism community and Chinese residential community.
4. Summarize the needs and constraints of Chinese residential planning.

THERORETICAL STUDY

CASE STUDY

SITE OBSERVATION

PROPOSAL

1. Proposed the Chinese residential planning ideas and design modes, design a new proposal for the residential community.

CONCLUSION

1. Clarify the research results, draw a conclusion
2. Points out the problems that need further research.
CHAPTER 3 METHODOLOGY

3.1 Theoretical study

3.1.1 Definitions and analysis of related concepts

3.1.1.1 Community

Community: The term community has two distinct meanings: 1) A group of interacting people, living in some proximity (i.e., in space, time, or relationship). Community usually refers to a social unit larger than a household that shares common values and has social cohesion. The term can also refer to the national community or international community, 2) in biology, a community is a group of interacting living organisms sharing a populated environment. A community is a group or society, helping each other (http://en.wikipedia.org/wiki/Community). (See figure 3.1)

![Figure 3.1 the composition of the community](https://www.google.com/search?hl=zh-CN&biw=1205&bih=523&noj=1&q=community&um=1&ie=UTF-8&tbm=isch&source=og&sa=N&tab=wi&ei=fGWoT-4Mks_hBJ7f1Mcl)

3.1.1.2 Residential community

Residential community: A residential community is a community, usually a small town or city that is composed mostly of residents, as opposed to commercial businesses and/or industrial facilities, all three of which are considered to be the three main types of occupants of the typical community (http://en.wikipedia.org/wiki/Residential_community). (See figure 3.2)
3.1.1.3 Residential district

Residential district: residential district is in a certain area form to live together as the main relationship of social groups, the interaction between members of the social group in the residential district is simple, and each members in the district group only served as a residence adjacent to the role, each family is relatively independent of the individual cells in the groups, lack of mutual relevance. (Hu, 2004, p4) (See figure3.3)

3.1.1.4 Analysis of related concepts

The community is a component unit of social group. The residential community is part of a community. Forming the different functions is the mainly difference between community and residential community. Residential community refers to the

Figure 3.2 Bird view of seaside city, Florida.
(Source: http://www.30abeachteam.com/)

Figure 3.3 a residential district in Hong Kong, China
living life as the main function to integrate the community. The public services facilities are mainly aim to the use of residents and their lives. But the function of community is wider and can cover all life activities (Zhang, 2000, p342~p343). (See figure 3.4)

Figure 3.4 the relation between the community and residential community
(Source: made by author)

China has been accustomed to using the concepts of “residential community” and “residential district”(Ministry of Construction P.R.China, 2002, p2~p3).

<table>
<thead>
<tr>
<th>residential community</th>
<th>residential district</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosed by urban arterial</td>
<td>Enclosed by secondary road</td>
</tr>
<tr>
<td>Population (30000-50000)</td>
<td>Population (7000-15000)</td>
</tr>
<tr>
<td>Public service facilities</td>
<td>Public service facilities</td>
</tr>
</tbody>
</table>

Table 1: The comparison of Chinese concepts “residential community” and “residential district”

Figure 3.5 the relation between Chinese residential community and residential district
(Source: made by author)

The composition of Chinese residential community and residential district are almost the same, just the different scale of them. But compare with the residential
community concept, Chinese community and district concepts are pay more attention to building the substance and geographic space, lack of the connotation of social space.
For a long time, people are eager to improve the geographic living space, has been neglected for the connotation of its social space.
The result is the Chinese residential community and residential district cannot meet the multi-level social needs of social groups. In summary, the concept of residential community to replace the Chinese residential district has crucial theoretical and practical significance.
The theory of New Urbanism community construction advocate to make various parts of modern life to re-form a whole, into a compact and walkable new residential community with the atmosphere of urban life. It emphasizes not only residential community physical form space designed, more importantly, it also hope to enable the community as the link of residents contact and social organization. And meet both the physical needs and spiritual needs (Hu, 2004, p5).

3.1.2 The research of New Urbanism movement

3.1.2.1 The origin and development of New Urbanism movement

Figure 3.6 Human changes the ideal of residential areas
(Source:http://image.baidu.com/i?ct=201326592&cl=2&nc=1&Im=-1&st=-1&tn=baiduimage&listtype=2&fm=index&pv=&z=0&word=%D0%C2%B3%C7%CA%D0%D6%F7%D2%E5&s=0)

The development of large cities in the United States experienced from Urbanism to suburbanization and then the process of development of New Urbanism, New Urbanism is critical to the sprawl of suburban development model.

The rapid development of the industrial revolution of the eighteenth and nineteenth centuries promoted the process of urbanization in western countries. In 1938, Louis Smith, American scholar, a way of life - Urbanism, from the sociological point of view, the text defined the urbanism as a way of life which consist of three characteristics-large population, high density and mutual heterogeneity. In order to solve the urban problems of this time, and proposed some urban planning theories, such as “industrial city”--- the early planning theory which takes considerations of the combination of living and working, “ribbon urban planning theory” and “garden city” theory, and so on. Although some of early planning theory and modes were too idealistic, such as the “Garden City”, however, it formed a lot of inspiration to New
Cities in England up to 1970s. The “Garden City” also put forward a unique insight of urban regional relations, spatial structure and landscape. (See figure 3.7)

Figure 3.7 Diagram from “Garden Cities of To-morrow”  
(Source: http://www.library.cornell.edu/Reps/DOCS/howard.htm)

As more and more people into the city, the urban living space was getting worse, living space crowded, narrow, and increasingly prominent of the contradiction. The population explosion in the United States after World War II, urban environment was getting worse, and it was difficult to meet the needs of new development. A large number of population and factories moved to suburban. The function zoning laws used to be respected by modernism urban planning was fully used again of planning and construction in the suburban area. (See figure 3.8)

Figure 3.8 United States birth rate (birth per 1000 population). The United States Census Bureau defines the demographic birth boom as between 1946 and 1964 (red).  
(Source: U.S. Census Bureau, 2010.)
Due to the suburban land was quite cheap, the natural environment was better than
the central urban areas, a large number of middle class moved from the city to the
suburban area in order to seek better living conditions. Meanwhile, the increasing
popularity of automobile promoted the development of suburbanization.

The building construction in suburban community was basically based on one or
several design projects and repeated everywhere. Most of them were freestanding,
far away from the chaotic, noisy city center, the living conditions was far superior to
the apartment in the city center. The only role of the community was providing
people a pure living space, also known as a “bedroom community”. (See figure 3.9)

Figure 3.9 Cincinnati-suburbs-tract-housing, the typical suburban form in the
United States of America.

Under the growing trend of suburbanization, the development of urban theories
contributed to the transformation of suburban development mode in the U.S.
Due to the influence of modernism movement in the early twenty century, the
traditional urban structure and immaterial social environment were gradually
destroyed by the modernism movement, a growing number of urban problems have
emerged. Such as the lack of a sense of belonging of public space, the indifference of
neighborhood contacts, social issues, racial segregation, etc. Once the truth for
solving the urban contradiction became the object of criticism and suspected (Cao,
2011, p31). (See figure 3.10)
In the 1950s, the tenth group as the representative of the second generation of European modernist reiterated modernism in urban space cannot meet demands of human nature and human activities. They tried to redefine the basic principles and forms of urban space, proposed the view of the place. And also put forward the principle of place which should be the response of the original community context.

In the 1970s, Post-modernist critique of modernism to a climax, they cannot face the failure of urban design theory application on the urban renewal projects and suburban development (Cao, 2011, p53).

In the next ten years, the U.S architecture field and planning field re-created the interest in traditional urban values, patterns, images, and raised an upsurge on the revival of European traditional urban form.

Under the influence of the thoughts and ideas from Krier and other European architects, DPZ firm explored a road which against to the normal suburban sprawl mode in the U.S. They designed the seaside city planning in Florida, 1982. Then, the project had achieved unprecedented success. This new urban lifestyle making people re-evaluate the possibility of construction in the suburban area, and began a “Traditional Neighborhood Development” (TND) movement. In the late 1980s, the “Traditional Neighborhood Development” (TND) on the east coast combined with the “Transit-Oriented Development” (TOD) on the west coast, led to the emergence of the “New Urbanism movement” in 1993.

In essence, the New Urbanism is a product of modernist criticism, it is established on the basis of the architecture and urban design theory in the 1960s and 1970s, aim to eliminate the defects of the sprawl suburban development mode (David Walters & Linda Brown, 2002). It also can be said the result of European architects research on the traditional urban space is the direct source of New Urbanism theory.
### Table 2: The movement process of New Urbanism
(Source: Cao, 2011, p19–p21)

<table>
<thead>
<tr>
<th>Time</th>
<th>people</th>
<th>movement</th>
<th>Book</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>Andres Duany &amp; Elizabeth Plater-Zyberk (DPZ)</td>
<td>Seaside city planning, proposed TND mode</td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td>Peter Calthorpe</td>
<td></td>
<td><em>Pedestrian Pockets</em></td>
</tr>
<tr>
<td>1990</td>
<td>Peter Calthorpe</td>
<td>Laguna West city planning, practice the pedestrian pockets mode</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>Peter Katz</td>
<td></td>
<td><em>The New Urbanism-Toward an Architecture of community</em></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td>CNU V (1997) Toronto, Ontario First time hold the meeting in other country</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td>CNU VIII (2000) Portland, Oregon, The largest meeting, more than 1400 participants, Discuss the New Urbanism and Smart growth movement</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>Andres Duany &amp; Elizabeth Plater-Zyberk (DPZ) and Jeff Speck</td>
<td></td>
<td><em>SUBURBAN NATION: The Rise of Sprawl and the Decline of the American Dream</em></td>
</tr>
<tr>
<td>2001</td>
<td>Peter Calthorpe And Fulton, William</td>
<td></td>
<td><em>The Regional City</em></td>
</tr>
<tr>
<td>2002</td>
<td>Andres Duany &amp; Elizabeth Plater-Zyberk (DPZ) And Jeff Speck</td>
<td></td>
<td><em>The Smart Growth Manual</em></td>
</tr>
</tbody>
</table>
The *Charter of the New Urbanism* was the guide of the New Urbanism movement. It was divided into 27 parts, elaborate theoretical point of view of the New Urbanism from three levels of region, neighborhood, and building.

The principle of *Charter of the New Urbanism* include: Neighborhood community construction should be compact, clear boundary, mixed use and diversity of residential types and coordination. The road network is connected and suitable for the use of any means of transportation, have good street furniture, such as pedestrian pavement and street trees, etc. And the road network should be convenient and safe throughout the whole neighborhood area. The pedestrian traffic should beyond the automobile traffic. The park, public space, as well as municipal buildings are located in the neighborhood to create a strong visual structure (Cao, 2011, p22).

The most attractive features of *Charter of the New Urbanism* is that in each dimension can be well design and planning, from regional to a city block. It combined those normal principles together, and in each level, comprehensive, sequential disposing the related issues of urban construction (Cao, 2011, p22).

3.1.3 The research of New Urbanism theory

3.1.3.1 The New Urbanism community construction theory

The core concepts of New Urbanism theory focus on three main fields which include: First, the regional planning and ecological sustainable development of New Urbanism; second, the suburbs design and practice; third, the urban renewal (Shen, 2003, p24∼p26).

Due to my research is concerned about the application by using the theory practice on Chinese residential community design, the paper will focus on research of suburban community design and practice.

3.1.3.2 Three levels of the New Urbanism Community Design

The New Urbanism community design advocate the public space is more important than the private space. This principle is not only reflected the interrelationship between the building design and the public space, community building types and functional arrangement, coordination of the land use scale and regional road network. It also focus on implementation of the metropolitan region level, traditional community level, building and street level design works (Peter Katz, 1994, p4∼p19). (See figure 3.11)
3.1.3.2.1 The Metropolitan region and urban center

The New Urbanism development concept is not only focusing on the community design, but also the connection from region scale design to the small urban scale design. This concept mainly uses two development strategies for developing areas. First, regardless of the location of the site (suburbs, new developed region or inner city), the diversity of community, population scale, public spaces and structure should be throughout the entire metropolitan area.

Second, according to the similar development principles design and planning for the whole region. The whole region should be the same structure as the single community, with public space, public transportation system, and also need the regional diversification, so a clear boundary is necessary.

``Region design is just like design a block. The most crucial aspect of region design is to disintegrate the region to the human scale and then design´´ (Peter Calthrope & William Fulton, 2001).

The urban center as a multi-functional mixed use public activity center, also as the important public space, it is designed to adapt walking and public transport as a principles, and then consider the use of private cars. There are four categories of centers constitute the urban public space system which including urban core, urban center, neighborhood center, and rural center. Because of the different size and service radius, and provide residents with different levels of life choices and urban open space. (See figure 3.12)
3.1.3.2.2 The traditional community, zoning and corridor

The organization of New Urbanism community structure contains neighborhood, zoning and corridor (David Walters & Linda Brown, 2004). The neighborhood is the urbanized area which contains various functions. Zoning is the urbanized area with a specific function. The corridor is the separation area between the different neighborhood and zoning. New Urbanism neighborhood community should be compact, multifunctional, and public transportation as the main way of traffic. The location of special functional zoning should be reasonable, and has some features. The corridor constructing could be contributed to integration of the natural environment and community.

1. The traditional neighborhood composed of compact diversified residential, services facilities and public facilities construction, and its concepts are reflected in the pattern of TOD, TND development modes. A good community should contain different types of families, residents of different incomes level. The city should be composed of the neighborhood and the neighborhood is interconnected and not independent of each closed block. (See figure 3.13)
2. The zoning usually refers to a special, single functional area, such as university campuses, office parks, industrial facilities or airports. Because of their own reasons making them out of the urban fabric, but they still should be combined with other urban elements and design the network organically. Meanwhile, design should focus on walking and public transport-oriented street and space network, to create the humanized urban space as more as possible. (See figure 3.14)

3. The corridor is the connection of neighborhood, regional center and zoning. It is the urban element with continuity for the characteristics, including highways, boulevards, railway, river systems and green channels. But these characteristics, location and path of the corridor are determined by the intensity of their use. (See figure 3.15)
3.1.3.2.3 The blocks, streets and buildings

Michael Southworth in the *Streets and the shaping of towns and cities* mentioned that "the New Urbanism community is in between the traditional urban form and suburban community form, or the improvement of planning a conventional suburban unit".

Due to the influence by the ideology of modernism, the suburban community has made extensive use of the cul-de-sac streets pattern. Meanwhile, the development of single function residential buildings which leading the residents are lack of communications, the single function of residential area and urban sprawl issues. (See figure 3.16)
New Urbanism is dedicated to creating streets and buildings with a sense of place. Through the development of streets, buildings and blocks, made them becoming the connection for residents. The streets separate the diversified function of blocks, and connect the whole area at the same time.

In the view of New Urbanism, prefer to use the gridded street system of traditional street patterns, and design the streets connect each other. Meanwhile, the concept of shared street provide an effective method for solving the disadvantage of gridded street in the community, it can reduce the traffic pressure within the residential community. (See figure 3.17)

![Figure 3.17 the comparison of different street patterns](Source: made by author)

The building should be the important component for creating the continuity of places. It can complete the streets, blocks, neighborhood, corridor and natural environment.

Urban space not only cannot be destroyed by the new buildings and should complement with the new construction.

The block is formed on the basis of New Urbanism street patterns and building construction, which improve the sense of place. The blocks, streets and buildings are the elements which are independent and influence to each other, each of them has its own personality and also have some common characteristics.

### 3.1.3.3 New Urbanism community practice mode

The most typical practice model of the New Urbanism is the TND mode and the TOD mode. The TND and TOD is the most basic representative model of New Urbanism suburban construction. The inherence are unified, the TND emphasis on the neighborhood level planning and design, and also the sense of history; and the TOD focus on the metropolitan area level, emphasizing on the integration of neighborhood and public transportation systems regional development.

#### 3.1.3.3.1 Traditional neighborhood development mode (TND mode)

The TND mode has the following characteristics:
1. An appropriate scale of the neighborhood is the basic unit of the composition of the community, between the neighborhood units is the green belt. Each neighborhood has its own center and a clear boundary. The size of the neighborhood center of approximately 40-200 acres (about 16-81 million square meters), the radius is not more than 1/4 miles (approx. 400 meters).

2. The community should give priority to public space. The process of design should avoid the lack of vitality of the open space and isolation of the placements of buildings. Neighborhood center is the open public space, which should be set to green spaces and squares for community activities. To strengthen the landscape values and visual status of the public buildings, and public buildings as a local landmark.

In addition, the main road is mainly on foot, the service road located behind the building and available for the use of vehicles. Left enough space back to the red line of the main road on both sides, and combined with the sidewalks, street parking together to make the space in front of the building for people contacts and children playing area, meanwhile, improve the quality of public street space.

3. The community should have a comprehensive and balanced function. Within the scope of neighborhood community, setting up living, working, business, schools and recreation facilities, strive to achieve a balanced mix used in the area, and try to creating employment opportunities as much as possible.

Figure 3.18 Traditional neighborhood development modes.
(Source: New Urbanism theory-new perspective of urban design, Cao, 2011, p77)
4. The community should have sufficient building density, which can improve the infrastructure and land use efficiency. The density of the buildings gradually increase as close to the community center, and presents a centripetal force of community, gathered the separate buildings together.

5. The community has a sophisticated transportation network. Construction and transportation are built on the top of a sophisticated network of interconnected streets. The TND mode prefers to use grid road system to contact the neighborhood community. In order to go through friendly for pedestrian using, the street should not be too broad. Sidewalk at least 1.2-1.5 meters and set up greenbelt on both sides and the middle of the road, which can shrink the visual scale of the road, and reduce the psychological pressure on the pedestrian crossing.

6. Respecting the traditional architecture style. This model emphasizes on the building style should be in harmony with the surrounding architectural context, respect the local culture and historical traditions.

7. The community should provide a variety types and different prices of dwelling, so that making different class can afford them. This not only reflects the social equity, and to enrich the social structure within the community, but also conducive to the development of the community (Gui & Mao, 2000, p26～p27).

3.1.3.3.2 Transit oriented development mode (TOD mode)

Peter Calthorpe proposed the “transit oriented development” mode. He described the concept in detail in the article pedestrian pockets, both of TOD mode and TND mode are concern about the traditional urban pattern, but the TOD mode is also concerned about the relationship between the public transportation system and community patterns, then create a compact walkable community and reducing dependency on motor vehicles (Wang, 2001, p77～p78). (See figure 3.19 3.20)

![Figure 3.19 TOD as a Walkable Scale](image-url)
Figure 3.20 TOD as Part of a Regional Network
(Source: Calthorpe’s Conceptual Design Schemes for TODs: Local and Regional Contexts. 1993)

This mode is evolved from the “walkable community”, which has the regional public transport links as the center. Within suitable walking distance of the radius, and contains high-density residential and public space, workplace, commercial area and service facilities to make a complex public community. Its commitment to reduce the volume of traffic, save the land and energy, and make all habitants can enjoy more services. The specific content including: (See figure 3.21)

1. The “pedestrian pockets” as the main oriented design, or shopping center for the walking-oriented. Each “pedestrian pockets” is about 480,000 square meters with rail transit connect each other to be a regional network. The mainly traffic way inside each “pedestrian pockets” is walking, and you can use the rail transit, bus or private car to reach other “pedestrian pockets”.

2. Each “pedestrian pockets” balanced arrangement of different types of construction. Residential, office, commercial, kindergartens as well as some recreational facilities should be balanced arranged inside the “pedestrian pockets”.

3. The design of the road take diversified principles: the checkerboard pattern, the bending pattern, etc. the road has a strong pedestrian oriented concept.

4. Through the small floor space and economical arrangement of living space, making the housing prices can be accepted for general households.
3.1.4 Conclusion

The development of New Urbanism was established on the critical basis of reality, and it is the continuity of the characteristics of theoretical development. From the community construction theory of New Urbanism, advocates using the overall coherence development strategy, the urban structure of each level is distinct. The patterns of streets, buildings and blocks are improved on the basis of the traditional urban patterns, to make these elements connect residents, and more emphasis on creating the sense of place.

The practical modes of New Urbanism reflect more clearly of the community construction theory.

TND mode proposed the specific planning and design ideas on several aspects, which including: community scale, public space, community structure and function, building density, traffic network and respect the historical resources.

TOD mode put forward the planning ideas including: regional transport links, community scale, diversified building functions, the pedestrian oriented street network and different price of dwellings.

From the comparison between TND mode and TOD mode, both of them are more advocate the contact of residents and the interaction between different groups of people. Hope to build appropriate scale residential community, which can be more convenient for walking and living, and also have a strong sense of community.

These theory and practical modes of New Urbanism can provide the basis and
direction for guiding the residential community planning. The design work can also create on the basis of continuity of the development strategy. But the guidance of Chinese residential construction is the Design & Planning Ordinance of Urban residential areas. It brings the restriction on the Chinese residential planning mode, and also emerged some living problems due to the planning of residential community under the Ordinance.

3.2 The comparison of New Urbanism community and Chinese residential community design ideas.

In the discussion of the relationship between Chinese residential community design and New Urbanism community design, a clear understanding of Chinese basic national conditions and the unique urbanization process we should have.

Compared with the Western countries, Chinese urbanization are facing the most serious problem is the huge population, which is unavoidable reality in China. (Cao, 2011, p188) The huge population also becomes the basic condition of Chinese suburbanization and urbanization in big cities. The urbanization of the “Chinese characteristics” refers to the resource constraints in the process of urbanization under the background of a large population. The other aspect is the problem of resources (Lin, 2008, p27). China is a per capita resource scarcity country, also a developing country, compared with the high-speed urbanization stage of the developed countries, and we must make full use of resources. The shortage in land resources is also becoming the critical issues of China’s urbanization. So our urbanization is bound to only take the intensive, compact road of sustainable development. (See figure 3.22, 3.23)

![Figure 3.22 Changes of arable land and population in Beijing (1949 - 1997)](Source: Beijing Statistical Yearbook, 1999)
In the social structure and living concept is also an important factor to guide the community design and development. In the social structure aspect, Chinese urbanization includes the urbanization of the city and suburbanization of rural areas. The most Chinese characteristics social problem is the urbanization of the farmers. Meanwhile, it also brings the further segregation of social classes (Cao, 2011, p195).

From the description of Chinese contemporary urban development background above, we know that in order to response the population and lack of resources issues, our needs should be more compact and smart thinking of our residential community development and planning.
3.2.1 The comparison of the community space construction

<table>
<thead>
<tr>
<th>Regional development</th>
<th>New Urbanism community design</th>
<th>Chinese residential community design</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. set up facilities from the regional level</td>
<td>1. Each community set up facilities separately</td>
</tr>
<tr>
<td></td>
<td>2. good connection of public facilities and transit stop, public facilities developed around the public transport system</td>
<td>2. The complete function of each community, lack of consideration of the surrounding urban environment.</td>
</tr>
</tbody>
</table>

| scale | 1. limit the size of living space in accordance with the human activity scale | 1. The scale based on the structure of urban road network. |
|       | 2. Each neighborhood scale is 16-81 hectares, the radius no more than 0.4km, guarantee 3 minutes walking to the park, and 5 minutes walking to the central square | 2. The distance between the urban road generally 400m, so the residential unit (district) normally more than 10 hectares. |

<table>
<thead>
<tr>
<th>Organizational structure</th>
<th>neighborhood, block and corridor</th>
<th>Residential community, residential district, residential group</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Public space</th>
<th>The community center usually consists of the square and parks</th>
<th>Lack of urban center and community center</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>openness</th>
<th>Good connection with the public transit</th>
<th>The community and district are relatively closed; take a variety of techniques to separate the inside and outside</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mixed function</th>
<th>Within the walking distance radius, set up shops, services, green space, school, activity center</th>
<th>The function within the residential community is relatively single</th>
</tr>
</thead>
</table>

| Regional features | 1. Planning and design combine with the regional features. |
|                  | 2. Continuation of local history, culture and architectural style, and enhance the residents a sense of belonging. |
|                  | 1. Urban construction ignores the protection and utilization of the existing building. |
|                  | 2. Tear down as the strategy of reconstruction, lack of respect the natural environment. |

Table 3: the comparison of the community space construction
(Source: made by author)
3.2.2 The comparison of traffic network and road space design

<table>
<thead>
<tr>
<th>Traffic organization</th>
<th>New Urbanism community design</th>
<th>Chinese residential community design</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Advocate walking and public transport, against dendritic roads, praised the grid road</td>
<td>Road is the simple traffic carrier</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Road space design</th>
<th>New Urbanism community design</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Make the street becoming the important public space for residents.</td>
<td></td>
</tr>
<tr>
<td>2. Under the planning laws, reduce the turning radius to decelerate the speed of cars, develop the landscape, and improve the deceleration facilities.</td>
<td></td>
</tr>
</tbody>
</table>

1. The purpose of street construction is for car passing. Generally two lanes and another parking lane on the both side of the streets.
2. Separate the cars and people in different route.

Table 4: the comparison of traffic network and road space design
(Source: made by author)

3.2.3 The comparison of block design

<table>
<thead>
<tr>
<th>Block</th>
<th>New Urbanism community design</th>
<th>Chinese residential community design</th>
</tr>
</thead>
<tbody>
<tr>
<td>The scale of length control in the 600ft (183m), the perimeter is 1800 feet (549m)</td>
<td>Urban road structure determined the residential district scale; the reasonable distance between two main roads is 600-1000m</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Layout</th>
<th>New Urbanism community design</th>
<th>Chinese residential community design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stressed the neighborhood concept, enclosed the courtyard by the building. The interior space is the activity space.</td>
<td>The most common pattern of community and district is arranging the buildings neatly in rows</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: the comparison of block design
(Source: made by author)

3.2.4 Conclusion

The organizational structure of New Urbanism residential community and Chinese residential area are different, the scale also different, so they are not directly comparable. Compared with the components, we can know that the neighborhood concept is similar to our unique concept of residential district, and the block concept is similar to our residential group concept, but we are missing the component similar to the corridor.

In the New Urbanism community construction, from the community to the neighborhood unit and then the block is a coherent, clear system. The organic
combination of centers, corridors and residential site revealed the holistic consideration of the residential community construction. But in our construction, from the residential community to the residential district and then the residential group, only simply copy with the residential district as a component, this mode ruined the organic of the whole city. Because of this typical Chinese organizational structure and our closed, single functional mode of the residential community, making the community can only piece together with other urban functional area, rather than the organic integration. (See figure3.24)

![New Urbanism residential community and Chinese residential community](source: made by author)
3.3 Case study

3.3.1 The successful New Urbanism projects in America

3.3.1.1 Case one: Seaside city planning

Seaside located on the Florida panhandle in Walton County, between Panama City Beach and Destin. Being one of the first cities in America designed on the principles of New Urbanism. The seaside area is only 320,000 square meters, designed to accommodate 2,000 people, and its diversified functions contrast with the scale and function of American traditional small town since the 1920s. There are 350 family housings and 300 sets of other buildings, including: apartments, and hotels, etc. Major public facilities include: a school, a small multi-functional building, an open market, a tennis court, a theater and a small post office.

Figure 3.25 Bird view of seaside, Florida
(Source: Google map)

The innovative planning and design ideas of seaside area add new content for the U.S urban development and planning. The main planning idea is to let all residents close to the beach, not just confined to some housing located close to the beach. Within all the streets are ultimately leads to the beach or community center, and the private housing, apartments and business facilities are all developed along the coastline.

Figure 3.26 Map of seaside, Florida
(Source: http://www.360blueproperties.com/Seaside-Fl/)
In the development of seaside planning, DPZ company are particularly emphasized the importance of public space, make it higher position than the private space. In addition to the parks and squares, they also focus on considering the streets, boulevards, pedestrian sidewalk, as well as some natural landscapes such as sand dunes and beaches as the important elements of public space. Then, they use the innovative designing strategy gradually fill the private building into the public space surrounding. The result of this development made a clear distinction with those developments that ruining the natural environment.

In order to encourage the interaction of community residents, the structure of seaside city is simple, the development of all facilities in accordance with the “within five minutes’ walk” as principles. This kind of walkable community reduced reliance on cars in their daily lives, and increase opportunities for interaction. In order to ensure the building diversity within the community, there are a variety of different architectural styles: Victorian, neo-classical, modernist, ultra-modernism and others coordinated together. Although the seaside city has become the model for architects to learn in the future, but many successful building are designed by owners rather than by the architects. (See figure 3.28)
The seaside city planning concepts played a huge role for those non-professionals to easily implement their own design. The planning experts just provide the location and style demands of the building, the specific design work are completed by others. Planners’ approach of using diagrams and titles to illustrate the architectural mode was extensively applied in later planning and design of TND community. (See figure 3.30)

The initial plan of seaside city was designed to be a moderately priced resort living community. Now, it is developed as a famous tourist destination. The land price of seaside have doubled ten times since the area was developed, and attract developers and investors from all over the world.

Conlusion:

Advantages: a strong sense of community is the essential part in this project.

Reason: In the process of development, the seaside project, from the development mode, construction process and planning concept to the final living status of residents, all revealed the consideration of the relation between community spiritual and physical levels, which impact and lead the residents a better way of life.

Problems: the seaside city planning was originally considered a variety of different prices of private housings, but due to the successful development of the community, making the prices rise very fast, and becoming the most expensive residential community. But their thinking and practice of the mixed level of buildings can be a certain reference for our planning in the future.
3.3.1.2 Case two: Kentlands (The TND residential community)

Kentlands located in Gaitherbrg, Maryland, designed in 1988. The size of Kentlands is 352 acres, which design to accommodate more than 5,000 people, and 1,600 residential units. (See figure 3.31)

![Figure 3.31 The master plan of Kentlands](Source: http://www.dpz.com/project.aspx?Project_Number=8805&type=3)

planning and design concept in Kentlands

1. The diversity of architectural styles.

In order to making communities to form a diversity of ages and income levels, planning and design a different type and style of housings. (See figure 3.32)

![Figure 3.32 The different function and style of buildings in Kentlands](Source: http://www.ecocompactcity.org/Building/Eco_Compact_Building.html)
2. Focus on the protection of the natural environment and open space design. Well protect of existing lakes and wetlands within the community, demarcated the reserved zone, green belt and planning a few small square, and formulate the open space system. (See figure 3.33)

![Figure 3.33 The old tree create new public space](http://www.carricoillustration.com/1-concept-illustration/kentlands-plan/)  
![Figure 3.33 beautiful lake view](http://www.carricoillustration.com/1-concept-illustration/kentlands-plan/)

3. The original building use and reference of the traditional architectural style. Good use of some original buildings in the farm of Kentlands, and had been transformed into a community cultural center. (See figure 3.34)

![Figure 3.34 Preserved old building](http://www.ecocompactcity.org/Building/Eco_Compact_Building.html)  
![Figure 3.34 reference of the original architectural style](http://www.ecocompactcity.org/Building/Eco_Compact_Building.html)

4. Focus on the gathering of public building to form a community center, the symbol of community and sense of place.

5. Mixed function: The entrance of regional shopping center connected to the town square, and gathered various functions of community here, increasing the vitality of community centers, and stimulate the commercial activities. (see figure 3.35)
Figure 3.35 The function of the Kentlands
(Source: http://www.kentlakes.com/maps&tours.htm)

Conclusion
Advantages:
1. An active pedestrian-oriented mixed-use district
2. the preservation and transformation of the existing structure, large trees, and wetlands into amenities the community can share and preserve for the use of future generations. This preservation and reuse tactic is not only an environmental technique, but also a unique way of connecting residents with the history of the place in which they live.
3. Kentlands uses common sense but highly effective environmental and urban design techniques to prove the viability of sustainable urban growth in the large region.

questions:
1. How to preserved and transformed the existing structure into reused process in Chinese residential community?
2. What is the Chinese mixed use community look like?
3.3.1.2 Case three: Laguna West (The TOD residential community)

![Figure 3.36 Laguna West sit plan](Source: http://www.eslarp.uiuc.edu/arch/ARCH371-F99/groups/o/tnd.html)

Sacramento, California used to be a forgotten official nature park. Later, developers and local government re-planning and developing the Laguna West (an area of 1045 acres, located in the 11 miles south of Sacramento ). The TOD concept as the principles had been widely used in the process of planning and development of Laguna West, and became the first successful community project using the TOD concept. The community provides 3,400 residential units and 100 acres of community centers, which have sufficient population to support the operation of public transport system. Peter Calthorpe as the designer was determined to create town which should be green, pedestrian oriented, close neighborhood and contains walkable shopping street and the government center. The major approach of transport within the community is walking, and the public transit will become the main way for residents going out.

![Figure 3.37 Bird view of the town center](Source: http://maps.google.com/)
The primary focus of the master plan is its 100-acre town center. Diagonal boulevards link this dense central zone with a surrounding secondary area of low-density, single family homes (Katz, 1994, p19).

**Figure 3.38 Open space system of Laguna West**
(Source: http://image.baidu.com/i?tn=baiduimage&ct=201326592&lm=-1&cl=2&word=Laguna%20West%20open%20space)
The community developed based on five parks as the centers, connect to the neighborhood green spaces, community parks, green belt and water system and create a coherent open space system.

**Figure 3.39 Examples of typical floor plans**
(Source: http://www.eslarp.uiuc.edu/arch/ARCH371-F99/groups/o/tnd.html)
Targeted at a number of different market niches, these 1,100-1,800 square feet houses have attracted the interest of both starter home buyers and “empty-nesters.” Two houses share a single driveway and parking court which reduces the total paved area required for each car (Katz, 1994, p24).
Houses incorporate a number of traditional elements that are considered innovative in the context of contemporary suburban development. Front facing porches and garages placed at the rear are some of the features of these homes (Katz, 1994, p28–p29).

Conclusion
Advantages:
1. The TOD principles and pedestrian oriented concepts.
2. The protection and development of the natural environment.

Question:
1. How to use the TOD principles in the Chinese residential community planning?
3.3.2 Analysis the Chinese residential projects.

3.3.2.1 Case one: Huaqiao town (residential district planning)

Figure 3.41 the plan and bird view of Huaqiao town
(Source: made by author)

The residential district project is located in the YanCheng city, China. The project uses the New Urbanism concept on design work. We can see the advantages of this project compare with the normal residential district, which is mixed building type at the boundary of the district and create large green space in the whole area. Due to the design and planning the project focus on the single residential district, the shortage of the project is also obvious.

From the bird view of the site we can clearly see: first, the residential district is a single component. Due to lack of consider the relationship with the whole residential area, the patterns of buildings are relatively single. And each of the residential districts around will use this mode to copy more gated residential districts. Second, the residential district is lack of public facilities inside. Just provide the green space inside. Third, the urban road network restrict the connection with the surroundings, and promote the private cars become the major traffic way.

Conclusion:
1. The planning mode of residential district is lack of consider the surrounding environment.
2. The building patterns are relatively single, and lack of sense of enclosure.
3. The function within the district cannot meet the needs for residents’ daily lives.
3.3.2.2 Case two: Tongzhou new town (residential community planning)

The Tongzhou new town project is located in the south part of Beijing. It consists of three residential districts within the whole residential community. The planning and design pursue to build the better living environment, and mixed used residential community. But actually, the function of the community just includes the residential and commercial, which is similar like other normal residential community in China. Each of the residential districts is closed, and the building patterns are similar each other. The pedestrian route is not clear and cut off by the urban road.

From the analysis of the Chinese projects above, we can realize that the practice of New Urbanism concept in Chinese residential community planning is still immature, and need more thinking in the future.

3.3.2.3 The feature of Chinese residential project

From the pictures, we can know most of the Chinese residential communities are consists of these building types, which is lack of diversity and cannot create the sense
of enclosure.

Figure 3.44 Chinese gated district (entrance)  
(Source: made by author)
From the picture, we can clearly see the entrance space of residential community in China. There is no space for people stay or contact, even no route for pedestrian walking, just for cars to access. The steel fence and huge concreting gate are cut everything from outside.

Figure 3.45 Green space in the residential community (Source: made by author)
This is a good landscape design in the residential community. It shows the public space is becoming more and more important in the residential community. But the basic function of public space is neglected by the designer, which should be connect the people contact. If the public space structure connect from the inner space to external urban space, it will be better compared with the gated districts. It also can form a transition belt to ensure the safety of the inner space and improve the interaction of different groups of residents.

3.3.2.4 Conclusion:

Combined with the analysis of Chinese residential cases and the feature of the general Chinese residential projects, compared with the successful cases in the U.S, the shortage of Chinese residential area planning is obvious:
1. Lack of consider the surrounding environment.
2. The building patterns are relatively single, and lack of sense of enclosure.
3. The function of the residential community is not the true sense of mixed use.
4. The traffic way still mainly by using private cars.
5. The green space within the community cannot make use for non-residents, and the gated residential district cut interaction of different social groups.
3.4 Site observation

This residential community is the redesign area of my proposal in the next chapter. It is located in the north part of Beijing, consists of four parts, and a subway station on the left side. The north side of the community is the green space which can be used for other development in the future. The site of residential community used to be the green space too. After the site observation, it is more clear to realize the opportunity and challenge of redesign work.

Figure 3.46 the map of the site
(Source: made by author)
Figure 3.47 the map of the site
(Source: made by author)

Figure 3.48 four residential districts
(Source: made by author)
Analysis of the feature:
1. The location of the residential community reflect the trend of urban development. Lots of green space are occupied by residential area.
2. This community represent the typical contemporary residential area in Beijing.
3. From the building patterns within the community looks like diversified. (See figure 3.51)
49

4. Due to the community is located close to the subway station, it can be more clear to see the relation between the community and urban functions around.

**Analysis of the challenge:**

Through the observation, analysis some existing problems of the site:

1. Green space is cut off by road. (See figure 3.52)
2. Each residential district was separated by walls and fences. (See figure 3.53)

Figure 3.53
(Source: made by author)
3.5 Conclusion

From all above, including the research and analysis of New Urbanism residential community theory and successful cases, compared with the Chinese residential planning ideas and projects, under the special Chinese background and facts of residential construction, we can summary the direction of Chinese residential planning development.

Opportunity
Learning from research of the design theory:
1. Reconsider to planning a coherent, clear system of residential community instead of forming a community by simply copied with each residential district.
2. Reform the original residential district, get rid of the restriction of road network, and create diversified residential components within the original site.

Learning from the successful cases:
1. Build a strong sense of community, by considering both the physical and spiritual needs of residents.
2. Build Mixed function and different types of buildings within the community.
3. Create the good pedestrian environment and route.
4. Preserved and use the existing structure and resources to satisfy sustainable development needs.
5. Consider the community planning from the region level.
6. Consider the pedestrian and public transport-oriented community.

Possibilities
By studying of the Chinese cases:
1. Avoid creating the closed community and district.
2. Reduce the single structure and building patterns in the community.
3. Provide the diversified choice of residential building and improve the sense of enclosure.
4. Increase the construction of public facilities and public space.
5. Improve the road network, specific on the pedestrian route and connection to the urban road.
6. Preserved and restore the existing green resources.

Restrictions
By understanding the unique background, we still confront the challenge of:
1. The huge population.
2. Shortage of the construction land.
CHAPTER 4 PROPOSAL

4.1 Proposal the planning idea

4.1.1 The contents of planning idea

Residential district integration

``The integration of each residential district’’ was developed based on the ‘‘New Urbanism’’. In my opinion, it will improve the existing planning ideas and applicable to the sustainable development in the future. It will gradually weaken the concept of each district, and stressed the concept of community.

There are two levels of residential district integration, which are the internal integration of residential district and the integration between the different district. This idea admit the reality of closed district, but also advocate to maintain an appropriate closed status.

It will create a sense of enclosure by building patterns, rather than completely closed by gate or buildings. At the same time, focus on the connection between different residential districts, forming the unified on functional levels. Each district within the community will achieve well running and sustainable development. Due to the consideration of the reality of Chinese background, there are two advices below:

1. Moderately insert a certain levels of residential buildings into a similar level of residential district, and gradually reform the structure of existing residential community. The original residential community development mode cut off the relationship at all levels of the population, and it also has disadvantage about the integration of residential community and urban functions. Because of the similar social position of different groups, it will avoid the contradiction between the similar groups, and also can contribute to guide more contact and activity. Avoid huge social gap of the residents within the same community as much as possible, to keep the community high homogeneity. (See figure 4.1)

![Diagram showing residential district integration](source: made by author)
2. Under the circumstance of residential relatively homogeneous, promoting more diversified communication activities in the community, and making the community more vitality. In order to promote more interaction of residents, the residential community should ensure to build enough space for people contact and activities; at the same time, to encourage residents stay longer in the open space.

4.1.2 The specific design method

4.1.2.1 Define and soften the district boundary

A relatively clear boundary of the district to maintain a sense of belonging is necessary. But a “gated residential district” as a symbol of rigid boundary reject the non-residents to enter, even blocking their visual entrance. And around the district, especially at the entrance are lack of facilities and spaces to attract people to stay. Only for the needs of residents access, difficult to increase opportunities for people to contact and activities.

The flexible boundary consider to use the natural terrain, green resources, or other resources to form the space around the residential district, meanwhile, set up public facilities, as the link between the different districts, and increase the residents’ contact. In fact, the flexible boundary in china can not completely replace the high walls or fences in most residential district now, but I think this is a trend of development. (See figure 4.2)

![Figure 4.2 how to soften the district boundary](Source: made by author)
4.1.2.2 Control the size of Chinese residential community and diversified residential buildings

In order to ensure the needs of walkable community, and create more opportunities for residents contact, the scale of community should be moderate. In the planning of residential community, we can consider gradually using the mixed density space, which means to develop different density groups within the same community. The price of each groups is different. It can be more flexible to adapt the diversified needs for different groups of people.

At present, most of residential district are taking a single housing type, such as high-rise residential community, villas, or mixed with multi-storey and few villas. On the same area or adjacent land are generally constitute of the similar types of residential buildings.

In my opinion, in order to reduce the classes segregation, integrate the diversified types of residential community is necessary. On the large scale planning, try to make the boundary of residential communities becoming a more urban functional corridor. So that more people will use it together, and increase more communication and development among each community within the entire city area. (See figure 4.3)

Figure 4.3 Control the size of Chinese residential community
(Source: made by author)
4.1.2.3 Functional reorganization

In China, the function division has been used as a principle of planning and design for many years. In this context, we should consider the reasonable comprehensive development of different functions. Regard the different functional elements in the same area as a unity, to form a reasonable complementary relationship among the social, economic and cultural. The aim is to seek commons from the difference. After the functional reorganization, it will provide more urban functions within the community, and also around each community. Due to the patterns are controlled within the scope of walking distance, it will reduce the unnecessary traffic around the community. (See figure 4.4)

**Figure 4.4 Functional reorganization**

(Source: made by author)

4.1.2.4 Public space setting

The construction of public space has obvious significance for decreasing the contact segregation between residents from different residential districts, strengthening community integration as well. In the process of planning each district, planners should ensure a sense of enclosure of public space within the district, but in fact it is open as well. Through utilizing natural resources or designing open space to get better connection from internal space to external space of the residential community, meanwhile, the features of the public space will gradually transit from private to semi private then public. And finally, the public space structure will be coherent rather than fragment in the city.
4.1.2.5 Diversified traffic patterns

New Urbanism advocate the walkable community design, we can see the emphasis on walking and public transportation from two “New Urbanism” modes. But from a practical point of view, a more realistic approach is to form a balanced relationship between walking, public transport, private cars, such as improve the connection between the residential district to the public transit stop, increased more lines and stops of public transit. From the community design aspect, planners should consider the diversified traffic needs of residents and corresponding functions to satisfy with. Indirectly lead more convenient way to traffic.

4.1.2.6 Rational use and protection of the natural environment

Build the harmony between people and nature relationship is an important view of New Urbanism. In order to ensure the sustainable development of the city, cutting, developing and changing the function should be prohibited within the community and the surrounding natural environment. This is precisely point the crucial problems of Chinese residential community planning. First, we need to stand on the higher level to confirm the standard about conservation and utilization of natural resources in the city. Second, the planners must follow these standards or laws in the specific planning and design process. Actually, the construction issues of residential community are comprehensive social problems. But we still need to consider more from planning and design aspects, chasing for an idealistic attempt, and hope to give positive impact on better living space construction.
4.2 Design

4.2.1 The Overview of Design Proposal

Figure 4.5 Comprehensive plan
(Source: made by author)

The aim of this plan is the integration of the residential districts. The process of redesign focus on reforming the existing structure and resources, meanwhile, add some new connections and functions. (See figure 4.5)
The existing street cut off the connection of green space and the residential district. Keep the existing street structure in the middle, and change the function for green space to integrate the both side of the residential districts. The south part of the street will provide game area and basketball courts, which made the residents can use the street for public activities. The car will parking in the new garage. Add a new route for connect the subway station and the green space on the north side. The new route will become the main axis within the community, provide good pedestrian environment and tram line. It also connects the main green space and form the new center area within the whole community. (See figure 4.6)

Figure 4.6 Main axis for pedestrian and public transit
(Source: made by author)
The new traffic network within the residential community shows the connection of different residential blocks. It also connects with the main axis which can be easily for residents to get the public space or community facilities. (See figure 4.7)

Figure 4.7 Traffic network
(Source: made by author)
Through the analysis of the existing residential building patterns, reform the new residential blocks. The new blocks structure will connect each other by green space and public facilities. Each of them is getting smaller and better connect with the public space and urban functions. (see figure 4.8)

**Figure 4.8 Structure of new blocks**

(Source: made by author)
In order to make the residential community integration, the new proposal provides diversified buildings for residents. The high rise residential buildings, the multi-story residential buildings, mixed used residential buildings, townhouses and villa. Add some new structures on the existing buildings, which can improve the sense of enclosure in each block. At the same time, based on the main axis and original street structure, create the line for setting public facilities. Including the community school, public transit stop, commercial, shops, community cultural center, and so on. (See figure 4.9)

Figure 4.9 Diversified residential buildings and functions

(Source: made by author)
Based on the original structure of green space, improve the green space network within the whole community. Ensure the residents can easily reach them. And create some green nodes within the blocks at the same time. (See figure 4.10)

Figure 4.10 the green structure

(Source: made by author)
During the site observation, there are lots of old trees within the whole community. In the new proposal, keep these old trees for green resources, form some good public spaces and also positive on the landscape sustainable development. (See figure 4.11)

Figure 4.11 Preservation of old trees
(Source: made by author)
Figure 4.12 Diversified building patterns
(Source: made by author)

Figure 4.13 Bird view of new proposal
(Source: made by author)
Figure 4.14 Section of the main axis
(Source: made by author)

Figure 4.15 Section of the street
(Source: made by author)
Figure 4.16 Public transit stop in the community
(Source: made by author)

Figure 4.17 the transformation of existing street
(Source: made by author)
CHAPTER 5 CONCLUSION

5.1 Evaluation

In recent years, in order to meet the diversified residential market demand, building a better living environment, the New Urbanism has become the popular label of Chinese urban construction. But in the process of practical application, the advanced theory does not solve the urban construction problems.

In this paper, from study and analysis of New Urbanism theory, combined with the unique Chinese background, proposed the planning concept of residential district integration. The concept changes the closed district mode, planning the residential community from larger urban scale. Meanwhile, proposed the specific design methods in order to solve the existing problems. These design methods concern about many aspects which including: residential district boundary; the residential community scale; diversified residential building patterns; diversified community functions; public space; traffic patterns and rational use and protection of the natural environment. The final design proposal reflects the ideal residential community mode. The redesign process is reforming and integration of all elements in the residential community, it has been changed the original state of community, solve the existing problems, and also a good exploration of New Urbanism application.

In the research process, gradually realize the Chinese residential planning should not just a simple plan or design process, there are more problems derived from the planning concepts and society. The Chinese planners has been used some old planning theory and ideas for many years, it will bring more serious urban problems in the rapid development of many cities in China. So our planning concept should be transformation. We should be more concerned about the direction of the ‘New Urbanism’ thinking and solving the urban problems instead of simply cope the theory.

5.2 The problems need further research

1. Analysis the different levels of residential communities, and improve the living environment through planning and design.
2. the design proposal emphasize the walking and public transport in the community, under the reality conditions, need more research on the balance among private cars, public transport and walking.

5.3 Applications and Prospects

With the rapid urban construction development of China, as the planner, need consider the transition of our planning concept, and using the theory lead us to explore a sustainable road for urban construction development. Hope this paper can stimulate the reader to think and explore the related issues.
CHAPTER 6 References


