

## The Discuss About Street Trees Color System Planning——A Case Study Jinhua

### City

Liwei Fang

Wenzhou Vocational & Technical College, Wenzhou, 325035, China

---

*Abstract: Our country not pay sufficient attention on city color planning. Serious lack of awareness of urban color landscape. Most of the city seems to have no difference in color. Poorly in the environment. Street trees are an important part of the urban landscape, is one of the important performance of city color. Based on the preliminary planning trees of the color system. Explore a scientific and rational system of the trees with color. To reflect the color characteristics of the city should be. Increase the city's discrimination. To do a more comprehensive analysis of. Come to the basic principles of color planning trees: 1. to meet the main functions on the basis of the road, choose the plant type and tidy, high-value ornamental trees 2. Ecological Principles of Green Road 3. Science and the art of combining the principles of 4. Local conditions, the principles applicable to plant trees.*

*Keywords: Street trees, Color System, Street Trees Structure, and Urban Color.*

---

### 1. INTRODUCTION

Due to its prominent urban image elements, the city color is truly visible in our field of vision. The so-called urban color environment refers to a kind of comprehensive feeling in human visual impression. Contrary to the first visual characteristic that the color is noticeable before the form of the object, the attention to the image of the city in the urban planning and construction of China is the first form and the latter. Due to the long-term neglect of urban color planning and the serious lack of awareness of the city's color landscape, the colors of most cities do not seem to have any difference. The environment is lackluster, and the mediocre and similar colors are worrying. From Beijing to Shanghai, from inland to coastal areas, it is difficult for us to distinguish the cultural characteristics of the city from its color. With the recent years, China has successively held many world-wide events, the Beijing Olympics, and the Guangzhou Asian Games. More and more foreign friends have come to our country, and the city's color planning is also getting hotter. In the city, the street trees cultivated on a large area of each road bear the function of giving people a first visual impression regardless of form or color. Under this background, the street tree color system planning has its existing significance and the significance of exploration. Urban planning not only needs to provide guidance for the development of urban forms, but also escorts cities in terms of urban context, history, and environmental characteristics.

Through the research on the color planning of street trees, we can use the guidance of the upper city planning to make a color according to the characteristics of the planning city itself, historical features, existing building colors, and the requirements of the residents living in the city to color the city. Coordinating and matching. Make the city more distinctive, so that people who come to the city no longer sigh for stereotyped images. Through this kind of research, it is also possible to increase the mastery of color knowledge in the professional planning field, enhance the cultivation of ideas for color design, start with the color system planning of street trees, incorporate color planning into a normal planning process, and improve the overall design level. At the same time, it strengthened the understanding of street trees and explored the impact of street tree colors on traffic, pedestrians, urban environment, and potential impacts on other aspects in order to allow more rational layout of street trees in the future. Thus, the street tree system is on the road of sustainable development and scientific development.

Jinhua City is located in the central part of Zhejiang Province. “Three thousand miles south of the water-passing country, and fourteen states of the air-pressure river city” vividly summarizes Jinhua's important position. For the subtropical monsoon climate, four seasons are distinct. The roadside trees in the main city roads of Jinhua City are only five species of eucalyptus, two-ball platanus, bald dug, yellow peony, and innocent, of which there are two evergreen species and three species of deciduous trees [1]. Walking on the streets of Jinhua City, the most common is the banyan tree. Its color is monotonous and its form is relatively single, so I have the idea of exploration. The paper starts from the actual situation and evaluates the green belts on the main roads of Jinhua City. Through analysis, a reasonable and scientific collocation plan is obtained.

## **2. RESEARCH CONTENT AND METHODOLOGY**

The main contents include the investigation of the current status of street tree planting in Jinhua City. Through surveys, we learned about the basic information such as tree species, collocation methods and growth status in Jinhua City. Through consulting literature, we understand the color, type and structure of street trees and explore their influence on the color composition of cities. A preliminary study of color planning for street trees was carried out in conjunction with examples of street tree system planning.

The diversity of street tree species and colors, different tree species have different colors, the same tree species have different colors in different seasons. Such as white poplar, gray bark, green leaves. Pistacia, into the autumn leaves will become orange or dark red. Hawthorn flourishes in spring and has many red fruits in autumn [3]. Road trees are planned in a unified way before planting. If the trees are not equal in size and uneven, it will bring difficulties in management and affect the overall aesthetic effect [4]. The planting environment of street trees is also an influencing factor for the selection of street trees, including soil quality, thickness of soil layer, temperature level, air quality, height branching points of street trees, etc. [5]. With the acceleration of urbanization, the choice of street tree species in different functional areas of the city is also diversifying. Therefore, it is possible to plan the entire street tree color system.

In Jinhua, the roads on the main roads are of a single tree species, and the street trees in various streets lack features and are similar to other cities. Some east-west urban roads also use eucalyptus as a street

tree, which is not conducive to the construction of a good ecological environment in the streets. There are certain problems, which also provide possibilities for research.

Investigation and analysis are the basis of scientific research. Many studies on urban street trees are based on investigation and analysis. On the basis of extensive collection and collation of data, combined with on-site investigations, field visits, etc., to understand the overview of the study and the status quo of the color system of street trees in Jinhua, and on this basis, in-depth analysis and synthesis. On the basis of analysis and synthesis, combined with successful examples of current urban color planning, horizontal and vertical comparisons are made, and the direction of roadside tree color system planning is derived. On the basis of the above research, the data and results were again integrated, the induction and deduction were performed, and the research results of this paper were obtained.

### **3. RESEATCH STATUS AND ACHIEVEMENTS OF URBAN STREET TREES AT HOME AND ABROAD**

At home and abroad, more research has been done on urban street trees since the 20th century. As far as research objects are concerned, there are many studies on specific urban forest ecosystems, such as Beijing, Shanghai, Guangzhou, Shenyang, and Nanjing. Including the tree structure of street trees, species diversity analysis, landscape pattern analysis, and the use of CITYgreen model to analyze their benefits [6]. As far as the research content is concerned, it mainly focuses on the research on the street tree structure, the adaptation of street trees to the urban ecological environment, the ecological functions of the street trees, and the management and construction. Research on urban color planning started late, and there are certain theoretical studies.

#### **3.1 Street tree system research status**

An avenue tree, a street tree, is an arbor planted along a road or road. [7] We have always attached importance to street trees. The history of planting trees to the trees dates back to ancient times. As early as the Spring and Autumn Period, the "Mandarin" already had records of "because the system was confusing, the trees were listed as roads, and the buildings were built as roads".

So far, there have been few professional books on the comprehensive and systematic research on urban street trees in domestic academic circles. A few books have studied certain aspects of the street trees, such as the book "The Common Street Trees in South China" edited by Wang Liao. There is also a book entitled "Analysis of Urban Road Greenland Landscape" edited by Xu Chongyong et al. It explores theories and methods of street tree design in road greening.

According to the results of the literature search, there are not many studies on the special lanes of street trees in foreign countries, and most of them are biased towards the research of urban road planning and design. Among them, translations of street trees include "Road Landscape Design" edited by the Civil Society, (English) J. McLurski's "Road Form and Cityscape", and "Trees" written by A. Bernatzky. Ecological and Conservation, etc., which includes designing, planning and maintenance aspects of street trees.

There are relatively many articles on urban street trees in domestic journals. In terms of research content, it mainly focuses on investigation and analysis of street trees, planning and design, ecology

and benefits of street trees, and maintenance and management of street trees.

### **3.2 Urban color planning research status**

Color is the most direct visual reaction of human form to the city [8]. At present, China's urban color planning and design have become the focus of many cities, but color planning is still in its infancy and theoretical research is less. In the 1990s, there was not enough theoretical research atmosphere and few systematic urban color planning and design development. In the early 1990s, with the continuous emergence of color issues in urban construction, research on orange colors was conducted. Began to appear. Since the 21st century, the study of urban colors has gradually increased, but theory has been insufficiently prepared for practice [9]. Many of them are also focused on the discussion of microscopic architecture and certain parts.

Relatively speaking, there are some studies abroad. Japan has formulated the "Guide to Urban Color Planning." In 1981 and 1992, they respectively introduced the "Basic Plan for Urban Planning" and proposed the "Color Planning for Urban Space" Act in the form of legislation. Britain, Sweden, and other countries also began with theoretical research and adopted legislation to strengthen the control of the historical and cultural architecture and the overall coordination of the city. By searching the literature, the number of relevant journal articles is relatively small, there is still a relatively large research space.

## **4. CURRENT STATUS OF STREET TREES IN JUNHUA CITY**

Each city has its own unique elements, which are usually represented by natural features such as topography, climate, trees, water systems, and products, as well as its built-up, context, historical features, humanities, and other cultural geography features. The famous Turkish poet Nechom Hick's famous phrase: "There are always two things in a person's life that will never be forgotten. This is the face of the mother and the appearance of the city"[21] and its profound nature is also there. Therefore, before carrying out urban planning, a comprehensive and in-depth understanding of the historical features, contexts, etc. of the target city is conducive to carrying out various tasks.

Jinhua is a tourism city with a long history, profound cultural connotations, and unique natural scenery. Jinhua is located in the eastern part of the Jinyi Basin in western Zhejiang, under the influence of the Wuyue culture in China's eight major cultures. Liang Yi used to portray Chinese culture as a fragile and elastic leather candy. Wu Yue culture is the most radiant part of the culture [22]. Jinhua has a long history. Since the Qin Dynasty, Wugan County has been established for more than 2,000 years. The passage of time has accumulated a profound historical and cultural heritage. In ancient times, Jinhua was the land of Yangzhou. During the Spring and Autumn Period, it was the land that crossed the border. Qin Shi belonged to Hueiji County. In the Eastern Han Dynasty, Changshan County was established in Jinhua and began to establish the city. Jinhua County was established in the Southern Song Dynasty. The Three Kingdoms of the Sui, Tang and Song dynasties were the places of state governance. The Yuan Dynasty was the road. Where the rule of the Ming and Qing Dynasties was ruled by the government, during the period of the Republic of China was the administrative supervision area, and historically there was the prosperity of the "South of the Yangtze River" [23].

Jinhua has developed culture and is known as the “state of culture”. There are many talents in calligraphy, painting, poetry, and literature. Famous artists emerge one after another, such as Luo Bingwang, one of Tang Sijie, Jinhua School of Southern Song Dynasty, and Li Qingzhao’s title of “The Eight Diagrams House”. It is famous all the time. Jinhua Taoist culture is also more prevalent. It is the hometown of “Wong Tai Sin” and “Hugong Great Emperor” [24]. Jinhua Mountain is one of our 36 Taoist heavens. There is a new Wong Tai Sin ancestral palace. Wong Tai Sin’s influence is more extensive, from the southeast coastal areas of China to Hong Kong, Macao, Southeast Asia, and North America. Jinhua's folk culture is colorful. Time passes, Jinhua area has accumulated rich and colorful folk culture, such as the ancient Jinhua bullfighting, local drama - opera has continued for thousands of years of history, Dongyang woodcarving, Yinghua candle, Yiwu hit drums, hit Luohan, Jinhua dragon lanterns, Pujiang Lift the court, Jinhua Taoist and so on.

Jinhua is currently a state-level historical and cultural city and has 16 national key cultural security units. After learning about the long history, I feel that Jinhua has a strong culture. The special geographical location and cultural characteristics make this city have a heavy sense of history and culture. Its historical color is also rich, but there are many fresh highlights in ancient simplicity.

## 5. PROBLEM AND DISCUSSION

The road greening plants in the city are usually arranged in the following ways: one board, two belts, three boards, four belts, four boards and five belts. One board and two belts are the most commonly used forms of road greening. They refer to planting sidewalk trees on the sidewalk separating lines on both sides of the roadway. The characteristics of this form are simple operation, economy of land use and convenient management. The three-plate and four-belt system refers to greening in the middle of two lanes of roads that are separated by a single lane, and the arrangement of street trees on both sides of the road. This form is suitable for wide roads and has the advantages of a large number of green belts and significant ecological benefits. The four-board and five-belt system means that three lanes are used to divide the lane into four lanes and five green belts are planned so that each vehicle can travel upstream and downstream without disturbing each other. According to the arrangement form of these types of green plants, there are one board, two belts, twelve belts, three belts and four belts, and four belts and five belts in the main urban roads of Jinhua City.

Through the survey, it was found that the main roadside trees in Jinhua City are only five species of eucalyptus, two-ball platanus, bald duh, yellow peony and bluegrass. Among them, there are two types of evergreens and three types of fallen leaves. Among them, the eucalyptus planting ratio is the highest. Eucalyptus, large evergreen trees, are important timber species and special economic species in the subtropical region (southwestern region). With a tree age of up to a hundred years, eucalyptus oils such as pine oil bicyclic hydrocarbons, camphorene, lemon hydrocarbons, and eugenol are emitted. They have the ability to purify toxic air, have anti-cancer effects, and filter out fresh and clean air. . It is an excellent street tree species. Through the survey, it was found that the frequency of its appearance in the major urban roads of Jinhua was 0.56; the frequency of the two-plated platanus was 0.44; the frequency of Du Ying and Huangshan was 0.44. Moreover, only a kind of street trees are planted on most roads, and monotony lacks change and reasonable collocation.

The frequency of eucalyptus and *P. platyphylla* is close to 1. This proportion is extremely unreasonable. The street trees in each street lack characteristics and lack the historical and cultural characteristics and unique urban colors of Huaihua City. The city lacks a distinct personality. Although eucalyptus is a city tree in Jinhua City, the urban roads such as Li Yulu, Danxi Road and Binhong Road are not suitable for planting eucalyptus, which is not conducive to creating a good ecological environment and is not conducive to the conservation of street trees.

By observing the separation zone, there are two types of trees: eucalyptus and palm. The shrubs include camellia, boxwood, holly, pencil cypress, redleaf plum, hollyhock, small wax, pyracantha, madam, azalea, tortoiseshell holly, red Huamu wood and so on. In terms of ornamental characteristics, there are 25% of *Camellia* species, *Camellia sinensis*, *Rhododendron cinnamomum*, and Safflower eucalyptus, and 18.8% of the species are palms, eucalyptus, and redleaf species. %; Spherical species are *Cycloviobuxine*, Holly, Small Wax, Mahonia, Tortoiseshell Holly and so on accounted for 50%. The above is a basic overview of some street trees in Jinhua City.

Through the investigation of 25 major roads, we found that there are only five kinds of street trees in the urban area. With eucalyptus and two-plated sycamore, the combined proportion of the two is approximately 1. The number of other tree species is very small and they all reach a certain scale. With a single sassafras tree as an important street tree species, it is not easy to form the landscape features of street trees in Jinhua City. Both camphor and sycamore are very good street species, but this lacks overall deployment and the blind large-scale planting does not bring good results. Others, such as holly euonymus, safflower eucalyptus, azalea, etc., have a small proportion and are scattered and fragmented. It is difficult to form an overall scale advantage, unable to set off and enrich the road greening landscape, and the color appears to be single, which does not bring about richness. Psychological experience. This form of a single, but also caused the lack of a historical and cultural city of Jinhua. The author believes that each city has its own unique aspect, and we lack a kind of humanistic care in our planning. It is only rational and formally combining the various functions of the city, but it ignores some of the human experience required by people as the ultimate service target of the city.

## 6. CONCLUSION

Through the analysis of the above examples, with the integration of data, we can draw a preliminary general principle of street tree color planning. This principle should be consistent with the principle of planting trees in nature, but at the same time there is a uniqueness about the color of street trees. Tree species or flowers, leaves, strange fruits, or bright colors, or long flowering period. This is conducive to the season, the color of street trees in a certain period of time to ensure relative stability. The main function of street trees is to shade, filter dust to reduce noise, improve the road's color environment, and enhance the city's aesthetics.

The beauty of plant configuration is beautiful, so as to beautify the environment. The application of this principle in street tree color system planning is particularly important because it is really related to people's quality of life. It is easy to plant and breed, and it is easy to survive and grow after transplanting. It grows quickly and is robust. Because of the long-term perspective of street tree planning, greening trees should not be replaced and transplanted frequently. Changes in the four

seasons change the appearance of the plant, especially deciduous plants. The color planning of street trees is, in essence, a reintegration of road ecology.

It is necessary to satisfy the requirements of the street tree and the surrounding environment and the function of the road, as well as to reflect the formal beauty of individual plants and groups through artistic compositional principles, and to highlight the unique features of the city itself. It must also conform to the four principles of unity, reconciliation, balance and rhythm in the art of painting and the art of gardening. It can be seen that the length of the road should be considered in the configuration, different road forms, and whether different blocks of the same road are duplicated. With a form of rhythm and beauty, and the rhythm of beauty in color, to create a rhythm for the people walking on the road, to achieve peace of mind, in line with the requirements of the road landscape. According to the microclimate of a specific area, choosing the right tree species can give full play to the advantages of tree species. This is conducive to the normal growth and development of trees, and maintain a more stable greening results. You cannot blindly choose the tree species that does not meet the climate of the area for the sake of color matching. This brings trouble to management and maintenance. At the same time, we must pay attention to the combination of native tree species and exotic tree species. The laws of ecology point out that the more complex the nutrition structure, the more stable the ecosystem.

## REFERENCES

- [1] Li Yuming. Status Quo and Suggestions on the Arrangement of Urban Road Green Plants in Jinhua City, Zhejiang Province [J]. East China Manager, 2007, Vol.
- [2] Wen Hao, Status Quo and Prospect of Urban Street Tree Research [J]. China Science and Technology Information, 2008 05, 185-186.
- [3] Sun Juanjuan. Selection and application of urban street trees [J], Agricultural Technology Service, 2010 09, 1215-1216.
- [4] Luo Haonan, Zhou Junhui, Liu Zehao, et al. Selection and application of high quality street trees in Dongguan[J].Acta Agriculturae Jiangxi,2009 01,40-43.
- [5] Fu Mengjun. Study on the Selection of Street Trees in Green Ecological City [J]. Science and Technology Innovation Guide, 2010 20,142.
- [6] Jin Yingshan. Structure and Function of Street Trees in Built-up Areas of Shenyang City[J]. Journal of Ecology, 2002, 21(6), 24-28.
- [7] Ministry of Construction (CJJ/T91-2002). Ministry of Construction Standards on Basic Terms of Gardening (Chinese-English Comparison) [M]. Beijing: China Building Industry Press. 2002.
- [8] Cheng Yi, Jiang Difei, Bing Ning. Urban color planning and management exploration [B].2010 07-0074-02.
- [9] Guo Hongyu. Color era of urban planning [J]. Urban Practice, 2009 08, 051.
- [10] Zhou Shujun, Zhai Dekui, Zhou Lu. Application of Autumn Color Tree Species in Garden [J], Chinese Landscape Architecture, 1999 15, 13-14.
- [11] Huang Yiru, Ge Kui. Discussion on the Planning of Street Trees in Hangzhou Urban District [J], Bulletin of Science and Technology, 2001 17 (2) 43-47.
- [12] Li Yanni, Guo Ling, Li Fengguang. Research on Street Trees in Shenyang City [J], Value Engineering, 66-67.
- [13] Liu Jie, Yang Hengyou, Sun Shuangjun. Application of Analytic Hierarchy Process in Selection of Street

- Trees in Urban Areas [J]. *Journal of Anhui Agricultural Sciences*, 2010 38(6) 3257-3258.
- [14] Zhu Fengyun. Cluster Analysis and Comprehensive Evaluation of Urban Street Trees [J], *Anhui Agricultural Sciences*, 2008 36, 529-531.
- [15] Zhang Helin. Diseases and pests control of street trees in urban areas [J], *Agricultural Technology Service*, 2010 27(9), 1169-1170.
- [16] Zhang Jingzhai. The Role of Street Trees in the Construction of Ecological Cities, 2009, 26(5), 141.
- [17] Jiao Yan. Dynamic environment color of urban and architectural research [J], *World Architecture* 5, 1998, 83-85.
- [18] Yang Xianbang. Urban Color Space Planning and Design [J], *Shanxi Architecture*, 2010 36(2), 59-60.
- [19] Wang Zhazhu. Reflections on Urban Color Planning [J]. *Journal of Tongji University*, 2010, Volume 21, No. 04, 32-37.
- [20] Zhu Yu. Color Psychology and Urban Color [J], *Journal of Anhui Institute of Education*, 2007, 25 (1), 115-117.
- [21] Fang Jingcheng. The Recognition and Protection of Historical and Cultural Cities and the Example of Jinhua [J], *Urban Development Research*, 2008, 1, 108-111.
- [22] Li Qinde. *Regional Culture in China* [M], Taiyuan, Shanxi University Press, 1995.
- [23] Chen Ying. *The world's first industrial speculation* [M], Beijing, People's Daily Press, 1999.
- [24] Gu Jianghui, Wu Xiaogen. Jinhua regional cultural characteristics and tourism development research [J], *Journal of Zhejiang Normal University*, 2003, 26 (2), 191-194.
- [25] Dou Miao, Zhang Mingjuan, Hao Riming, Yang Liang. Analysis of the Structure and Structure of Street Trees in the Old City of Nanjing [J]. *Journal of Plant Resources and Environment*, 2007, 16(3), 53-57.