

An Introduction to Changchun City Features Extraction

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Abstract. Studying the features of Changchun city as an example, this paper performs a preliminary exploration on Changchun city landscape features into three angles in terms of constituent elements of urban landscape, historical evolution characteristics and urban space features. Meanwhile we also design a framework describing a unique Changchun into three levels, including the landscape from the city zoning, the characteristic landscape area and the city style of governance. And our salient framework makes a great contribution on creating a unique Changchun and provides a logical method for the urban landscape design in northeast China.

Introduction

The reform and opening up take great development on China's science and technology. And with the accompanying economic globalization and cultural transmission erosion, the material space carrier of urban regional culture has borne the brunt. The integration and collision of economy, politics, culture, science and technology break the original stable and positive features of the city. Consequently, the regional features of the landscape disappear gradually. As the central city of northeast China, Changchun cannot maintain its unique historical evolution and natural environment as well. Therefore, the deep excavation and diversification of the special features of the landscape provide an effective way to reconstruct the features of the city.

The meaning of urban features

Urban features refer to the urban environment with its certain style. It is based on the urban physical space environment, from which taking the natural and cultural factors of the city as the material. These features always reflect the visual patterns of the urban space environment and the typical characteristics of the city. The urban landscape changes with the development of the city, which shows the fundamental characteristics of systematicness, structures and dynamic evolution. First of all, the city style has the material function. It is a real record of the evolution of urban space time. Secondly, the urban landscape possesses the narrative significance. Urban landscape is also a

kind of cultural expression, with deep history, regional culture, society, symbol, values, psychology and thinking.

Elements of urban features

From the perspective of narrating, the urban feature is not only the word describing the city function, but also the carrier of the development process of the city. The city style covers the basic elements, which contains but not limited to people, things and objects. In general, the urban landscape contains two meanings, one for "connotation" and the other for "appearance". The "connotation" is a software system summarizing humanistic orientation of the urban society. And it is also the expression of social customs, local customs, drama, legends and other cultural aspects. On the contrary, "appearance" is the hardware characteristics of the overall urban comprehensive environment performance. It presents the tangible form and intangible space, which could be abstracted as the carrier of the "connotation". The software and hardware supplement each other and organically combine which generate the urban style with cultural connotation and the spiritual orientation.

Analysis of urban features and features of Changchun city.

In the history of more than 200 years, Changchun is established from nothing and it has reached nearly 400 square kilometers until 2017. The urban morphology evaluates from single-center groups to polycentric groups and multicentric scattered groups.

Characteristics of natural environment.

There are three main rivers in Changchun namely XinKai river, YinMa river and YiTong river. YinMa river flows from south to north cutting "big black mountain". YiTong river lies across the city from south to north, and the new Xin Kai river passes by the city on the western edge. In the area, there are two water sources including the stone mouth reservoir and the Xin Li City reservoir. There are also many small river systems and lakes, and the water resources are abundant.

After studying the urban features of Changchun city, it is found that its natural environment has advantages in the style, and becomes one of the characteristic resources of the urban landscape design of Changchun city. However, the analysis of the city map of Changchun in a few decades reveals that its natural environment is constantly being eroded, so that its development has many limitations.

Characteristics of historical evolution process

Changchun was founded in 1800 and has a history of 210 years. Changchun is a young city, and in the 210 years of urban construction, the urban landscape is gradually going through changes and evolution. Changchun has experienced several typical historical stages, such as the late Qing dynasty, the Russian period, the Manchurian period, the Puppet Manchurian period (refer to: Fig. 1), the 1525 period, the 1960s and the 1980s, and so on. The urban structure and the layout of the city characteristic features formed in the Puppet Manchuria period still plays an important role in the development of Changchun, and it is the foundation of Changchun city urban construction. In terms of urban structures, single-center centralized layout structure is used, and the low-density construction and development is carried out in small and pleasant neighborhood. The urban skyline is relatively gentle. In the aspect of urban greening based on the characteristics of hills, using river

tributaries and ditches, afforesting land to form the land use for greening. Distributing strips to form artificial lakes and set in the hollows of weir, marry Asian water park, set on the fringes of the city ring green belt, combined with the road on both sides of the green belts and blocks in green space, form a landscape garden city characteristics. There is a saying in Changchun that "a wide road, four rows of trees, round square, small villa" which describes the city's landscape features, and these four elements are formed during the Puppet Manchurian period.

To sum up, Changchun, as a young city with only 200 years of history has a lot of styles and features that are worth passing on. These features are as follows: large-scale urban road landscape axis, scale and pleasant grid street distribution, and the combination with river topography which leads to large green space tree-lined urban trunk road, the distinctive round square and so on.

Urban spatial characteristics

Changchun has six historic districts, such as the Changchun Renmin street historic block, the Xinmin street historic block, the Puppet full palace historic block and so on. Over the years, Changchun has formed a certain number of city parks, such as the South Lake park, Sculpture park, Wildlife park, Changchun park, Chaoyang park, Shengli park, Children's park, etc., and these parks are mostly located in the city. They are not only important public recreation places and tourism destinations, but also playing an important role in improving the urban environment, urban ecological maintenance, enriching animals and plant species, improving air quality and easing the greenhouse effect.

These distinctive urban spaces are not only representative of the past of Changchun city, but also an illustration of the current Changchun. They are the key elements that make up the characteristics of the city features of Changchun city.

Construct the framework of urban features of Changchun city

In order to inherit the natural geography and continuation of Changchun, we aim at building a green ecological landscape to support citizen's better experience life and use of the city. Meanwhile the ecological landscape also has the characteristics of as the basement, times combined with local and traditional beauty and modern reflect the city landscape space framework.

Urban landscape zoning plan -- clear zoning and unified coordination

We find out the regional characteristics in a macro perspective. Then we divide the urban landscape of Changchun at the urban level, so that we can control the different districts according to its urban features. Thus the different districts achieve clear zoning and unified coordination. According to the three partition rules including continuity features of natural landscapes, partition landscape features and zoning classification principles, three districts are divided, namely old historic style partition and partition, metropolitan style partition and industry ecology landscape partition from the macroscopic aspect of Changchun. The control and guidance of different metropolitan styles are mainly based on space structures, open space, height control, visual corridor, public art, viewing system and slow system.

Planning of featured area -- with distinctive features and different strategies

According to the different style partition, our framework extracts the specific elements from different partitions. It extracts and purifies the district that can reflect the location of the city

characteristics directly. Furthermore we delimit the characteristic landscape area, and execute the strict protection and utilization. Finally, we formulate different development policies in diverse landscapes, because various characteristic landscape areas are Changchun experience area of urban landscape features, practical characteristic. According to the function in the city of Changchun, a historic district, comprehensive trade area, creative culture area, the delineation of the feature area is to control the features of the local lot with characteristic activities.

Urban features governance -- to implement the guarantee and build the city

In order to achieve a better implementation of the city style partition planning and characteristic landscape area planning, our research respectively proposes three aspects on controlling content of the principle including natural environment, urban spatial structure and city form and city landscape features. We ensure implementing the urban landscape planning can be put into place, and to create a Changchun city with distinctive features.

Conclusions

Designing urban landscape involves various factors in wide aspects. Both “connotation” and “appearance” should depend on each other, and abolishing either side loses the whole. This paper proposes a special designed framework analyzing Changchun in three levels including the city landscape planning, characteristic areas and urban areas governance. We also construct a progressive transformation, and a distinctive, powerful security framework. Our model takes the natural environment, historical evolution and the urban space characteristics into consideration, hoping to provide a reference for the study of urban landscape design in northeast China.

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