



Swedish University of Agricultural Sciences
Faculty of Landscape Planning, Horticulture and Agricultural Sciences
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Discussion of “The Eight Characteristics” in Huanggang City

–When A Swedish Green Space Research Result Meets A Chinese City

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**Discussion of “The Eight Characteristics” in Huanggang City
--When A Swedish Green Space Research Result Meets A Chinese City**

Diskussion om "De Åtta Egenskaper" i Huanggang stad
--När Ett svenskt grönområden forskningsresultat möter en kinesisk stad

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Abstract

With the development of society, a variety of psychological diseases attack human beings. Relevant research shows there is a coherent relationship between outdoor environments and human well-beings. So more and more emphasis is paid by both the government and normal people at present, on the construction of a better outdoor environment. A group of researchers from SLU, Alnarp have classified and concluded eight important characteristics of outdoor environment through investigation. Different size, form, distance and amount of these characteristics will affect environmental perception to people, thus influencing psychological health.

In China, we do have norms and legislations about the green structure, involving the size, classification and framework of green areas. While the perspective of human well-beings and environmental psychology is a lack in the green structure system there. In this thesis, the main city of Huanggang is chosen as the target area to introduce The Eight Characteristics in China.

Firstly, analysis about the green space in the main city of Huanggang will be given according to Standard for Classification of Urban Green Space in China, in order to give a general and preliminary impression of the area. Then the analysis will be developed through an Internet investigation, aiming at understanding the perception and expectation of normal Huanggang people to their surrounding outdoor green spaces. The last analysis is made according to The Eight Characteristics, on green spaces in the main city of Huanggang,

Discussions will be conducted after, from the following perspectives: Differences between Standard for Classification of Urban Green Space in China and The Eight Characteristics in Sweden; Suggestions of The Eight Characteristics in main city of Huanggang; Improvements made on the outdoor green space in the main city of Huanggang.

Key words: Green space; The Eight Characteristics; Huanggang; China

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1 Background

Around 2 years ago, I was accepted to the master program “Urban Landscape Dynamics” of SLU, Alnarp, thus having the opportunity to study in Sweden, the country famous for its healthy environment and nature proximity. Not only attracted by the beautiful landscape different from those in China, I am also surprised by the attention that relevant research paid to the relationship between green space and human well-beings, like Roger Ulrich’s psycho-evolutionary theory (Ulrich et al. 1991, as reference in Hartig et al., 2011, P. 149-150), Kaplan and Kaplan’s Attention Restoration Theory (ART) (Kaplan and Kaplan, 1989) and so on and so forth.

During the study in the past two years, there were several courses dealing with this related issue. One of the research results is The Eight Characteristics (Grahn et al., 2005) derived from SLU, Alnarp, which I found interesting and beneficial when analyzing green areas of Swedish cities and towns.

In China, we do have norms and legislations about the green structure, involving the size, classification and framework of green areas. While the perspective of human well-beings and environmental psychology is a lack in the green structure system there. With the development of the society, the benefits and effect brought by the existing green structure planning is far from enough, especially with the expansion of the urbanism, many psychological diseases attack modern generation. A better outdoor environment provided by green space will be the pursuit as planners for the benefits to people’s psychological problems.

Before I came to Sweden, I was involved with a green system planning in Huanggang city located in central part of China. I think it might be interesting and meaningful to introduce a Swedish research result to a Chinese city, where the culture and geographic condition is different. Moreover, quite different from those well developed cities in China, like Beijing and Shanghai, Huanggang represents most of the developing city which will play important roles in future China.

2 Aim & Objective

The aim of the project is to introduce The Eight Characteristics to the main city of Huanggang in China, and suggest some proposals accordingly.

The green structure of Huanggang city will be analyzed according to both Standard for Classification of Urban Green Space of China and The Eight Characteristics of Sweden. Differences might be discussed accordingly.

Secondly, the research result of The Eight Characteristics was concluded from an investigation conducted in Sweden, which determines the limitation of the adaptability. The introduction to China might meet some maladjustment and require some adjustment according to the local situation. More over, The Eight Characteristics was a conclusion of how do people use the existing green space, which is enough for Sweden but might not be enough for the present China, since the existing Chinese green space need to be improved quite much. So suggestion of The Eight Characteristics in main city of Huanggang is to be made from not only how do Huanggang citizens use the existing green space, but also what do they expect their outdoor green environment.

What's more, as what has been mentioned in the background part, the perspective from environmental psychology is a big need for the green system planning in China. After all the analysis and discussions, improvement on green space in Huanggang city would be suggested.

3 Methodology

- ✓ Literature study on research results from relevant topic; analyze and summarize the specific thoughts of these articles to get full information.
- ✓ Research on Standard for Classification of Urban Green Space in China.
- ✓ Collect and select information from government website of Huanggang city, together with the materials provided by Bureau of Landscaping of Huanggang Municipality and Bureau of Urban Planning of Huanggang Municipality.
- ✓ Field investigation to get the basic knowledge of the primal situation of green space in Huanggang.
- ✓ Kevin Lynch map will be illustrated accordingly to provide the basic impression of the city.
- ✓ In order to understand what the city really needs, a questionnaire investigation mainly targeting at normal citizens from Huanggang will be conducted via Internet to see the psychological perception and requirement of green space in Huanggang.

Further analysis will be made on basis of all these theory, information and materials collected.

4 Development of The Eight Characteristics

The Eight Characteristics, which play the core research role in this project, are about the relationship between human-beings and natural environment. In this chapter, a short theoretical evolution about the research background of The Eight Characteristics will be given at first. Then the primary and further research results of The Eight Characteristics will be stated. At last, some questions are mentioned about the hypothetic situation of The Eight Characteristics in China, on which the analysis and discussion would be deployed in the later chapters.

4.1 Theoretical background of The Eight Characteristics

People and Environment

As early as the year 1974, Yi-Fu Tuan has mentioned in his book *Topophilia* “the human being’s affective ties with the material environment, which is the feeling one has toward a place because it is home and the means of gaining a livelihood” (Tuan, 1974. P. 93). What’s more, Tuan holds that the “artificial environment may be seen as cocoons that humans have woven in order to feel at home in nature” (Tuan, 1974. P. 13). This might subtly imply the affective relationship between human beings, nature and environment before there were substantial research results proving the benefits natural environment brings to human well-beings in the 1980s.

Psycho-evolutionary Theory

Later on, assumptions about the psychological restoration brought by nature were supported gradually by series of theory and experiments. Roger Ulrich’s psycho-evolutionary theory (Ulrich et al. 1991, as reference in Hartig et al., 2011, P. 149-150) emphasized the characteristics of nature would inspire the inner content to the surroundings. He also said that for genetic evolution, modern humans have a biological capacity for restorative responses to certain nature settings, but not to built environments (Ulrich, 1999, as reference in Hartig et al., 2011, P. 149-150). One of the famous experiments Ulrich conducted was “View through a window may influence recovery from surgery”. In the experiment, patients were assigned differently to rooms with windows of natural scene and of brick building wall in the experiment. The result showed that “in comparison with the wall-view group, the patients with tree view had shorter postoperative hospital stays, had fewer negative evaluative comments from nurses, took fewer moderate and strong analgesic doses, and had slightly lower scores for minor postsurgical complications” (Ulrich, 1984).

Attention Restoration Theory

Another contributing theory is Kaplan and Kaplan's Attention Restoration Theory (ART) which focuses on restoration after attention fatigue (Kaplan and Kaplan, 1989). The theory supposes it will take efforts for people to pay direct attention to something for a long time especially to those of no interests. Then fatigue will attack the body and the task requiring direct attention might fail since the capacity is full. One can get restoration through the experience of fascination, a mode requiring no effort, thus relaxing fully and recharging again. Similarly, *being away*, *extent* and *compatibility* are the other three important elements offering restoration. And the four steps of restoration are "clearing the head", "recharging", unbidden thoughts and "reflections" (Kaplan and Kaplan, 1989). Apparently, nature context has the character to provide such kind of environment for people to go through those steps naturally and easily.

4.2 The research on The Eight Characteristics

According to the respondents from a survey Ulrika A. Stigsdotter and Patrik Grahn did, the most mentioned recommendation for a stressed and anxious friend to do is visiting a nearby wooded area or a city park, which indicates the importance of nature to human well-being. Ironically, the respondents, who gave those suggestions, they themselves seldom do it (Grahn & Stigsdotter, 2003, as reference in Stigsdotter, 2005). The reasons hindering them vary from one to another.

The foremost thing is those outdoor green environment should have the specific character people intend to experience. "an area marked green on the city plan is not necessarily a natural environment that city dwellers appreciate or wish to visit" (Berggren-Bärring & Grahn, 1995, as reference in Stigsdotter, 2005). Hence, the eight basic characteristics, in this regard, were concluded from a research at SLU Alnarp. The study, "aiming to know which parks people use, what they do there and what qualities they appreciate" (Berggren-Bärring & Grahn, 1995, as reference in Nordh, 2010), was conducted in three middle-size Swedish cities of different landscape features---Lund, Uppsala and Västerås. The survey included interviews to organizations and individuals with different interests focus, deep interviews, diaries, photo survey, questionnaires via both post mail and emails and so on and so forth. After fully collecting and analyzing all the materials, The Eight Characteristics were classified and interpreted, which were developed later as: *Serene*, *Wild*, *Lush*, *Space*, *The common*, *The pleasure Garden*, *Festive* and *Culture* (Grahn et al, 2005. See Table1). Grahn concluded, "These characteristics consist of symbols manifesting themselves through many different sensations perceived through sight, hearing, locomotion, et al" (2005).

Table 1. *The Eight characteristics that meet recreational needs, from Grahn et al. 2005*

The Eight Characteristics	Characteristics of the Space
1.Serene	A place of peace, silence and care. Sounds of wind, water, birds and insects. No rubbish, no weeds, no disturbing people.
2.Wild	A place of fascination with wild nature. Plants seem self-sown. Lichen and moss-grown rocks, old paths.
3. Lush	A place rich in species. A room offering a variety of wild species of animals and plants.
4. Spacious	A room offering a restful feeling of “entering another world”, a coherent whole, like a beech forest.
5. The Common	A green open place allowing vistas and stays.
6. The Pleasure Garden	A place of imagination. An enclosed, safe and secluded place where you can relax and be yourself, let your children play freely.
7. Festive/centre	A meeting place for festivity and pleasure.
8. Culture	The essence of human culture: A historical place offering fascination with the course of time.

Based on The Eight Characteristics, further research also indicates other factors influencing the use of the outdoor green lands. They are accessibility, size and shape of the specific green area (Grahn et al, 2005).

Accessibility:

In the investigation mentioned before, Grahn and Stigsdotter (2003) found that “users are extremely sensitive to distance to urban open green spaces, the farther the park is from the home or the office, the fewer and shorter are park visits” (Grahn et al, 2005).

From the diagram (Diagram 1) below which is based on the research results from Grahn et al. (2005), we can easily know that after 50 meters distance of the green areas, the number of people visits decreases. So does the time they stay there. The statistics decrease sharply when the distance augments to more than 300 meters. If a person has access to a green area within 50 meters of his/her home, the visit frequency is three to four times a week. However, if the distance is 1000 meters, the visit is postponed until the weekend. And the stress experience happened more with the increase of the distance to green areas.

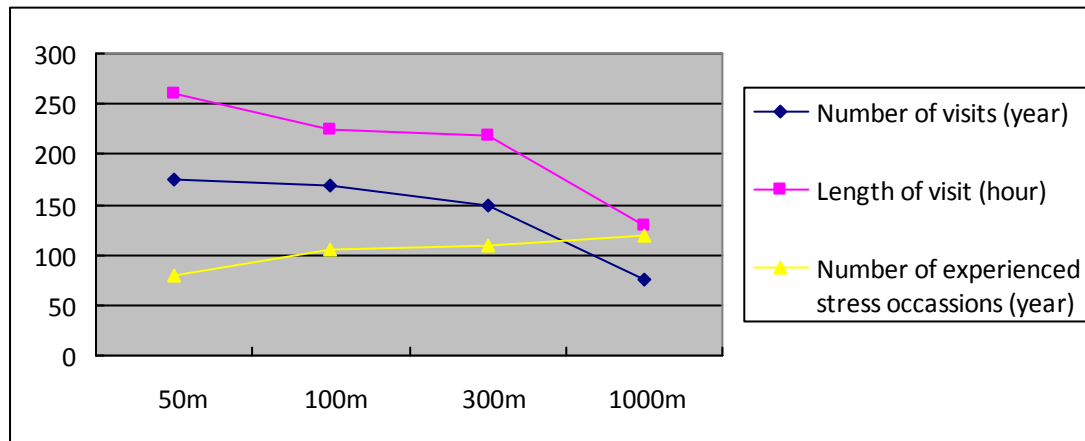


Diagram 1. The relationship between distance to green area and three factors: number of visits (year), Length of visit (hour) and Number of experience stress occasions (year). After Ulrika A. Stigsdotter, 2005.

Size and shapes:

If an accessible green area has specific appreciated qualities, will it be visited often for sure? The answer is it depends. The research shows, two size classes of green areas were the most visited: 1-5 hectares and 10-50 hectares (Grahn et al, 2005). The former favours *culture* and *festive*, the latter *serene*, *space*, *lush* and *wild*. And when the size of an area is larger, most of time it will be more appreciated by people since their activities could be free from traffic, noise and other people. While it might create negative effects if the room is too big. And the optimal area was about 100 hectares (Grahn et al, 2005).

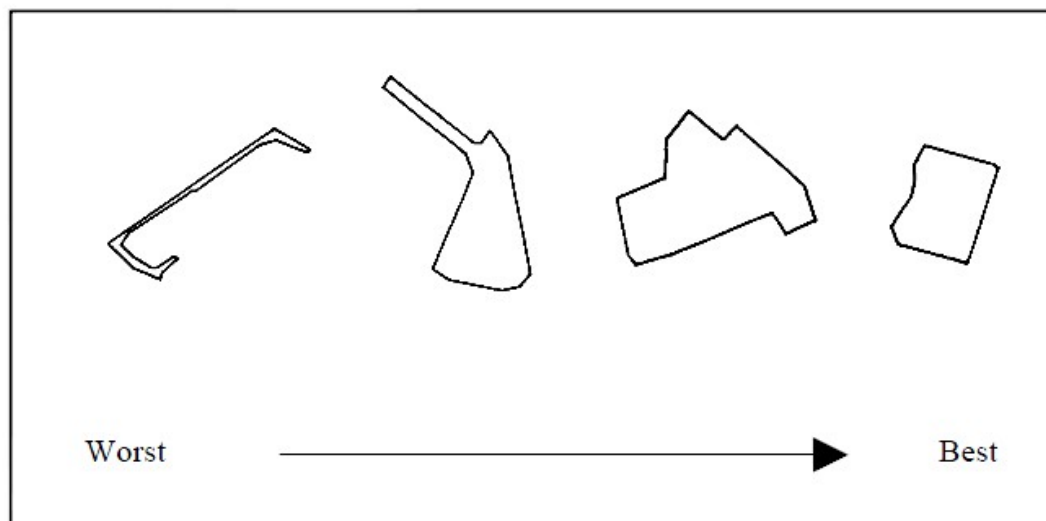


Image 1. The more coherent the shape of the green area, the more developed The Eight Characteristics can become. By Ulrika A. Stigsdotter, 2005

The shape of the area could also influence the way people experience and use green areas. It is discerned that a large proportion of the parks least visited consisted of elongated areas (Grahn et al, 2005). The importance embodies when the park is smaller than ten hectare,

especially significant when the green area is smaller than one hectare. The significance of the shape factor decreased relatively rapidly with increased area. As to specific characteristics sensitive to the shape, they are *serene*, *space*, *lush* and *wild*. Hence, the more coherent the shape, the better (Stigsdotter, 2005)

4.3 What will it be in China?

The Eight Characteristics and relevant research results were classified and concluded in Sweden, a country totally different from China either in geography or in culture. As what has been mentioned in the background part, the introduction of the research result will bring benefits for the development of Chinese urban green structure. If it is not advanced, at least it provides a different perspective to reconsider the development direction of Chinese urban green structure and the relationship between human beings and natural environment.

However, what will it be in China? For a country with 1/5 of the world's population, is that possible to find the quality of *Serene* in a Chinese city? For a country with such a boosting developing speed of urbanization, will *Wild* be accessible to urban citizens? Owing to the cultural difference, will the character of *Festive/Center* in China look the same as it is in Sweden?

What's more, the research result is a conclusion more of how do people use green space. For Sweden, where the green space is of enough amount and good quality, it could be enough to only conclude the utilization situation of green space. While for China, a country with such a large population and low per capita share of resource, such a rapid developing speed and severe environmental problem, it requires more suggestions than a conclusion of the existing situation. Hence, if The Eight Characteristics is to make effects in Chinese cities, wishes and expectation of Chinese people on green space could not be neglected.

With these doubts and questions, further analysis and discussion will be conducted in the following chapters.

5 Introduction to the pilot area

5.1 Context

5.1.1 Hubei Province

Hubei Province is located in the very central part of China with Wuhan city as the capital. It covers an area of 185.9 thousand square kilometers and plays an important role in the convenience of transportation in China for its geographical location (Land of Hubei Province, 2012). Most traffic lines connecting different parts of China passing through Hubei province as a hinge, especially the trunk lines, like Jingjiu Railway (connects Beijing and Hong Kong) and Yangtze river (the longest river in China, running from west to east) which bring people from the very north to the very south and deliver goods from the very west to the very east. Moreover, Hubei province is famous for its pedagogic quality and the large amount of the university students.



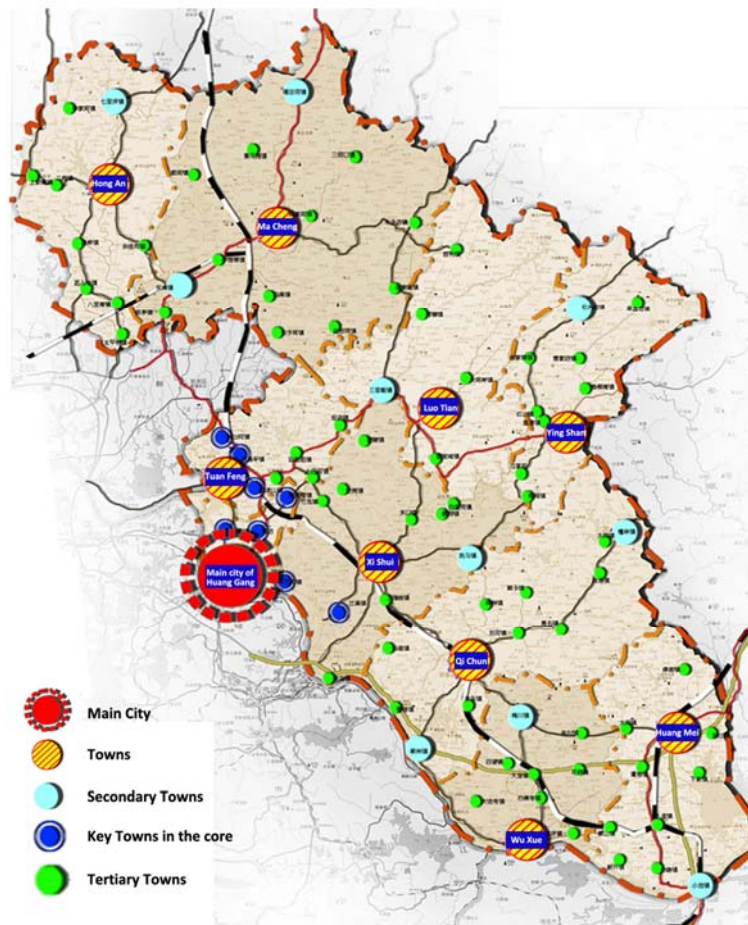
Map 1. *Hubei Province in China*

5.1.2 Huanggang city

Huanggang city is situated in the east of Hubei province. It has a subtropical continental monsoon climate with four clearly distinct seasons (Yearbook of Huanggang city, 2010, P. 78). Huanggang has a long history and abundant natural resource. Besides the main city, the administrative boarder of Huanggang city includes several towns. In this project, the pilot area is the main city of Huanggang, which is the administration center and economic core of the whole Huanggang.



Map 2. *Huanggang city in Hubei Province*



Map 3. *The main city in the whole Huanggang*

5.1.3 The main city of Huanggang

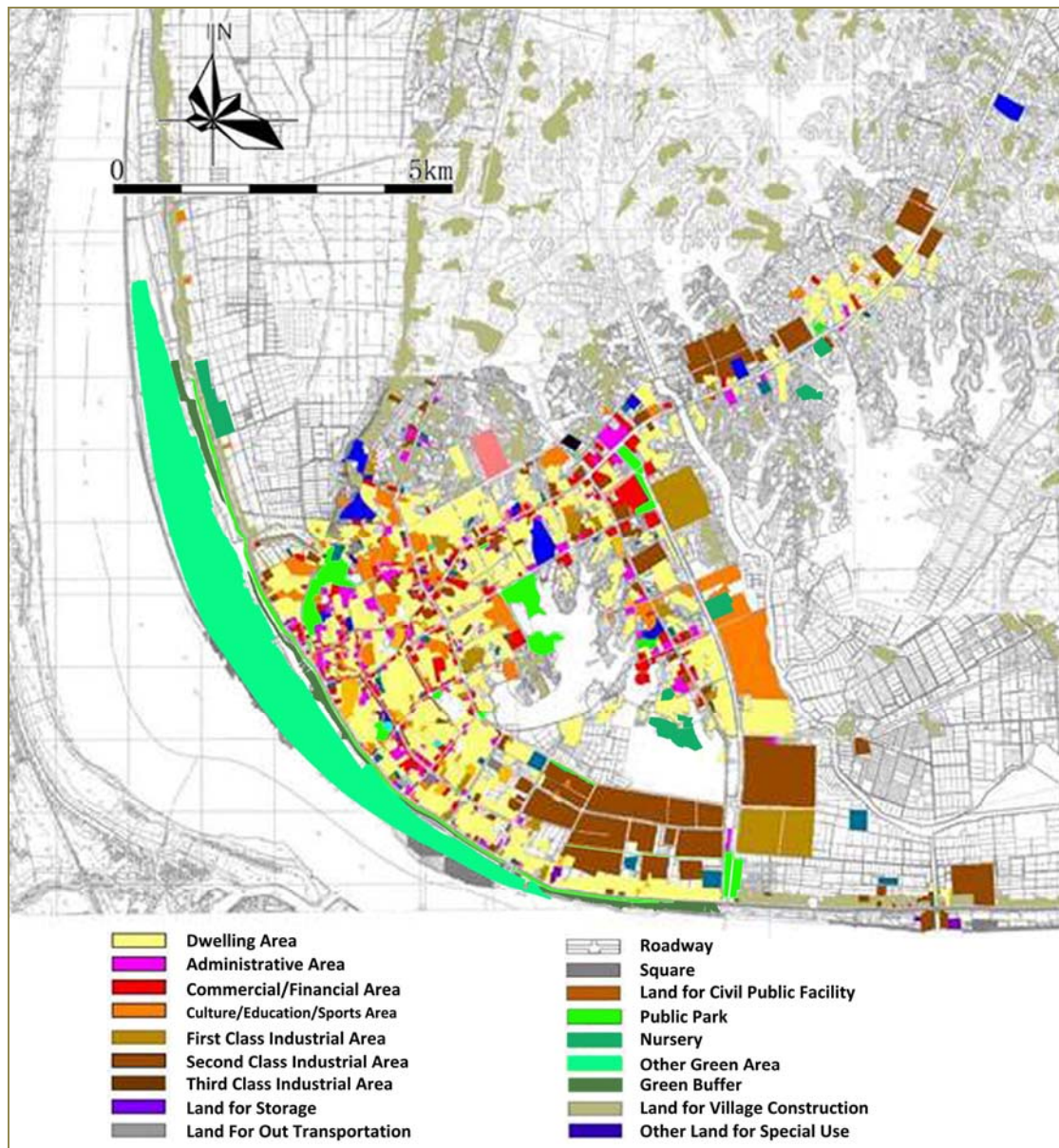
According to the materials provided by Bureau of Landscaping of Huanggang Municipality, the size of the main city of Huanggang is approximately 50 square kilometers with a population of 242 thousand. It is located to the north of middle reach of Yangtze River. The branch of Yangtze River, Ba He River, runs through the area. There is a popular park which is still under construction. The park is composed mainly of a vast lake—Yi ai hu lake, which is around 2.93 square kilometers, even larger than the famous west lake of Hang Zhou. The main city is rather famous for two things. One is the national eminent key school—Huanggang Senior Middle School, where several students win the first prize each year in International Mathematical Olympiad, International Physical Olympiad and International Chemical Olympiad. The other is Chi Bi Park, which represents a historical story of the area. The story is about one poet of Song dynasty, Su dong po, who has stayed in the place “Chi bi” for a time and written the celebrated verse *Chi bi fu*, bringing intense sense of culture to the area.



Map 4. The main city of Huanggang

5.2 Current Land Use Situation

If we look at the map below, we could get knowledge about the current land use of the main city of Huanggang. The origin of the city is the district west to the lake, and the direction of the city development in the future is towards the north-eastern. And some comparative large industrial areas are located in the peripheral area. Another feature is that small pieces of dwelling areas, administrative areas and culture areas interweave together and disperse around the lake. Except green belts along riverbanks, a sprinkle of large green areas, but still smaller than industrial areas, are interspersed in the city.

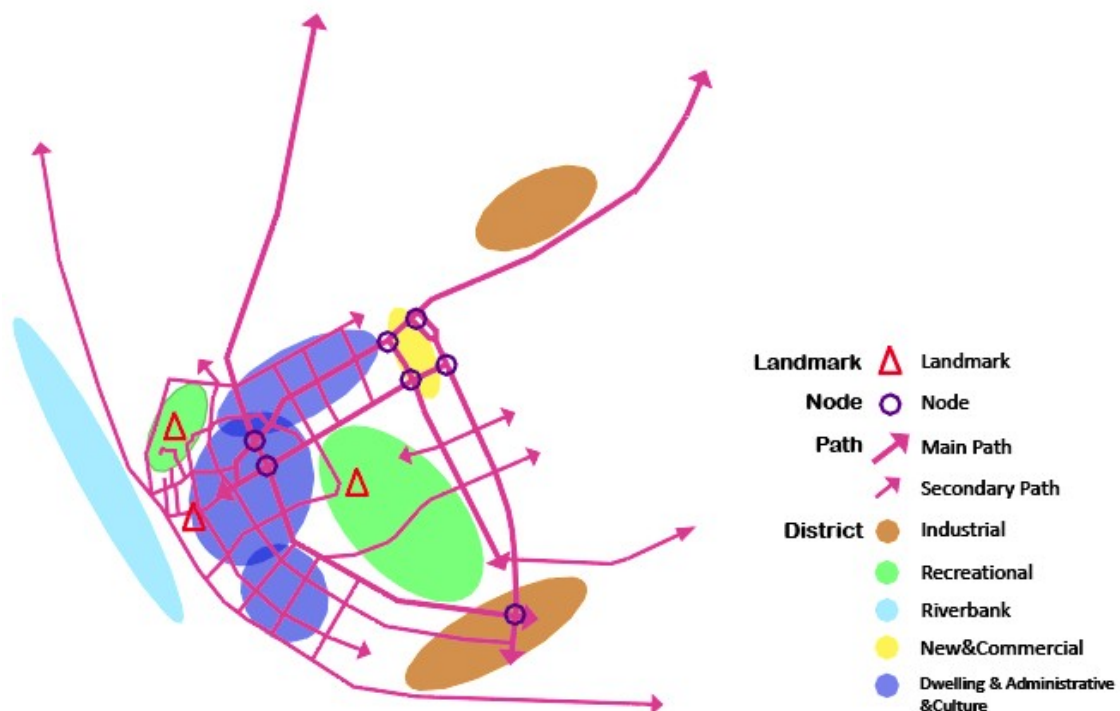


Map 5. The land use of Main city of Huanggang, after Overall urban plan of Huanggang city(2008), provided by Bureau of Urban Planning of Huanggang Municipality

5.3 Kevin Lynch Map

In the book *The image of the city*, Kevin Lynch created an innovative method about the look of cities. “This study will therefore concentrate on the identity and structure of city images” (Lynch K., 1960, P. 9). Five elements were classified referable to physical forms:

1. Paths. Paths are channels along which the observer customarily, occasionally, or potentially moves.
2. Edges. Edges are the linear elements not use or considered as paths by the observer.
3. Districts. Districts are the medium-to-large section of the city, conceived of as having two-dimensional extent, which the observer mentally enters “inside of”, and which are recognizable as having some common, identifying character.
4. Nodes. Nodes are points, the strategic spots in a city into which an observer can enter, and which are the intensive foci to and from which he is traveling.
5. Landmarks. Landmarks are another type of point-reference, but in this case the observer does not enter within them, they are external” (Lynch K., 1960, P. 47-48).



Map 6. *Lynch Map of Main city of Huanggang*

The lynch map might give us a more direct impression of the main city of Huanggang. Based on the current land use situation and the Kevin lynch method, the four main elements are illustrated:

Landmark: There are three landmarks in the area. One is the recreational park, Chi bi park, which is named after the verse “Chi bi fu”. Apart from natural parts, the historic site was kept in the park in memory of the famous poet and his story. The other is Huanggang senior middle school. The third landmark is Yi ai Hu park, the newly finished big recreational area appreciated by lots of citizens.

Nodes: Most of the nodes are the junctions or intersections of the main streets.

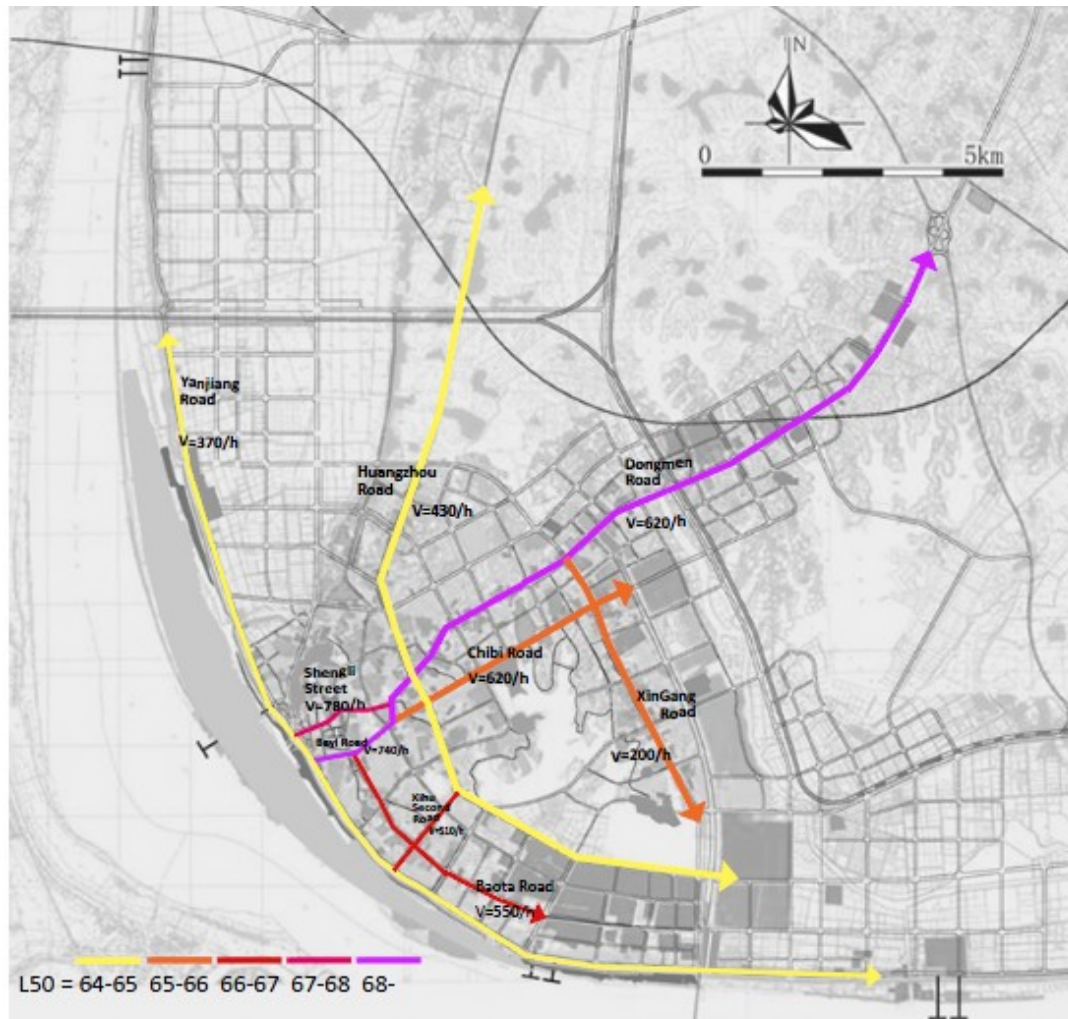
Path: Paths in Huanggang has several levels. Here main path and secondary path are marked in the map, which connects the whole area.

Districts: There are five main districts according to the mental map:

- ✓ Industrial district: Contribute to the economy while attribute to pollution at the same time.
- ✓ Recreational district: Mainly the large recreational areas, public green areas etc.
- ✓ Riverbank district: The area along the Yangtze river beneficial to the ecology while without good management.
- ✓ New & Commercial district: The city sprawls to the north-eastern direction with the development, so a new square has been built, and other commercial opportunity follows.
- ✓ Dwelling & Administrative & Culture district: Since the city derives from this district, main culture sites locate here. Dwelling areas and administrative areas interweave together in the district as well.

5.4 Vehicles and Noise

28 metrical spots have been set to measure the traffic noise. The statistics of nine roads are illustrated in the map (Map 7) below. The formula $L_{50}=X$ means the sound exceeds the value of X during 50% of the measured time. For example, the value of Huangzhou Road is 64.2 decibel, then half of the measured time, the sound of Huangzhou Road exceeds 64.2 decibel. Hence the higher the value of X the more noisy is the spot.



Map 7. *Vehicles and Noise*, drawn by author, according to environmental noise monitoring report provided by Bureau of Urban Planning of Huanggang Municipality (2008).

$L_{50}=X$ (decibel), which means the sound exceeds the value of X during 50% of the measured time. $V=Vehicle$ $h=hour$

The level of noise has a direct proportion with the number of vehicle per hour and the width of the street. Most of the roads have a width of 24 meters except Bayi Road (18 meters) and Shengli Street (12 meters). The interesting thing is, it is those two narrower roads that have a comparative high noise level (68.4 and 67.8). According to National Environmental quality standard for noise (China. Ministry of Environmental Protection, General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China, 2008) in China, the statistics of those spots meet the related requirements.

6 The Analysis

The total size of the entire green space of the area is 1205.82 hectare, representing only 2.4% of the whole area. And these isolated green areas scatter in the area, failing to contribute to ecological system.

In this part, Standard for Classification of Urban Green Space in China will be implemented first to analyze the green space of the area, which would give a general idea about the current situation of the green space in the area. Then the analysis on the questionnaire will be conducted to understand how do normal citizen of Huanggang city percept and expect to urban green space in the area. At last, The Eight Characteristics of Sweden will be applied to analyze green space of the area from different perspectives.

6.1 The Chinese classification and analysis on green space of the area

The research on classification of urban green space in China was affected deeply by the style of Soviet Union in the 1970s (Chen and Hu, 2010). The national accepted norms were not formed and the discussion and debates continues with the development of society and economy of the country. Till early 21 century, national Standard for Urban Green Space (China. Ministry of Construction of People's Republic of China, 2002) was put forwarded and it was approved to implement since 1st, September, 2002.

There are five main classifications according to the Standard and each of them has sub-category (see Appendix). The five classifications of urban green space are:

1. Public Park

Open to public, recreation as the main function, with ecological, aesthetic and disaster prevention function.

2. Nursery

Those green lands with productively effect, providing seeds or plantlet for urban greening.

3. Green Buffer

The function of this type of green space is for ecological protection

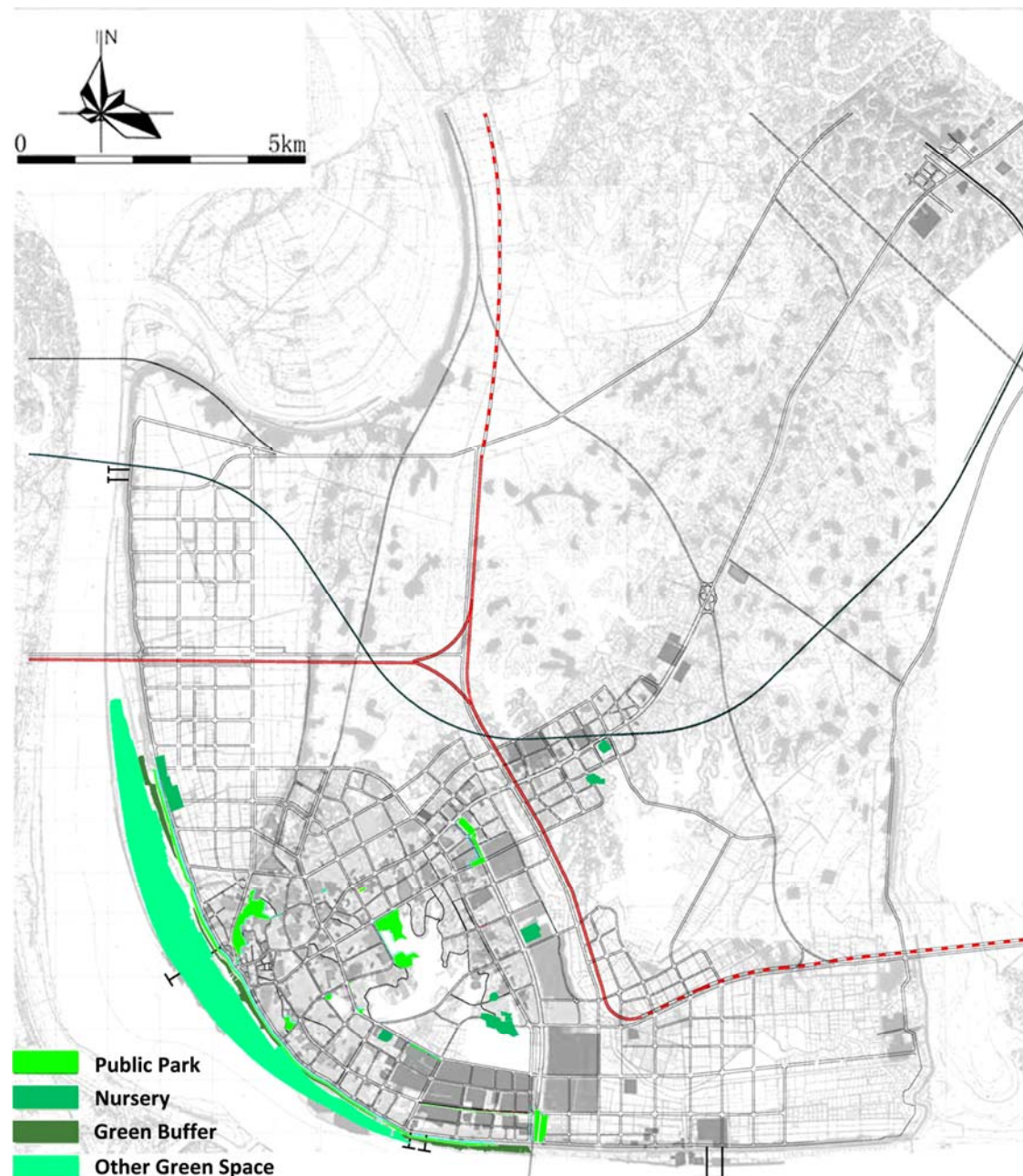
4. Attached Green Space

Include those green space attached to dwelling areas, companies, roads, etc.

5. Other Green Space

Undeveloped or Developing green space with potential value, such as wetland, resumed green areas of landfill etc.

The classification of urban green space has been illustrated in the map below except the “Attached Green Space” since the size of this category of green space is usually too tiny to be recognized from the map at the scale. The analysis will be given for each classification accordingly.



Map 8. Green space classification of main city in Huanggang according to Chinese national standard

6.1.1 Public Park

Table 2. *The current situation of the category of Public Park*

No.	Name	Size (Ha)
1	Dong Po Chi Bi	36.2
2	Dong Fang Square	10.2
3	Yi Ai Hu	105
4	Bao Ta Park	3.0
5	Qi Xia Garden	0.5
6	Qing Zhuan Hu Square	1.03
7	Jing Pin Di	16.8
8	Qi Yi Da Ba	0.3
9	Da Qiao Park	11.3
10	Jing Xiao (Dong Po Road)	0.68
11	Shi Wei Dang Xiao	0.15
12	Shi Di Shui Ju (Huang Zhou Road)	0.1
13	Bao Ta Road Westside	1.51
14	Huang Zhou Road	2.04
15	Huang Zhou Road Waterside	0.76
16	Qing Zhuan Hu Road	2.83
17	Xin Gang Road	2.83
18	Ming Zhu Road	8.33
19	Other Green Area	5.94
Sum up	/	209.36



Map 9. *Main sites of the category of Public Park in the area*

It is not difficult to find problems of the category of Public Park in the area:

1. The size of the total category of Public Park is 209.36 hectare, which is only 0.42% of the entire area. While according to the classification, although other categories of green space take up some portion as well, Public Park is almost the only category aiming at recreational function for citizens.
2. The two big public parks, Dong po chi bi and Yi ai hu, have the total size of 141.2 hectare, accounting for 85% of the whole public park. While the other public parks with a comparative small size neither have enough amounts nor distribute evenly. Especially the culture districts of the area, which is also the place most administrative and dwelling area locates, there is a big need of small size public parks with different styles.
3. The diversity of vegetation in the category of Public Park is far from enough (See picture 1), especially local species. According to our investigation, the number of the main vegetation applied in the category of Public Park is 48 species, and many of them are repeatedly utilized in different parks. Only one third of those species are local vegetation, which means it will cost more to introduce and acclimatize, and it is a waste of the local resource.



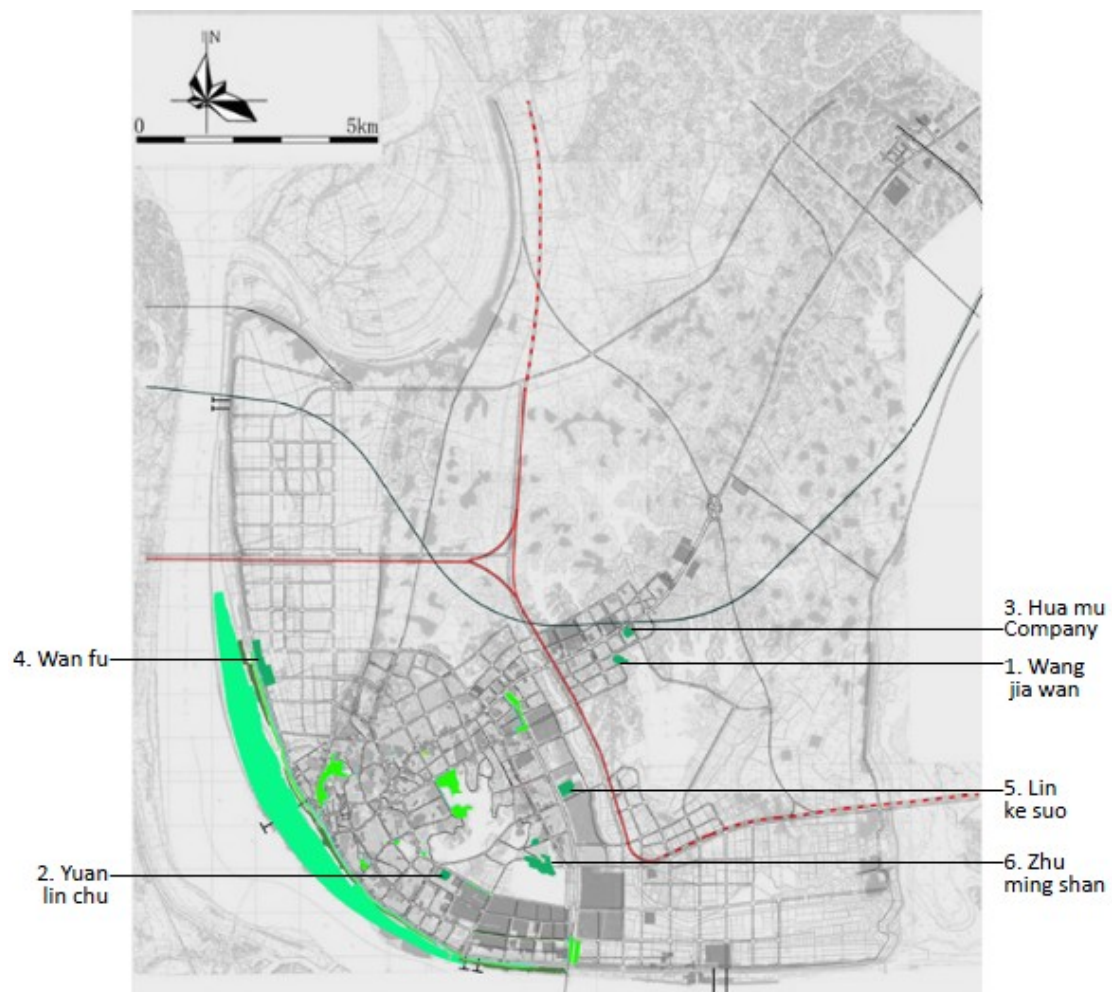
Picture 1. *Qi Xia Garden, an example to show the lack of diversity in the category of Public Park*



Picture 2. *Qing nian Square, an example to show that the category of Public Park provides recreational function to citizens*

6.1.2 Nursery

The category of Nursery is those green lands with productively effect, providing seeds or plantlet for urban greening. From this perspective, the category of Nursery is of both ecological value and economic function.



Map 10. *Distribution of the category of Nursery in the area*

The natural resource is rather abundant in Huanggang city, which is as much as 1792 species (Planning of Plant Diversity Protection and Application in Huanggang city, 2010). However, most vegetation those nurseries plant are not native flora. Frankly speaking, the native species are the one most acclimatized to the local geography and climate, most representing local culture and most beneficial to the ecological system. Consequently, the application of native plants can easily diversify vegetation species in urban green areas, and decrease the cost of cultivation and management at the same time. What's more, the local feature could be formed owing to its uniqueness. Hence, it is the category of Nursery that should take the responsibility to introduce, produce and popularize those local wild nature resources with ornamental values.

Table 3. *Situation of the category of Nursery*

No.	Name	Size (hectare)
1	Wang jia wan	5.33
2	Yuan lin chu	2.5
3	Hua mu Company	5.33
4	Wan fu	13.33
5	Lin ke suo	20.0
6	Zhu ming shan	10.0
Sum up	/	56.49

Another thing that should be paid attention is that most nurseries are not in good condition and management. For example, Zhu ming shan nursery occupies 10 hectares, while in fact, as the Picture 3 shows, only one small green house is being utilized. What's more, the average size of the current category of Nursery is not big enough to bring certain effects.



Picture 3. *Nursery of Zhu Ming shan, an example to show that most nurseries in the category of Nursery are not in good condition and management.*



Picture 4. *Nursery of Hua mu Company, an example to show a general situation of the category of Nursery in the main city of Huanggang*

6.1.3 Green Buffer

The function of this type of green space is mainly for ecological protection, such as purify the air, protect environment, etc. In the area green buffer is as large as 66.7 hectare, most of which are the green belts along Yangtze riverbank (Picture 5). While some shrubs and weeds start growing, and some living garbage pile there. What's worse, some garbage has been discharged into Yangtze River, resulting in rather bad effects on ecological system.

For the current situation, the category of Green Buffer is lacked and in great need between industrial districts and dwelling districts. If we look at the land use map of the area, it seems the area is surrounded by the outer industrial districts. Since the frequent wind direction is from south east, and there is no buffer zone or barrier in between, the industrial districts is bound to have a direct negative impact on the inner city areas.



Picture 5. *Situation of green belts along Yangtze riverbank, the main site of the category of Green Buffer in the main city of Huanggang*

6.1.4 Attached Green Space

The category of Attached Green Space is those green spaces attached to road, dwelling communities, offices and organizations etc. In the main city of Huanggang, the category of Attached Green Spaces are usually of small sizes, around 1.2 hectares average, especially those attached to dwelling communities, while they still contribute a lot to the entire green structure of the area.

Deciduous tree is not very popular in the category of Attached Green Space of the area. Actually, the category of Attached Green Space is the closest category to human being's daily life, and application of too much evergreen will prevents sunshine in winter, thus affecting the living quality of human beings.



Picture 6. *Green space attached to school, an example to show the general situation of one sub-category of the category of Attached Green Space. The picture shows the main problem of the category of Attached Green Space: Deciduous tree is not very popular*



Picture 7. *Green space attached to road, an example to show the general situation of one sub-category of the category of Attached Green Space*

6.1.5 Other Green Space

The category of Other Green Space indicates the undeveloped or developing green space with potential value, such as wetland, resumed green areas of landfill etc. The category of Other Green Space of the main city of Huanggang is mainly the green belt along Yangtze River. The planning and management of this category of green space need to be improved (Picture 8).



Picture 8. *Green belt along Yangtze River, an example to show the situation of the category of Other Green Space: weeds are growing freely, paths are rough and muddy, the planning of the category of Other Green Space lacks management.*

6.2 Analysis on questionnaire

6.2.1 Introduction to the questionnaire

In order to understand what are the perception and expectations of citizens in Huanggang to their outdoor environment, a questionnaire was conducted via Internet from January 21st, 2012 to March 15th, 2012. The survey is anonymous and voluntary. The target group is mainly normal citizens of Huanggang city, while respondents from other cities are not excluded, especially those who have been there before. The link to the open questionnaire is <http://www.sojump.com/jq/1247846.aspx>. Since the language is Chinese, an English version of the questionnaire was translated by me and attached in the appendix. Through the investigation, 148 completed or partly completed questionnaires, which were answered by random Internet users, were attained from the website and all of them are valid. Among these 148 respondents, 30 come from the main city of Huanggang and 106 are from other towns of Huanggang city. The rest 12 people represent opinions of other cities in China.



Image 2. Screen print from the website of online investigation

6.2.2 Structure of the questionnaire

The questionnaire consists of 11 questions and three categories of focus. The first category is about the personal data of the respondents, such as gender, age and profession. Then the focus reaches their perception to the situation of the green space in their surroundings. Questions of the third category wonder the ideal green area and the corresponding qualities in their mind, i.e their expectation and needs of the outdoor green space, which would be important for the introduction of The Eight Characteristics in Chinese cities.

6.2.3 Analysis on the answers from questionnaire

Gender and age:

In the investigation, 81 respondents are males, the other 67 are female. As the diagram (Diagram 3) shows, the age of the respondents covers from 18 to 65, most of whom is between 18 and 25, which is the youngest group. The group of the oldest age is 56-65 years and only one person is in this age group.

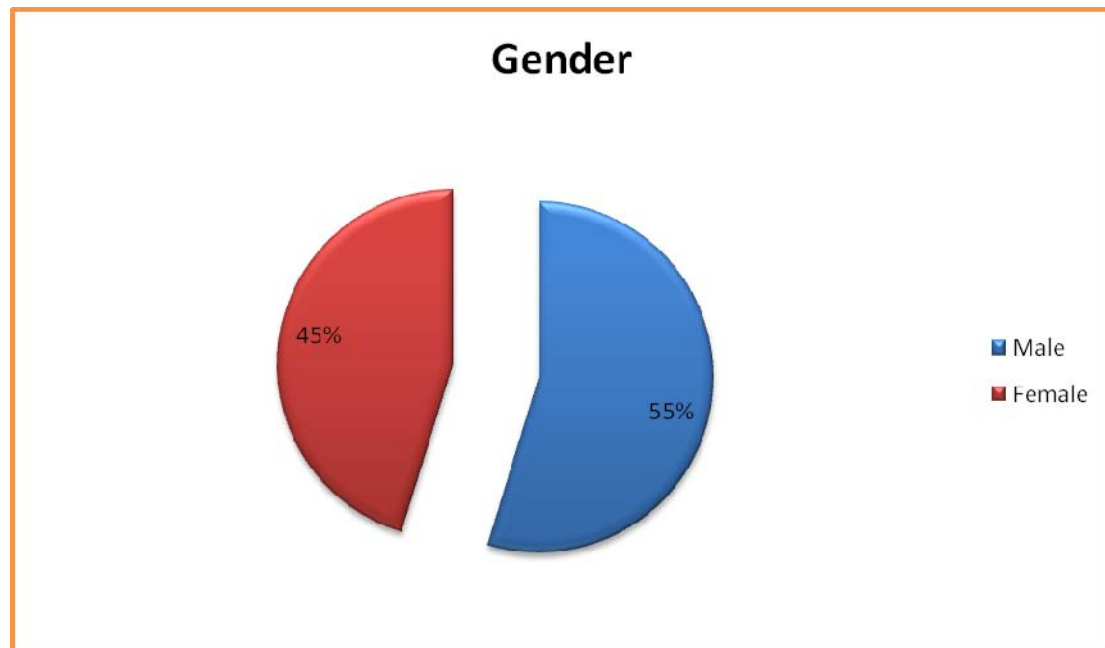


Diagram 2. Gender

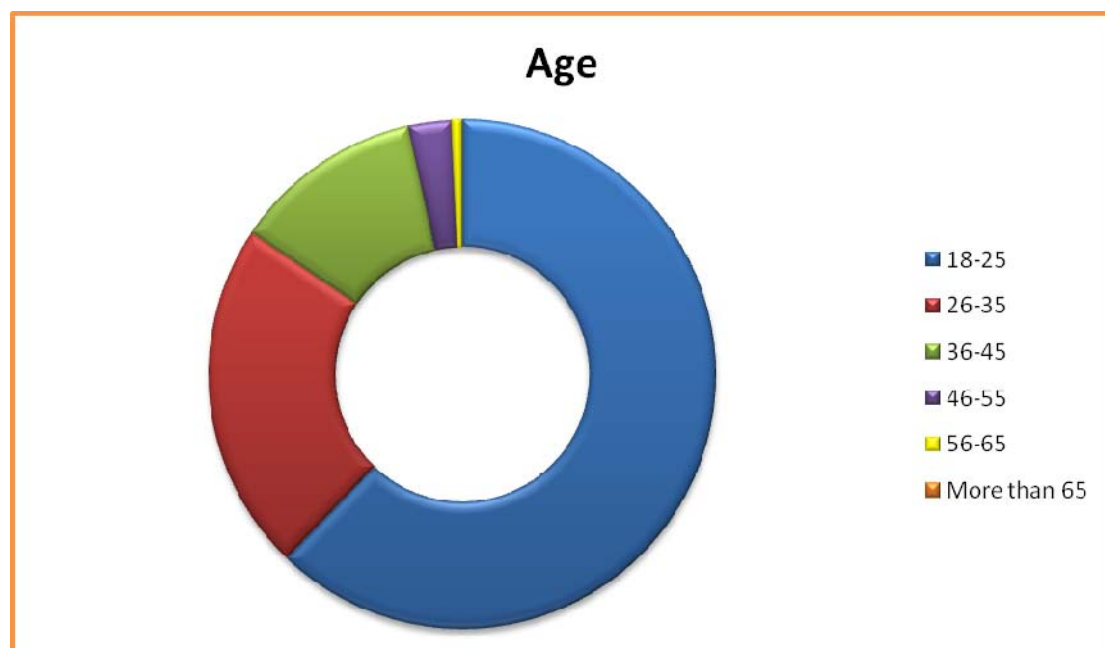


Diagram 3. Age

Table 4. *Number and percentage of different age periods*

Age period	Number	Percentage
18-25	92	62.16%
26-35	33	22.3%
36-45	18	12.16%
46-55	4	2.7%
56-65	1	0.68%
More than 65	0	0%

Where the respondents come from and their professions

The number of respondents from the main city of Huanggang is 30, and most respondents (106 persons) are from other towns of Huanggang. There are 12 people from other city in China who have answered the questionnaire as well. According to their answers, most of them have been to the main city of Huanggang city and have their opinions on the area, so we assume that their answers are contributory to the investigation as well.

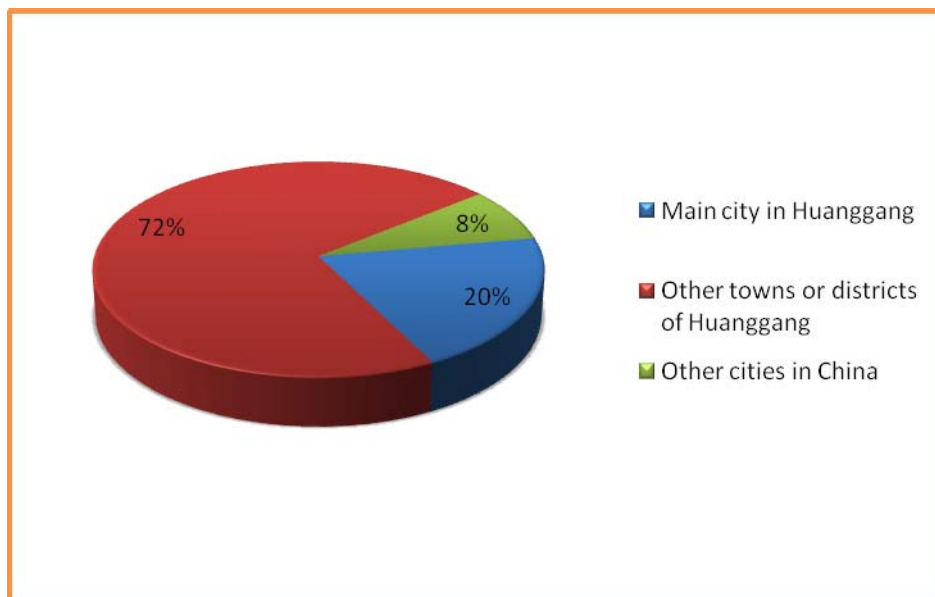


Diagram 4. *Where the respondents come from*

As to the question of career field, respondents were asked if they are working at Landscape/Greening/Planning or not. The object is to see if people from these relevant fields answer differently as a result of their working character, or both them and other people not from those relevant field have the same perception and expectation to the green space in their surroundings. Only 9 people from Landscape/Greening/Planning field took part in the investigation. The cross analysis will be given later.

Is there any green area close to their home or working place

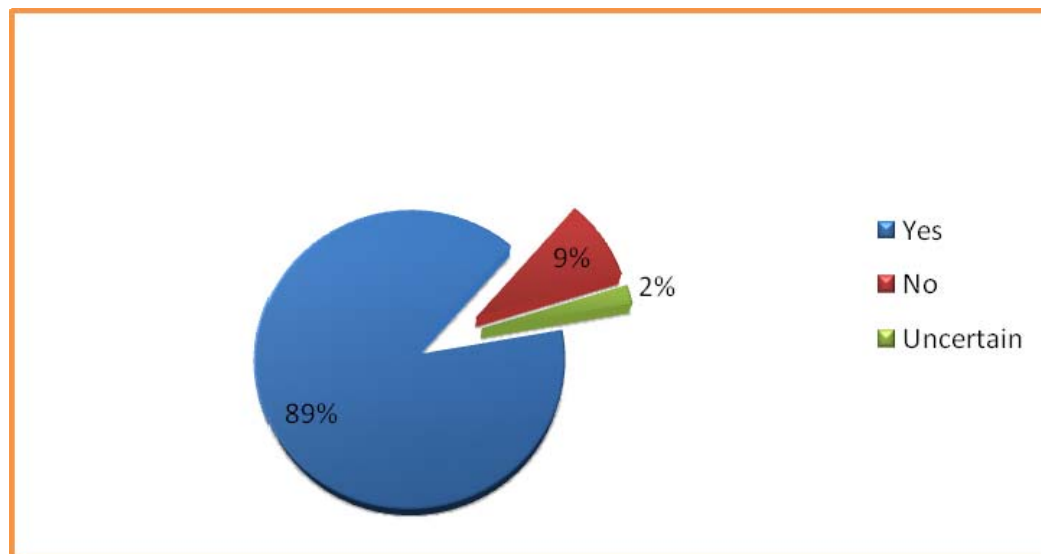


Diagram 5. *Is there any green area close to their home or working place*

The question was set to be a buffer from those about personal data to the topic issue and I thought nobody will answer negatively to this question, while surprisingly, the positive answer only attained from 132 respondents. Those who answered “No” or “Uncertain” are farmers (refer to the profession question), who are mainly surrounded by farmland everyday. They might be uncertain that if agricultural lands belong to green area or not.

What type of green areas exist in their surroundings

In the investigation, respondents were asked to choose as much as they think is the type of green areas in their surroundings. The options were revised and set down by the author, basing on the current Chinese National Standard for Urban Green Space (China. Ministry of Construction of People’s Republic of China, 2002). Respondents were also encouraged to supplement the provided options.

According to the questionnaire result (Table 5), Roadside green space ranks the highest among all the options, winning 115 votes. Green space attached to urban road and Public Park take up the second and the third place. Green space attached to dwelling areas and companies is after them. The least choice is Other green areas, such as wetland, resumed green areas of landfill etc. Only 23 people chose it as the type of green areas in their surroundings. There are 8 respondents writing “farmland”, “natural green area” or “country natural area” as the complement to the option.

Table 5. *Type of green areas existing in the surroundings*

Type of green areas	N	Percentage
Public Park —Open to public, recreation as the main function, with ecological, aesthetic and disaster prevention function.	90	60.81%
Roadside green space —Individual green area along but outside the urban roads.	115	77.70%
Nursery —Provide seeds or plantlet for urban greening.	41	27.70%
Green Buffer — The function of the green space is for ecological protection.	53	35.81%
Green space attached to urban road —Green areas inside road, including street trees, green barrier in the middle of the road for separation etc.	94	63.51%
Attached green areas —Green space attached to dwelling areas or companies.	69	46.62%
Other green areas —Such as wetland, resumed green areas of landfill etc.	23	15.54%
Other, please specify	8	5.41%

Most relevant quality to outdoor green areas they usually go to

In this question, respondents were asked to choose as much as they think is the quality relevant to the outdoor green areas they usually go. The options were based on The Eight Characteristics. Some small adjustments were made, such as “Spacious....like a bamboo forest”. Because the original word “beech”, that species is not as common and familiar as bamboo to normal citizens in China. Respondents were also encouraged to supplement the provided options.

According to the result (Table 6), the outdoor green areas most visited with the characteristic of *Serene* and *The common*, win 94 and 93 votes among the entire 146 respondents. The qualities which rank the last are *Lush* and *Culture*, chosen only by 25 and 27 respondents as qualities of outdoor green areas they usually go to.

Table 6. *Qualities of outdoor green areas they usually go to*

Qualities of outdoor green areas they usually go to	N	Percentage
Serene -- A place of peace, silence and care. Sounds of wind, water, birds and insects. No rubbish, no weeds, no disturbing people.	94	63.51%
Wild -- A place of fascination with wild nature. Plants seem self-sown. Lichen and moss-grown rocks, old paths.	50	33.78%
Lush -- A place rich in species. A room offering a variety of wild species of animals and plants.	25	16.89%
Spacious -- A room offering a restful feeling of “entering another world”, a coherent whole, like a bamboo forest.	57	38.51%
The Common -- A green open place allowing vistas and stays.	93	62.84%
The Pleasure garden --A place of imagination. An enclosed, safe and secluded place where you can relax and be yourself, let your children play freely.	67	45.27%
Festive/centre -- A meeting place for festivity and pleasure.	62	41.89%
Culture -- The essence of human culture: A historical place offering fascination with the course of time.	27	18.24%
Other	0	0%

Description of the ideal green area

In the question, respondents were asked to describe the ideal green area in their minds and the psychological feeling to them. 103 respondents have answered this question and those answers were collected and interpreted. Some key words, which were repeated frequently among those answers, have been classified and concluded as follows (the most frequented is placed in the first):

1. Serene, Comfort, Relaxation, without any stress N=76
2. Nature, Country, Rustic N=32
3. Vast and Open grassland, sunshine in winter and shade in summer N=27
4. Neatness, without pollution, good air quality N=23
5. Public Park/Garden N=11

Some quotation (translated):

“Quiet, sounds of birds and insects, plants grow freely. Fresh air. Such kind of green area brings me into another world where I can totally relax myself”.

“Pure nature, without any artificial or man-made decorations”.

“My ideal green areas are like the sweet home. After working hard exhaustedly, people can find their psychological perception of belongings and relaxations”.

“Quiet and peaceful nature reserve with hills and water, birds and insects. The infinite proximity to nature will exclude stress and bring me the pure goodness of life”.

“Open and vast grassland, where people can lie and bask.”

“Open grassland people can enter freely. Shade would be provided by big trees in summer and sunshine will come in winter”.

Outdoor green qualities they would like to have

In this question, respondents were asked to describe the most important type of green areas they would like to have, by choosing qualities they find most relevant from the options, which were based on The Eight Characteristic. And they can choose only four qualities (no more, no less).

Apparently, the most popular type of green area they would like to have, has the character of *Serene*, which is supported by 120 respondents (See Table 7). *The Pleasure Garden* ranks the second place, winning 100 votes among 146 respondents. The third and the fourth are *Spacious* and *Wild*. The one ranks last is *Culture*, chosen as important quality by only 29 persons.

If we compare “Most relevant qualities of outdoor green areas they usually go” and “Quality relevant to the most important type of green area they would like to have”, we could find that in both the questions, the characteristic of *Serene* ranks the first place, while *Lush* and *Culture* are placed in the end. 81 persons regard *Wild* as the important quality that green areas should have, while only 50 of the respondents usually go to areas with the quality of *Wild*, indicating the inaccessibility and the need of it for citizens of Huanggang city.

Table 7. *Outdoor green qualities they would like to have*

Qualities relevant to the most important outdoor green areas they would like to have	N	Percentage
Serene -- A place of peace, silence and care. Sounds of wind, water, birds and insects. No rubbish, no weeds, no disturbing people.	120	81.08%
Wild -- A place of fascination with wild nature. Plants seem self-sown. Lichen and moss-grown rocks, old paths.	81	54.73%
Lush -- A place rich in species. A room offering a variety of wild species of animals and plants.	43	29.05%
Spacious -- A room offering a restful feeling of “entering another world”, a coherent whole, like a bamboo forest.	89	60.14%
The Common -- A green open place allowing vistas and stays.	59	39.86%
The Pleasure garden --A place of imagination. An enclosed, safe and secluded place where you can relax and be yourself, let your children play freely.	100	67.57%
Festive/centre -- A meeting place for festivity and pleasure.	44	29.73%
Culture -- The essence of human culture: A historical place offering fascination with the course of time.	29	19.59%
Other	1	0.68%

The positive aspects of the outdoor green area in the main city of Huanggang

The question is not mandatory and only those who are living in the main city of Huanggang or have been there were expected to give their opinions. There are 45 respondents providing their considerations about the good points of the outdoor green area in the main city of Huanggang. And most of these answers are similar in two categories. One is the good impression of two public parks. Yi ai hu Park, of which they think the vast lake and the landscape are attractive; Chi bi Park has good reputation for the ancient culture, heritage preservation and thick vegetation. The other comes from the the improvement on Roadside green space.

Quotations (translated):

“The preservation of natural hill (Long Wang hill) increases the vegetation diversity in Chi bi Park. It is the advantage of the area”.

“The mutual interaction between vegetation and the vast lake in Yi ai hu Park is rather pleasant. The park is beneficial for citizens in a city like Huanggang, which lacks big recreational green area”.

“The development of economy brings improvement of green areas, especially green space along the road.”

The improvements of the outdoor green area expected in the main city of Huanggang

The question is not mandatory and only those who are living in the main city of Huanggang or have been there were expected to give their opinions. The expected improvements on the outdoor green area in the main city of Huanggang are collected from 46 respondents who gave their suggestions in the questionnaire. These expectation and suggestions are mainly from 3 aspects. The most severe problem pointed out is the limited size of the green area. “Too little green areas” were complained frequently. The second is about vegetation design. Certain species are applied repeatedly and the type is simple and boring. The third complaint comes from the mismanagement and unsanitary conditions of the green space.

Quotations (translated):

“When I take the bus No.5, the vegetation becomes less and most of the places are covered by dust”.

“I hope the green area would be expanded in the future, they are so small and scatted”.

“Vegetation in public areas is planted by people, but no one take care of them at all. The management is really bad. Plants are going dead or dirty with dusts”.

“The amount of Public Park is not enough, and the species in the park is not abundant either.”

6.2.4 Cross Analysis

Cross analysis were conducted based on the answers from the questionnaire. The aim is to compare answers to certain questions from different groups and have a further understanding about the situation of green areas in Huanggang city.

Gender

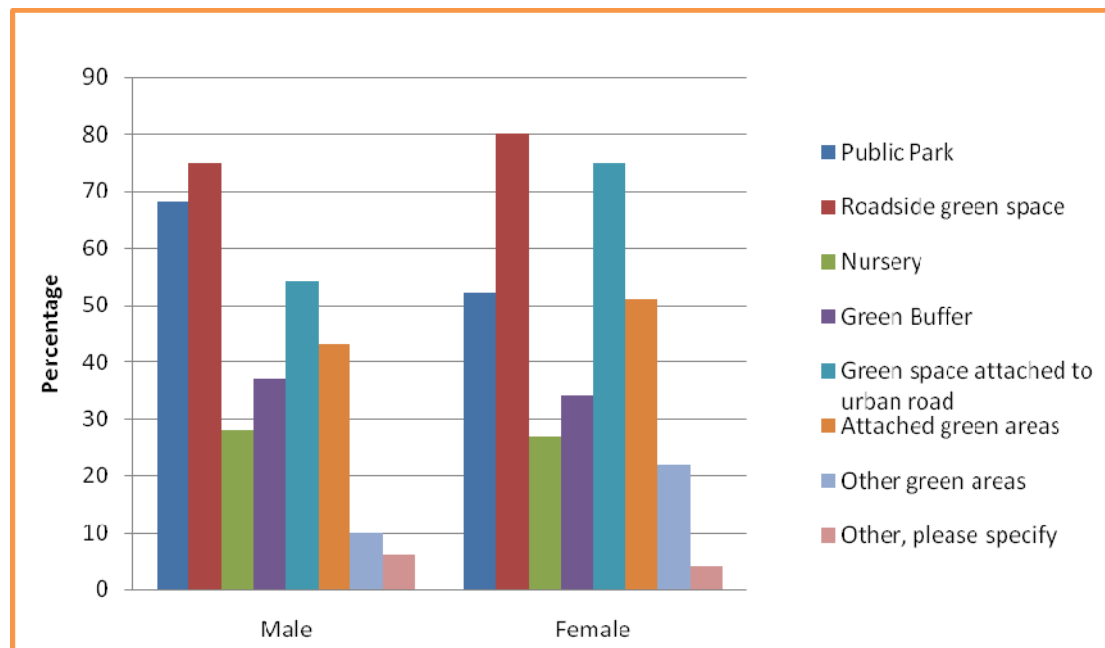


Diagram 6. *Percentage of gender and type of green area existing in the surroundings*

Table 8. *Number of different gender and type of green area existing in the surroundings*

	Public Park	Road-side green space	Nursery	Green Buffer	Green space attached to urban road	Attached green areas	Other green areas	Other, please specify
Male	55	61	23	30	44	35	8	5
Female	35	54	18	23	50	34	15	3

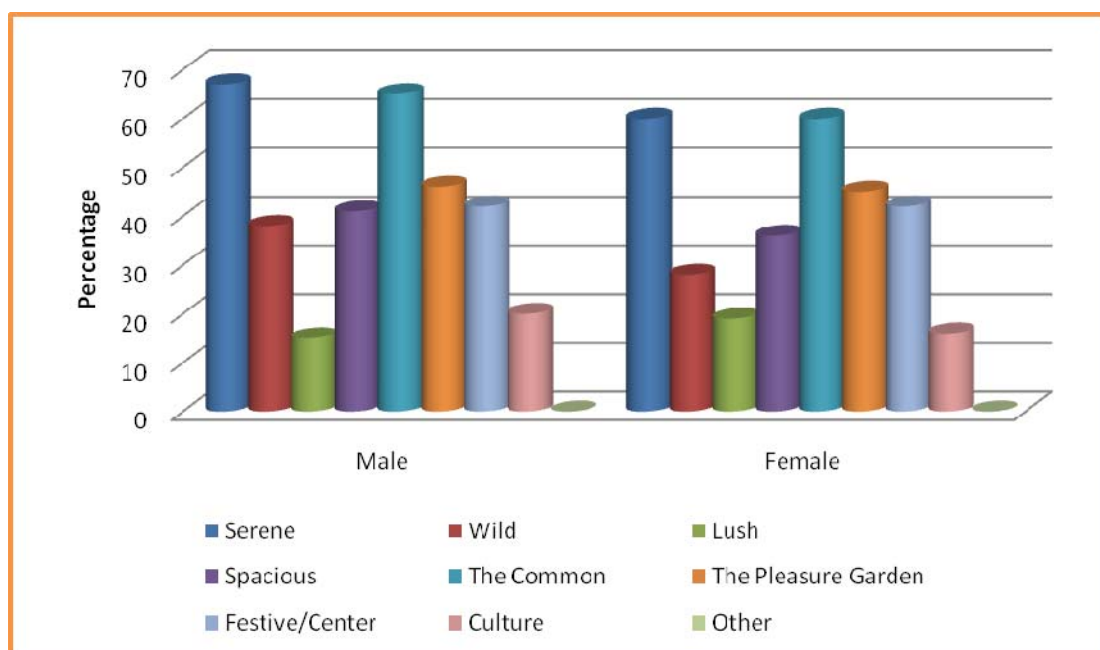


Diagram 7. Percentage of gender and the quality to outdoor green areas they usually go to

Table 9. Number of different gender and the quality to outdoor green areas they usually go to

	Serene	Wild	Lush	Spacious	The Common	The Pleasure Garden	Festive /Center	Culture	Other
Male	54	31	12	33	53	37	34	16	0
Female	40	19	13	24	40	30	28	11	0

According to the investigation, there is no big difference between male and female when they were asked about what type of green area exist in their surroundings (Diagram 6 and Table 8).

With regards to quality of outdoor green areas usually visited, the first four priorities of The Eight Characteristics are the same between different genders, which are: *Serene*, *The Common*, *The Pleasure Garden* and *Festive/Center*. *Wild* ranks fifth, which males favor more than females (Diagram 7 and Table 9).

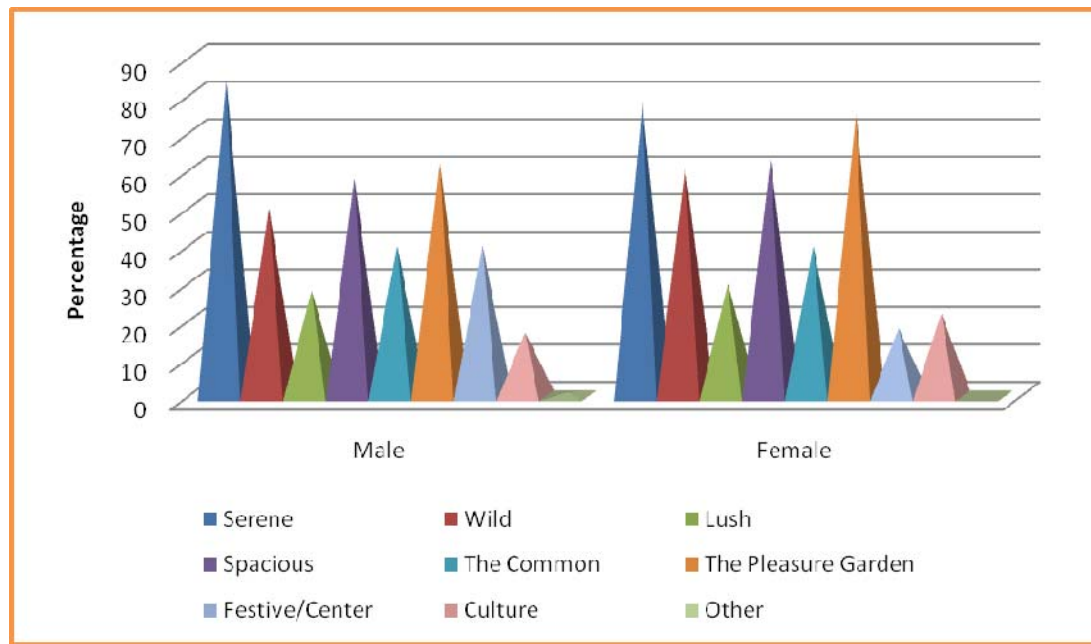


Diagram 8. Percentage of gender and green quality they would like to have

Table 10. Number of different gender and green quality they would like to have

	Serene	Wild	Lush	Spacious	The Common	The Pleasure Garden	Festive /Center	Culture	Other
Male	68	40	23	47	32	50	32	14	1
Female	52	41	20	42	27	50	12	15	0

As for the quality relevant to the most important type of green area they would like to have, the preference priority is still similar to each other (Diagram 8 and Table 10). Both of them consider *Serene* is the most important character for green areas, and the followings are *The Pleasure Garden*, *Spacious* and *Wild*. As to other qualities, interesting difference is the attitude to the character of *Festive/Center*. The ratio of males who think it is important is 39.51%, quite higher than that of Females (17.91%), which is out of my expectation, since it is well accepted that females enjoy chatting and meeting with acquaintances more than males. It could result from the function overlapping among The Eight Characteristics and most females assume *The Pleasure Garden* would be a better quality for festivity and pleasure. While it still needs more research for substantiation.

Age

Since no respondent is older than 65 years, and only one person is in the age group of 56-65, who can not stand for this age group, the analysis will focus on the first four age groups.

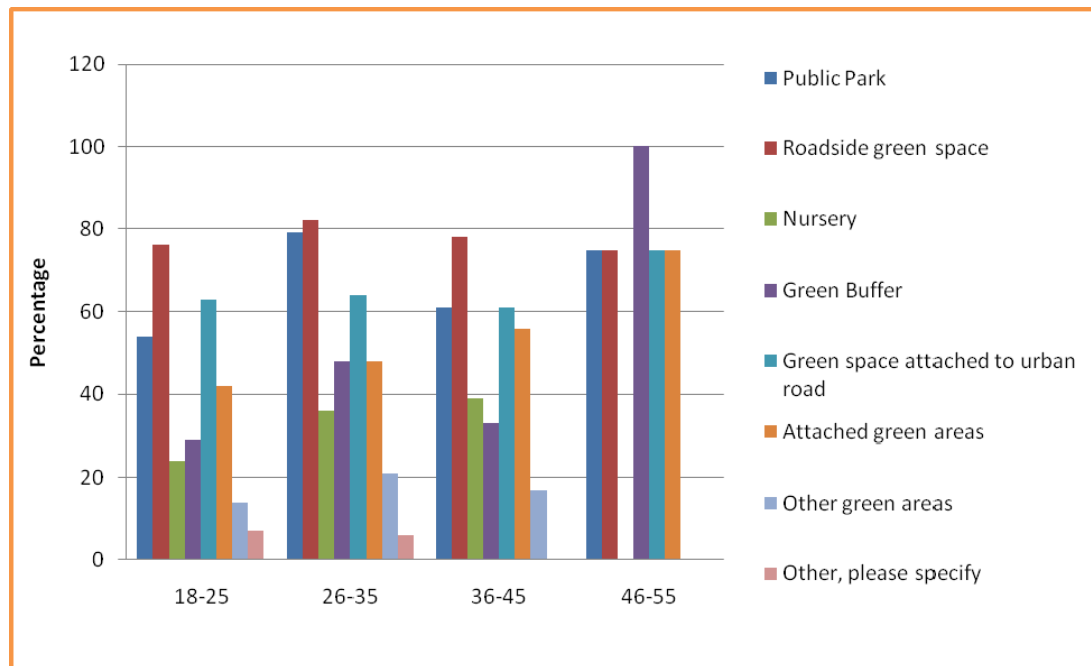


Diagram 9. *Percentage of age and type of green area existing in the surroundings*

Table 11. *Number of different age and type of green area existing in the surroundings*

	Public Park	Road- side green space	Nursery	Green Buffer	Green space attached to urban road	Attached green areas	Other green areas	Other, please specify	Sum up
18-25	50	70	22	26	58	39	13	6	92
26-35	26	27	12	16	21	16	7	2	33
36-45	11	14	7	6	11	10	3	0	18
46-55	3	3	0	4	3	3	0	0	4

According to the diagram (Diagram 9) and table (Table 11) above, we found the group with age of 46-56 is more sensitive to type of Green Buffer in the surroundings and pays less attention to Nursery and Other Green Areas than the younger groups.

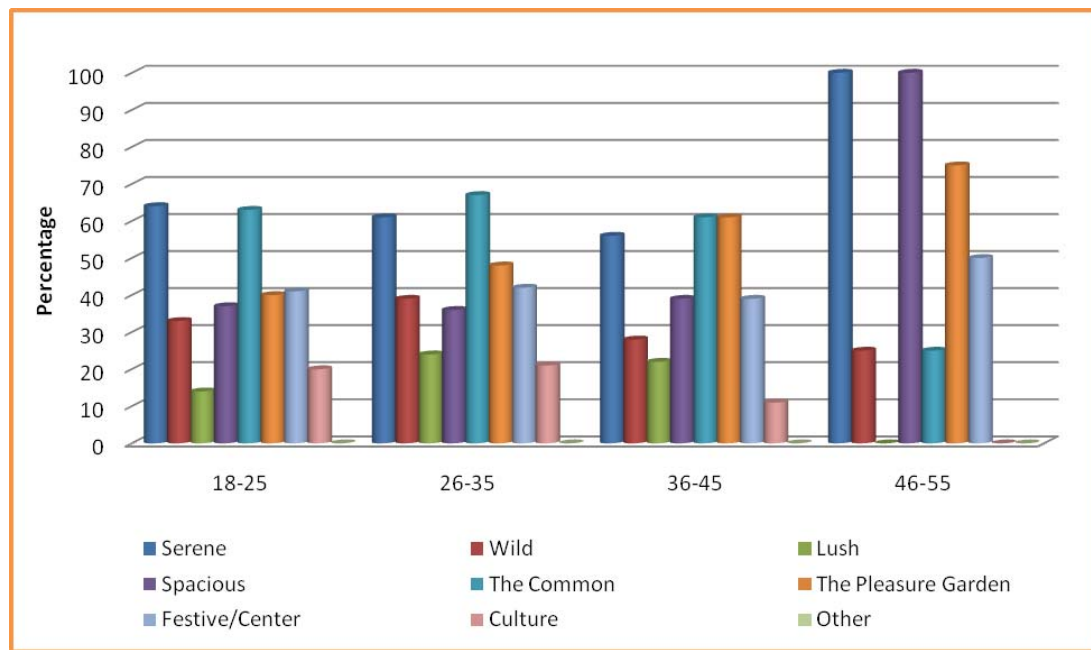


Diagram 10. Percentage of age and the quality of outdoor green areas they usually go to

Table 12. Number of different age and the quality of outdoor green areas they usually go to

	Serene	Wild	Lush	Spacious	The Common	The Pleasure Garden	Festive/Center	Culture	Other
18-25	59	30	13	34	58	37	38	18	0
26-35	20	13	8	12	22	16	14	7	0
36-45	10	5	4	7	11	11	7	2	0
46-55	4	1	0	4	1	3	2	0	0

With regard to age and the quality of outdoor green areas they usually go to, we found that *The Pleasure Garden* is paid more visits with the age increase (Diagram 10). And the respondents with age of 46-56 have a distinct preference to *Serene* and *Spacious*, but no interests in *Wild* and *Culture*.

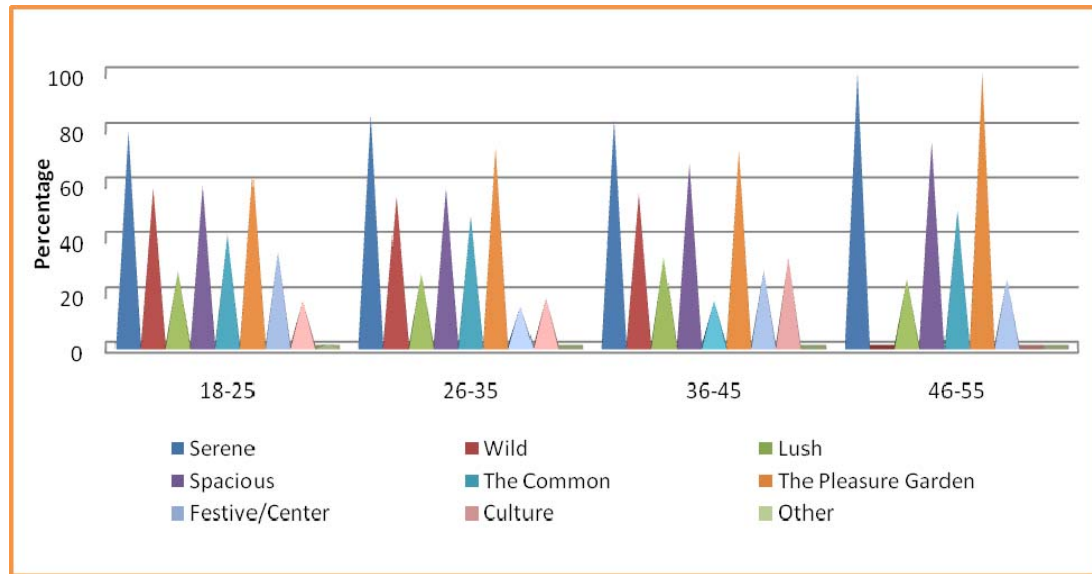


Diagram 11. *Percentage of age and green quality they would like to have*

Table 13. *Number of different age and green quality they would like to have*

	Serene	Wild	Lush	Spacious	The Common	The Pleasure Garden	Festive /Center	Culture	Other
18-25	73	53	26	54	38	58	32	17	1
26-35	28	18	9	19	16	24	5	6	0
36-45	15	10	6	12	3	13	5	6	0
46-55	4	0	1	3	2	4	1	0	0

Serene, The pleasure Garden and Spacious are the first three important qualities each age group think good green areas should have, especially the age group of 46-55, whose top 3 choices have an obvious inclining than other qualities. And nobody in the age between 46 and 55 years old chose *Wild* or *Culture* (Diagram 11 and Table 13).

Location of the respondents

It is quite interesting to compare people from different locations and their choices. What should be stated first is that the number of respondents outside city of Huanggang (N=12) may be too limited to value their answers as significant.

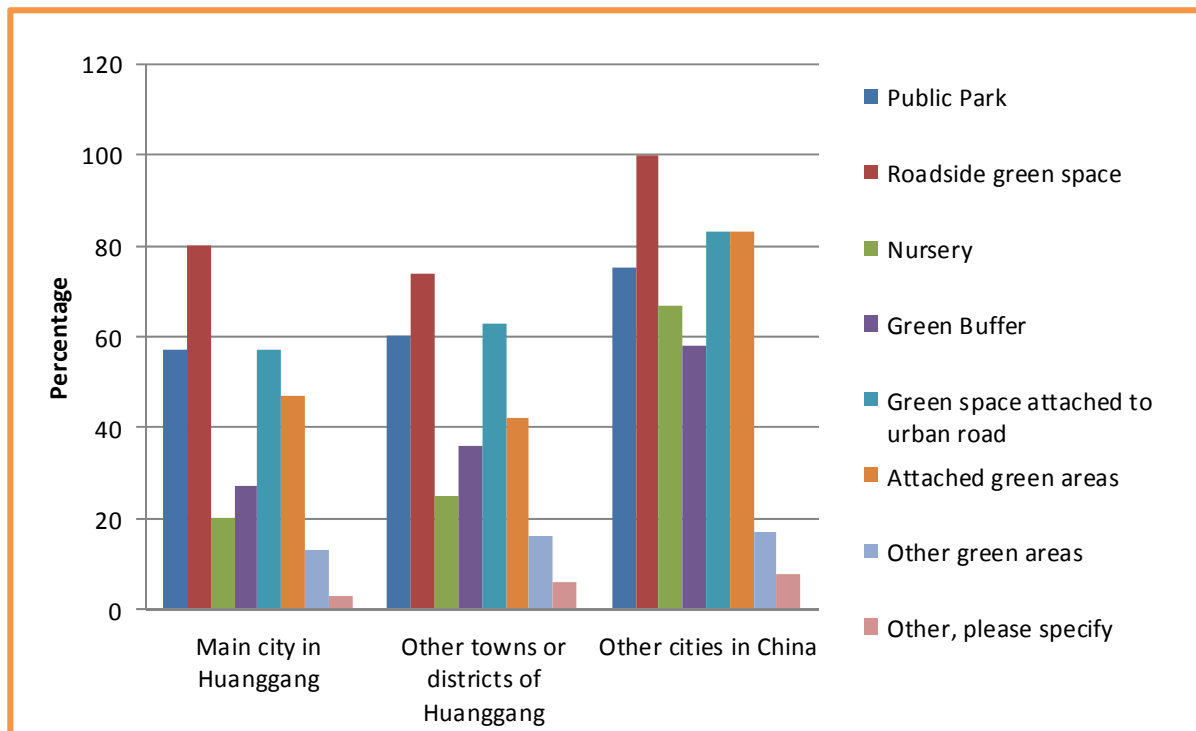


Diagram 12. *Percentage of different location and type of green area existing in the surroundings*

Table 14. *Number of Different location and type of green area in the surroundings*

	Public Park	Road-Side green space	Nursery	Green Buffer	Green space attached to urban road	Attached green areas	Other green areas	Other, please specify
Main city in Huanggang	17	24	6	8	17	14	4	1
Other Towns or districts of Huanggang	64	79	27	38	67	45	17	6
Other cities in China	9	12	8	7	10	10	2	1

From the histogram above (Diagram 12), Nursery, Green Buffer and Green Space Attached to Dwelling Areas or Companies, these three types of green area were less considered to be in the surroundings for citizens of Huanggang, compared with residents from other cities in China.

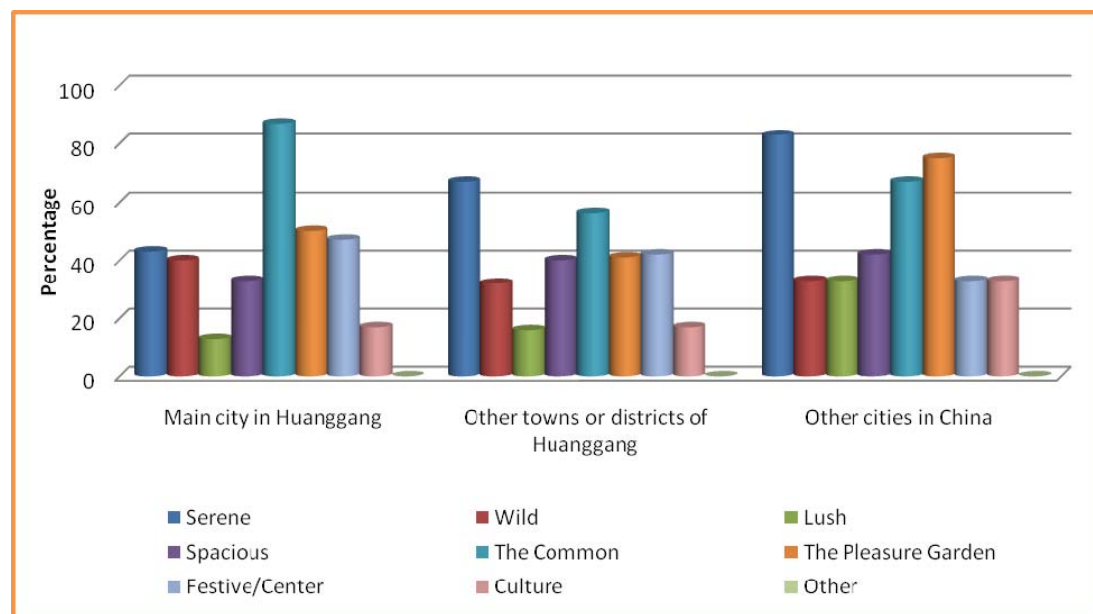


Diagram 13. Percentage of different location and quality of outdoor green areas they usually go to

Table 15. Number of different location and quality of outdoor green areas they usually go to

	Serene	Wild	Lush	Spacious	The Common	The Pleasure Garden	Festive/Center	Culture	Other
Main city in Huanggang	13	12	4	10	26	15	14	5	0
Other towns or districts of Huanggang	71	34	17	42	59	43	44	18	0
Other cities in China	10	4	4	5	8	9	4	4	0

The quality of outdoor green areas usually visited for citizens of main city in Huanggang is *The common*, which has an overwhelming ratio of 86.67%. For residents from other towns or districts of Huanggang city, their representative option are *Serene* and *The common* (Diagram 13).

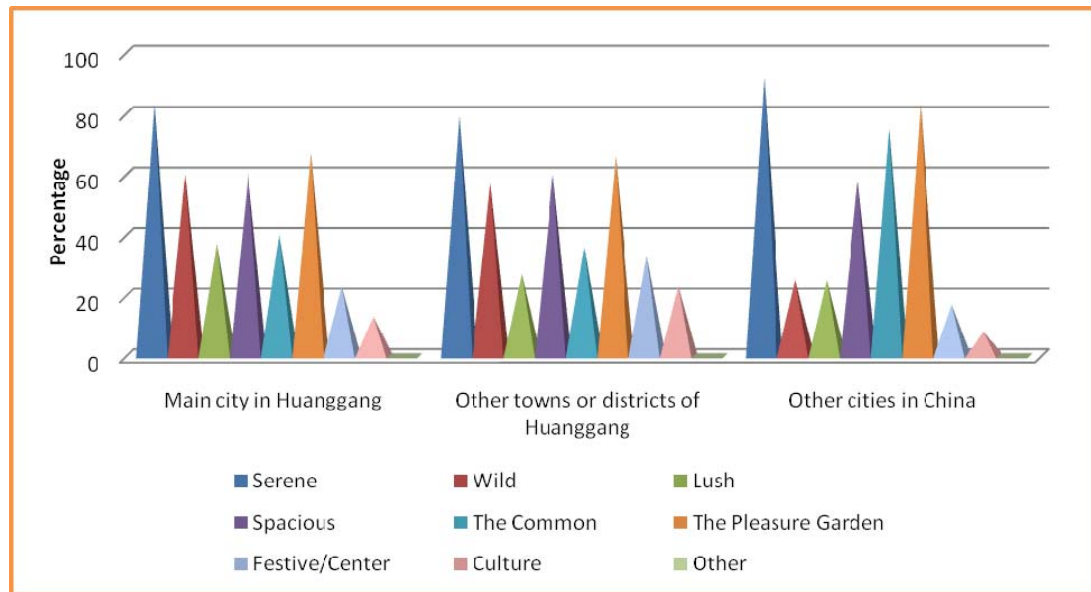


Diagram 14. *Percentage of different location and green quality they would like to have*

Table 16. *Number of different location and green quality they would like to have*

	Serene	Wild	Lush	Spacious	The Common	The Pleasure Garden	Festive /Center	Culture	Other
Main city in Huanggang	25	18	11	18	12	20	7	4	0
Other towns or districts of Huanggang	84	60	29	64	38	70	35	24	1
Other cities in China	11	3	3	7	9	10	2	1	0

With regards to quality relevant to the most important type of green area, the choice is similar in both the main city and other towns of Huanggang. If comparing the whole Huanggang city with other cities in China, we found citizens of Huanggang expect more on the characteristic of *Wild* (Diagram 14).

Profession

The comparison aims to see if people from relevant professional (Landscape/Greening/Planning) fields answer differently as a result of their working character, or both them and other people not from those relevant field have the same perception and expectation to the green space. Despite the fact only 9 respondents are professional some differences seem to be valid.

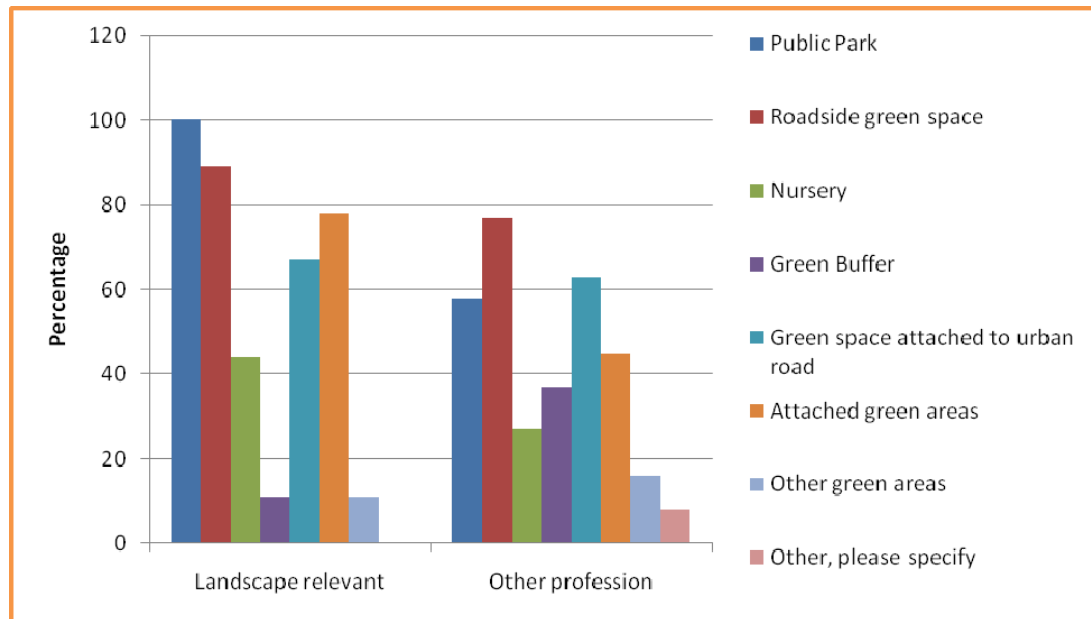


Diagram 15. *Percentage of different profession and type of green area existing in the surroundings*

Table 17. *Number of different profession and type of green area existing in the surroundings*

	Public Park	Road-side green space	Nursery	Green Buffer	Green space attached to urban road	Attached green areas	Other green areas	Other, please specify
Landscape relevant	9	8	4	1	6	7	1	0
Other profession	81	107	37	52	88	62	22	8

What people from landscape field think they have in the surroundings is convergent to the following four types: Public Park, Roadside Green Space, Green Space Attached to Dwelling Areas or Companies and Green Space Attached to Urban Road. While for people from other professions, there are fewer acknowledgements to Public Park and Green Space Attached to Dwelling Areas or Companies. Another difference is, it is highly possible that the professionals have more expectation or strict standard to Green Buffer since the portion of their choice is only 11.11%, which is lower than that of non-professional group (37.41%) (Diagram 15).

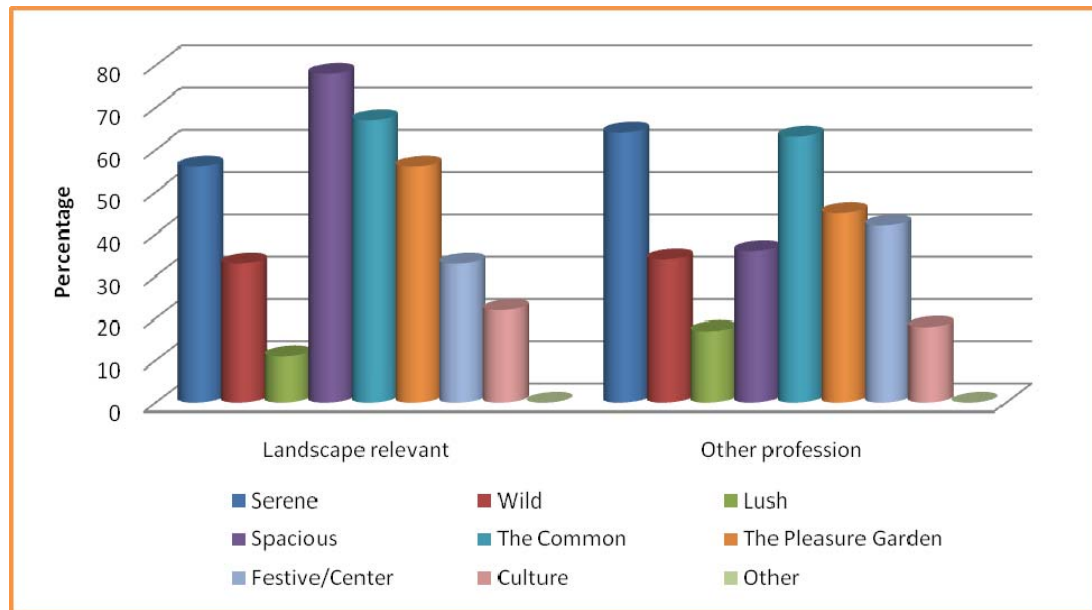


Diagram 16. *Percentage of different profession and quality of outdoor green areas they usually go to*

Table 18. *Number of different profession and quality of outdoor green areas they usually go to*

	Serene	Wild	Lush	Spacious	The Common	The Pleasure Garden	Festive /Center	Culture	Other
Landscape relevant	5	3	1	7	6	5	3	2	0
Other profession	89	47	24	50	87	62	59	25	0

The visiting preference of the most qualities of the eight is almost the same in both groups. Big contrast comes from the attitude to *Spacious*: The professionals (77.78%) have a distinct higher preference than non-professional group (35.97%).

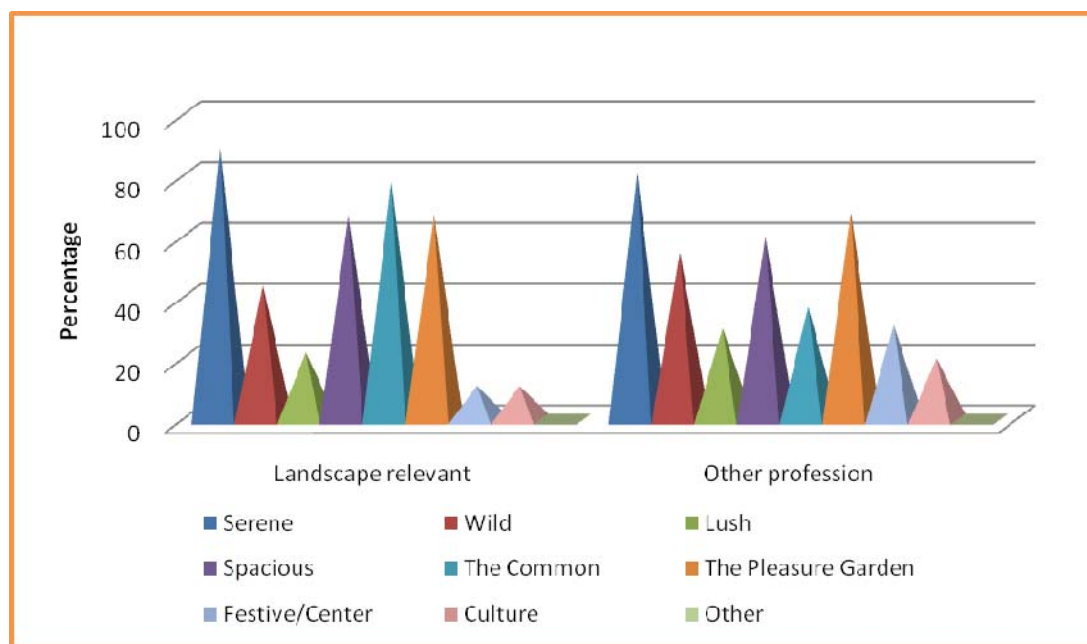


Diagram 17. Percentage of different profession and green quality they would like to have

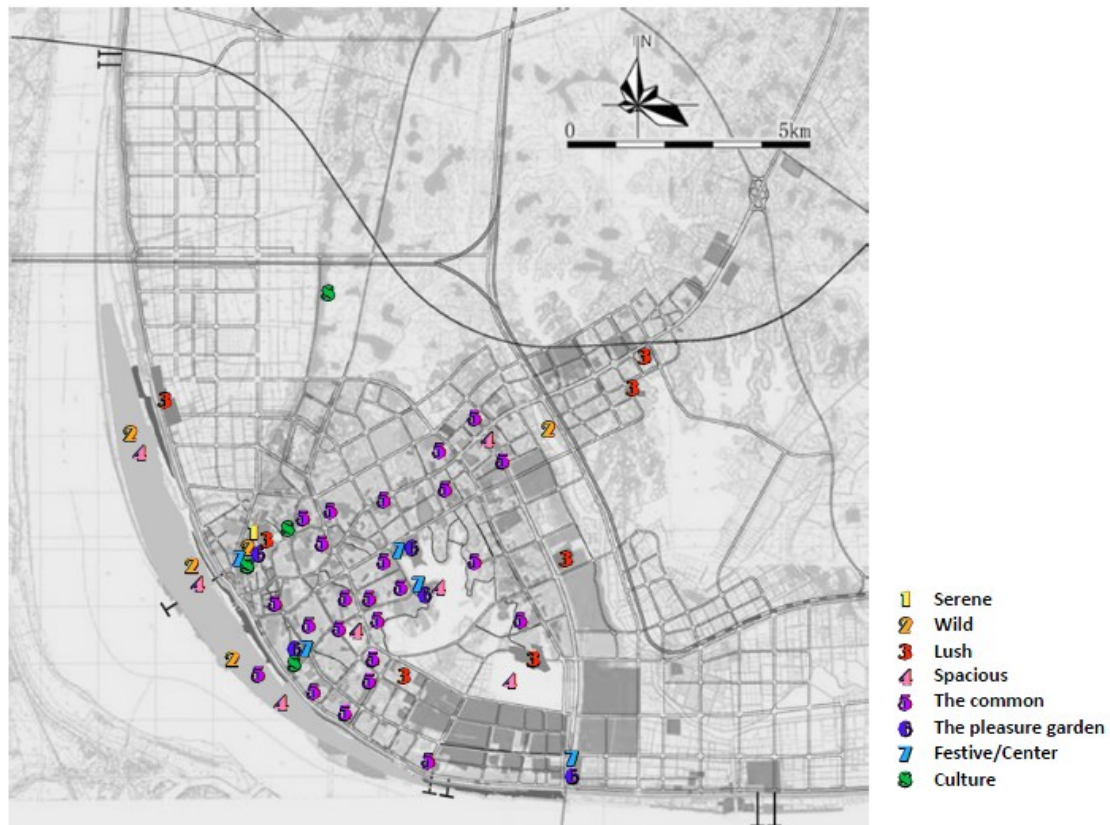
Table 19. Number of different profession and green quality they would like to have

	Serene	Wild	Lush	Spacious	The Common	The Pleasure Garden	Festive /Center	Culture	Other
Landscape relevant	8	4	2	6	7	6	1	1	0
Other profession	112	77	41	83	52	94	43	28	1

Both groups consider the characteristic of *Serene*, *The Pleasure Garden*, *Spacious* and *Wild* as important. The difference is the attitude to *The Common*, which in the professional group was placed in the second place with a rather high ratio of 77.78%, while it ranks the fifth (ratio: 37.41%) from non-professional field. What's more, more attention was paid to *Festive/Centre* by non-professional group.

6.3 The Eight Characteristics

All The Eight Characteristics have been marked on the basis of current situation of each green space in the area. What should be stated first is that the analysis in this part is strictly according to the definition and description of “The Eight Characteristics (Grahn et al. 2005)”.



Map 11. *Distribution of The Eight Characteristics in the area*

6.3.1 Serene

Situation

To be honest, it is not easy to find the characteristic of “*Serene*” in a normal Chinese city. In the main city of Huanggang, it lies only in Long wang hill, where Chi bi Park locates. Some parts of this park provide an atmosphere of quiet and peace (See picture 9). It matches the result from the investigation. Although 63.51% of respondents pay visits to green areas with *Serene*, most contributory amounts come from other towns of Huanggang, but not the main city.



Picture 9. Chibi Park, an example to show the situation of the character of *Serene*.

Size & Shape

The size of Chi bi Park is 36.2 hectare. According to the research result, when the green area is around 50 hectares, it will be more visited especially for the characteristic of *Serene* (Grahn, 2005). Although Chi bi Park occupies less than 50 hectares, we can still assume that the park has a high possibility to provide an intensive serene atmosphere, at least making a strong contrast to the downtown outside the park.

Accessibility

Apparently, the accessibility of *Serene* in the whole area is low since the limited number of green space with the character. With regards to the existing *Serene*, the accessibility is not that high if strictly comply with the threshold of “300 meters”. However, the tourism site and culture atmosphere of the park make it more interesting, so the accessibility prolongs to some extend. More over, the only hill of the area, Long wang hill, contributes a lot to the attraction of the park.

Effects

The number of places with the characteristic of *Serene* is not enough. As what has been discussed in previous parts, *Serene* is the most essential and popular quality people appreciate for outdoor green space. Hence, the effect is not positive for the present situation.

Consequence

The great appeals to *Serene* were raised in this investigation and this situation is not alone. In many studies, *Serene* is described as a highly important aspect of why people visit a park (Grahn and Stigsdotter, 2003). As what have been mentioned before, with the industrialization and urbanization, more psychological diseases will attack the modern generation. The lack of *Serene* might make it hard to recover from those psychological diseases.

Mitigation

The atmosphere of *Serene* is highly recommended to be constructed within urban green spaces.

6.3.2 Wild

Situation

The character of fascination with wild nature embodies in Chi bi Park as well. The other two places are both riverbanks. One is the long belt along Yangtze River. The other is some reaches of Ba he River, which is the branch of Yangtze River as mentioned before. Both of these two meet the description of “*Wild*”: “Plants seem self-grown, lichen and moss-grow rocks...” However, it is not the “*Wild*” scene by Swedish perspective, which is at least pleasing. Since compared with the word “wild”, “lack of management” might describe the situation more fully.



Picture 10. Belt along Yangtze River, an example to show the situation of the character of *Wild* in main city of Huanggang: Plants seem self-grown, but lacks management

Size & Shape

The character of *Wild* has the similar sensitivity to the character of *Serene*, so the analysis of *Wild* in Chi bi Park is the same as *Serene* part. The other two are riverbank with the shape of belt. Green area along Yangtze River is around 400 hectares so the shape of the green area affects little. While the size of green area in the riverbank of Ba he River is much less, and the green area looks like two strips surrounding the river.

Accessibility

Accessibility of the whole area is low if analyzing holistically. As regards the existing *Wild*, Chi bi Park is the same as *Serene* part. The accessibility of green area with characteristic of *Wild* in the riverbank of Yangtze River is not bad, while the riverbank of Ba he River is poor. On one hand, its shape and size are both sensitive, neither coherent nor large enough. On the other hand, most vegetation is wild grass without management. More over, the location of this place is far from the center of the main city. All of them decrease the accessibility.

Effects

It is a pity that there is few real “*Wild*” in the area, no wonder when analyze the relationship between different location and quality relevant to the most important type of green area, citizens of Huanggang, especially the main city of Huanggang, have a stronger desire to *Wild* than those from other cities in China. And more than half of all the respondents regard *Wild* as an important character for green areas.

Consequence

Wild nature, areas of being untouched, naturally occurring vegetation are disappearing with the sprawl of urban area. The gap between nature and human beings is increasing. When being asked to write the ideal green space in their minds, Wild nature was appealed frequently by respondents.

Mitigation

Artificial landscape and disturbance by human beings should have a good balance with nature in urban green area. The goal to build green space of the field from Landscape/Greening/Planning may transfer from the conquest and use of nature to live and enjoy with nature.

6.3.3 Lush

Situation

Apart from Chi bi Park where the species of vegetation and animals (there is a zoo located in) are diverse, other spots with characteristic of *lush* are all nurseries. As mentioned earlier, some of them are not in good condition and management at present.

Size & Shape

The character of *Lush* has the similar sensitivity to the character of *Serene*, so the analysis of *Lush* in Chi bi Park is the same as *Serene* part. Other green spaces in the area with the characteristic of *Lush* are nurseries (Picture 11). If we look at the information about the category of Nursery mentioned in the first part of the Analysis chapter (The Chinese classification and analysis on green space of the area), we can find the size of the biggest nursery is 20 hectares, far less than 50 hectare, which is the most visited size for *Lush* according to the research (Grahn, 2005). Fortunately, most nurseries are coherent in shape except Wan fu with a size of 13.33 hectare.



Picture 11. *Nursery of Lin ke suo, an example to show the general situation of the character of Lush in the main city of Huanggang*

Accessibility

Characteristic of *Lush* in the whole area is low if analyzing holistically. Accessibility of Chi bi Park is the same as *Serene* part. Most nurseries locate in the suburban region since the inner parts of the city are usually planned for more important use according to the planner.

Effects

According to the analysis, the main green areas with *Lush* are nurseries. The species utilized in the normal urban green space is not abundant and the access to normal citizens is not positive.

Consequence

The pedagogic value of *Lush* decreases since people could have learned to recognize various species of plants. Some good local species are wasted, thus losing the contribution to the ecological system as well.

Mitigation

The category of Nursery should not be the only places people can get in touch with biological diversity, which could actually embody easily in common urban green space. And nurseries should not be the places only breeding vegetation but also offering recreational function.

6.3.4 Spacious

Situation

Spacious is a room offering the feeling of entering another world. Then the vast lake of Yi ai hu Park definitely meets the requirement, especially for those living in a crowded city structure. And a few big city squares with green areas also provide restful feelings (Picture 12), while some of them only have empty space but not the restful feeling, such as the newly constructed Dong fang square (Picture 13), where the vegetation needs time to grow up. *Spacious* also embodies in the discontinuous forest belt along Yangtze River, which consist of several stands of poplar and Pterocarya and plays an important role of flood prevention and control.

Size & Shape

According to the research, most visited size of green area with *Spacious* is 50 hectare. While apart from riverbank of Yangtze River, others are much smaller than this size, especially those squares in the city.

Accessibility

The green spaces with the characteristic of *Spacious* have a comparative good accessibility.

Most of them are comparative large and coherent, and the locations of existing *Spacious* are positive, while the amount is expected to be more.

Effects:

From the investigation, in the list of quality relevant to green areas usually visited, *spacious* is in the fifth place. While it ranks the third when respondents were asked to prioritize quality they think most important to green areas. This means citizens hope to percept *Spacious* when they go to green spaces while it is not enough in the main city.

Consequence:

Urban green areas with *Spacious* would be swallowed by architecture and asphalt streets if the importance of *Spacious* is ignored.

Mitigation:

Attention should be paid to creating the quality of *Spacious* in urban outdoor green spaces.



Picture 12 *Gong Qing Square, an example to show positive situation of green space with the character of Spacious in the main city of Huanggang*



Picture 13. *Dong Fang Square, the big newly constructed city square in the main city of Huanggang An example to show negative situation of green space with the character of Spacious*

6.3.5 The common

Situation

The character of “*The common*”, i.e. “a green open space allowing vistas and stays” is actually the main green characteristic of the area. There are a great many pieces of comparative tiny green space which is not big enough to be seen from the map at the scale, while they can still make contribution to the outdoor environment (Nordh et al, 2009). Most of them are attached to dwelling communities, companies or schools. Picture 14 is an example to show a common green space in the dwelling area with the character of *The Common*.



Picture 14. *A common green space in the dwelling area, an example to show the general situation of green space with the characteristic of The Common in the main city of Huanggang*

Size & Shape

As described above, most of those green spaces are rather small. And the character of *The common* is not included in the characteristics sensitive to size and shape. While there are some green areas attached to road is strip or belt-shaped, which decreases the function to some extend.

Accessibility

Not bad. Although not big, they scatter in most places and provide good accessibility to citizens.

Effects

The common is the second quality relevant to green areas respondents usually go, which matches the current situation of main city in Huanggang. While it is not top qualities regarded as the most important for green areas by respondents.

Consequence

The small green space or pocket park could also bring benefits to human well-beings.

Mitigation

No big change is needed.

6.3.6 The Pleasure Garden

Situation

Almost all the city parks have the characteristic of *The Pleasure Garden* for the comparative enclosed and safe sense formed by green areas. The representatives are Yi ai hu Park, Bao ta Park, Da qiao park and Qing zhuan hu Park (Picture 15). The citizens could relax themselves and let their children play freely there.



Picture 15. *Qing zhuan hu Park, an example to show the general situation of green space with the character of The Pleasure Garden in the main city of Huanggang*

Size & Shape

The statistic of size could be referred to the information about the category of Public Park mentioned in the first part of the Analysis chapter (The Chinese classification and analysis on green space of the area). Only parks in the category of Public Park have the character of *The Pleasure Garden*. Two of them exceed 30 hectares, and most of others are middle-small size. While luckily, *The Pleasure Garden*, like *The common*, is not sensitive to the size and shape.

Accessibility

The number of green spaces with the characteristic of *The Pleasure Garden* is expected to be increased for the accessibility to citizens.

Effects

Distinctly, *The Pleasure Garden* plays an essential role in urban green spaces. People usually visit them and insist their importance in green areas. The existing green space with the quality

of *The Pleasure Garden* in the main city of Huanggang serves the citizens well to certain extend.

Consequence

Normal citizens could relax themselves quite well in those green spaces with quality of *The Pleasure Garden*.

Mitigation

The number of green areas with the quality of *The Pleasure Garden* is expected to increase.

6.3.7 Festive/Center

Situation

People usually meet or hold get-togethers in public parks or large squares. Different from many Swedes enjoying jogging outside, Chinese usually assemble together to do some exercise, usually practicing certain type of dance in the morning or after dinner everyday (See Picture 16). The place they choose is those public parks or squares with green areas where vegetation could provide good air quality, and act as shelter to some extent from both psychological needs and security consideration.



Picture 16. An example to show how people use green space with the character of Festive/Center in the main city of Huanggang

Size & Shape

The size of the most visited green space with the characteristic of *Festive/Center* is about 1-5 hectare, which matches most existing green space of *Festive/Center* in the main city of Huanggang.

Accessibility

Almost all of the existing *Festive/Centers* are accessible but the amount might not be enough, thus affecting the overall accessibility.

Effects

Positive, while some complaints about the management of the service in those places were raised in the investigation.

Consequence

Green spaces with *Festive/Center* functions well as the meeting places for festivity and pleasure. And it encourages social interactions a lot.

Mitigation

Except management should be enhance, no big changes need to be done.

6.3.8 Culture

Situation

We can understand easily from the concept it self, the characteristic of *Culture* is the essence of human history, a place offering fascination with the course of time. As has been introduced, the area has a long history. Except the poet Su Dong po and his versus, several heritage sites have the character of *Culture*. For example, Yu wang cheng site was an ancient city 2000 years ago located in the north of the area. The moat around the city could still be recognized clearly today. According to experts on culture relics and archeology, the site has great value to research on the culture of Chu (regional culture). Other heritage sites are Qingyun tower, Anguo temple and Li Siguang Memorial.



Picture 17. *Cultural site of Su Dong po, an example to show the general situation of the green space with the character of Culture in the main city of Huanggang*

Size & Shape

The size of the most visited green space with the characteristic of *Culture* is about 1-5 hectare, which matches most existing green space of *Culture* in the main city.

Accessibility

Most of them are accessible except that Yu wang cheng site is a bit far from the downtown.

Effects

From the investigation, we found that citizens themselves seldom go to green spaces with quality of *Culture*. Neither do they think it is important.

Consequence

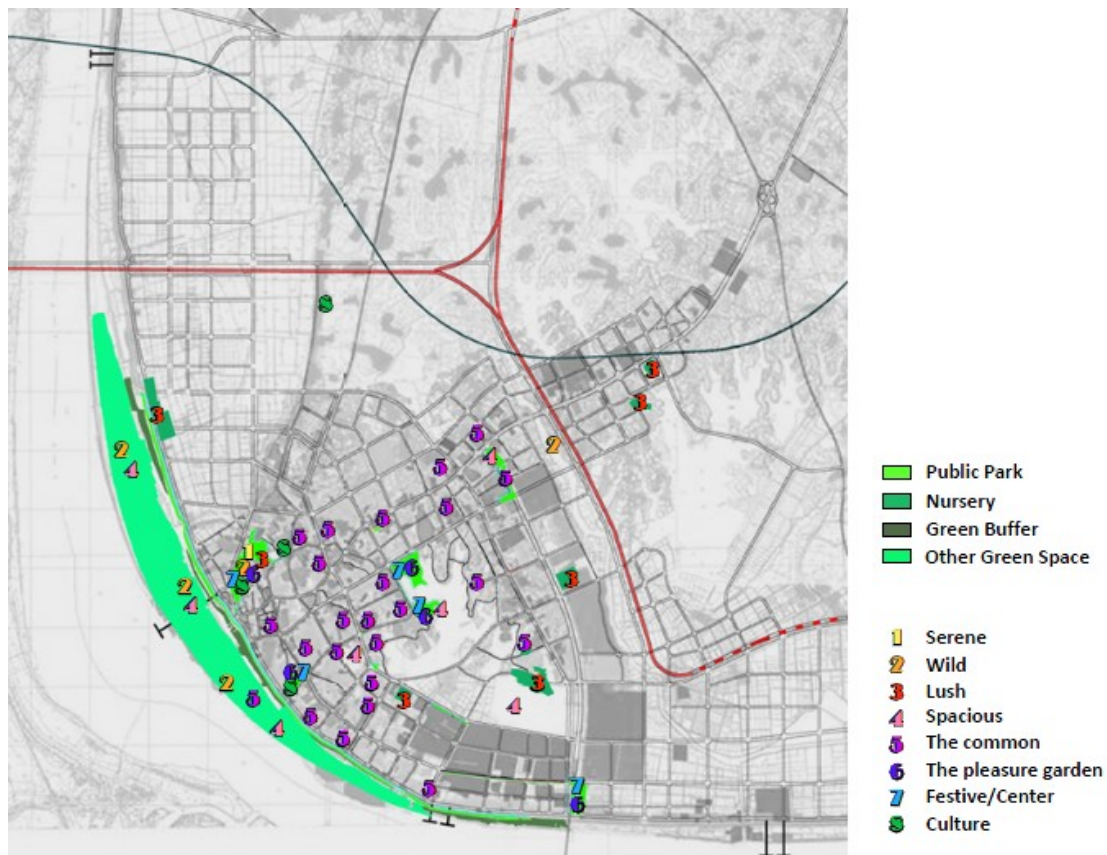
The local history and cultural story attract tourists, while it might be ignored by local citizens.

Mitigation

The proper propagandism could be made to reinforce the sense of belongings for local people.

7 Discussion

7.1 Difference between Urban Green Space Classification of China and The Eight Characteristics of Sweden



Map 12. *The Eight Characteristics of Sweden and The Urban Green Space Classification of China*

7.1.1 Function or Perception

Differences about green space derive from differences of national situations. Compared with Sweden, China is a country with large size of land area and population, and a rather low per capita share of resources. With the modern industrialization, urban area has expanded at the expense of swallowing green lands. Pollution and damage to ecological system increased severely as well. So each category of the Chinese National Standard is given function, either to ecological system or to people's daily life. From the name we can discern the function, for

example Public Park is for recreational function and Green Buffer is for ecological function, like purifying air etc. While Sweden, famous as one of the best accommodation countries, has less problems about pollution or worries about lack of green areas. The concern moves naturally to the perception and health of human beings. In other words, when Chinese is asking if there is enough green areas, Swedes have begun to discuss if those enough and various green areas will fulfill people's mental and healthy needs. Consequently, "Nursery" in Chinese classification usually has the character of "*lush*"; "Other Green Space" is often "*Wild*" and "*Spacious*", and "Public Park" has more than two characteristics, otherwise it cannot fulfill the recreational function (see map 12).

7.1.2 Three Dimension or Two Dimension

When classifying urban green spaces, the Chinese National Standard seems to transfer the green area from three-dimensional space into two-dimensional master plan. More attentions are paid to size, quantity and service radius of the green area from map, a two-dimensional illustration. To municipality or government offices, a manner would be accepted and popular if information could be illustrated from a two-dimensional perspective which is easy to understand and control. However, the overall perception a green space brings is far beyond what could be shown on maps. Contrast to this, the Eight Characteristics are to describe green space from the perspective of human beings' experience and perception. The research focuses on what benefits certain qualities could bring to human well-beings. The Eight Characteristics are said to have some practical application limitation by municipality as a three dimensional method, while I believe further research will make improvement on the related issue.

In order to conduct the planning eligibly, foci are laid on how to locate all these classified green spaces in China. Those green spaces in the built area of city are dealt with carefully, while green spaces in surrounding areas of the city are unnoticed (WANG Xiao-Jun, 2009). Taking the main city in Huanggang as an example, current situation of "Other green land" green space is the least pleasant type because this type of green space mainly locates in the peripheral area of the city. Not taking advantage of big green size and providing wild nature to the citizens, "Other Green Land" appears massy and lacks of management. While if analyzed from the quality perspective, green spaces with certain qualities are not easily ignored, especially those rewarding to human beings, because those concluded qualities in The Eight Characteristics were based on investigation research and are most representative. More over, the classification in the Standard for Urban Green Space in China tries to include all the types of the green space, while the form of the classification determines the limitation to new greening types, such as green roof and vertical greening, which is intractable to classify according to the current Standard.

7.1.3 Participatory or Not

This leads us to the last but not least difference: Participatory or not? Participatory planning might be the most mentioned concept in planning courses at SLU, Alnarp. And it is acceptable to say The Eight Characteristics are the outcome of democracy because the interpretation and classification are based on the investigation. That is to say, it is the opinions from normal people that are respected. And it is opinions from normal people that planners and municipal officers would listen to when applying The Eight Characteristics. As Ulrika A. Stigsdotter said, “it is natural for me to talk and pose questions to the people involved before I start changing their living environments”. And who says the professionals in the field of landscape architecture and urban planning, who are working on the so called “nature” and “green lands” should know quite well on how to provide or design a good natural environment (Stigsdotter, 2005). However, the Chinese National Urban Space Standard was set down by those experts working on the so called “nature” and “green lands”. They do have their professional knowledge and experience, but it can not exclude voice from normal people.

If we come back to the cross analysis about choices from different professions, we could easily find some differences in the perception to green spaces in the surroundings between professional group and non-professional group. The green qualities these two groups usually visit are not the same either. With regards to the expectation, some characteristics are both regarded as the most important by two groups, while contrasts still exist in other options. Hence, we landscape architects and urban planners are relied to design and plan a more beautiful and reasonable urban green space in the surroundings, but we cannot always represent everyone when doing designing and planning.

Frankly speaking, China falls behind western countries a lot on democracy and participatory planning as a result of thousands years feudal system. Fortunately, more and more advanced ideas have been accepted and introduced to China and a better green space is expected to build there.

7.2 Suggestions of The Eight Characteristics in main city of Huanggang

In this part, firstly, the original Swedish version of The Eight Characteristics will be discussed and concluded about the situation of each character in the main city of Huanggang. Then the suggestion about the reclassification of The Eight Characteristics would be given not only from how do people use green space, but also what do they expect in the outdoor environment. To make it clearer, a synthesis of the suggestion in the main city of Huanggang would be given at last.

7.2.1 The situation of The Eight Characteristics in main city of Huanggang

Through the analysis of The Eight Characteristics in main city of Huanggang, we met some problems, for example, some popular characters in Swedish green spaces might not be normal to Chinese; some qualities are common in Sweden but they might only appear in certain type of green spaces in China. A discussion and conclusion upon the situation of each character in the main city of Huanggang are given in Table 20, in which “+” means the specific character is applicable in the area, “-” means the specific character is not applicable in the area, “±” means the specific character is applicable in the area to some extent, but not that applicable.

Table 20. Discussion and conclusion on the situation of each character in the main city of Huanggang,

The Eight Characteristics	Characteristics of the Space	Applicable in main city of Huanggang or not	Statement
1.Serene	A place of peace, silence and care. Sounds of wind, water, birds and insects. No rubbish, no weeds, no disturbing people.	+	1. Great function of restoration; 2. Required most by citizens of Huanggang city; 3. There is a lack in the area.
2.Wild	A place of fascination with wild nature. Plants seem self-sown. Lichen and moss-grown rocks, old paths.	+	1. Great function of restoration; 2. Required largely by citizens of Huanggang city; 3. There is a lack in the area.

3. Lush	A place rich in species. A room offering a variety of wild species of animals and plants.	\pm	1. Almost only exist in the category of Nursery in Chinese Urban Green Structure Classification; 2. Beneficial to human-well beings and required by people to some extent. 3. Easily embodied in vegetation design.
4. Spacious	A room offering a restful feeling of “entering another world”, a coherent whole, like a beech forest.	+	People need the simple, empty and open perception to offload the upset and worries.
5. The Common	A green open place allowing vistas and stays.	+	No feature, while contributes largely to the present main city of Huanggang
6. The Pleasure Garden	A place of imagination. An enclosed, safe and secluded place where you can relax and be yourself, let your children play freely.	+	1. The existing green space with character of <i>The Pleasure Garden</i> is rather popular to citizens. 2. The amount of green areas with the character of <i>The Pleasure Garden</i> is not enough.
7. Festive/centre	A meeting place for festivity and pleasure.	-	Chinese always meet and celebrate in green space with other characteristics, like <i>The Common</i> and <i>The Pleasure Garden</i> . So <i>Festive/Center</i> is not necessary to be classified specially.
8. Culture	The essence of human culture: A historical place offering fascination with the course of time.	\pm	In the area sometimes it is difficult to tell the character of a green space is Culture or others. Many cultural sites were designed and planned as cultural parks (one type of the category of Public Park), so the character of <i>Culture</i> is deducted and people pay less attention to it.

7.2.2 Suggestion about the reclassification of The Eight Characteristics in main city of Huanggang

Different history, culture and geography contribute to different perception and expectation. Hence, reclassification of The Eight Characteristics is a must if it is to be applied in China. As Table 20 in 7.2.1 shows, some characteristics in The Swedish Eight Characteristics appear similar and play an important role in main city of Huanggang. Those characteristics are kept in the proposal. Others are newly added to satisfy the local needs, based on the current green space situation of the main city of Huanggang and the Internet investigation results.

Consequently, seven important characteristics of green space in main city of Huanggang are given below. Different from The Eight Characteristics in Sweden, which is more of a conclusion on how do Swedish people use outdoor green space, the proposal here is the suggestion which consists of not only how do Huanggang citizens use the green space, but also their expectation to future outdoor environment in Huanggang.

1. Serene—a place of peace, silence and care. Sounds of wind, water, birds and insects. No disturbing people.

The quality of *Serene* is required most by citizens of Huanggang, who regard it as the most important character a good green space should have. When being asked to describe the ideal green space, the interviewees have mentioned the word many times. “Quiet and peaceful nature reserve with hills and water...” “Quiet, sounds of birds and insects...”

2. Wild Nature—Proximity to nature, without any artificial or man-made decorations. Plants seem self-sown. Lichen and moss-grown rocks, old paths.

Wild nature is in great need in the main city of Huanggang where there is no real “*Wild*” but “lack of management” instead. Wild Nature functions quite well in restoration, as one interviewee wrote, “My ideal green space is quiet and peaceful nature reserve with hills and water, birds and insects. The infinite proximity to nature will exclude stress and bring me the pure goodness of life”.

3. Open & Spacious—an open and vast space, like grassland, people could enter freely, lie and bask.

The vegetation design costs efforts from planners and landscape architects, while for users, sometimes what they want is the simple open space, to enter, own and control temporarily for a while. For citizens of main city in Huanggang, they rarely have big and open green spaces. Even if it exists, it shows unwelcome to people. So appeals were raised from the investigation

expecting open and vast grassland they could step and lie on. Spacious here is not to emphasis “a coherent whole” but “A room offering a restful feeling of “entering another world”” as The Eight Characteristics describe.

4. The Pleasure Garden--An enclosed, safe and secluded place where you can relax and be yourself, let your children play freely. It is shared by all with recreational function.

A garden with flowers, trees and shrubs would make a relaxing atmosphere. When the first time I conducted the field investigation in the main city of Huanggang, I was led to the newly constructed Yi ai hu Park by responsible personnel from the Bureau of Landscaping of Huanggang Municipality. He is very proud of constructing the park and bringing benefits to the citizens. I can tell the happiness from the people I met there, who were enjoying the pleasant environment Yi ai hu Park contributes. This could also be supported by the answers to the questions in the investigation. 100 of 148 respondents consider *The Pleasure Garden* as the most important green quality. Many respondents admit the great significance of “*The pleasure Garden*” to the whole area: “The mutual interaction between vegetation and the vast lake in Yi ai hu Park is rather pleasant. The park is beneficial for citizens in a city like Huanggang, which lacks big recreational green area”.

5. Neatness—A place with clear and fresh air. No pollution. Both the vegetation and instruments of the green space is in good management.

As mentioned before, the industrial development in China results in severe pollution, and the large population makes it harder to manage public stuff. No wonder so many people dream of a tidy and clear environment without pollution. For a developing area as Huanggang city, there will be a great potential and opportunity to develop, which is to say, to build and construct. It will be fortunate for citizens of Huanggang if being provided a pleasant and neat environment during this long developing period.

6. Season based vegetation design—Based on the diversity of species and forms, the vegetation design fully considers transformation of season, especially summer and winter.

The climate feature of the area determines people’s sensitivity to sunshine in Huanggang. Different from Europe, especially northern Europe, summer in Huanggang is rather hot with strong sunshine. Winter is chill but sunshine would come out from time to time. While evergreen are planted too much in some places of the area, so a season based vegetation design worth paying attention to, as what the interviewee expected, “Shade would be provided by big trees in summer and sunshine will come in winter”. And the application of certain species should also consider biological diversity.

7. The Common--A green open place allowing vistas and stays

Honestly speaking, The Common is the characteristic with least feature. Only a few Huanggang citizens chose it as the most important green quality although most of them admit they usually visit green spaces with “The Common”. However, for a city with little large green space and small size of total green areas, those small pieces of green area, like the green areas attached to dwelling community or companies, play an important role to human well-beings. So I insist The Common is a necessary character, at least for the present period in the main city of Huanggang.

7.2.3 A synthesis of the suggestion in main city of Huanggang

In order to make the suggestion clearer, a synthesis is given as follows. In the table, each character mentioned and suggested above is identified if it is mainly from the Swedish Eight Characteristics or newly suggested. Also it shows if each character exists in the current green space or not, and should it be improved in the future.

In Table 21, for the column of “From the Swedish Eight Characteristics or not”, “+” means the specific character is from the Swedish Eight Characteristics, “-” means the specific character is not from the Swedish Eight Characteristics, “±” means the specific character is partly from the Swedish Eight Characteristics. If one character is from or partly from The Eight Characteristics, the certain character in The Eight Characteristics will be indicated with bracket.

For the column of “Exist in the current green space or not”, “+” means the specific character has existed in the current green space and is in good condition, “-” means the specific character has not existed in the current green space, “±” means the specific character has existed in the current green space but is not in good condition.

For the column “should it be improved in the future”, “+” means the specific character needs to be improved quite a lot in the area, “-” means the specific character is good enough, “±” means the specific character needs to be improved, but not that much.

Table 21. *A synthesis of the suggestion in the main city of Huanggang*

The Characteristics	Characteristics of the Space	From the Swedish Eight Characteristics or not	Exist in the current green space or not	should it be improved in the future
1.Serene	A place of peace, silence and care. Sounds of wind, water, birds and insects. No disturbing people.	\pm (Serene)	\pm	+
2.Wild Nature	Proximity to nature, without any artificial or man-made decorations. Plants seem self-sown. Lichen and moss-grown rocks, old paths.	\pm (Wild)	\pm	+
3. Open & Spacious	An open and vast space, like grassland, people could enter freely, lie and bask.	\pm (Spacious)	+	+
4. The Pleasure Garden	An enclosed, safe and secluded place where you can relax and be yourself, let your children play freely. It is shared by all with recreational function.	\pm (The Pleasure Garden)	+	+
5. Neatness	A place with clear and fresh air. No pollution. Both the vegetation and instruments of the green space is in good management.	-	\pm	+
6. Season based vegetation design	Based on the diversity of species and forms, the vegetation design fully considers transformation of season, especially summer and winter.	\pm (Lush)	\pm	+
7. The Common	A green open place allowing vistas and stays	\pm (The Common)	+	\pm

7.3 Improvements suggested on the main city of Huanggang

After all the analysis and discussions in the foregoing chapters, it is not difficult to conclude the suggestion on the green structure in main city of Huanggang.

First and foremost, more green spaces are required in the main city of Huanggang, which is well accepted and admitted. Not only the total size of green spaces needs to be expanded, the function, quality and distribution need to be considered at the same time. When choosing vegetation to form the green space, biodiversity, local species and various design style should be paid attention to as well. What's more, the management cannot be ignored after construction. A pleasure green space will be definitely ruined by mismanagement and unsanitary conditions.

Another advantage that the area could take of is the large peripheral natural area, which could contribute greatly to the citizens and make biological benefits to the whole green space. According to the current green situation and developing pace in Huanggang, it might not be enough to only focus on the built area of the city. Those unnoticed green spaces in the surrounding area will make up for the lack of “*Serene*” and “*Wild Nature*” in the built area, and the precondition is with good management.

At last, invite normal citizens to participate the planning of the city. As mentioned before, with the development of society and economy, the participatory planning is to be the main trend of urban construction and planning in future China. Huanggang could be one of the leading cities with the regard.

8 Conclusion and Limitation

The thesis managed to introduce the Swedish research result, The Eight Characteristics, in a Chinese city. The analysis was made from both The Eight Characteristics and Chinese National Standard about green spaces. An internet questionnaire was conducted in order to understand the perception and expectation of people in Huanggang city to their outdoor green space. Discussions were made accordingly.

Through the analysis, I found the basic requirement to outdoor green space is similar, thus the basic relationship between environment and human beings in different countries is similar. However, difference exists as a result of different culture, climate and geography. China is a rapidly developing country, with boosting economy and increasing problems at the same time. It needs ideas and thoughts from different, especially advanced perspective. The situation of The Eight Characteristics in main city of Huanggang has been discussed and proposals on reclassification are suggested from not only how do people use green space, but also what do they expect in the outdoor environment.

The target area of the project is main city of Huanggang, which can represent some developing Chinese cities, but not all the cities. The time and accessibility of the online investigation is limited, and the distribution of investigation groups is not that broad. The amount of certain group is too small to give substantial support. Hence, the result attained here is the elementary conclusion. More research needs to be done in the future.

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Appendix

1.

Classification of Urban Green Space in China

(Extracted and Translated from Standard for Urban Green Space Classification in China)

Category Code			Name of Category	Remark
Large	Medium	Small		
G1			PUBLIC PARK	
	G11		Comprehensive Park	
		G111	City level park	
		G112	District level park	
	G12		Community Park	
		G121	Dwelling area park	Service radius: 0.5-1.0 km
		G122	Small dwelling area park	Service radius: 0.3-0.5 km
	G13		Theme Park	
		G131	Children's park	
		G132	Zoo	
		G133	Botanical garden	
		G134	Historical park	
		G135	Scenic site park	
		G136	Amusement park	The portion of green space should be more than 65%
		G137	Other theme park	The portion of green space should be more than 65%
	G14		Belt park	
	G15		Roadside green space	The portion of green space should be more than 65%
G2			NURSERY	
G3			GREEN BUFFER	
G4			ATTACHED GREEN SPACE	
	G41		Dwelling area	
	G42		Public facility green space	
	G43		Industrial green space	
	G44		Green space for storage	
	G45		Green space for out Transportation	
	G46		Road green space	
	G47		Civil facility green space	
	G48		Special green space	
G5			OTHER GREEN SPACE	

2.

Investigation on Psychological Feelings and Needs to Outdoor Green Space of citizens in Huanggang

With the development of the society and expansion of urban area, the outdoor environment and green area are playing more and more important role in people's daily life and human well-beings. The survey is part of my master degree thesis, aiming at knowing the psychological feeling and needs to outdoor green space of people in Huanggang city.

Confidentiality: The survey is anonymous and voluntary. All data will be treated in strict confidence and for thesis research use only. Please fill in the survey according to the facts for its scientificity and validity. Thank you very much.

Please note:

- Highlight your answer as red color or make a cross in the corresponding frame;
- Choose one answer only, if without the indication of multi-choice;
- The main interviewees of the survey are mainly normal citizens from Huanggang city.

6. Your gender:

1. Male ☐ 2. Female ☐

7. Your age period:

1. 18-25 ☐
2. 26-35 ☐
3. 36-45 ☐
4. 46-55 ☐
5. 56-65 ☐
6. More than 66 ☐

8. Where are you from:

1. ☐ Main city in Huanggang
2. ☐ Other towns or districts of Huanggang
3. ☐ Other city in China, please specify the name _____

4. Your career field:

1. ☐ Landscape/Greening/Planning or relevant
2. ☐ Other, Please specify _____

5. Is there any green area close to your home or working place?

1. Yes ☐
2. No ☐
3. Uncertain ☐

6. What type of green areas do you have in your surroundings? Please choose from below (multi-choice).

Public Park—Open to public, recreation as the main function, with ecological, aesthetic and disaster prevention function.

Roadside green space—Individual green area along but outside the urban roads.

Nursery—Provide seeds or plantlet for urban greening.

Green Buffer — The function of the green space is for ecological protection.

Green space attached to urban road—Green areas inside road, including street trees, green barrier in the middle of the road for separation etc.

Attached green areas—Green space attached to dwelling areas or companies.

Other green areas—Such as wetland, resumed green areas of landfill etc.

Other, please specify: _____

7. Please describe the ideal green area in your mind. What psychological feeling do they bring to you?

8. Please choose from the following you find most relevant to the qualities of outdoor green areas you usually go. (Multi-choice)

- 1). ☐ Serene-- A place of peace, silence and care. Sounds of wind, water, birds and insects. No rubbish, no weeds, no disturbing people.
- 2). ☐ Wild-- A place of fascination with wild nature. Plants seem self-sown. Lichen and moss-grown rocks, old paths.
- 3). ☐ Lush-- A place rich in species. A room offering a variety of wild species of animals and plants.
- 4). ☐ Spacious-- A room offering a restful feeling of “entering another world”, a coherent whole, like a bamboo forest.
- 5). ☐ The Common-- A green open place allowing vistas and stays.
- 6). ☐ The Pleasure garden--A place of imagination. An enclosed, safe and secluded place where you can relax and be yourself, let your children play freely.
- 7). ☐ Festive/centre-- A meeting place for festivity and pleasure.
- 8). ☐ Culture-- The essence of human culture: A historical place offering fascination with the course of time.
- 9). ☐ Other _____

9. What do you think is the most important type of green area? (You can describe them by choosing qualities from the following list you find most relevant. Multi-choice, choose 4 of them at most):

- 1). ☐ Serene-- A place of peace, silence and care. Sounds of wind, water, birds and insects. No rubbish, no weeds, no disturbing people.
- 2). ☐ Wild-- A place of fascination with wild nature. Plants seem self-sown. Lichen and moss-grown rocks, old paths.
- 3). ☐ Lush-- A place rich in species. A room offering a variety of wild species of animals and plants.
- 4). ☐ Spacious-- A room offering a restful feeling of “entering another world”, a coherent whole, like a bamboo forest.
- 5). ☐ The Common-- A green open place allowing vistas and stays.

- 6). ☐ The Pleasure garden--A place of imagination. An enclosed, safe and secluded place where you can relax and be yourself, let your children play freely.
- 7). ☐ Festive/centre-- A meeting place for festivity and pleasure.
- 8). ☐ Culture-- The essence of human culture: A historical place offering fascination with the course of time.
- 9) ☐ Other _____

If possible, please prioritize your options using the number. The best is placed at first:

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