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The Chinese Characteristics in the Planning and Design of Guangdong Greenway

He Fang, Suo Xiu, Li Hui

Introduction

As a typical example of greenway networks in China and Asia, Guangdong Greenway Network is of epoch-making and practical significance. The practice of Pearl River Delta Regional Greenway is instructive for other developing countries and densely-populated urban areas to build their greenway networks. The experience of Guangdong Greenway Network gives new Chinese characteristics to the concept and practice of greenway.

China has a profound history of greenways. Even before the Qin Dynasty was established, there already existed a great number of prototypes of greenway. These greenways were born in ancient era where the original productivity remained at a low level and people had nothing to do but to revere nature. Today, when human being has accumulated a great deal of material and spiritual wealth, they come to realize the importance of balance between man and nature. Therefore, greenway becomes one of the active ways for balancing the development of man and nature. Pearl River Delta Region is one of the most developed areas in China and it is also where the first greenway programs in China are initiated. The Pearl River Delta Regional Greenway has set a typical sample for the greenway movement in China.

1. East Wisdom and Chinese Greenway Concept

The traditional Chinese philosophy emphasizes the harmony between man and nature. For Taoists, man is part of the nature.

The greenway planning concept in China can be traced back to Zhou Dynasty, more than 1000 years before Christian Era. Western Zhou Dynasty built the earliest Zhou Way and set a precedent example in the road network and greenery maintenance. *The Book of Poetry* says the Big Dipper is in the north of the sky and Zhou Way is just like a westward spoon that connects the Big Dipper. The Zhou Government encouraged their people to upgrade the roads after rainy days and build bridges in dry areas. The Zhou Government also requested planting rows of trees to define roads and building service stations in the countryside to offer food and drinks for passers-by. *The Interpretation of Names*, an ancient book in East Han Dynasty, interprets road is the place where people walk across. In ancient China, the roads for human and animals can be called greenways.

With the development of productivity, the increasing needs for culture exchange and living conditions, a great number of prototypes of greenway that carry out the linear planning philosophy and the idea of harmony between man and nature come into being. A satellite imagery of Earth shows that there is a green track at the location of E'105.5° and N'30°. This is the famous Cuiyun Corridor, an ancient corridor built in Qin and Han Dynasties. Cuiyun Corridor extends as long as 150km with prosperous Cypress planted along its sides. It is regarded by geographers and historians as a wonder of the World that is more splendid than the Roman Route. Cuiyun Corridor is the oldest and well-preserved ancient greenway in the world. In Lianzhou, a city in the north of Guangdong Province, there is a Nantianmen Qinhan Ancient Track (Fig.01) which is regarded as the first ancient

track in Linnan Region. It is about 3 meters wide and is cut out along the rocks. It has about 8800 steps and is the first track that connects the south and north of the Lingnan Region in Qin and Han Dynasties. In addition, the marine silk route that is built in the Han Dynasty and developed in the Tang Dynasty as well as the Tea-Horse Road prosperous in Ming and Qin Dynasties are the typical trade roads that are renovated from natural trails in mountains and along the coast (Fig.02). And the Grand Canal built in Sui Dynasty and developed in Tang, Ming and Qing Dynasties is a prototype of greenway that connects the river networks and the urban-rural areas. The ancient trail and Horse Trail in Tang Dynasty and the Official Trail in Ming and Qing Dynasties are all greenways that are built up by the local people. All these greenways follow the Fengshui principle and offer convenience for people's daily life. They connect different areas with different sceneries and culture and are favorable for the maintenance and management of local government.



Fig.01 The first ancient trail in Linnan



Fig.02 The traditional greenway in Ancient China-Tea-horse Trail

2. Guangdong- The first province in China to launch greenway programs

2.1 Greenway gives us a chance for reflection: From self-aggrandizement to the reverence for nature

Pearl River Delta Regional Greenway plays a strategic role in preserving natural and culture heritage of urban and rural areas and controlling the sprawl in fast urbanization. The planning of greenway network offers structural connections and restoration for the eco-community of metropolis. They connect the isolated eco-patch separated by urban constructions and encourage animals' migration and plants' integration within each eco-patch. Greenways help to improve bio-diversity and balance the eco-system.

2.2 Greenway is a product of balancing the development of urban and rural areas in the fast urbanization



Fig.03 Pearl River Delta Greenway Layout Map

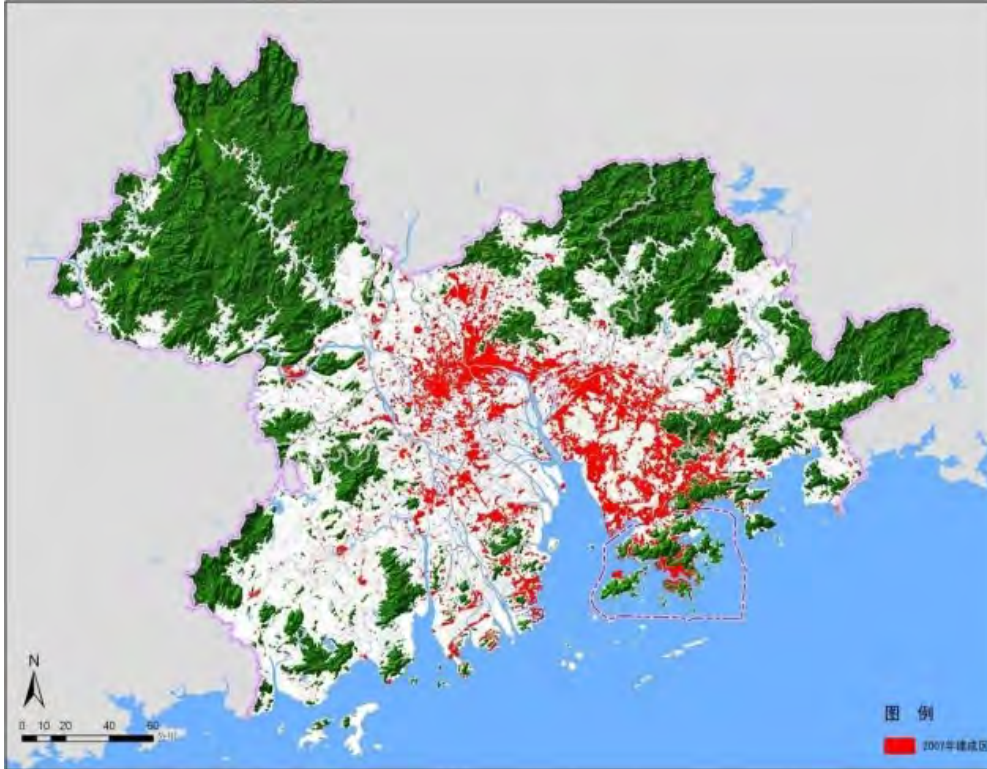


Fig.04 Main Ecological Resources Distribution in Pearl River Delta Area

Greenway network is an exploration of the relationship between green space in urban-rural areas and the urban built-up areas under the context of urban-rural integration. The ecological, recreational and landscaping functions of green space are evaluated to create a network that can help improve the eco-capacity of cities.

Greenway networks establish connecting corridors between urban and rural areas at a regional level. It encourages people in rural areas to work in urban areas and people in urban areas to seek recreation in rural areas.



Fig.05 Hiking trail



Fig.06 Trail for the vehicles



Fig.07 Fishway

2.3 From regional green space to greenway and greenway movement in China

From 2004, Guangdong Province started compiling the framework of Pearl River Delta Regional Green Space Planning and Management. This framework proposes eco-patterns for the Pearl River Delta Region and promotes the eco-protection from soft constraints to hard constraints. It helps to create a well-defined, systematic and sustainable green space system.

In studying the regional green space planning, we find out that eco-patch and eco-corridor are two key elements in creating the regional green space system. However, the preservation and management of eco-patch and eco-corridor remain a big difference. The eco-patches composed by farmlands, natural preserve and scenic areas have well-functioning management organizations and systems and most of the eco-patches are well preserved and managed. But eco-corridors are disconnected and not well-maintained, which make the eco-patches isolated. The Pearl River Delta Regional Greenway Network follows the principle of balancing conservation and development and aims at creating a multi-functional greenway network that offers opportunities for eco-conservation, improving people's daily life and developing local economy.

3. The Planning and Construction of Guangdong Greenway Network

3.1 From Pearl River Delta Region to the collaboration between Guangdong, HongKong and Macao

The size of eastern, western and northern areas of Guangdong Province is about four times of that of Pearl River Delta Region. The population of the eastern, western and northern areas of Guangdong Province is about two times of that of the Pearl River Delta Region with different economy

development. It is significant to promote the greenway network within Guangdong Province and extend it to the outer eco-conservation areas of Guangdong Province.

3.1.1 An attempt to build greenway in the world-level Metropolis Circle

The Pearl River Delta Regional Greenway Planning covers an area of 41698 square kilometers, with a population of about 42.3 million. Six main greenways go across this area, namely West Coast Recreational Greenway, East Coast Recreational Greenway, East-West Coast Cultural and Recreational Greenway, East Coast Urban Recreational Greenway, West Coast Urban Recreational Greenway and West Coast Waterfront Recreational Greenway. These six greenways extend as long as 1690 kilometers, with a green buffer of 4410 square kilometers. Fifteen branches connect the main greenways and important nodes, with a total length of 470 kilometers. The Pearl River Delta Regional Greenway integrates the ecological, historical and cultural recourse of Pearl River Delta Region. It serves for 25.65 million people, offers about 300,000 job opportunities and brings about 45 billion RMB social consumption. It helps to improve the eco-systems along the greenways.

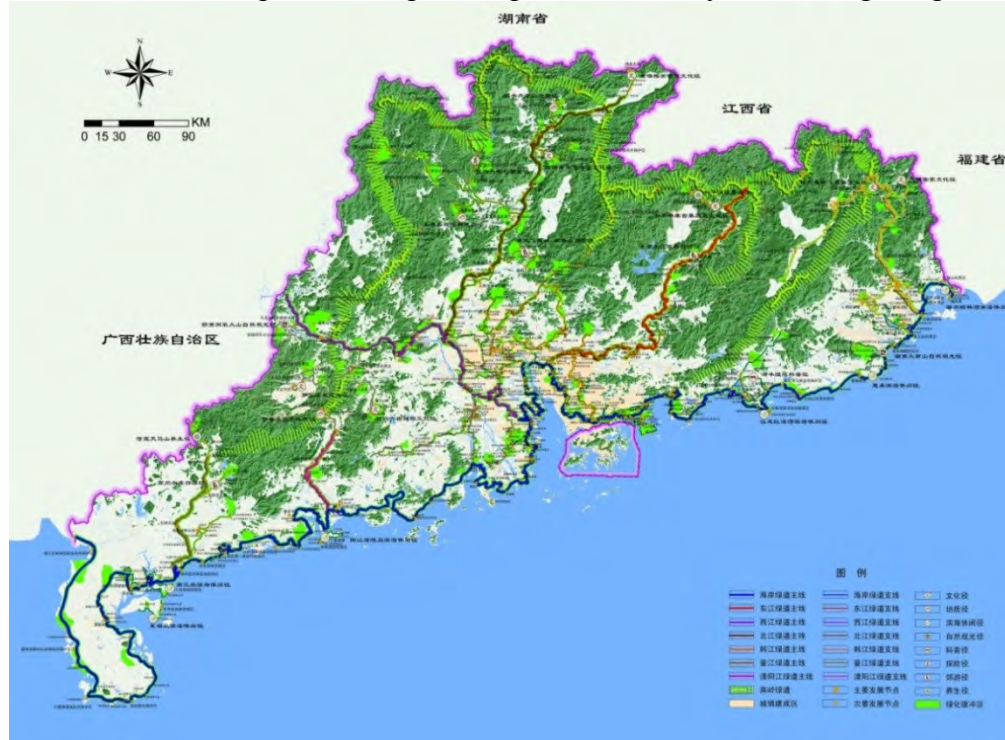


Fig.08 The General Spatial Layout Map of Guangdong Province Greenway Network

Guangdong Province Greenway Network aims at building a greenway network of 8770 kilometers including the completed 2372 kilometers provincial greenway in Pearl River Delta Region by the year of 2015. It is also expected to create a multi-functional provincial greenway network and connect 46 urban-suburban intersections including 18 urban-suburban intersections in Pearl River Delta Region. Guangdong Province Greenway Network will coordinate with the urban traffic system to achieve a seamless connection between greenways and urban public transportation system.

In 2010, the framework of Pearl River Delta Regional Greenway Network Planning was released, the compiling team began to study the collaboration between Guangdong , Hong Kong and Macao

in greenway network. They proposed that the *Guangdong- Hong Kong Collaboration Framework* should be seriously implemented and that both Guangdong and Hong Kong should work together to create the inter-regional natural reserve and natural corridors as well as an integrated regional ecosystem. In addition, Guangdong and Macau should strengthen their cooperation to create regional eco-barrier that connects Guangdong, Hong Kong and Macau. Guangdong, Hong Kong and Macau should collaborate to construct inter-regional greenways between Shenzhen and Hong Kong, Zhuhai and Macau, to encourage the construction of natural reserve and to protect the sensitive eco-resources and eco-tourism. The Pearl River Delta Regional Greenway Network should be optimized to improve the Pearl River Delta Regional Greenway I,II,V. Pearl River Delta Regional Greenway I will be extended to Macau and Pearl River Delta Regional Greenway II will be extended to Baxianling in Hong Kong through Wutong Mountain in Shenzhen. Pearl River Delta Regional Greenway V will be extended southward to Hong Kong. The integrated regional greenway network for Guangdong, Hong Kong and Macau will help to promote the development of greenways and related facilities in these areas and to create a Greater Pearl River Delta Social Sphere.

3.1.2 Six Measurements to Realize the Large-scale Planning



Fig.09 Shenzhen Maluan Mountain Ecological Greenway Connected to Nature



Fig.10(left) Greenway of Shenzhen Meilin Reservoir

Fig.11(right) Shenzhen Demonstration Section in 2nd Line of Pearl River Delta Regional Greenway



Fig.12(left) Shenzhen Bay Greenway

Fig.13(right) Shenzhen Yantian Coastal Greenway



Fig.14 Wutong Mountain Section in 2nd Line of Pearl River Delta Regional Greenway

(1) Establish a greenway eco-pattern with priorities in eco-conservation and cultivation

Guangdong Greenway Network should be focused on utilizing primitive ecological construction methods to protect biological space system. For example, keeping and sowing native wild fauna and flora in the area with better natural conditions where Greenways are connected around Pearl River Delta (PRD), and proceeding interventions as few as possible to maintain a sustainable biological circulatory system in the entire large-scale area; in the upstream areas of Shaoguan, Heyuan etc., developing waterfront greenways along rivers, lakes and reservoirs to raise the awareness for water resources and rare animals and plants protection, meanwhile attracting more funds and applying more advanced technologies to enhance the protection for provenance area.

(2) Facilities and recourses will be distributed according to users' demands

For the PRD area where economy is highly developed and population density is large, Greenway network development is to establish a linear-corridors-dominated network with high density and wide coverage through a multi-pronged working pattern under the guidance of the general strategic framework. As to north, west and east Guangdong where economic development is relatively backward and population is unevenly distributed, the work should firstly focus on the green space construction of key cities, towns and regions, and the inner Greenway system establishment of core areas such as cultural scenic spots etc; secondly, build connective corridors between core areas, and eventually develop a Greenway network with proper spatial density, which combines “stepping stone corridors” with dominated linear corridors.

(3) As to functional development, large scale regional greenway tour route will be established to display the large scale regional landscape and culture features.

The functions of Guangdong Greenway Network depend on the wide coverage of the recourse points and the complete demonstration of regional characteristics. Considering the PRD outskirts area is large and its resources are unevenly distributed, and its ecological environment is more sensitive, a new Greenway function layout structure and a development approach with more regional characteristics are developed. Centered on cities and towns, connect functional node areas such as urban gardens, historical and cultural locates, forest reserves and water source protection areas, establishing an interconnected regional resources green culture area. Isolated areas in eastern, western and northern Guangdong will be integrated into the macro cultural network with local humanistic resources to create a cultural village with distinct features. Promote condensed Greenway tour routes with obvious themes such as “Hakka Culture Tour”, “Chao Shan Culture Tour” and “Oversea Chinese Tour”.

(4) As to accessibility, greenway network will be connected to different transpiration system

Take the differences within the province's economic development levels and transportation network facilities levels into consideration, lay emphasis on connecting traffic lines and traffic means. Apart from the PRD area, as for other Guangdong regions where transportation is poorly constructed, connect regional road network through highway toll gates and service areas, promote Greenways to passengers from other cities and regions who travel on the highways; by connecting city's conventional public traffic system and slow traffic system, improve the accessibility of Greenways and city's travel environment, so as to increase the city's attractions.

(5) Facilities will be distributed according to sustainable and simple principles

According to the unevenly distributed population, construct Greenway ancillary facilities with different methods. For example, in cities and towns with higher population density, greenway facility construction should aim for serving the local residents, be accordance with the greenway facilities standards of PRD area, and base on the convenience principle, to construct humanized ancillary facilities. As for eco-regions with lower population density, facility construction should

base on ecological principle and aim for satisfying visitors' primary needs, reduce the number of artificial facilities.

(6) As to management and operation, a more stable and diversified financing mechanism and a more economic and ecological maintenance scheme will be created.

Due to the backward economic development, lower population density and more sensitive ecological environment of the PRD outskirts area, the financing and maintenance works are more difficult. Therefore, a more stable and diversified financing plan, and a more economic and ecological maintenance scheme will be created, to ease municipal government's financial pressure, ensure the regional ecological safety. Proposed measurements are: strengthen the connection among greenway planning and other public projects; promote the transactions of the water rights and emission rights of water sources protection regions, utilize ecological compensation of the downstream area to support greenway construction; work out a recuperative maintenance plan with low maintenance frequency; set up a stable, normative greenway construction and protection special fund, etc.

3.1.3 Establish green infrastructure network within large-scale area

As part of the green infrastructure network, the construction of greenway network plays an important role in pushing forward Guangdong's ecological environment protection and improving urban and rural spatial pattern.

(1) Create a continuous green space, and prevent the unordered extension of city construction.

Connect and develop fractured and isolated green patches into eco-corridors through Greenway network, which form city patterns and communicate urban and rural areas, providing migration passages for wildlife species and maintaining biodiversity and circulation of ecosystem.

(2) Promote an ecological urban and rural construction model. By connecting Greenways with natural ecological patches such as wetlands and forests, form an interconnected and organically unified network system, realizing a low-impact and ecological urban and rural construction model, so as to save city management cost.

(3) Improve the ability of sustainable development, and forge a new carrier for green industry's development. Apply green development strategy, and combine Greenway construction with promoting green economy. Integrate characteristic tourism resources and make it the development solution for green economy.

(4) Push forward the construction of livable urban and rural areas, establishing a charm stage of the ecological human habitat environment. Considering that the PRD outskirts areas are the key sections for urban and rural coordinating development, it is important to create comfortable housing Greenways, healthy housing Greenways and joyful housing Greenways that run through urban and rural areas, making the areas a charm platform for demonstrating and representing Guangdong's livable urban and rural construction. At the same time, attract urban residents to enjoy the leisure activities in rural areas. So as to drive the rural economic growth and social development and promote interaction and communication between urban and rural areas, creating valuable experience for "bidirectional urban-rural integration".

3.2 Establishment of the Three-stage network of Greenway Network

3.2.1 Regional Greenway: from “spot” to “area”, forge a three-stage greenway network

- (1) By making reasonable and ecological measurements to establish a regional ecosystem structure with long lasting effect, compete structure, coordinative relationship and efficient function, creating a integrative Greenway network which combines ecology, recreation and landscape together;
- (2) Proceed a general examination on city development planning, distribute Greenway route selection resource according to different situations, and lay stress on the reusing of brownfield: strengthen the connection between Greenway planning and city mater planning, integrating Greenway network into urban form and urban function;
- (3) Organize all-level systems of Greenway network, and enhance the connection between urban and neighborhood Greenways and Regional Greenways, achieving the integration of the Greenway system, slow traffic system and service system of the urban and neighborhood.

3.2.2 Urban Greenway: A Happy Trip from Home to Office

Comparing with regional and neighborhood Greenway, urban Greenway undertakes more residential needs for joyful working trips and links the traffic shifts among living area, working places and other destinations. Based on regional greenway, urban greenway integrates urban spatial form and connects urban slow traffic system, adjacent cities areas and greenways, establishing an urban network layout with proper density and balance distribution.

3.2.3 Community Greenway: A Renovation of our Homeland

Combine the planning and construction of neighborhood greenway network with city and regional recreational system, allowing easy access to greenway for neighborhood residents and visitors, at the same time making connection with greenway of upper level, outer traffic system and recreational system. The planning goal of entering neighborhood Greenways within 5-10 minutes will therefore be realized.

Combining with the “three old” reconstruction, by removing illegal and old buildings and building greenways in old cities and urban villages in downtown areas and urban villages in countryside areas where the greenway network goes through, improve the infrastructure conditions in urban villages, realizing the goal of beautifying cities; combining “new countryside” construction, improve human settlement in the countryside by building greenways. Through integrating village road reconstruction, public restroom construction, sanitation maintenance and river treatment with greenway construction, improve the entire environment of the countryside. During the construction, villagers along the greenway lines also renewed their house, making their contribution to the environment improvement in the areas along greenway lines,

4. Guangdong Greenway: A Shift from “Rural China” to “Charming China with Ecological Civilization”

4.1 The Most Beautiful Greenway in China—Shenzhen Dapeng Greenway

Dapeng new district has a combined area of 294.18 square kilometers with 76% of forest coverage rate, more than twice as much of the average rate of the entire Shenzhen. With rich rare animals and plants resources and various old and famous trees, Dapeng is the only “ecological virgin land” whose environment is barely disrupted. The district has a coastline of 133.22 km, taking almost the 1/2 of Shenzhen’s shoreline; it has rich landscape resources such as mountains, seas, wetlands, beaches, rivers, villages and relics. The Dongxichong Beach was proud enough to be named as “the top eight most beautiful beaches of China” by China National Geography. In conclusion, Dapeng new district is the most beautiful area with the best ecological environment and landscape of Shenzhen.

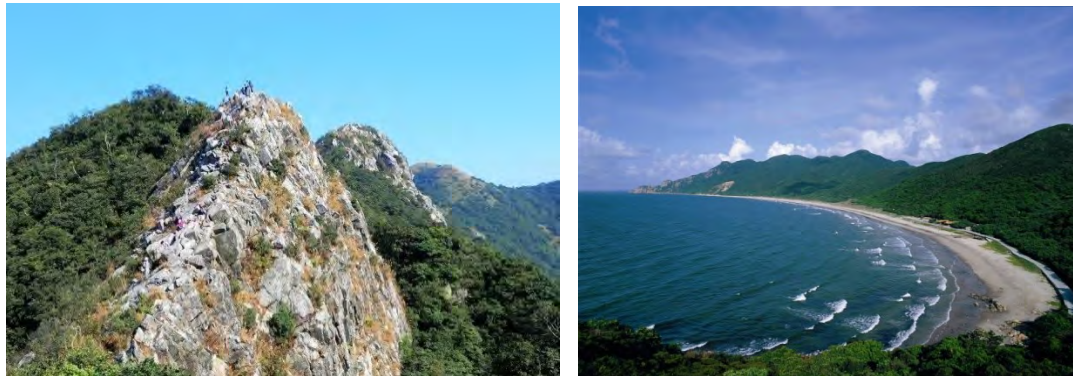


Fig.15 Natural Scenery in Dapeng New District





Fig.16 Culture Landscape of Dapeng New District

Integrate the planning and design for rich ecological human resources of Dapeng and Greenways, and connect them into a complete network, so as to improve tourism spatial layout within limited construction funds, providing a wider, safer, and more comfortable and more humanized ecological tourism areas for citizens, and at the same time establish a international and ecological landscape tourism network on such basis, providing the most ecological and beautiful Dapeng image to people all around the world.





Fig.17 Dapeng Greenway

This project tries to integrate China's traditional landscape aesthetic theory with ecological environment quality evaluation method, so as to provide solid supports for the most unique and beautiful Greenway construction.

4.1.1 Aesthetic evaluation of traditional Chinese landscape

China shows special preference of landscape. It is blended in painting, poetry, song and philosophy, and becomes unique culture. With Chinese traditional aesthetic evaluation on pattern of mountain, sea, city and town in Dapeng District, and overall consideration on pattern of mountain and water, scenic landscape, and diversity, 14 landscape districts are divided as follows(Fig.19)..



Fig.18 The Chinese landscape painting art reflects nature

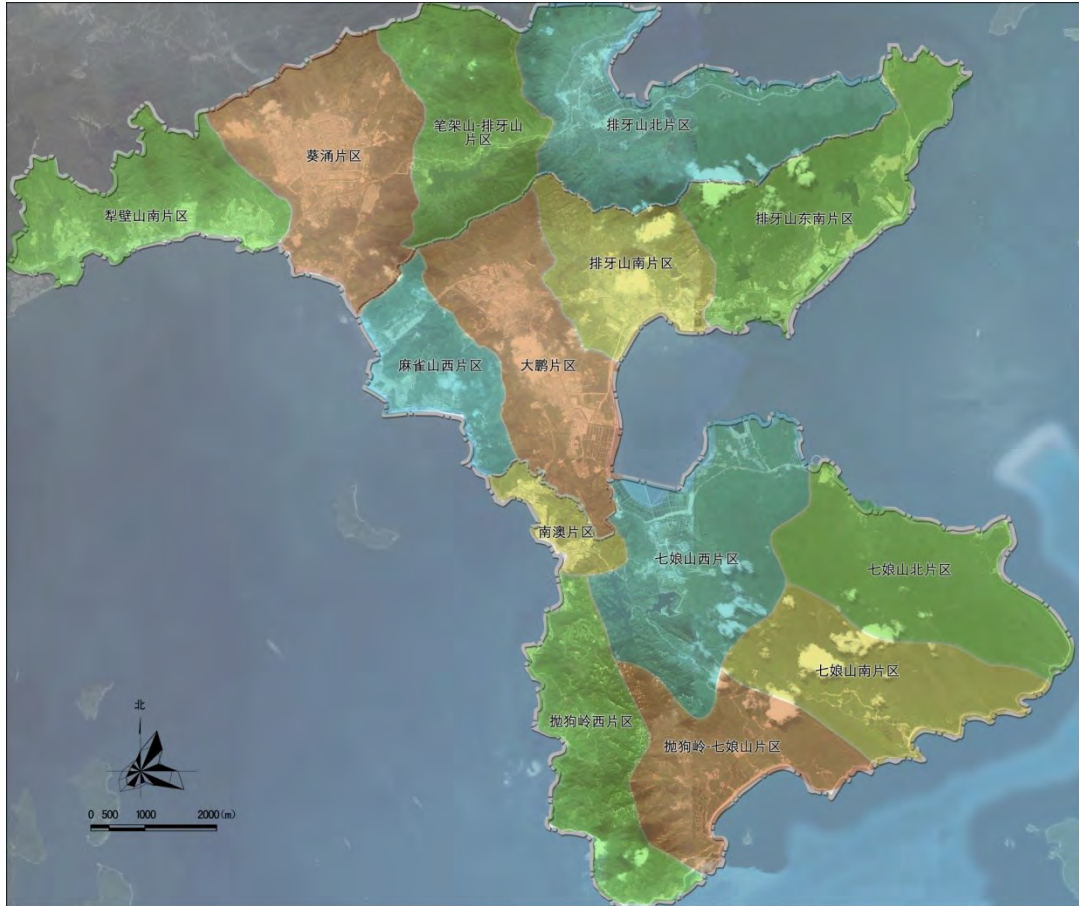


Fig.19 Landscape Districts in Dapeng

Chinese traditional landscape evaluation considers that beauty of nature shows the beauty of image, color, dynamic and obscure. Refining index of five beauties and giving a certain weight, reaches an index system of landscape evaluation in Dapeng.

Table 01 Aesthetic evaluation criteria

First Level Index	Second Lev Index	Weigh	Third Level Index	Evaluation Scale ((Scenic——Poor Scenery)
Aesthetic evaluation of traditional Chinese landscape	Image	0.2	Shape	Massive——Tiny
			Diversity	Abundant——Simple
			Uniformity	Harmonious——Messy
			Loneness	peaceful——bustle
	Color	0.2	Color Harmon	Harmonious——Cluttered
			Color Abundan	Rich——drab
			Color Intensit	bright——dim
	Dynamic	0.2	Movement	Dynamic——undynamic
			Variation	various——single
			rhythm	strong——week
	Sound	0.2	Artistic Conception	With Artistic Conception——Without Artisti Conception
Mood			happy——gloomy	

			Melody	euphonic—noisy
	Obscure	0.2	curiosity	curious—common
			nature	natural—unnatural
			vegetation	lush—sparse

According to markings of experts, and their evaluation on all the landscape districts, they give five levels of each index. The overall evaluation is as below (Fig.20).

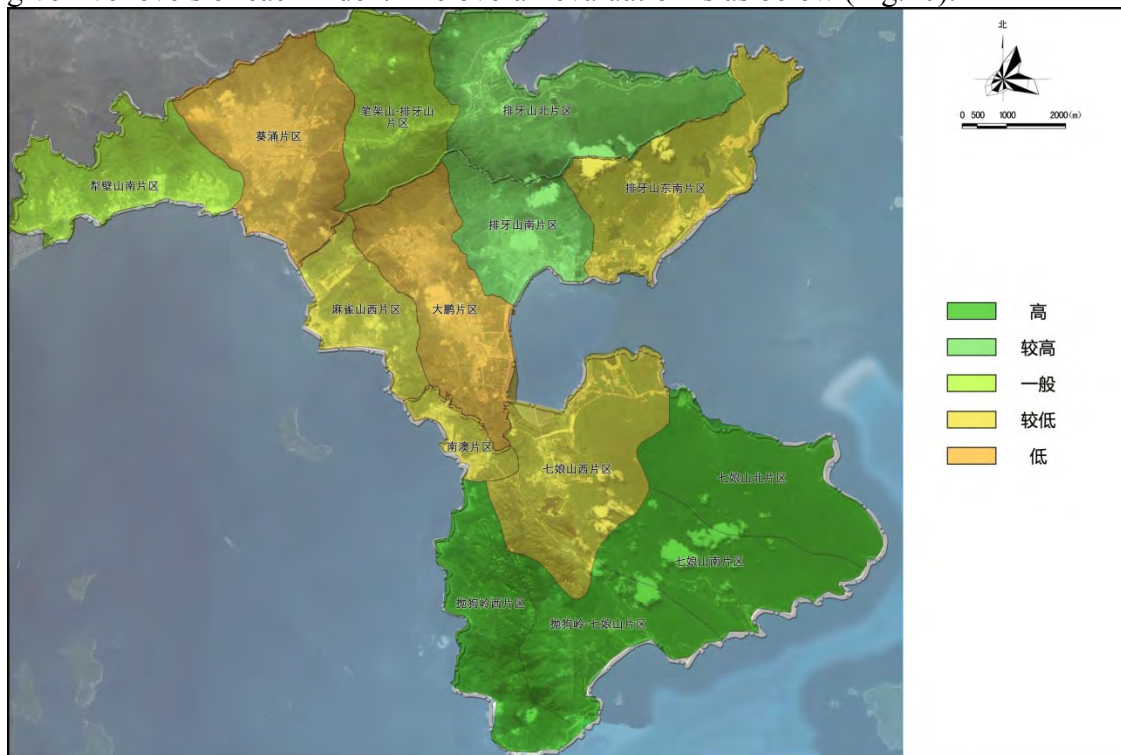


Fig.20 Aesthetic evaluation of landscape in Dapeng

The result shows that the most beautiful district is in the south of Nan’ao sub district office. It has Qiniang Mountain, Paogou Hill, Honghua Hill and other mountain range; Yang Mei Keng, Dong Chong, Xi Chong and other gorgeous coastline; and Ban Tian Yun Village, E Gong traditional old villages and other brilliant landscape resource. It also has a beautiful landscape area from Dapeng Fortress, Paiya Mountain to Baguang. Landscape resource in Dapeng Fortress, Paiya Mountain and *Heritiera littoralis* Geomantic Forest is more graceful and unique. Landscape quality in Kuichong and Dapeng downtown is worse.



Fig.21 Dong Chong Coastline



Fig.22 Sea Stacks

4.1.2 Ecological Environment Quality Assessment

Ecological environment quality refers to the merits of ecological environment, which reflects the adaptable degree of eco-environment for human's living and the socio-economic sustainable development. The assessment is made on the result of eco-environment's nature and changes according to specific requirement of human beings. Dapeng New District is divided into 22 ecological areas based on the comprehensive consideration of its ecological system types, land use types, administrative unit division, etc(Fig.23).



Fig.23

Ecological Area Division of Dapeng New District

Eco-system service quality assessment is one of the best systematic and comprehensive methods of eco-environment quality assessment. Eco-system services mean all the conditions and process beneficial to realize and maintain human living provided by eco-system and the species within it, which fall into 4 levels and 17 categories. This project reconstructs eco-environment quality assessment system on the base of its understanding of Dapeng New District eco-system services together with the existing sorting modes.

Table 02 Eco-environment Quality Assessment Index System of Dapeng New District

First Grade Indicator	Second Grade Indicator	Third Grade Indicator	Weight
Eco-environment Quality Assessment	Supply Service	Food, Fresh Water, Raw Materials, Ornamental and Decorative Species, Biochemical Substance, Genetic Resources	0.2860
	Regulation Service	Climatic Regulation, Disaster interference control, Water Regulation, Biological Control, Disease Control, Erosion Control, Polluting Waste Treatment, Pollination and Breeding	0.1449
	Culture Service	Spiritual Religion, Leisure and Recreation, Aesthetic information, Scientific Education, Culture and Arts, Inspiration Incentives	0.1011
	Support Service	Soil forming, Biodiversity, Geochemical Cycle, Primary Production, Habitat Shelter	0.3784
	Other Services	Future Needs Service, Outer Space Service	0.0897

Expert grading method is adopted to evaluate each ecological area according the characteristics of eco-environment quality by five categories of high, superior, general, lower and low. Assessment results are finally reached by multiplying grades and each index weight (Fig.24).



Fig.24 Eco-environment Quality Assessment Results of Dapeng New District

Assessment results find that areas of best eco-environment in Dapeng New District are mainly mountain and forest regions around Qiniang Mountain, Paiya Mountain, Paogou Mountain and so on. Eco-environment of mountain and forest regions around Bijia Mountain, Libi Mountain and others are better too. As for areas like Kuichong, Dapeng, Tuyang, Xichong, with more communities and towns concentrated in the areas, the eco-environment there are relatively poorer.



Fig.25 Ecological Environment in Qiniang Mountain





Fig.25 Geomantic Forest Community

4.1.3 Ecological and Aesthetic Comprehensive Evaluation

Dapeng New District Greenway Planning is dedicated to becoming the most beautiful greenway in Southern China. It pays attention to ecological environment protection, and links all districts of best quality at the New District.

The ecology and landscape are differently positioned, that is to classify the evaluations of landscape aesthetics and ecological environment quality into three levels. The ecological environment quality evaluation is divided into extremely high, comparatively high, medium and low levels; landscape aesthetics one: high, medium and low levels, each level's guiding significance is showed in the table below. At last, the two evaluation results are combined to comprehensively zone the Dapeng New District

Table 03 Ecological Environment Quality Evaluation Index System of Dapeng New District

		Landscape Aesthetics Evaluation		
		High(high appreciation value)	Medium(of some appreciation value)	Low(of appreciation value)
Ecological Environment Quality Evaluation	extremely high(Restricting access)	I Zone	II Zone	III Zone
	Comparatively high(allow small-scale construction)	IV Zone	Nil	V Zone
	Medium and low(allow large scale construction)	VI Zone	VII Zone	VIII Zone

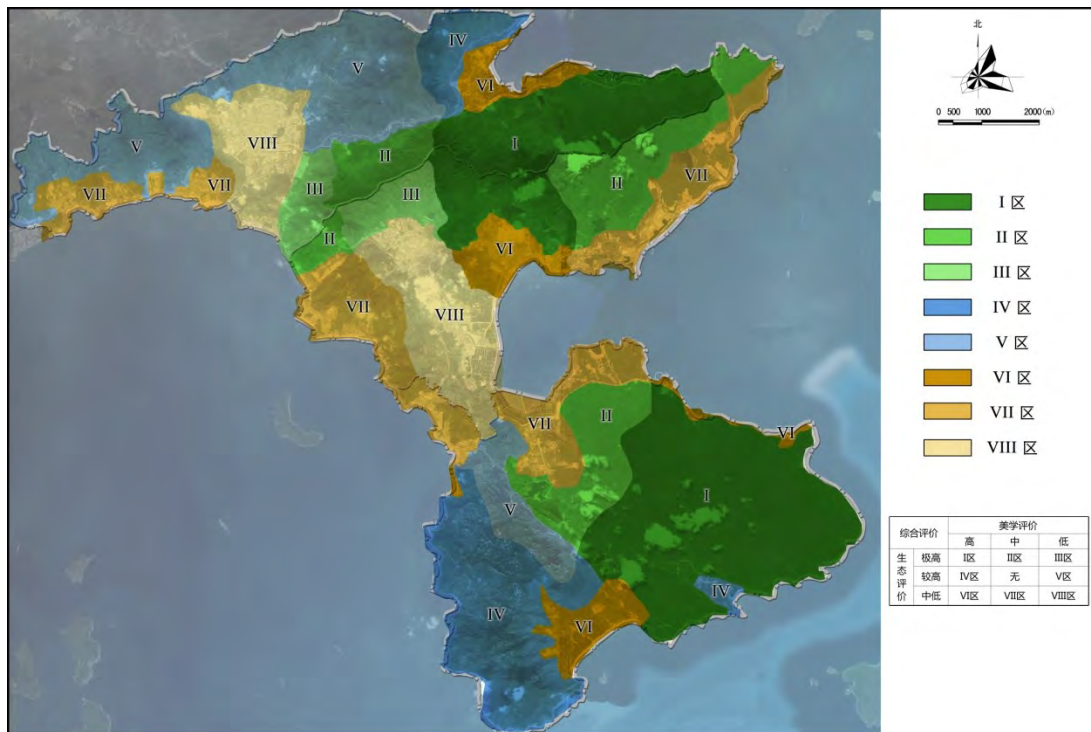


Figure 26 Dapeng New District Ecology and Aesthetics Comprehensive Evaluation Zoning

According to the zoning results, the ecology and environment quality of Qiniang Mountain and Paiya Mountain are both extremely high. They are the representative districts of scenery characteristics. Most coastal areas, beaches such as Dongchong, Xichong, E’gong Bay, and Yang Mei Keng and so on, not only are most beautiful in scenery, but also have very good ecological environment, becoming the first choice for tourists. But due to the concentrated towns in Dapeng and Kuichong District, the ecology and landscape qualities are lower than others’.

Based on the ecological feature, feasibility, diversity, convenient feature, continuity and safe feature principle of Dapeng New District Greenway Planning, the aesthetics and ecology quality evaluation guiding principles are set for each comprehensive evaluation zoning.

Table 04 Greenway Guiding Principle for Dapeng New District on Ecology-Aesthetics Comprehensive Zoning

		Landscape Aesthetics Evaluation		
		High	Medium	Low
Ecological Environment Quality Evaluation	Extremely High	Except for part of representative sections, others basically prohibit the greenway construction.	The greenway can move around (II Zone)	It is strictly prohibited to enter(III Zone)
	Comparative high	Needing to employ ecological construction method.(Zone)	Dealing with the greenway ecologically.	Only constructing the necessary greenways. (V Zone)

	Medium and low	Allowing comparatively high-density greenway construction. (VI Zone)	Common greenway construction (VII Zone)	The greenway construction only satisfy the commuting needs or no construction at all (VIII Zone)
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4.2 Greenway—National Strategy of Chinese Characteristics

The geographical situation in China has one large zonal structure every eight degrees, such as Tian Mountain-Yin Mountain Zonal Structure, Hunlun Mountain-Qinling Mountain Zonal Structure and Nanling Mountain Zonal Structure. Just as the saying in Kao Gong Ji goes, “In geography, there must exist great reiver between two mountains, and roads over the great river.” In Yu Gong, the mountains in China are divided into four columns and nine mountains. In Feng Shui Theory, the stretches of mountains are called dragon veins. “The vast Kunlun Mountain has eight veins.” Dragon Vein roots from the Kunlun Mountain in the northwest, and extends three strings of vast dragon veins to the southeast. The northern dragon vein goes to Shanxi from Yin Mountain and Helan Mountain, thus beginning Taiyuan, ending across the sea. The medium dragon vein comes into Guanzhong from the Min Mountain and goes into sea after Qin Mountain. The northern dragon vein comes into sea from Yungui, Hunan, Fujian, Zhejiang and Guangdong along Yangtze River.

From the perspective of the traditional cognition to the natural geography, the Chinese history can guarantee the preserving and remaining of the humanistic history by national historic way. And it has very important practical significance in increasing national pride and improving cultural quality. As the tentative study of ecological security pattern construction for the national land, the geographic system for the greenway application provides technology support to identify the national corridor system and cultural corridor system of important meaning at the national land level and raise the elementary “national land ecological security pattern”. This pattern can be seen as the basic framework of the national ecological infrastructure or the national greenway system.

Making the greenway construction as the national strategy is a idealized and positive thinking. This thinking is based on the previous urban planning which was limited by the motorway and expressway. When we look back at the green infrastructure layout space, we will rethink and realize that the reverse growth of green is so important for China, which has dense population and limited human habitat ecological resources. In the coming urbanization areas, green farmland space needs to be planned form the overall urban and rural aspect, with urban intensive development and both of the urban and rural areas find their position and task, and reaching the win-win situation. So, we can reasonably surround the cities with the countryside and layout the ideal living environment. Scientific development leads the ecological civilization to become the mainstream in the future. The greenway in the future needs to be built by constructing the ecological safety in vast regions and creating pleasant urban slow system. This can begin new value benchmark and lead people themselves to the ultimate view of the ecological concern.

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