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조경학석사 학위논문

Design for the renovation of
Alilang square in Yanji, China

중국 연길시 아리랑 광장
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2020년 8월

서울대학교 환경대학원

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CUI YUNA

Design for the renovation of Alilang square in Yanji, China

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이 논문을 조경학석사 학위논문으로 제출함
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위 논문은 서울대학교 및 환경대학원 환경조경학과 학위논문
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Abstract

Design for the renovation of Alilang square in Yanji, China

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With the development of China's economy, the construction of urbanization is also accelerating. Yanji, as the center city of Yanbian Korean Autonomous Prefecture, in China, is the center of politics, economy, culture, education, transportation, etc. of Yanbian Korean Autonomous Prefecture.

It is also one of the regions with the fastest urbanization process in the minority areas of China. In particular, after the completion of people-benefit projects in the 60th anniversary of the founding of Yanbian Korean Autonomous Prefecture, Yanji city has dramatically changed its appearance and greatly improved its urban modernization. Yanji city continues to expand construction to the West and North, among which Yanbian people's government, the political center, moved to the west, which means that Yanji City Center will move to the west in the future.

Alilang Square was built at the 60th anniversary of the founding of Yanbian Prefecture. It is a large Square covering an area of about 19 hectares. In the north of the Square, it is connected with the Yanbian

people's government, the political center of Yanbian Korean Autonomous Prefecture, and in the south, it is connected with Buerhatong River, the mother river of Yanji city. It is an essential connecting area between the Yanbian people's government and the Buerhatong river. The government hopes to make use of the appropriate geographical location of Alilang Square to build it into a cultural landmark and tourist attraction of Yanji City. Thus, it can become a large Square with the functions of entertainment, culture, education, and sightseeing. However, as a temporary Square, Alilang Square only has a lawn and two roads. However, with the continuous increase of surrounding residents, more and more residents are dissatisfied with the use of the Square. The government also hopes to rebuild it by investment before the 70th anniversary of Yanbian Korean Autonomous Prefecture in 2022. Simultaneously, the water area of the buerhatong River in the south of Alilang Square from the Xinmin bridge to the Tianchi bridge has not developed and utilized. It is also very inconvenient to reach the Square from the south side of the river. And the connection between the river and the Square is insufficient.

This paper will take Alilang Square as the main research object and take the geographical location, terrain, population, traffic, and other natural and cultural conditions as reference factors to carry out planning and design. At the same time, the Alilang Square and the buerhatong river will connect to extend the planning of the section of the Buerhatong river from the Xinmin bridge to the Tianchi bridge, so that the surrounding residents can use the Square conveniently, effectively and accessibly.

Key words: square, renovation design, rivers

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CONTENTS

Abstract	i
Contents	iii
List of Tables	vii
List of Figures	viii
Chapter1 Introduction	1
1. 1 Research Background and Purpose	1
1. 1. 1 Research Background	1
1. 1. 2 Research Purpose and Significance	3
1. 2 Research Scope	5
1. 2. 1 Site Location	5
1. 2. 2 Content Range	7
1. 3 Plan Process	8
Chapter2 Theoretical Reference and Case Analysis	10
2. 1 The Understanding and Utilization of the City Central Square	10

2. 2 Case Study	12
2. 2. 1 The Case Analysis of Square	12
2. 2. 2 The Case analysis of Ecological River Area	16
Chapter3 Analysis of Design Conditions	19
3. 1 Surrounding Site Analysis	19
3. 1. 1 Geographical Characteristics	19
3. 1. 2 Natural Environment	21
3. 1. 3 Urban Development Process	26
3. 1. 4 Population	28
3. 1. 5 Traffic System	29
3. 2 Site Internal Analysis	31
3. 2. 1 Site Topography	31
3. 2. 2 Site Land Use	32
3. 2. 3 Current Situation of Site Green Space Utilization ..	34
3. 2. 4 Traffic Conditions around the Site	35
3. 2. 5 The Section of the Buerhatong River from the Xinmin Bridge to the Tianchi Bridge Analysis	38
3. 2. 6 Alilang Square Analysis	42
3. 3 Analysis of Korean-Chinese Culture	47
3. 4 Questionnaire	48
3. 5 Problem Setting	58
Chapter4 Conception Planning	60
4. 1 Direction and Principle of Design	60
4. 2 Design Strategy	60
4. 2. 1 User	60

4. 2. 2	Requirement space	61
4. 3	Space Planning	63
4. 3. 2	Program Planning	63
4. 3. 2	Space Division	64
4. 3. 3	Space Planning	68
Chapter5	General Planning	70
5. 1	Overall Planning	70
5. 1. 1	Road Planning	70
5. 1. 2	Water Space Planning	71
5. 1. 3	Plant Planning	71
5. 1. 4	Building Planning	73
5. 1. 5	Facilities Planning	74
5. 1. 6	Master Plan	74
5. 2	Details of Design Space	75
5. 2. 1	Entrance Square Area	78
5. 2. 2	Sports Area	79
5. 2. 3	Hydrophilic Leisure Area	82
5. 2. 4	Activity Area	85
5. 2. 5	Library and Parking Lot	87
5. 2. 6	Multifunctional Center Square	88
5. 2. 7	Service Area	90
5. 2. 8	Garden Leisure Area	92
5. 2. 9	Multifunctional Lawn Lrea	95
5. 2. 10	Shade of Trees Leisure Area	97
5. 2. 11	Square Dance Area	98
5. 2. 12	Underground Passage	100
5. 2. 13	Viewing Platform	100

5. 2. 14 Riverside Landscape	101
5. 3 Management and Operations	103
5. 3. 1 Government-led Management Model	103
5. 3. 2 Government-commissioned Company Model	103
5. 3. 3 Community Management Model	103
5. 3. 4 Civil Club Model	104
Chapter6 Conclusion	105
Reference	106
Book	106
Report	106
Journal Article	106
Thesis	107
Online Database	107
초록	110

List of Tables

[Table 1-1]	Research Process	9
[Table 3-1]	Classification of Land Use	23
[Table 3-2]	Yanji Weather 1	25
[Table 3-3]	Yanji Weather 2	25
[Table 3-4]	The Course of Urban Evolution	27
[Table 3-5]	Yanji Population Composition	28
[Table 3-6]	Age Group Composition of Male and Female [Sixth Population Census(2010)]	28
[Table 3-7]	Bus Station around the Site	36
[Table 3-8]	Water Quality Table (2016-2018	41
[Table 3-9]	Current Situation of Plant Quantity in Alilang Square	43
[Table 3-10]	Questionnaire	49
[Table 4-1]	User	62
[Table 5-1]	Planting	71

List of Figures

[Figure 1-1]	Site Location	5
[Figure 2-1]	Central Park in Ho Chi Minh City	13
[Figure 2-2]	Gu' an Central Park	13
[Figure 2-3]	Azatlyk – Central Square of Naberezhnye Chelny	15
[Figure 2-4]	Wuhan Yangtze Riverfront Park in China	17
[Figure 2-5]	The Weaves	17
[Figure 3-1]	Yanbian Korean Autonomous Prefecture, Jilin Province, China	20
[Figure 3-2]	Yanji City and Yanji City Main District	20
[Figure 3-3]	Yanji Contour	22
[Figure 3-4]	Yanji Water System Map	22
[Figure 3-5]	Land Ues I	24
[Figure 3-6]	Land Ues II	24
[Figure 3-7]	Urban Change Map in the Past 40 Years	27
[Figure 3-8]	Yanji Road Map	30
[Figure 3-9]	Analysis of Site Topography	31
[Figure 3-10]	Yanji City Land Use	33
[Figure 3-11]	Site Land Use	33
[Figure 3-12]	Potentials for Urban Ecology	34
[Figure 3-13]	Traffic Conditions Around the Site	35
[Figure 3-14]	Bus Route Map	36
[Figure 3-15]	Traffic Congestion State Diagram	37

[Figure 3-16]	Riverside Park Photo 1	38
[Figure 3-17]	Riverside Park Photo 2	38
[Figure 3-18]	Buerhatong River Regional Analysis	39
[Figure 3-19]	River Section	40
[Figure 3-20]	Plants in the River Area 1	41
[Figure 3-21]	Plants in the River Area 2	41
[Figure 3-22]	Alilang Square Lawn Photo	42
[Figure 3-23]	Alilang Square Main Road Photo	42
[Figure 3-24]	Alilang Square South Side Photo	42
[Figure 3-25]	Alilang Square Winter Photo	42
[Figure 3-26]	Current of Alilang Square	43
[Figure 3-27]	Yanbian Korean Autonomous Prefecture Library	45
[Figure 3-28]	“Benben“(“犇犇”)	46
[Figure 3-29]	Memorial Statue of Zhu Dehai (朱德海) ·	46
[Figure 4-1]	Space division 1	64
[Figure 4-2]	Space division 2	64
[Figure 4-3]	Space division 3	64
[Figure 4-4]	Space division 4	65
[Figure 4-5]	Space division 5	65
[Figure 4-6]	Space division 6	66
[Figure 4-7]	Space division 7	66
[Figure 4-8]	Space division 8	67
[Figure 4-9]	Space division 9	67
[Figure 4-10]	Space Planning	69
[Figure 5-1]	Road Planning	70
[Figure 5-2]	Water Space Planning	71

[Figure 5-3]	Traditional Building Corridor	73
[Figure 5-4]	Transforming Corridor to Traditional Architecture	73
[Figure 5-5]	Facilities Planning	74
[Figure 5-6]	Master plan	74
[Figure 5-7]	Alilang square master plan	75
[Figure 5-8]	Alilang square section 1	76
[Figure 5-9]	Alilang square section 2	77
[Figure 5-10]	Entrance square area master plan	78
[Figure 5-11]	Entrance Square Area Section	78
[Figure 5-12]	Entrance Square Area Renderings	79
[Figure 5-13]	Sports Area Master Plan	80
[Figure 5-14]	Sports Area Section	80
[Figure 5-15]	Sports Area Renderings 1	81
[Figure 5-16]	Sports Area Renderings 2	81
[Figure 5-17]	Sports Area Renderings 3	81
[Figure 5-18]	Use Water in the Square	82
[Figure 5-19]	Hydrophilic Leisure Area Master Plan	83
[Figure 5-20]	Hydrophilic Leisure Area Section	84
[Figure 5-21]	Hydrophilic Leisure Area Renderings 1	84
[Figure 5-22]	Hydrophilic Leisure Area Renderings 2	84
[Figure 5-23]	Activity Area Master Plan	85
[Figure 5-24]	Activity Area Section	86
[Figure 5-25]	Activity Area Renderings 1	86
[Figure 5-26]	Activity Area Renderings 2	87
[Figure 5-27]	Activity Area Renderings 3	87

[Figure 5-28]	Library and Parking Lot, Multifunctional Center Square Master Plan	88
[Figure 5-29]	Multifunctional Center Square Section	88
[Figure 5-30]	Multifunctional Center Square Renderings 1	89
[Figure 5-31]	Multifunctional Center Square Renderings 2	89
[Figure 5-32]	Service Area Master Plan	90
[Figure 5-33]	Service Area Section	91
[Figure 5-34]	Service Area Renderings 1	91
[Figure 5-35]	Service Area Renderings 2	91
[Figure 5-36]	Garden Leisure Area Master Plan	93
[Figure 5-37]	Garden Leisure Area Section	94
[Figure 5-38]	Garden Leisure Area Renderings 1	94
[Figure 5-39]	Garden Leisure Area (Community Farmland) Renderings 2	95
[Figure 5-40]	Garden Leisure Area (Plump Pop) Renderings 3	95
[Figure 5-41]	Multifunctional Lawn Area, Shade of Trees Leisure Area Master Plan	96
[Figure 5-42]	Multifunctional Lawn Area, Shade of Trees Leisure Area Section	96
[Figure 5-43]	Multifunctional Lawn Area Renderings	97
[Figure 5-44]	Shade of Trees Leisure Area Renderings ..	97
[Figure 5-45]	Square Dance Area Master Plan	98
[Figure 5-46]	Square Dance Area Section	99
[Figure 5-47]	Square Dance Area Renderings 1	99

[Figure 5-48]	Square Dance Area Renderings Winter 2	• 100
[Figure 5-49]	Riverside Landscape Renderings	101
[Figure 5-50]	Riverside Landscape Master Plan	102
[Figure 5-51]	Riverside Section	102
[Figure 5-52]	Style of Riverside Platform	102

Chapter1 Introduction

1. 1 Research Background and Purpose

1. 1. 1 Research Background

With the development of China's social economy and industrialization, the speed of urban development is also accelerating. The city is expanding to the surrounding areas so that suburbs around the city become a part of the city. Urbanization is not only the result of social and economic development but also the driving force of social and economic progress. (Chen Youchuan, 2003) It is also why, although urbanization will bring economic, social, and environmental problems to the city, it is still expanding the city's development. Due to the influence of time, space, capital and other factors on the development of old urban areas, in order to improve the spatial layout, economic and social benefits of urban development, the government will expand the scale of the city, and move the government and other government agencies to the newly developed areas, to develop the economy of the newly developed areas.

Square is the space for people to carry out political, economic, cultural, and other social activities or traffic activities. With the increasingly frequent communication between cities, square culture has become a critical window to show the city. The construction and development of Square culture promote communication and softness among different places, types, and characteristics. Simultaneously, the rise of Square culture has also built a bridge for professional culture and elegant art to enter the folk, provided a broader stage for display, and expanded its development space. At the same time, it also plays the role of education orientation. The Square culture directly Orient to the general public,

with a wide range of people's participation. Square cultural activities, especially some large-scale square art performances and festivals, not only meet the spiritual and cultural life of the general public, but also advocate a healthy and civilized way of life, to a certain extent, cultivate and improve the aesthetic awareness and appreciation level of the audience, playing a subtle role in education and guidance.(Zhang Xin, 2016)

Today, Yanji City, Yanbian Korean Autonomous Prefecture, Jilin Province, China is also developing in urbanization. In order to promote the economic development of the new area, the political center of the Yanbian Korean Autonomous Prefecture Government has moved to the West New Area. Alilang Square, a temporary Square, was built on the south side of the government of Yanbian Korean Autonomous Prefecture. In the past ten years, the number of residents around the Square has been increasing. But the Square has always maintained the state of the lawn. The internal facilities of the Square do not meet the needs of the surrounding residents. Now it is necessary to renovate the Square.

1. 1. 2 Research Purpose and Significance

The Alilang Square, now located in the west new area of Yanji City, was built in the 60th anniversary of Yanbian Korean Autonomous Prefecture in 2012. The reason for the construction is that in 2012, the political center of the Yanbian Korean Autonomous Prefecture Government has moved to the current location of the West New Area of Yanji City. However, at the beginning of the relocation, the surrounding landscape has not been improved,. There are many farmland. So the government spent 90 days to rebuild a farmland into a square, which is named Alilang Square.

Alilang Square has not transformed in the past ten years, but with the development of the city, many events and buildings in the new urban area on the west side have continued to increase the population. Residents living around Alilang Square are increasingly dissatisfied with the way Alilang Square used. At the same time, the government is aware of this situation and plans to build Alilang Square into its central Square. The Square space with functional integrity and diverse shapes and regional cultural characteristics of Yanji City planned to be improved by 2022.

The government hopes to maximize the use function, style, and perception of the city's central Square to create the most profound artistic conception of the space, the beauty of the overall form and the beauty of the spiritual connotation. They combined with the actual situation of Yanji City, the exploration of the historical and cultural connotation of Yanji City, the construction of the artistic spirit of the Square design materials and basis, to explore how the design of modern city center Square shows the regional cultural landscape better to convey the city's regional place spirit 1. Historical culture, customs, and people's

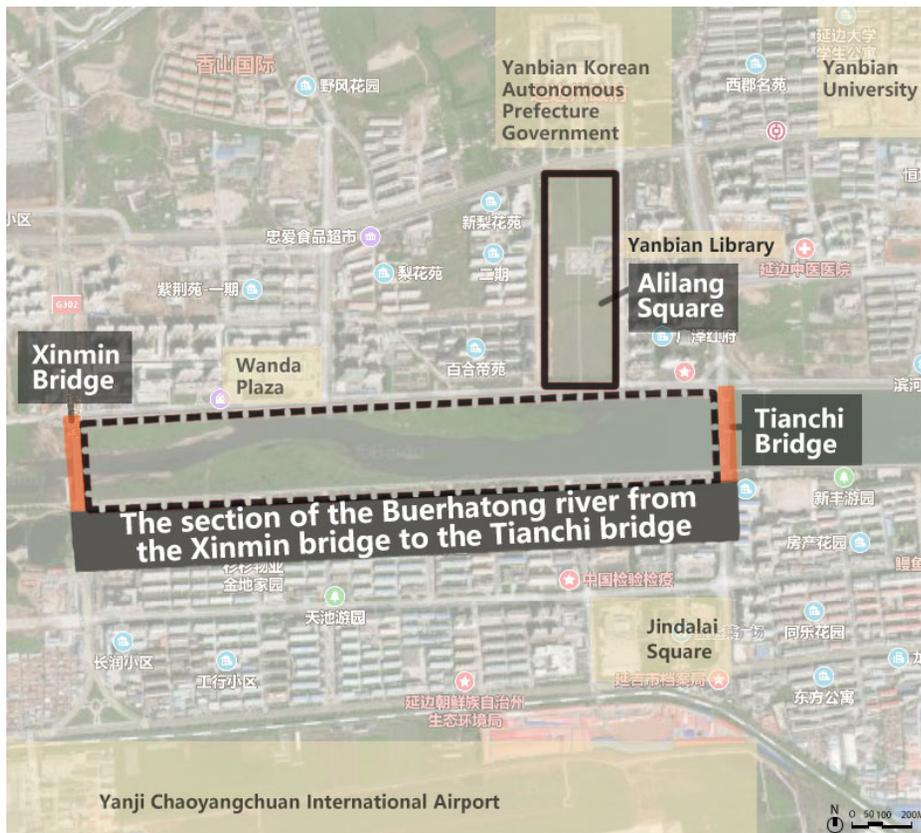
sentiments enhance the city's distinctive image and create a unique and diverse urban public space environment. To maximize the transmission of historical and cultural information, improve the artistic spirit and humanistic appeal of the Square, and then trigger the public's thinking, association, and memory, they can be recognized by people and experience a sense of belonging in a public space environment such as a city Square. Develop the underground space of the Square, connect Lihua Road and Buerhatong River, and develop and utilize the Square and its surroundings reasonably.¹⁾

1) Data source: <http://jl.sina.com.cn/yanbian/whyb/2014-07-29/236.html>

1. 2 Research Scope

1. 2. 1 Site Location

The site of this study Alilang Square locates in the Western New district of Yanji City, Yanbian Korean Autonomous Prefecture, Jilin Province, China. There is a large shopping mall Wanda Plaza in the east of Alilang Square, Yanbian University, the highest University in Yanji City in the west, an important transportation hub in Yanji City in the south, Chaoyang Chuan Airport in Yanji City, and Yanbian Korean Autonomous Prefecture Government, the political center of Yanji City in the north.



[Figure 1-1] Site Location

The study area will take Alilang Square as the main design object. Alilang Square from west to east is 260m and from south to north is 730m, with a total of 189,800m². The section of the Buerhatong river from the Xinmin bridge to the Tianchi bridge will briefly plan as part of the Square design extension. The section of the Buerhatong river from the Xinmin bridge to the Tianchi bridge from east to west is 2100m, from north to south is 280m, and the area is 588,000m².

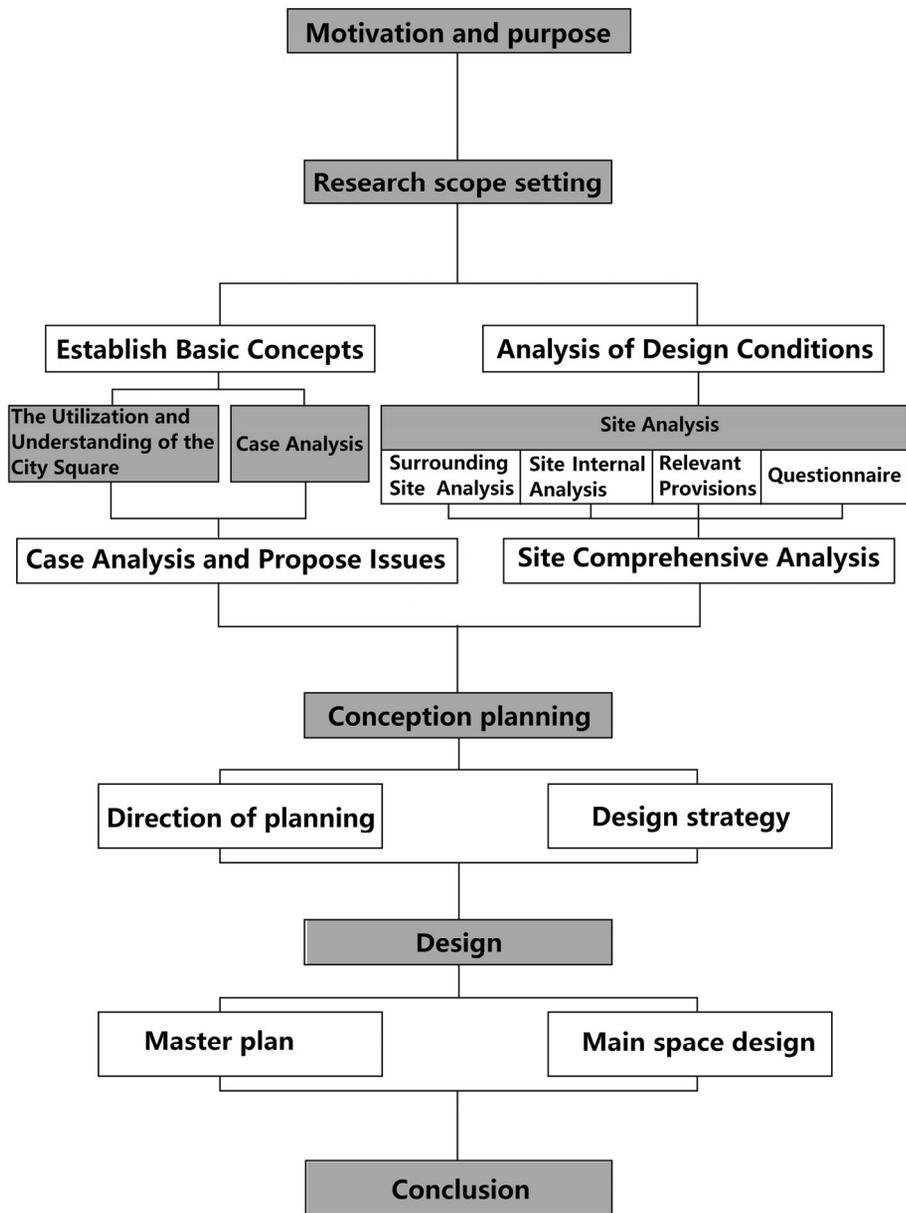
1. 2. 2 Content Range

Yanbian is a famous cultural prefecture, which has always attached great importance to the construction of urban culture, especially the implementation of the significant projects of benefiting the people in the 60th anniversary of the Yanbian Korean Autonomous Prefecture celebration, which has dramatically improved the appearance of Yanji City and greatly improved the quality of urban modernization. However, due to historical reasons and the limitations of economic strength, there are also regrets in Yanji's urban construction. There is no symbolic public space that can represent urban culture and image. Alilang Square covers an area of nearly 19 hectares of the large-scale Square, which is a rare gold treasure land, connecting Yanbian political center Yanbian Korean Autonomous Prefecture government center and Yanji mother river buerhatong river. Alilang Square was built into a cultural landmark and tourist attraction in Yanji, making it a leisure and health preservation place, Cultural Square, and a scenic tourist spot for Yanji citizens.

Through interviews and literature research, the local history sorted out, a reasonable plan formulates, the planning direction formulates, and a design plan suitable for the full field propose. Investigate how the existing facilities used and how they used. Connect the nearby areas to expand the space, improve the feasibility, build leisure, cultural and art place for Yanji citizens, increase the infrastructure, plan the feasible activities and industrial inflow, and enhance public space quality.

1. 3 Plan Process

Thoroughly investigate the area near Arirang Square, use a questionnaire survey and other means to understand the people's ideas, and understand some inconveniences and areas that need to be improved. According to the development policy of the government, considering the underground space of the Square, increasing the use area of the Square, on the premise of not affecting the connectivity of the Square, connecting Lihua Road on both sides of the East and the west, connecting the buerhatong river, increasing the use function of the Square, increasing the hydrophilicity of the river, realizing the feasibility of cognitive development and utilization of the Square and its surrounding areas. Based on the case study of Square and riverside, this paper puts forward the design proposal and scheme of this area. Determine the future development direction of this field. Then, according to the above research trends, improve spatial planning, and design.



[Tables 1-1] Research Process

Chapter2

Theoretical Investigation and Case Study

2. 1 The Understanding and Utilization of the City Central Square

The city center Square generally builds in the center of the city, or near the government departments, as the center of the city's politics and culture, as well as the space integrating the city's historical culture, architectural features, and landscape art. As an integral part of the urban center, the layout should thoroughly combine the characteristics of the municipal functional zoning and spatial environment and play a finishing role in the city's overall landscape. Because the city's central Square connects the whole city, it must be accessible. It should combine with the main urban road and other public transport facilities. At the same time, the surrounding road level should be enough to accommodate the corresponding traffic volume. In terms of function, this kind of Square's main task is to carry the city's major public activities with a massive flow of people and long stay time. When there is no activity, it can use for entertainment. Corresponding to the design, the central part of the Square (the main section provides the central activity place, mainly with the hard pavement, fewer trees, to ensure the smooth and open vision for large-scale activities. Some public facilities and other landscapes are set in the auxiliary part around the Square to provide places for tourists to rest and entertain.

Throughout the central Square design, most of the plane design and landscape has a low skyline, to form an open activity site. The urban central Square is an essential embodiment of the economic development level and municipal cultural level of a region and a city. An excellent central Square landscape plays a vital role in improving the overall image of the city and promoting the development of Urbanization. (Zhao Ruzhi, 2012) The function, form, and classification of the city center Square are also various. It is the most public and artistic charm in the modern city, and it is also the open space that can best reflect the contemporary urban civilization and atmosphere. (Wang Jun, 2009)

2. 2 Case Study

2. 2. 1 The Case Analysis of Square

(1) Central Park in Ho Chi Minh City

Location: Ho Chi Minh City, Vietnam

The Measure of Area : 160,700 m²

Designe : Chris Bosse(LAVA) , Stephen Buckle (ASPECT Studios)

Main Facilities :

outdoor art galleries, water features, music and theatre performance pavilions, skate park, sports zones, playgrounds, forests, waterfalls, etc. ²⁾

Learning points :

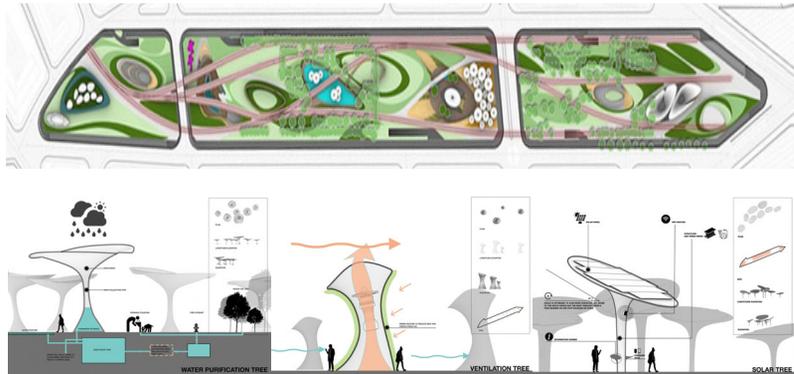
(1) The Square integrates a series of multi-functional places, spaces, and experience areas.

(2) The Square design provides dynamic and static spaces, such as sculpture garden, outdoor gallery, waterscape, music and outdoor theater Pavilion, roller skating rink, recreation space, woods, waterfalls, and commercial space.

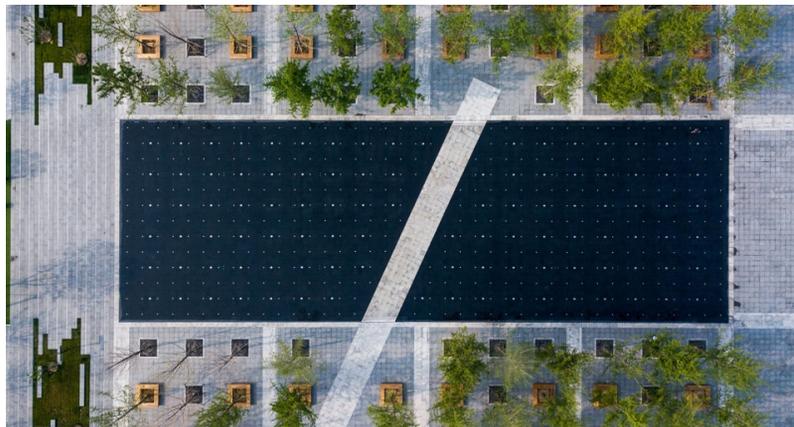
(3) Artificial plants will complement the existing landscape. 'Water purification' trees collect rainwater to be recycled and used for watering, drinking fountains and fire hydrants.³⁾

2) Data source: <https://www.archdaily.com/922558/lava-plus-aspect-design-the-central-park-of-ho-chi-minh-city>

3) Data source: <https://www.goood.cn/lava-aspect-studios-win-central-park-competition-ho-chi-minh-city.htm?lang=en>



[Figure 2-1] Central Park in Ho Chi Minh City⁴⁾



[Figure 2-2] Gu' an Central Park ⁵⁾

4) Data source: <https://www.goood.cn/lava-aspect-studios-win-central-park-competition-ho-chi-minh-city.htm?lang=en>

5) Data source: <https://baijiahao.baidu.com/s?id=1623970859605427504&wfr=spider&for=pc>

(2) Gu' an Central Park

Location: Langfang Hebei, China

The Measure of Area : 205, 000m²

Landscape design: Yilan planning and Design Institute

Main Facilities :

Fitness facilities, hydrophilic space, education space, rest area, open lawn, lake, runway

Learning points :

- (1) Strengthen the connection of surrounding areas through greening.
- (2) Taking into account the participation and rest function of users to meet the use and needs of the public.
- (3) A pool with a depth of only 3cm and fountains are set up for users to play safely. When the water surface is calm, a reflecting pool formed. When there are large-scale activities, the sluice gate is closed and becomes a Square of common paving materials.
- (4) Set up many shared spaces, main lake water, natural trees, ground cover, and aquatic plants to create a nature education space.
- (5) The runway surrounds the park, increasing the vitality of the park.⁶⁾

(3) Azatlyk – Central Square of Naberezhnye Chelny

Location: Naberezhnye Chelny, Russia

The Measure of Area : 7800 m²

Design: DROMStrelka KB

6) Data source: <https://baijiahao.baidu.com/s?id=1623970859605427504&wfr=spider&for=pc>

Main Facilities :

Outdoor theater, coffee shop, viewing platform, fountain pool (can be a skating rink in winter), garden

Learning points :

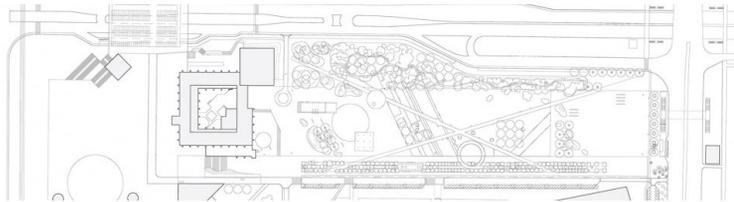
(1) Remove the original central axis design and move the main axis to the vegetation area surrounded by green trees.

(2) Set up different spaces, strengthen the connection of the surrounding.

(3) The square has an open-air market every week.

(4) Place the lawn, and people sit on the lawn to rest and watch the landscape in different seasons.

(5) Different usage of the same space in different seasons can increase the efficiency of square utilization.⁷⁾



[Figure 2-3] Azatlyk – Central Square of Naberezhnye Chelny⁸⁾

7) Data source: <https://archello.com/project/azatlyk-central-square-of-naberezhnye-chelny>

8) Data source: <https://archello.com/project/azatlyk-central-square-of-naberezhnye-chelny>

2. 2. 2 The Case analysis of Ecological River Area

(1) Wuhan Yangtze Riverfront Park in China

Location: Wuhan City, Hubei Province, China

The Measure of Area : 5, 030,000m²

Design: Sasaki Associates

Main Facilities :

Aquatic animal and plant habitat, kayak port, Riverfront Park, sunken Square, depot, terminal site of the freight train station, abandoned industrial site reproduction, restaurants, galleries and community gardens, museums, science and technology museums, waterfront park footpath, stair-like rest space.

Learning points :

(1) To promote the diversity of the wetland ecosystem, carry out strategic dredging and terrain treatment to create a variety of microenvironments.

(2) In the dry season, tourists walk and play on the sunken square and the river channel. In the rainy season, the river and the sunken square are flooded, forming waterscape.

(3) Create a hydrophilic space by using the Wharf site, etc.

(4) Set up restaurants, galleries and community gardens, and other activity areas.

(5) Walking roads set up along the river.⁹⁾

9) Data source: <https://www.sasaki.com/projects/wuhan-yangtze-riverfront-park/>



[Figure 2-4] Wuhan Yangtze Riverfront Park in China¹⁰⁾



[Figure 2-5] The Weaves¹¹⁾

10) Data source: <https://www.sasaki.com/projects/wuhan-yangtze-riverfront-park/>

11) Data source: <https://www.mvrdv.com/news/2492/mvrdvs-%E2%80%9Cthe-weaves%E2%80%9D-wins-competition-to-reinvent-seouls-tancheon-waterfront>

(2) The Weaves

Location: Jamsil, Seoul, South Korea

The Measure of Area : 630,000 m²

Design: MVRDV

Main Facilities :

Cisterns, artificial islands, and purifiers contribute to a healthy waterfront ecosystem, The overlapping roads (“Event Dome” , “Seoul Water Path”), squares, viewing platforms, amphitheaters, cafes

Characteristics of Surrounding Areas :

(1) The sidewalk, bicycle lane, landscape, and public facilities are interwoven and combined.

(2) The development of the winding and interconnected road network makes pedestrians easy to enter the whole waterfront and contact the natural ecology in various ways.

(3) These paths crisscross, twists and turns, ups and downs, forming squares, sightseeing spots, amphitheaters, cafes, and other conveniences, which also give the park a stronger sense of three-dimensional.¹²⁾

12) Data source: <https://www.mvrdv.com/news/2492/mvrdvs-%E2%80%9Cthe-weaves%E2%80%9D-wins-competition-to-reinvent-seouls-tancheon-waterfront>

Chapter3 Analysis of Design Conditions

3. 1 Surrounding Site Analysis

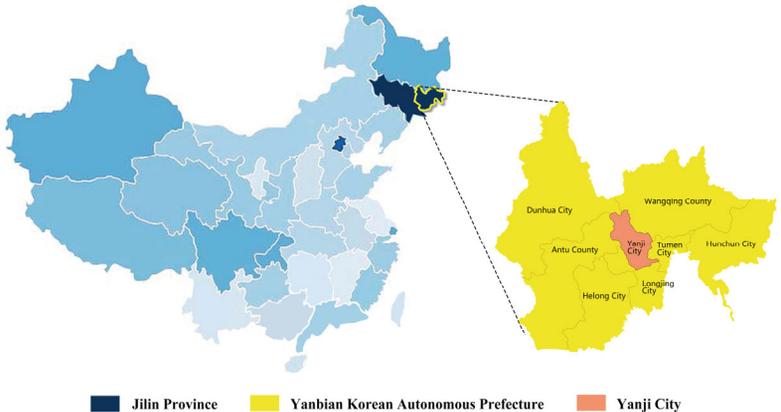
3. 1. 1 Geographical Characteristics

Jilin Province locates in the northeast of China. Yanbian Korean Autonomous Prefecture is located on the eastern border of Jilin Province, northeast of China. It is 41° 59' N to 44° 30:42' N, 127° 27' E to 131° 18' E. Located at the border of China, North Korea, and Russia, it faces the sea of Japan. It borders on the Russian coastal border in the East and faces North Hammyong Province (함경북도) and Ryanang Province (량강도) across the Tumen River (图们江) in the south; the total land area of Yanbian Korean Autonomous Prefecture is 43300 Square kilometers, accounting for about a quarter of the total area of Jilin Province. Yanbian Korean Autonomous Prefecture (延边朝鲜族自治州) includes six cities and two counties, namely Yanji City (延吉市), Tumen City (图们市), Dunhua City (敦化市), Longjing City (龙井市), Hunchun City (琿春市), Helong City (和龙市), Wangqing County (汪清县), and Antu County (安图县). With a population of 2.0866 million (2018), Yanbian Korean Autonomous Prefecture is the only and largest Chinese Korean National Minority Autonomous Prefecture in China, where 42.3% of the Korean Chinese population lives.¹³⁾

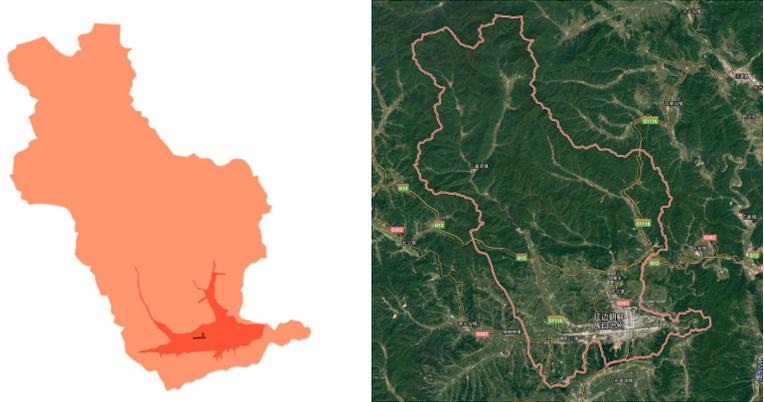
Yanji City (延吉市) is the administrative capital, economic, cultural, and Communication center of Yanbian Korean Autonomous Prefecture, Jilin Province. Yanji City (延吉市) is located in the middle of Yanbian Korean Autonomous Prefecture, north of Changbai Mountain. Yanji is adjacent to Dunhua City (敦化

13) Data source: <https://baike.baidu.com/item/%E5%BB%B6%E5%90%89/688920?fr=aladdin>

市), Antu County (安图县), Longjing City (龙井市), Tumen City (图们市), and Wangqing County (汪清县). The geographical coordinates are between 42° 50' - 43° 23' north latitude and 129° 01' - 129° 48' east longitude, governing 10 township administrative regions, including 6 streets and 4 towns. The registered population of the city is 5413000, and the Korean population is 308400, accounting for 57% of the total population, the main urban area located in the south of Yanji city.¹⁴⁾



[Figure 3-1] Yanbian Korean Autonomous Prefecture, Jilin Province, China



[Figure 3-2] Yanji City and Yanji City main district

14) Data source: <https://baike.baidu.com/item/%E5%BB%B6%E5%90%89/688920?fr=aladdin>

3. 1. 2 Natural Environment

(1) Topography

Yanji city is surrounded by mountains in the East, South, and North, open in the west, flat in the middle, and horseshoe-shaped basin. The average altitude is 150 meters. The terrain is high in the north and low in the south, and the ground is hilly. The main urban area distributes in the basin area.¹⁵⁾

(2) Water System

Buerhatong river (布尔哈通河) locates in the south-central part of Yanbian Prefecture, Jilin Province. It originates from the marshland at the east foot of haerbaling(哈尔巴岭) in Antu County (安图县). The Buerhatong river is 242km long, with a gradient of 0.6 ‰, a drainage area of 7141km², and an average annual runoff of 1.312 billion m³. It belongs to the Tumen River system, and its main tributaries are Tumen River (图们江) system. Its main tributaries are Hailan River (海兰江), Chaoyang River (朝阳河), Yanji River (延吉河) and Gaya river (嘎呀河).

Yanji city is located in the middle reaches of the buerhatong River, with a total length of 18.7km and a drainage area of 121.97km². The channel is wide and shallow, the flat water surface is 27-225m full, and the average water depth is 1.1m. From April to November, the water storage height of the section of the Buerhatong river from the Xinmin bridge to the Tianchi bridge 1.5m, during the freezing period (from the beginning of December to the end of March), the water level is about 1.2m, the frozen thickness is 0.4m, and the frozen layer is 0.8m. (WangCheng,GuoZhongling,2006)

15) Data source: http://www.yanji.gov.cn/sq_2473/dldm/



[Figure 3-3] Yanji contour¹⁶⁾

[Figure 3-4] Yanji water system map¹⁷⁾

16) Data source: <http://www.resdc.cn/data.aspx?DATAID=284>

17) Data source: <http://www.resdc.cn/data.aspx?DATAID=279>

(3) Soil

The soil in the area is primarily gray-brown soil, paddy soil, alluvial soil, meadow soil, and black soil, etc. ¹⁸⁾

The division of land use mainly divided into six aspects: cultivated land, forest land, grassland, water area, urban and rural, industrial and mining construction land, unused land. The six areas will continue to divide into 25 regions. Among them, there are 15 kinds of land use types in Yanji, of which forest land occupies the north of the city and most of the whole Yanji city. The dry farm is located in Yanhe River and around the main urban area of the city. The city's main metropolitan area located in the open space of the southeast corner of the city.

Classification of Land use			
Land use I		Land use II	
Number	Name	Number	Name
1	Cultivated land	11	Paddy field
		12	Dry farm
2	Forest land	21	Forest land
		22	Shrub land
		23	Sparse woodland
		24	Other forest land
		31	High coverage grassland
3	Grassland	32	Medium coverage grassland
		33	Low coverage grassland
		41	River and canals
4	Water area	42	Lakes
		43	Reservoir, pond
		44	Glacier permanent snow
		45	Sea beach
		46	Shallows
5	Urban and rural, industrial and mining construction land	51	Cities and towns
		52	Rural residential land
		53	Land for construction
6	Unused land	61	Desert
		62	Gobi Desert
		63	Saline-alkali soil
		64	Marshland
		65	Bare land
		66	Bare rock land
		67	Other unused land

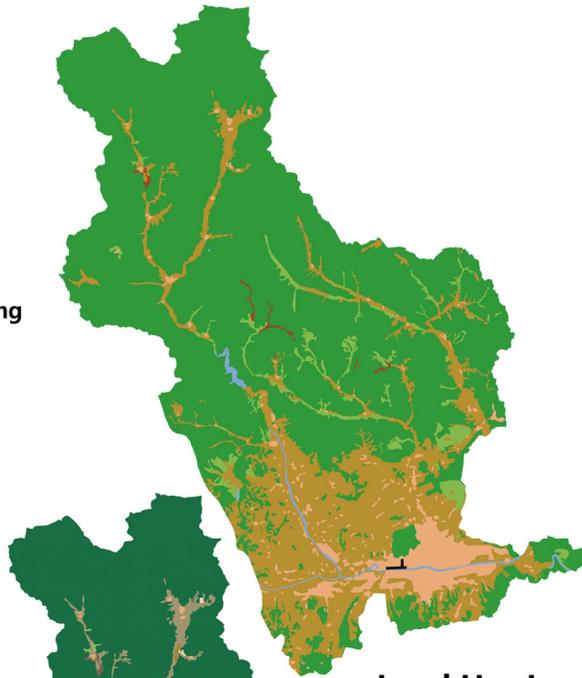
[Table 3-1] Classification of land use¹⁹⁾

18) Data source: http://www.yanji.gov.cn/sq_2473/dldm/

19) Data source: <http://www.resdc.cn/data.aspx?DATAID=264>

Land Use I

- Cultivated land
- Forest land
- Grass land
- Water area
- Urban and rural, industrial and mining construction land
- Unutilized land



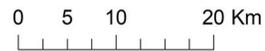
Land Use I

Land Use II

- Paddy field
- Dry farm
- Forest land
- Shrub land
- Sparse woodland
- Other forest land
- High coverage grassland
- Medium coverage grassland
- River and canals
- Reservoir, pond
- Shallows
- Cities and towns
- Rural residential land
- Land for construction
- Marshland



Land Use II



[Figure 3-5] Land uses I ²⁰⁾

[Figure 3-6] Land uses II ²¹⁾

20) Data source: <http://www.resdc.cn/data.aspx?DATAID=264>

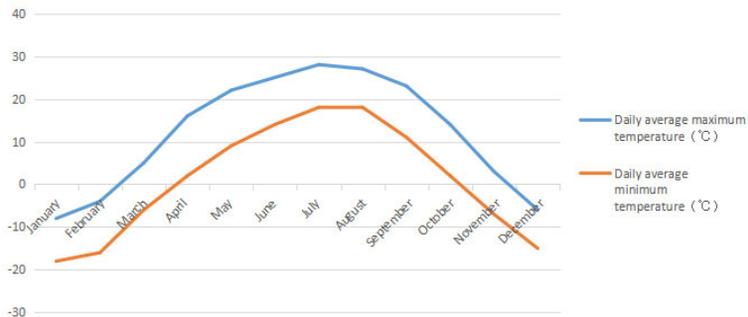
21) Data source: <http://www.resdc.cn/data.aspx?DATAID=264>

(4) Meteorological Climate

Yanji locates in the mountain forest basin of high latitude, with continental climate characteristics. It is dry and windy in spring, warm and rainy in summer, cool and rainless in autumn, and long and cold in winter. It belongs to the semi-humid climate area in the middle temperate zone. The annual average temperature is 5.5 °C, the average temperature in January is the lowest, generally around -13 °C and the extreme minimum heat is below -26 °C; the average temperature in July is the highest, typically between 22 °C and 23 °C, and the absolute maximum temperature is 38 °C. The annual frost-free period is 160 days, the average yearly precipitation is 479.0 mm, the average sunshine is 2447.2 hours, and the ice day is about 164 days.²²⁾

Month	Daily average maximum temperature (°C)	Daily average minimum temperature (°C)	Historical highest temperature (°C)	Historical lowest temperature (°C)
January	-8	-18	1	-26
February	-4	-16	8	-23
March	5	-6	24	-19
April	16	2	34	-6
May	22	9	32	1
June	25	14	35	8
July	28	18	36	11
August	27	18	38	8
September	23	11	28	0
October	14	2	24	-9
November	3	-7	17	-17
December	-6	-15	5	-25

[Table 3-2] Yanji weather²³⁾



[Table 3-3] Yanji weather²⁴⁾

22) Data source: https://www.tianqi.com/qiwen/city_yanji/

23) Data source: https://www.tianqi.com/qiwen/city_yanji/

24) Data source: https://www.tianqi.com/qiwen/city_yanji/

3. 1. 3 Urban Development Process

First Phase: The formation of urban structure (1909 ~ 1945):

From 1909 to 1945, Yanji began to form the modern urban structure under the Japanese rule.

Second Phase: Urban integration (1945 ~1992):

From 1945 to 1992, Yanji liberates from Japan, Hebei, and Henan, were merged, and urban integration officially carried out.

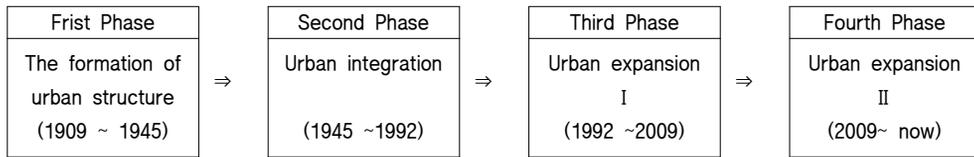
Third Phase: Urban expansion I (1992 ~2009):

From 1992 to 2009, a series of political changes made Yanji expand to the East, West, North, and South in the rapid development.:

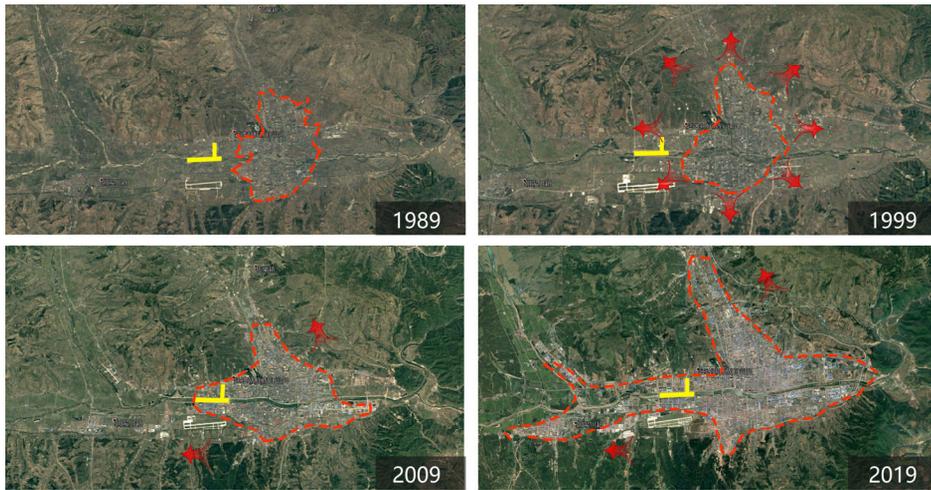
The fourth stage: urban expansion II (2009 to now):

From 2009 to now, Yanji has formulated the 2030 urban master plan with the western region as the center. (Li, Yin-Zhu · Park, Sang-Cheon · Lee, Chang-Hyun · Kwon, Oh-Eun, 2019) The city develops continuously from north to west.

Take the buerhatong River as the boundary, the northern part of the River is called Hebei District, and the southern part of the River is called Henan district. The western new area is on the west side, the northern New Area is on the north side of the city, and the industrial development zone is on the west side of the city. The area located in the center of the city is the old urban area and the economic center of the city. After 2009, the center of Yanji city moved to the west continuously.



[Table 3-4] The course of urban evolution



[Figure 3-7] Urban change map in the past 40 years ²⁵⁾

²⁵⁾ Data source: google earth Historical images

3. 1. 4 Population

According to the data of Jilin Province Statistical Yearbook in 2018, Yanji city has 207,200 households, 5,500,100 registered population, 77,800 rural population, 472,300 urban population, 265,300 male population, 284,800 female population, 76,500 under the age of 18, 117,400 under the age of 18-34, 247,300 under the age of 35-60, 108,900 over the age of 60.²⁶⁾ Chinese Korean National Minority population accounts for 56.3% of Yanji city's population, the Han population accounts for 41.0% of Yanji city's population, and the other ethnic population accounts for 2.7% of Yanji city's population.²⁷⁾

year	Household registration population	Urban population	Urbanization rate	Male	Female	Sex ratio	Proportion of ethnic minorities	Number of households
2018	55.01	47.23	85.80%	26.53	28.48	93.15%	59.01%	20.72
2010	51.01	50.55	89.80%	28.01	28.28	99.04%	51.13%	20.86
2000	38.93	36.29	83.94%	22.33	20.89	106.89%	55.49%	12.97

* Sixth Population Census (2010) * Fifth Population Census (2000) *Unit: ten thousand people

[Table 3-5] Yanji Population composition²⁸⁾

Age	Male	Female
Under 10	19717	18022
10 generation	44765	27196
20 generation	46570	52975
30 generation	55247	47193
40 generation	55176	54719
50 generation	41800	41207
60 generation	20921	23575
70 generation	11144	14024
Over 80	2611	3949

[Table 3-6] Age group composition of male and female [Sixth Population Census(2010)]²⁹⁾

26) Data source: <https://www.hongheiku.com/xianjirank/jlxsqrk/9816.html>

27) Data source: http://www.yanji.gov.cn/sj_2518/sjcx/201809/t20180930_80629.html

28) Data source: <https://www.hongheiku.com/xianjirank/jlxsqrk/9816.html>

29) Data source: <https://www.hongheiku.com/xianjirank/jlxsqrk/9816.html>

3. 1. 5 Traffic System

Yanji Chaoyang Sichuan International Airport locates in the southwest of the main urban area of Yanji city. Yanji Chaoyangchuan International Airport built-in 1952. Since 1985, it has become a 4C level civil-military airport, with 23 air points, including 18 domestic air points in China and 5 international air points.³⁰⁾

There are two railway stations in Yanji City, Yanji railway station, which locate in the south of the main urban area of Yanji. It found in 1924, and mainly operates the old type of trains with a fast train, the local train. ³¹⁾Another railway station is Yanji west station, which locates on the west side of Yanji's main urban area. It is built-in 2015. It mainly operates new high-speed trains with D-series high-speed trains, inter-city rail service, and high-speed railway.³²⁾

There are 4 national highways and 4 provincial highways in Yanji city. The transportation hub mainly distributes in the main urban area in the southeast. The roads in the old urban area are dense, and the roads in the new urban area are relatively wide, but most of them are 6-lane and 8-lane roads. The flow direction of roads and rivers outside the main urban area is similar.

30) Data source:

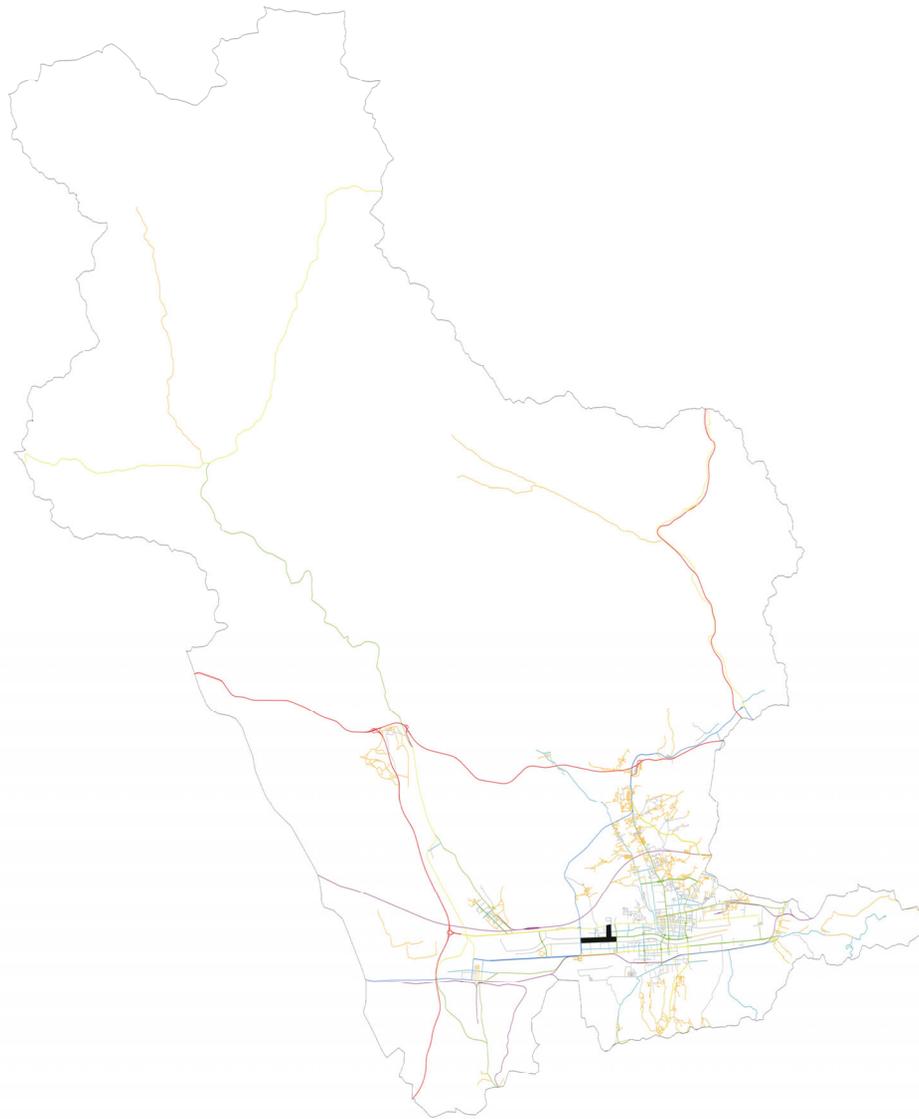
<https://baike.baidu.com/item/%E5%BB%B6%E5%90%89%E6%9C%9D%E9%98%B3%E5%B7%9D%E5%9B%BD%E9%99%85%E6%9C%BA%E5%9C%BA/8159780?fromtitle=%E5%BB%B6%E5%90%89%E6%9C%BA%E5%9C%BA&fromid=222538&fr=aladdin>

31) Data source:

<https://baike.baidu.com/item/%E5%BB%B6%E5%90%89%E7%AB%99/10970949?fromtitle=%E5%BB%B6%E5%90%89%E7%81%AB%E8%BD%A6%E7%AB%99&fromid=315828&fr=aladdin>

32) Data source:

<https://baike.baidu.com/item/%E5%BB%B6%E5%90%89%E8%A5%BF%E7%AB%99/13886632?fr=aladdin>



- | | | | |
|-----------|------------------|-----------------|------------|
| ■ Footway | ■ Primary road | ■ Tertiary road | ■ Motorway |
| ■ Path | ■ Secondary road | ■ Trunk road | ■ Railway |

[Figure 3-8] Yanji Road Map³³⁾

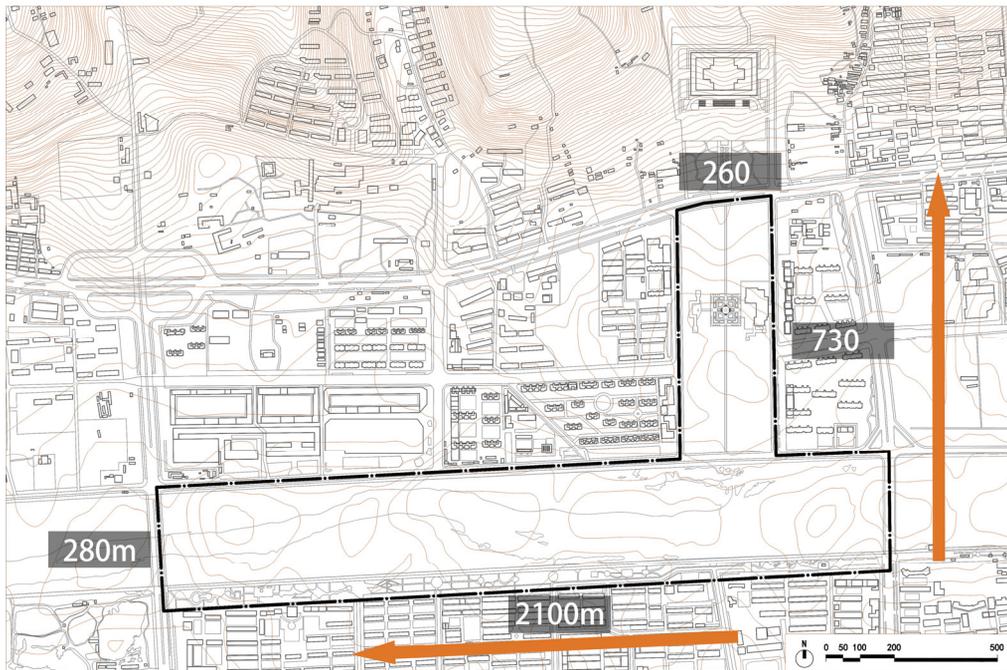
33) Data source: <http://www.resdc.cn/data.aspx?DATAID=237>

3. 2 Site Internal Analysis

3. 2. 1 Site Topography

Allilang Square is about 260 meters from west to east, 730 meters from south to north, with a total area of about 19 hectares. The Buerhatong river section from the Xinmin bridge to the Tianchi bridge is about 2.1km from west to east, 280m from south to north, covering an area of about 58.8 hectares.

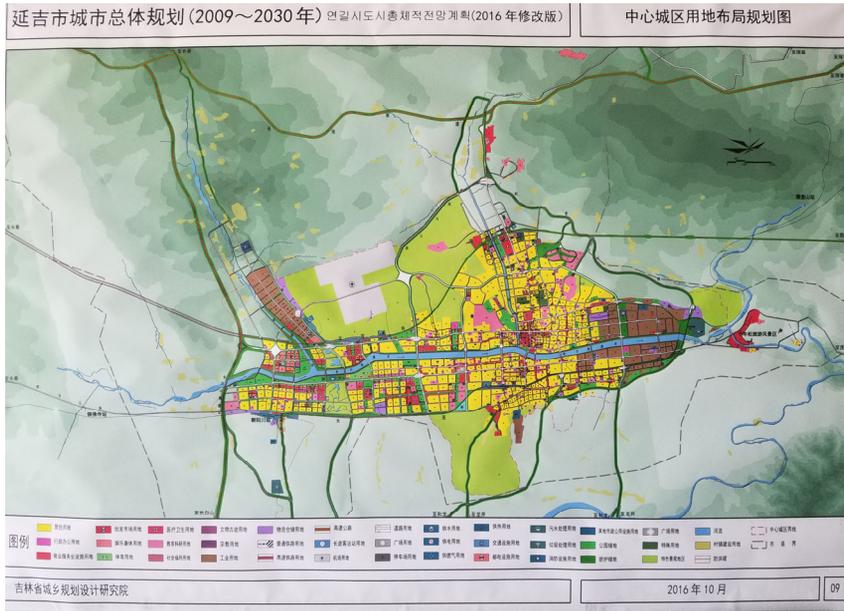
The elevation difference of the Square is 7 meters from south to west, and the gradient is about 1%. The section of the Buerhatong river from the Xinmin bridge to the Tianchi bridge from east to west, the slope is about 0.3%. The whole site is relatively flat.



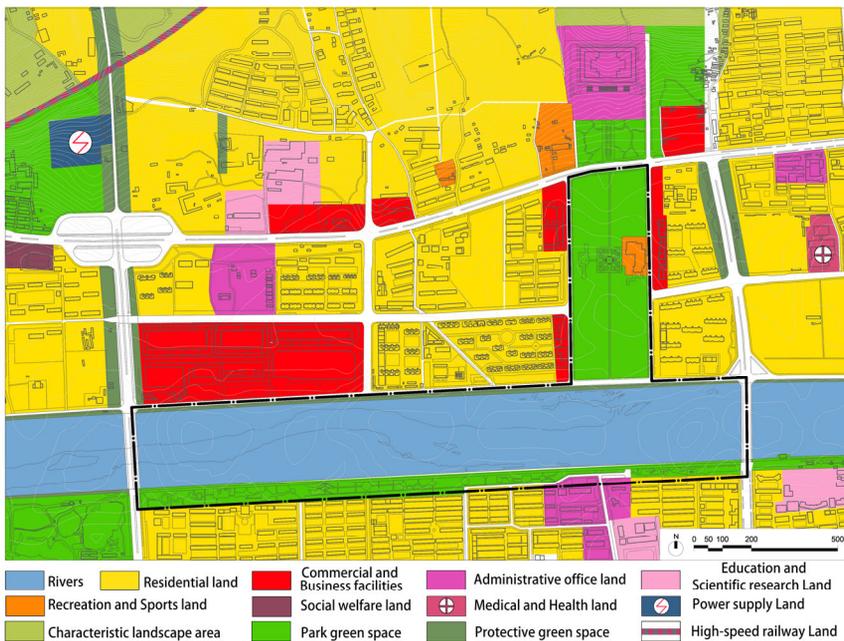
[Figure 3-9] Analysis of Site Topography

3. 2. 2 Site Land Use

In 2016, the government formulated the urban development plan to 2030, in which Alilang Square land divided into green park space, and the north side connected with the public garden combined with the Yanbian Korean Autonomous Prefecture government, extending the scope of greening. Commercial and business facilities distributed on the east and west sides of the Square, among which Wanda Plaza(万达广场) is a large shopping mall on the west side. The residential land near the site has the largest area. The residential areas in the north of Buerhatong River are all built in the past ten years, belonging to the high-end residential area of Yanji city. The residential areas in the south of the Buerhatong River have a history of 15-30 years. Near the whole site, the number of residents in large and rising. Not only is the Yanbian Korean Autonomous Prefecture Government, the political center of Yanji City, on the north side of Alilang Square, but there are also many large and small government offices around for citizens' convenience. The political center of the Yanbian Korean Autonomous Prefecture Government is in the north of Alilang because there are many government offices. To develop the western new area, many schools, and other educational institutions, as well as cultural activities, were introduced. Among them, Yanbian Library in the Alilang library is the most extensive library in Yanji city.



[Figure 3-10] Yanji city land use³⁴⁾



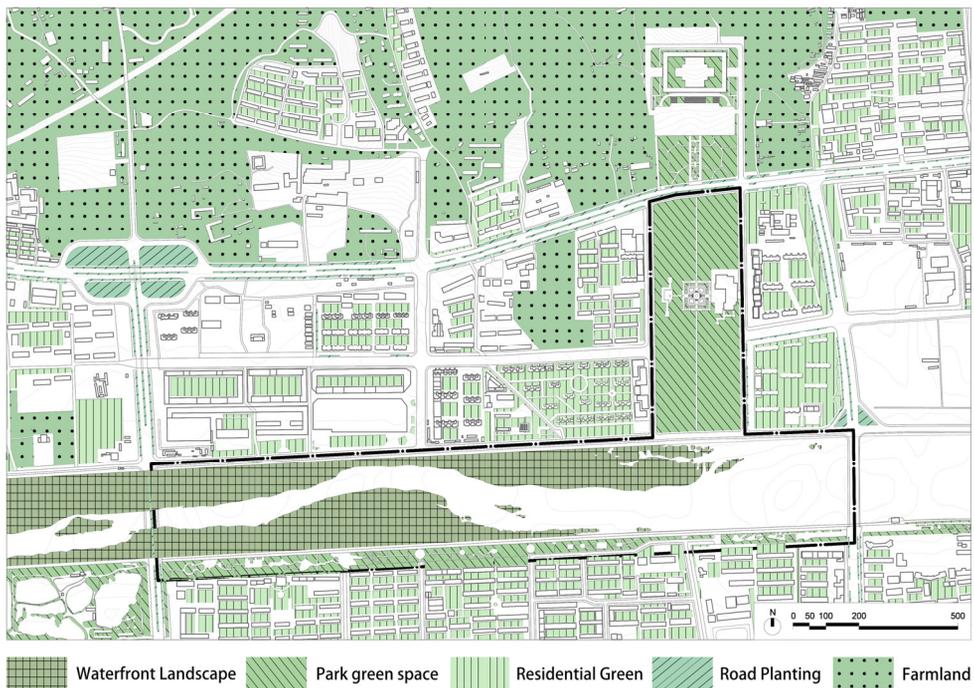
[Figure 3-11] Site land use³⁵⁾

34) Data source: Jilin Institute of urban and rural planning and design

35) Data source: Jilin Institute of urban and rural planning and design

3. 2. 3 Current Situation of Site Green Space Utilization

Because the residential areas around the site was built in recent years, and most of them are high-grade residential areas, the green facilities inside the community are relatively good. There are many areas to be built nearby, so there is a lot of construction land, and there are many properties that haven't started yet, most of which temporarily used as farmland. There are a lot of park green spaces around the site in the whole urban area. The park green space occupies a large area; It is an area with a better greening degree.



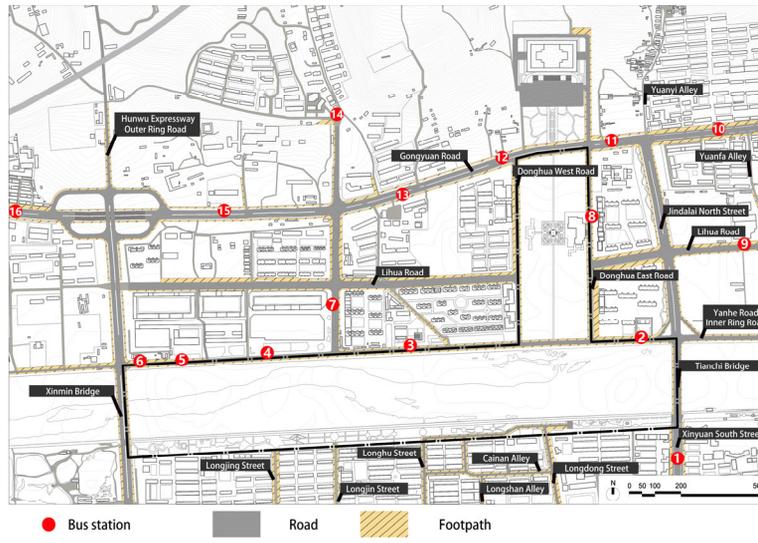
[Figure 3-12] potentials for urban ecology ³⁶⁾

³⁶⁾ Data source: Jilin Institute of urban and rural planning and design

3. 2. 4 Traffic Conditions around the Site

There are 17 routes near the site, including 4 main urban roads: Gongyuan Road (6 lanes), Lihua Road (6 lanes), Yanhe Road (Inner Ring Road) (6 lanes), Jindalai North Street (10 lanes), Hunwu Expressway (Outer Ring Road) (10 lanes).

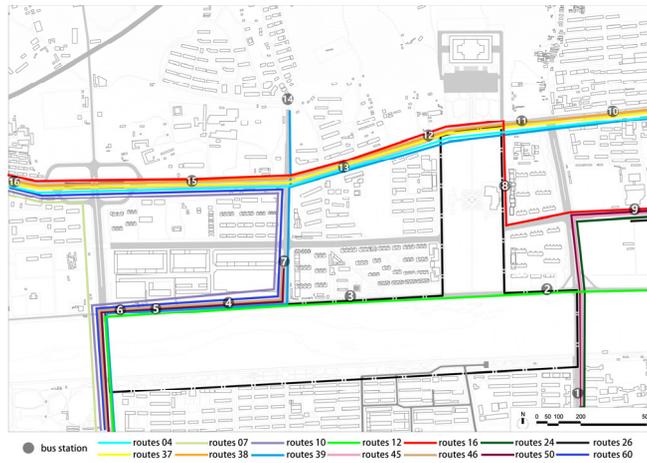
There are 16 bus stops near the site. There are 40 bus routes in Yanji City, among which 14 (4, 7, 10, 12, 16, 24, 26, 37, 38, 39, 45, 46, 50, 60) bus routes pass around the site. 35% of the buses can reach around the site, which is a convenient place for transportation. Among them, 8 (4, 24, 26, 37, 39, 45, 50) bus routes pass through the city, 60), there are three routes (7, 16, 24,) to the countryside and eight routes (4, 7, 10, 16, 24, 37, 38, 60) to the transportation hub of the airport and railway station. These bus stops are convenient to get to Alilang Square and can not take too long.



[Figure 3-13] Traffic conditions around the site ³⁷⁾

37) Data source:

[https://map.baidu.com/search/%E5%BB%B6%E5%90%89%E5%B8%82/@14373480.095804248,5300510.915,16.44z/mapttype%3DB_EARTH_MAP?querytype=s&da_src=shareurl&wd=%E5%BB%B6%E5%90%89&c=1&src=0&pn=0&sug=0&l=13&b=\(14120405,4469188;14153941,4493476\)&from=webmap&biz_forward=%7B%22scaler%22:1,%22styles%22:%22pl%22%7D&device_ratio=1](https://map.baidu.com/search/%E5%BB%B6%E5%90%89%E5%B8%82/@14373480.095804248,5300510.915,16.44z/mapttype%3DB_EARTH_MAP?querytype=s&da_src=shareurl&wd=%E5%BB%B6%E5%90%89&c=1&src=0&pn=0&sug=0&l=13&b=(14120405,4469188;14153941,4493476)&from=webmap&biz_forward=%7B%22scaler%22:1,%22styles%22:%22pl%22%7D&device_ratio=1)



[Figure 3-14] Bus route map 38)

Bus station around the site			
Number	Bus station name	Bus line	Time to Aliang square on foot
1	Tianchi Bridge South Station	24, 45, 50	12
2	Water Conservancy Bureau Station	12	2
3	Changchun Gas Yanji Company Station	12	5
4	Wanda Plaza Station	10, 12, 39, 46, 50, 60	15
5	power supply company Station	10, 12, 39, 46, 50, 60	18
6	Power Supply Bureau Station	60	21
7	Wanda Plaza East Station	10, 39, 46, 50, 60	12
8	Yanbian library station	16	1
9	Traditional Chinese medicine hospital station	16, 24, 26, 45, 50	10
10	Xijunmingyuan station	4, 37, 38, 39	12
11	East Station of Yanbian Korean Autonomous Prefecture	4, 37, 38, 39	2
12	west Station of Yanbian Korean Autonomous Prefecture	4, 16, 37, 38, 39	2
13	Lihuyuan Station	4, 16, 37, 38, 39	10
14	Longchengjiayuan Station	39	17
15	Beishan primary school west school station	4, 10, 16, 37, 38, 60	15
16	Social Security Bureau Station	4, 7, 10, 16, 37, 38, 60	37

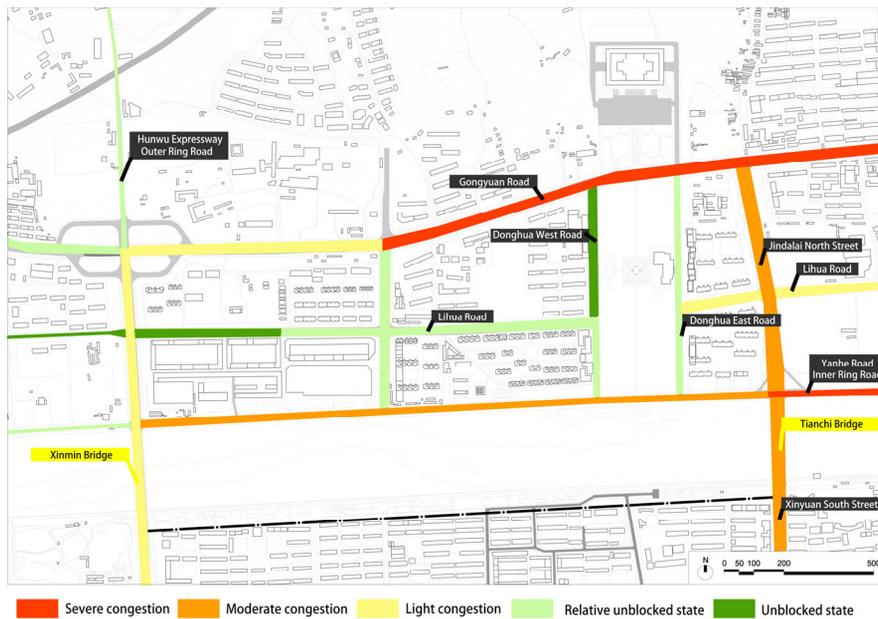
[Table 3-7] Bus station around the site 39)

38),39) Data source:

[https://map.baidu.com/search/%E5%BB%B6%E5%90%89%E5%B8%82/@14373480.095804248,5300510.915,16.44z/matype%3DB_EARTH_MAP?querytype=s&da_src=shareurl&wd=%E5%BB%B6%E5%90%89&c=1&src=0&pn=0&sug=0&l=13&b=\(14120405,4469188;14153941,4493476\)&from=webmap&biz_forward=%7B%22scaler%22:1,%22styles%22:%22pl%22%7D&device_ratio=1](https://map.baidu.com/search/%E5%BB%B6%E5%90%89%E5%B8%82/@14373480.095804248,5300510.915,16.44z/matype%3DB_EARTH_MAP?querytype=s&da_src=shareurl&wd=%E5%BB%B6%E5%90%89&c=1&src=0&pn=0&sug=0&l=13&b=(14120405,4469188;14153941,4493476)&from=webmap&biz_forward=%7B%22scaler%22:1,%22styles%22:%22pl%22%7D&device_ratio=1)

The traffic jam time mainly divide into two periods. The first period is 07:30-09:30, and the second period is 16:30-18:30. These two periods are the main commuting time, so the traffic jam.⁴⁰⁾

The traffic congestion index divides into 5 levels, and the 0-10 scoring mechanism use to evaluate the traffic operation status of the regional road network. The number of each two grades is one. The higher the value is, the more serious the traffic congestion is, represented by five colors in the figure. "Unblocked state" is dark green (congestion index is 0-2), "Relative unblocked state" is light green (congestion index is 2-4), "light congested state" is yellow (congestion index is 4-6), "Moderate congested state" is orange (congestion index is 6-8), "Serious congested state" is red (congestion index is 8-10).⁴¹⁾



[Figure 3-15] Traffic congestion state diagram ⁴²⁾

3. 2. 5 The Section of the Buerhatong River from the Xinmin Bridge to

40) Data source: Yanji Transportation Bureau/

41) Data source: <http://cs.zjol.com.cn/system/2015/04/01/020581606.shtml>

42) Data source: Yanji Transportation Bureau/

the Tianchi Bridge Analysis

The section of the Buerhatong river from the Xinmin bridge to the Tianchi bridge is the westernmost section of the riverside park at this stage. The riverside park located in the south end of Buerhatong. It has been constructed since 2011 and divided into three phases. The first is the section of the Buerhatongriver from the Henan bridge to the Yanxin bridge, the second is the section of the Buerhatong river from the Yanxin bridge to the Tianchi bridge, and the third is the section of the Buerhatong river from the Xinmin bridge to the Tianchi bridge. It was completed in 2013 and covered half of the Buerhatong River in the urban area. The riverside park takes leisure and entertainment as its orientation, and its internal facilities are relatively intact, which can meet the needs of the sport of surrounding residents.



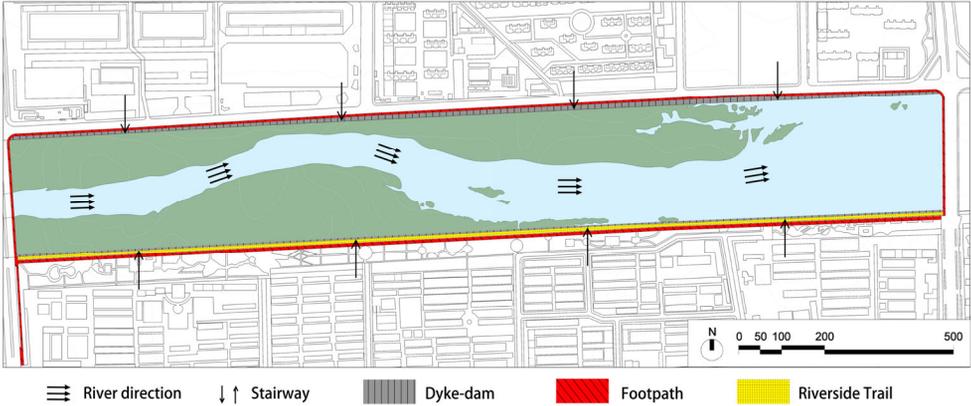
[Figure 3-16] Riverside Park Photo 1



[Figure 3-17] Riverside Park Photo 2

However, there is no facility in Hebei, but only a 3 meter walk. There is a row of *Firmiana platanifolia* (L. f.) Marsili in the middle of the road, which makes the narrow road become narrower and without any hydrophilic space. Yanhe Road between Alilang Square and Buerhatong river is the inner ring road of Yanji city.

During the rush hours of 07:00-08:30 and 16:30-18:00, the road is bustling. The pedestrian road beside the road is noisy, full of car exhaust and narrow, so cannot feel relaxed and happy on this road.

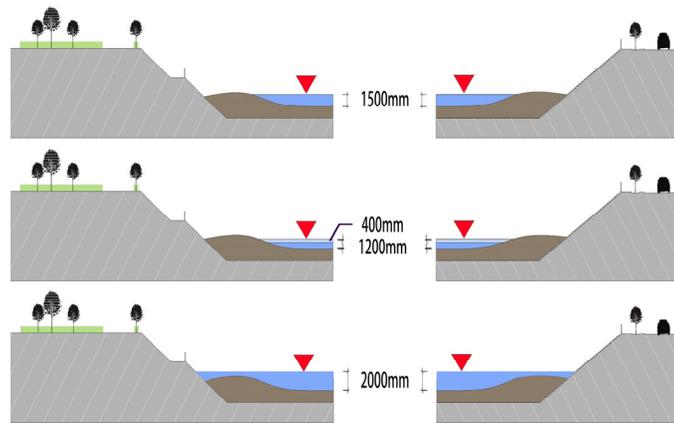


[Figure 3-18] Buerhatong river Regional analysis

There are eight stairs on the north and south sides of the section of the Buerhatong river from the Xinmin bridge to the Tianchi bridge . From November to March of the next year, the Buerhatong river entered the freezing period, with the height of the river in the freezing period is 1.2m, ice thickness is about 0.4m and a soil layer of approximately 0.8m. People can go down the stairs to the river, convenient for the riverside park at the south end of Buerhatong. They can also have many ice entertainment activities on the ice to increase people’s entertainment life in winter. However, from April to October, the ice in the Buerhatong river melted and could not pass through the river. Only the farmers of animal husbandry led the sheep through the stairs to enter the river’s green land for breeding. Most of the people only played an ornamental role in the river, and the way of using the ice after melting was more than in winter. The average height of the water surface is about 1.5 meters. The flow direction of the river flows from west to East. The stream’s flow velocity is 1.0m/s in the

primary flood season from May to September, and 0.5m/s in the dry season from March to April and October.

There are five barrages on the Buerhatong River to control the height of the river surface, controlling the flood within 2 meters, and the highest height once reached 1.71m.



[Figure 3-19] River Section

Plants in the Buerhatong River are *Setaria viridis* (L.) Beauv, *Arundinella hirta* (Thunb.) Tanaka, *Glycyrrhiza pallidiflora* Maxim. *Triarrhena sacchariflora* (Maxim.) Nakai, *Phragmites communis* (Cav.) Trin. ex Steud, *Calamagrostis pseudophragmites* (Haller f.) Koeler, *Typha orientalis* Presl, *Scirpus validus* Vahl, *Miscanthus*, *Mperata cylindrica* (L.) Beauv. They are all wild, and there is no person in charge of the management. The main fish species in Hanoi are *Carassius auratus auratus*, *Cyprinus carpio*, *Silurus asotus*, *Channa asiatica*. In spring and Autumn mallard, Wild goose, *Aix galericulata*, etc. birds to appear nearby.



[Figure 3-20] Plants in the river basin 1 [Figure 3-21] Plants in the river basin 2 ⁴³⁾

As in 2016, the water quality of the Buerhatong river is level V, which is suitable for agricultural water use areas and water areas with general landscape requirements. Water bodies exceeding the level IV water quality standards have no useful function. In 2017, the government began to carry out management, started to implement rainwater and sewage diversion, rainwater into Hanoi, and sewage into the pipe network for treatment. Since 2017, the river water quality has reached level IV, suitable for general industrial protection areas and non-contact entertainment water for the human body.

The annual mean value of main pollutants in the lower section of buerhatong River in Yanji in 2016-2018			
Number	1	2	3
Particular year	2016	2017	2018
PH	7.09	7.44	7.17
Chemicaloxygen demand (mg/L)	26	23	20
Permanganate index (mg/L)	5.8	5.49	5.5
Ammonianitrogen (mg/L)	2.209	1.014	1.15
Totalphosphorus (mg/L)	0.256	0.224	0.179
waterquality classification	V	IV	IV

[Table 3-8] Water quality table (2016-2018) ⁴⁴⁾

43) Data source: <http://wap.yanjinews.com/index.php?m=content&c=index&a=show&catid=6&id=48668>

44) Data source: Yanji Water Conservancy Bureau

3. 2. 6 Alilang Square Analysis

There is a 5-meter-wide pedestrian road on four sides of Alilang Square, and a path through the north and south in the middle, which is also the only road in the Square. On the eastern side of the Square, there is a row of *Firmiana platanifolia* (L. f.) Marsilion the north side. There are 31 species of plants on the south side, including 13 species of flowers and plants, 18 species of trees and shrubs. Lawns dominate the Square without trees. There is only one road in the Square of nearly 20 hectares, which is very unreasonable. Therefore, the grass in the Square trample and many artificial ways appear.



[Figure 3-22] Alilang Square lawn photos ⁴⁵⁾ [Figure 3-23] Alilang Square Main road photos ⁴⁶⁾



[Figure 3-24] Alilang Square south side photos [Figure 3-25] Alilang Square winter photos

45) Data source: http://blog.sina.com.cn/s/blog_4c63ffc20102x6zd.html

46) Data source: http://blog.sina.com.cn/s/blog_4c63ffc20102x6zd.html



[Figure 3-26] Current of Alilang square

Quantity of plants in Alilang square			
Number	Name	Number of plants	planting area (m2)
1	<i>Syringapubescens</i> Turcz. subsp. <i>microphylla</i> (Diels) M.C.Changet X.L.Chen	6680	267.19
2	<i>Leptodermis parkeri</i> Dunn	2000	80.01
3	<i>Spiraea thunbergii</i> Bl.	12040	481.65
4	<i>Ulmus pumila</i> L cv 'Jinye'	9970	379.92
5	<i>Prunus Cerasifera</i> Ehrhar f. <i>atropurpurea</i> (Jacq.) Rehd.	4200	160.95
6	<i>Spiraea japonica</i> Gold Mound	85	3.46
7	<i>Swida alba</i> Opiz	3700	112.07
8	<i>Physocarpus opulifolius</i> var. <i>luteus</i>	715	23.91
9	<i>Forsythia suspensa</i>	3230	129.27

10	Rosa rugosa var. cathayensis	3980	159.24
11	Sabina vulgaris Antoine	400	33.12
12	Hosta plantaginea (Lam.) Aschers.	47850	1914
13	Lawn	—	3177.13
14	Pinus thunbergii Parl.	75	—
15	Acer pictum Thunb. ex Murray	37	—
16	Picea asperata Mast	86	—
17	Fraxinus rhynchophylla Hance	23	—
18	Alnus cremastogyne	11	—
19	Crataegus pinnatifida var. major N. E. Brown	5	—
20	Ligustrum obtusifolium Sieb. et Zucc.	112	—
21	Acer ginnala Maxim.	57	—
22	Lonicera japonica Thunb	56	—
23	Quercus mongolica Fisch. ex Ledeb.	24	—
24	Tilia tuan Szyszyl.	1	—
25	Albizia kalkora	11	—
26	pyrus ussuriensis maxim	3	—
27	Acer triflorum Komarov	3	—
28	Ulmus pumila L.	1	—
29	Acer ginnala Maxim.	8	—
30	Amygdalus triloba	1	—
31	Salix babylonica	2	—
Total green area		—	7367.22

[Table 3-9] Current situation of plant quantity in Alilang square ⁴⁷⁾

The Square has the most extensive library in Yanji, Yanbian Korean Autonomous Prefecture library has a total area of 12920 Square meters, 9 reading rooms, 4 skill training rooms and lecture halls, more than 1000 seats, and more than 200 computers can access the Internet at the same time. At present, it has a collection of 400000 books, including more than 80000 Korean documents, 300000 ordinary books in Chinese and foreign languages, more than 7000 ancient books, more than 5000 local books, more than 2000 electronic

47) Data source: Yanji City Administration and Law Enforcement Bureau

newspapers, and magazines in Chinese and foreign languages. It has established a summary database of Korean books and magazines and a database of Chinese books and books. The service function of facilities and equipment has further improved to reach the standard of the national first-class library in an all-round way.⁴⁸⁾



[Figure 3-27] Yanbian Korean Autonomous Prefecture library ⁴⁹⁾

To the west of the library is a statue in the center of the Square. It is the mascot of the 60th anniversary of the founding of Yanbian Korean Autonomous Prefecture, which embodies the spiritual connotation of “national unity” with the traditional music and dance as the core creativity. The national costume of “Benben” (“犄犄”) is a traditional seven color ribbon of Chinese Korean National Minority, which symbolizes brightness, beauty, and harmony. The *Rhododendron dauricum* L. pattern in the drum is the Yanbian Korean Autonomous Prefecture representative flower. The laughter of “Benben” (“犄犄”) shows the gratifying

48) Data source:

<https://baike.baidu.com/item/%E5%BB%B6%E8%BE%B9%E6%9C%9D%E9%B2%9C%E6%97%8F%E8%87%AA%E6%B2%BB%E5%B7%9E%E5%9B%BE%E4%B9%A6%E9%A6%86/22615389?fr=aladdin>

49) Data source: <http://www.jlhxs.net/html/product/chanpinyijifenlei/53.html>

achievements of Yanbian Korean Autonomous Prefecture in the 60 years since its establishment and the picture of Yanbian's growing economic and cultural life⁵⁰⁾

To the West, there is a memorial statue of Zhu Dehai (朱德海) and a traditional corridor. Zhu Dehai (朱德海) founded Yanbian University in April 1949 and Yanbian Korean Autonomous Prefecture in 1952. He was the first Secretary of Yanbian Korean Autonomous Prefecture Committee and governor of Yanbian Korean Autonomous Prefecture. He made significant contributions to the development of Yanbian Korean Autonomous Prefecture, so his statue was set up in the Square to commemorate his great achievements.



[Figure 3-28] “Benben”(“犇犇”) ⁵¹⁾ [Figure 3-29] memorial statue of Zhu Dehai (朱德海) ⁵²⁾

50) Data source: <http://www.yanjinews.com/index.php?a=show&c=index&catid=170&id=9206&m=content>

51) Data source: http://blog.sina.com.cn/s/blog_4c63ffc20102x6zd.html

52) Data source: http://blog.sina.com.cn/s/blog_4c63ffc20102x6zd.html

3. 3 Analysis of Korean-Chinese Culture

There are three periods for the Korean to immigrate to China:

The first period is since the mid-17th century, due to war, famine, feudal tyranny, and Korea's invasion by Japanese imperialism, the residents of the Korean peninsula surrounded by the sea on three sides were forced to move to some places in the northeast border of China to settle down. (Sun Chunri, 2002)

The second period is after the merger of Korea and Japan in 1910;

The third period is the forced immigration by the Japanese imperialist aggressors after the September 18th Incident in 1931". (Zheng Panlong, 2000)
On September 3rd, 1952, Yanbian Korean Autonomous Prefecture was established.

The Korean nationality has a wide range of cultural aspects, Myths and legends, folktales and ballads in literature; music, dance, architecture and painting in art; costumes, food, etiquette and games in customs; changes in ethics, marriage and funeral rites, life customs, as well as religious beliefs and sports culture. (Chen Fang, 2014) While inheriting the original Korean culture, it also accepted the Chinese culture. Customs and its continuous integration create the current Chinese Korean culture.

3. 4 Questionnaire

According to 215 Yanji citizens, including 106 people living near the site, the demand of the Square and the river investigate according to different age groups.

According to the survey results, Yanji citizens are not satisfied with the use of the existing park Square, most of which are the residents around the park Square who use it more often and use it singly.

In the Buerhatong River Basin in the west of the Tianchi bridge and to the east of the Xinmin Generally, people in bridge area use more frequently on weekends than on weekdays, and more than half of them use the bridge area during the period of 17:00-21:00. Their stay time-controlled below 1 hour, because most of the people in this area use sports walking, and there is a walking road in this area that goes back and forth just within 1 hour.

Nearly half of the people did not come to Alilang Square, which means that most of the people who use the Square go to the surrounding residents, and the time used is relatively scattered, most of the time used is less than an hour, while the survey results show that half of the people who pass the Square, the rest is mostly walking. Because there is only one road in the Square, and people can alone walk around the road in the Square in a single way. Moreover, the night lighting is insufficient, dark, and when the lights turn off, the site is dark and dangerous after the lights turn off. People hope that various facilities can add to enrich the Square and improve the way people use it.

This paper will understand the inconvenience of people through these investigations, and then design a flexible Square space.

**Questionnaire on the use of Alilang square and its surrounding rivers in
Yanji City Analysis of survey results**

1. Which parks and squares do you often go to it? (multiple selections)

Options	Subtotal	Proportion
Yanji Park	135	62.79%
Maoershan National Forest Park	150	69.77%
Riverside park	85	39.53%
Jindalai square	74	34.42%
Shidai Square	23	10.7%
Qingnian Square	13	6.05%
Xinxing Square	8	3.72%
Alilang Square	73	33.95%
Person of this question	215	

2. Why do you often go to the park/square? (multiple selections)

Options	Subtotal	Proportion
Quiet	40	18.6%
Large open space	94	43.72%
Abundant plant species	61	28.37%
Suitable for photo taking	29	13.49%
Convenient traffic	76	35.35%
Close to home	108	50.23%
Suitable for sports	92	42.79%
Can walk the dog	5	2.33%
Person of this question	215	

3. Are you satisfied with the use of outdoor public spaces such as parks and squares in Yanji City?

Options	Subtotal	Proportion
Feeling satisfied	49	22.79%
Feeling average	144	66.98%
Not satisfied	22	10.23%
Person of this question	215	

4. Do you often go to the west of the Tianchi bridge to the east of the Xinmin bridge?

Options	Subtotal	Proportion
Hardly eve	60	27.91%
1-2 times a year	46	21.4%
1-2 times a month	50	23.26%
1-2 times a week	31	14.42%
3-5 times a week	10	4.65%
Almost every day	15	6.98%
Other	3	1.4%
Person of this question	215	

5. When do you usually come to this river basin?

Options	Subtotal	Proportion
Weekdays	67	31.16%
Weekend	126	58.6%
No response	22	10.23%
Person of this question	215	

6. When do you usually come to this river basin? (multiple selections)

Options	Subtotal	Proportion
Early morning (04:00-07:00)	10	4.65%
Morning (07:00-11:00)	44	20.47%
Noon (11:00-14:00)	18	8.37%
Afternoon (14:00-17:00)	70	32.56%
Night (17:00-21:00)	116	53.95%
Late at night (After 21:00)	2	0.93%
No response	15	6.98%
Person of this question	215	

7. How long do you usually stay in this river basin?

Options	Subtotal	Proportion
Less than 1 hour	106	49.3%
1-2 hours	86	40%
2-3 hours	4	1.86%
More than 3 hours	2	0.93%
No response	17	7.91%
Person of this question	215	

8. What is the purpose of your coming to this river basin? (multiple selections)

Options	Subtotal	Proportion
Pass by	74	34.42%
Exercise or walk	132	61.4%
Rest	35	16.28%
Play	35	16.28%
Fishing	0	0%
Raise livestock	0	0%
Camping	1	0.47%
Collective activities (Squaredance, Playchess)	27	12.56%
No response	10	4.65%
Person of this question	215	

9. Is there a companion (multiple selections)

Options	Subtotal	Proportion
No	41	19.07%
With family members	129	60%
With friends	87	40.47%
With pets	1	0.47%
No response	11	5.12%
Person of this question	215	

10. Are you satisfied with the scenery of this river area?

Options	Subtotal	Proportion
Feeling satisfied	65	30.23%
Feeling average	128	59.53%
Not satisfied	10	4.65%
No response	12	5.58%
Person of this question	215	

11. What is your opinion on the design of the river basin as an Ecological riparian?

(the ecological riverbank is dominated by nature, which can maintain species diversity, reduce the deprivation of resources, maintain the dynamic balance of the ecosystem, and is of considerable significance to improve the self-regulation, self-healing ability, and human living environment of the system.)

Options	Subtotal	Proportion
Optimistic attitude	162	75.35%
General attitude	49	22.79%
Negative attitude	4	1.86%
Person of this question	215	

12. Do you often use the facilities in the riverside park on the south side of the river basin?

Options	Subtotal	Proportion
Often	14	6.51%
Occasionally	112	52.09%
Never use	79	36.74%
No response	10	4.65%
Person of this question	215	

13. Are you satisfied with the way of using the riverside park on the south side of the river basin?

Options	Subtotal	Proportion
Feeling satisfied	51	23.72%
Feeling average	155	72.09%
Not satisfied	9	4.19%
Person of this question	215	

14. Have you heard of Alilang square before (south side of the Yanbian state government)?

Options	Subtotal	Proportion
Have heard of there	156	72.56%
Haven't heard of there	59	27.44%
Person of this question	215	

15. Do you often come to Alilang square?

Options	Subtotal	Proportion
Hardly ever (Canjump to 26 questions)	94	43.72%
1-2 times a year	50	23.26%
1-2 times a month	31	14.42%
1-2 times a week	25	11.63%
3-5 times a week	5	2.33%
Almost every day	10	4.65%
Person of this question	215	

16. When do you usually come to Alilang square?

Options	Subtotal	Proportion
Weekdays	59	27.44%
Weekend	116	53.95%
No response	40	18.6%
Person of this question	215	

17. When do you usually come to Alilang square? (multiple selections)

Options	Subtotal	Proportion
Early morning (04:00-07:00)	10	4.65%
Morning (07:00-11:00)	50	23.26%
Noon (11:00-14:00)	25	11.63%
Afternoon (14:00-17:00)	60	27.91%
Night (17:00-21:00)	61	28.37%
Late at night (after 21:00)	0	0%
No response	43	20%
Person of this question	215	

18. How long do you usually stay in Alilang square?

Options	Subtotal	Proportion
Less than 1 hour	141	65.58%
1-2 hours	32	14.88%
2-3 hours	0	0%
More than 3 hours	1	0.47%
No response	41	19.07%
Person of this question	215	

19. What is the purpose of your coming to this Alilang square? (multiple selections)

Options	Subtotal	Proportion
Pass by	114	53.02%
Exercise or walk	95	44.19%
Rest	23	10.7%
Play	25	11.63%
Camping	1	0.47%
Parking	3	1.4%
Collective activities (Squaredance, Playchess)	4	1.86%
No response	31	14.42%
Person of this question	215	

20. Is there a companion (multiple selections)

Options	Subtotal	Proportion
No	56	26.05%
With family members	105	48.84%
With friends	64	29.77%
With pets	2	0.93%
No response	31	14.42%
Person of this question	215	

21. Are you satisfied with the plant species in Alilang square?

Options	Subtotal	Proportion
Feeling satisfied	45	20.93%
Feeling average	104	48.37%
Not satisfied	41	19.07%
No response	25	11.63%
Person of this question	215	

22. Does the night lighting of Alilang square meet your needs?

Options	Subtotal	Proportion
Feeling satisfied	51	23.72%
Feeling average	115	53.49%
Not satisfied	22	10.23%
No response	27	12.56%
Person of this question	215	

23. Are you satisfied with the overall design of Alilang square?

Options	Subtotal	Proportion
Feeling satisfied	51	23.72%
Feeling average	95	44.19%
Not satisfied	42	19.53%
No response	27	12.56%
Person of this question	215	

24. Are you satisfied with the rest facilities in Alilang square?

Options	Subtotal	Proportion
Feeling satisfied	42	19.53%
Feeling average	101	46.98%
Not satisfied	44	20.47%
No response	28	13.02%
Person of this question	215	

25. If not, what would you like to add? (multiple selections)

Options	Subtotal	Proportion
Plant	119	55.35%
Rest facilities (bench Pavilion)	126	58.6%
Sports facilities (bicycle lane, dancing space, fitness equipment)	125	58.14%
Water source (fountain, pond)	89	41.4%
Public transport facilities	76	35.35%
Entertainment facilities	84	39.07%
Other facilities	10	4.65%
No response	18	8.37%
Person of this question	215	

26. Do you have any other opinions on Alilang square in Yanji City (south of Yanbian state government) and the buerhatong River Basin in the west of the Tianchi bridge to the east of the Xinmin bridge?

Please download the detailed data to get the data _____

For statistical purposes only, your privacy will not be exposed:

27. Your gender

Options	Subtotal	Proportion
Male	80	37.21%
Female	135	62.79%
Person of this question	215	

28. Your age

Options	Subtotal	Proportion
Under 10 years old	10	4.65%
10-19 years old	15	6.98%
20-29 years old	40	18.6%
30-39 years old	30	13.95%
40-49 years old	35	16.28%
50-59 years old	53	24.65%
Over 60 years old	32	14.88%
Person of this question	215	

29. What is your occupation?

Options	Subtotal	Proportion
Student	45	20.93%
Office worker	75	34.88%
Freelance	30	13.95%
Housewife / househusband	14	6.51%
Retired	46	21.4%
Other	5	2.33%
Person of this question	215	

30. Do you live near the site?

Options	Subtotal	Proportion
Yes	106	49.3%
No	109	50.7%
Person of this question	215	

Thank you very much for your reply, thank you for your valuable comments!

[Table 3-10] Questionnaire

3. 5 Problem Setting

There are four problems in the square :

1. Insufficient connectivity between the square and the surrounding areas:

- (1) The number of roads is too small, there is only one vertical main road and pedestrian road around the square, and there is no road connecting the square and the surrounding areas.
- (2) The connection between the square and the river is insufficient.

2. The utilization rate in the square is not high :

- (1) Although the square area is large, the number of people using it is very small.
- (2) The surrounding residents are reluctant to use the square.
- (3) People know little about this square.

3. The function of facilities in the square is insufficient :

- (1) The main facilities are library, sculpture, square and corridor, among the interior of the corridor cannot use.
- (2) Lack of rest space, activity space, sports space, entertainment space, communication space, etc.

4. Uneven distribution of plants in the square:

- (1) The plants distribute in four sides, but only lawn inside.
- (2) Lack of natural shade.

Problems of river:

- (1) The Buerhatong River section from the Xinmin bridge to the Tianchi bridge lacks connectivity between the north and the South.
- (2) There is no way to get there quickly from the south bank to the north bank. Only when the river freezes in winter can it cross the river.
- (3) Lack of hydrophilicity to the river.
- (4) The wild plants in Hanoi are not protected. When people cross the river in winter, they trample on the plants seriously.
- (5) No one manages wild plants in the river, and the height is higher than that of man, Certain risk is dangerous to pass through plants in winter.

Chapter4 Conception Planning

4. 1 Direction and Principle of Design

The whole design follows the human-centered principle and needs to address with consideration of the existing conditions, resources, and existing problems at the base.

With the new residential areas on both sides, the number of households in the future will continue to grow, and demand for the square will continue to rise. Therefore, according to the human-oriented principle, the planned and designed space can improve users' quality of life.

4. 2 Design Strategy

4. 2. 1 User

The personnel using the site mainly divided into three categories.

The first category is the residents living within 1000m (about 20min) around the site. Now, about 50000 residents are living around the site. Because there are a large number of new buildings around the site, as well as the buildings expected to build, the population expected to increase by 10000-20000 in the next five years. The main use time is 14:00-21:00.

The second type is the office worker within 1000m around the site. There are many government and public units around the site. For example, there are 1800 employees of the Yanbian Korean autonomy premium government, 70 employees of the Yanbian Korean autonomy premium library, 450 employees of the Hospital of traditional Chinese medicine, 80 employees of the water control bureau, and

about 500 employees in other work units. This kind of person mainly uses their time to make use of the site during the rest time after their work. These kinds of people mainly use the site between 08:00 and 17:00. Most of the working hours are 08:30-16:30 in winter and 08:30-17:00 in summer.

The third kind of users are those who come to Yanbian Korean Autonomous premium government for meetings, People who borrow books in the library, generally within 100-200. About 500 patients hospitalize in the hospital of traditional Chinese medicine, and nearly 2000 patients consult every day. There are about 100 other people, including tourist.

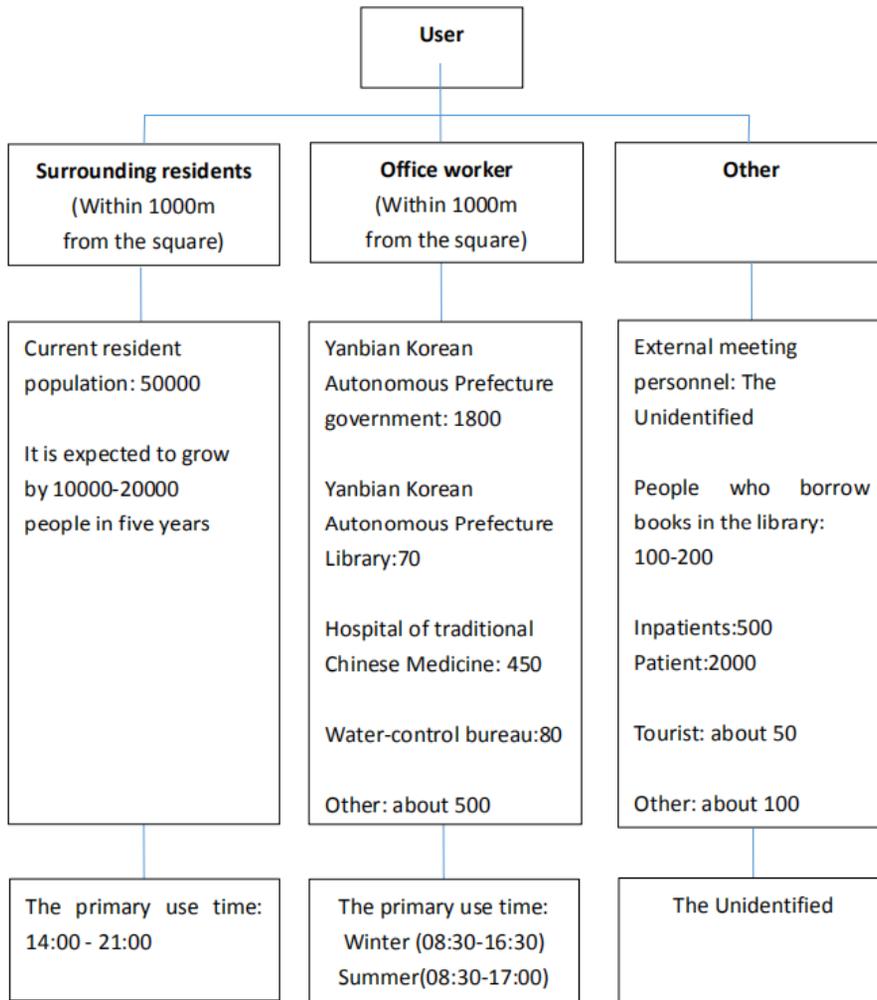
Due to the lack of site facilities, the number of people who use the square daily is about 50-150. After improving the square, it is expected that the number of people who use the square every day would increase to about 500-600.

4. 2. 2 Requirement space

According to different people, the demand for the site is also different. People living near the site want to add more squares.

It can carry out simple sports, sports area with specific site requirements, hydraulic leisure area for people to watch and play, children's activity area for children, square dance area for most middle-aged and older adults, leisure area for rest, the stage for performances, programs, activities and service Area, etc. People working near the venue hope to set up a leisure area in the plaza to relieve pressure and enhance communication. Sports areas can promote Korean-Chinese culture, regular stage performances, square areas for specific activities, the service area for publicity, etc.

There are also leisure areas, service area, service area, square area, viewing platform, and other areas for serving other users.



[Table 4-1] User

4. 3 Space Planning

4. 3. 1 Program Planning

(1) Due to the lack of roads in the site, more routes with different functions can be added, such as the promenade, bicycle lane, dog walk lane, etc.

(2) Single facilities can increase the facilities that can be used by different groups, such as small amusement parks for children, extreme sports facilities for teenagers, open space for dance square, and various indoor and outdoor sports venues and fitness equipment for people who are willing to exercise.

(3) Communities, streets, often hold a variety of activities, need a stage, and close to the government, build a stage, and carry out a variety of activities beneficial to the people.

(4) Precious tree species, increase shade, create a natural and functional environment, and allow people to use the lawn freely.

(5) Increasing the rest space can let the person quiet down to read a book, play chess place.

(6) Increasing lighting facilities can increase the safety of the site at night.

(7) As more and more people keep pets recently, it is possible to provide places for training animals.

(8) To facilitate driving, reduce the road burden, uninterrupted square functionality under the circumstances of connecting the East and the west.

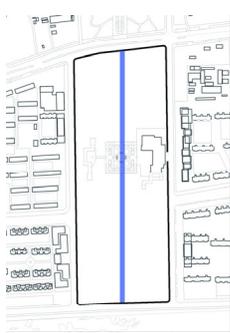
(9) The square can be connected with the river to create hydrophilic Park, Riverside Road, observation platform, etc.

(10) To increase the hydrophilicity, we can use the riverside green space camp to create an ecological park, and build a small bridge in the middle of the river to facilitate the communication between the north and the south.

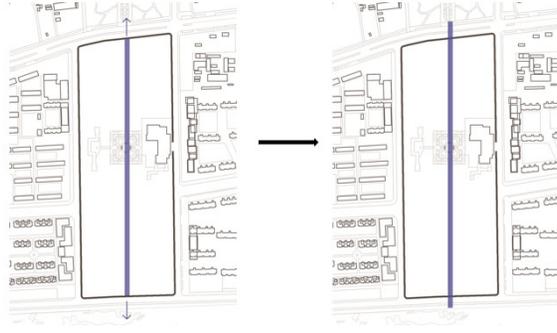
4. 3. 2 Space Division

(1) The square is designed based on vertical central axis road.

(2) To extend the central axis to the North and South. Connecting the government garden and the buerhatong River. It' s convenient for more people to use the square and expand its functions.

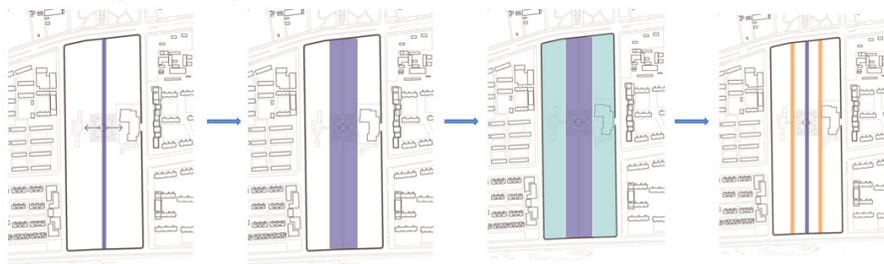


[Figure 4-1] Space division 1



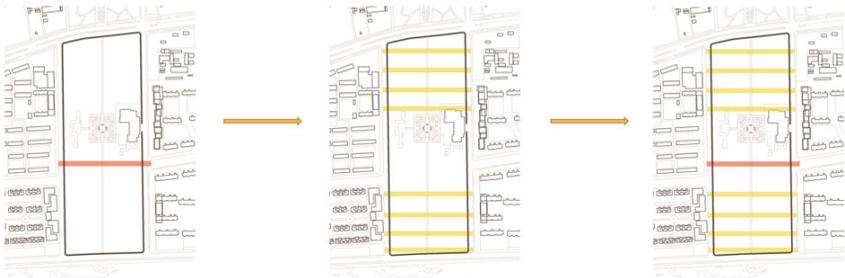
[Figure 4-2] Space division 2

(3) To extend the central axis to the East and West, to turn monotonous roads into functional areas, to change central road to central functional area and form three new paths.



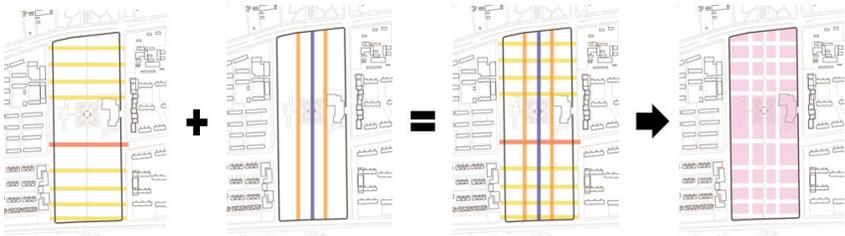
[Figure 4-3] Space division 3

(4) A transverse main road added based on the middle path. In order to make the entrance and exit of residential areas on both sides convenient, it is necessary to increase horizontal roads.



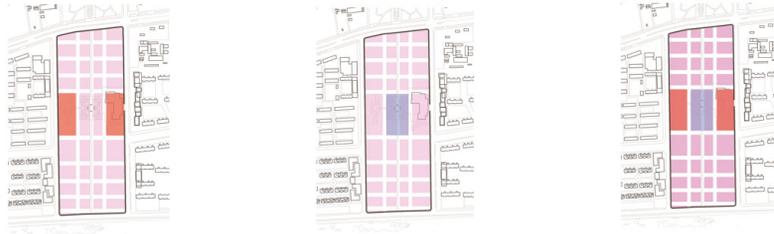
[Figure 4-4] Space division 4

(5) The vertical direction of the road and the horizontal direction of the road coincide to form a different size area.



[Figure 4-5] Space division 5

(6) To retain the original building and improve the function. Original central square role should be retained. The design of the central area mainly improves on the original basis.



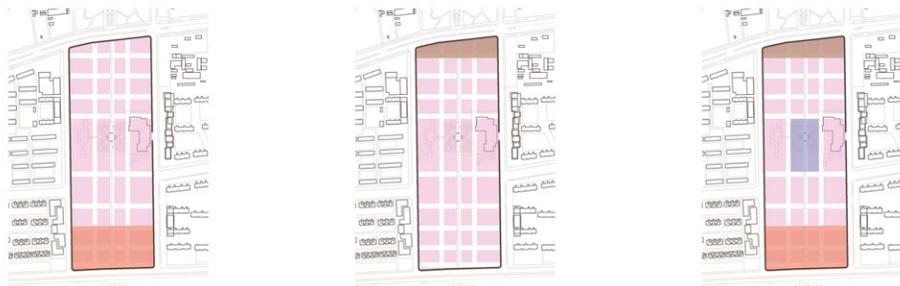
[Figure 4-6] Space division 6

(7) Square dance is the main way to use square.

The East and west sides are mainly residential. The south side has more residents than the north side, and the south side connects with the buerhatong river. Setting up the main square dance site on the south side is convenient for people's use and can relatively reduce the noise level.

The north side connects with the government. It is also the main entrance of the square, which can carry out cultural publicity.

Make the square function differentiation, layout, in the north and south, as well as in the middle to form three different function squares. Different people can use it in different ways.



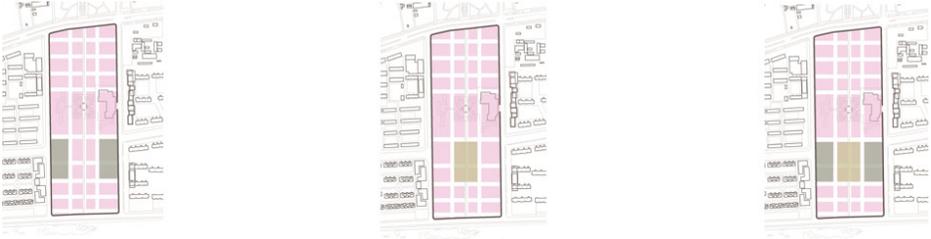
[Table 4-7] Space division 7

(8) Both residents and office worker need sports areas, so the sports areas should place on the north side, The hydrophilic space in the middle can connect the two areas well . The north area is mainly dynamic.



[Table 4-8] Space division 8

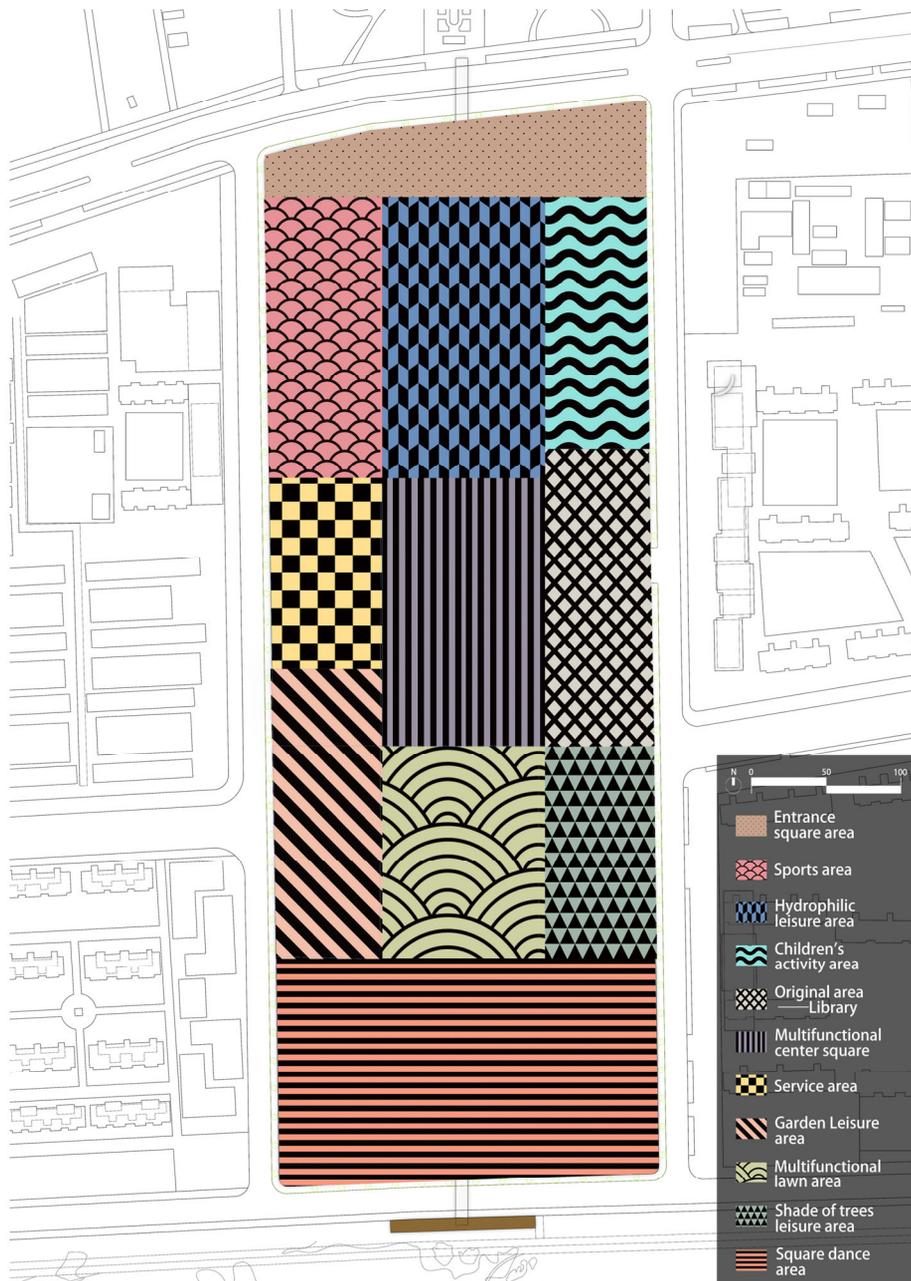
(9) In addition, the square also needs leisure areas, lawn can be placed in the middle, convenient for people to use at any time, The area in the south is relatively quiet in the north.



[Table 4-9] Space division 9

4. 3. 3 Space Planning

The square's function is distributed to the north, the middle, and the south, respectively. The minimum area of the square on the north side is adjacent to the government, convenient for the government personnel to use and carry out activities. Moreover, the square in the middle has no specific way of use. It can be used in any form, convenient for all kinds of people to reach and use. The square on the south side has the largest area, and the number of residents living in the square is less than that on the north side, and it is close to the river. While the vision is broad, it can prevent the spread of noise and disturb the lives of surrounding residents. Therefore, the square dancing set to the south side. The East and west sides are mainly recreational areas, mainly to ensure the living environment of the surrounding residents, and put the noisy places in the middle with multi-layer trees to reduce the spread of noise. The north side of the sports ground is to make the surrounding residents and government employees have convenient access to the sports ground when they rest to promote communication.



[Figure 4-10] Space Planning

Chapter5 General Planning

5. 1 Overall Planning

5. 1. 1 Road Planning

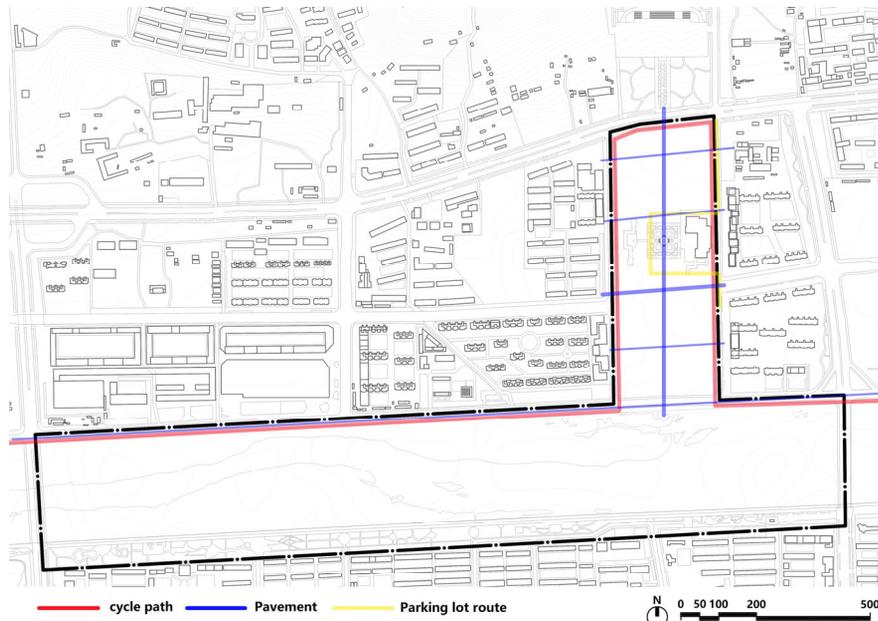
Considering that the needs of different people in the venue are also different.

(1) The internal traffic mainly divide into the cycle path, pavement and parking lot.

(2) The cycle path is on the outside of the square and by the river.

The pavement's through the site, connecting the square and the surrounding area.

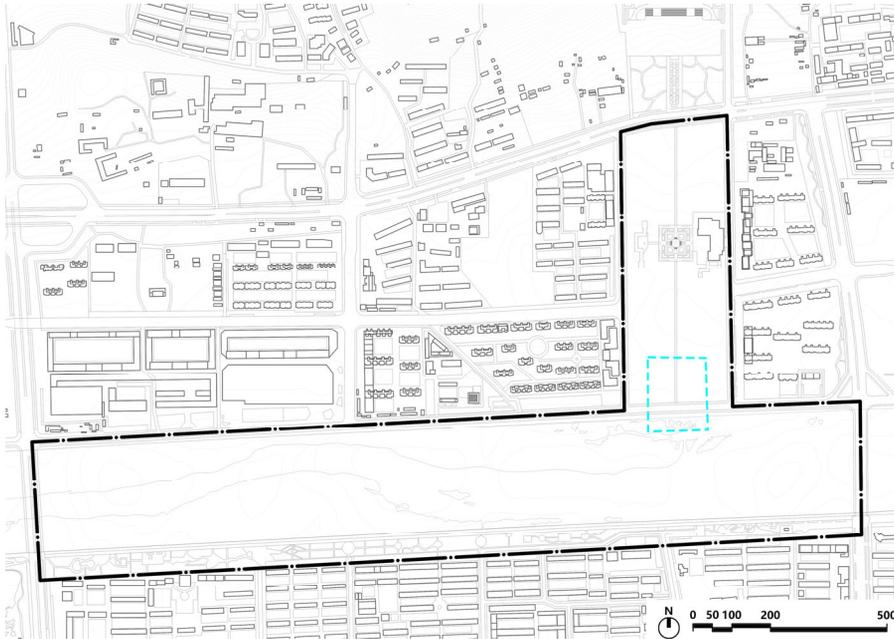
(3) The parking lot's current scale can not meet the parking requirements of the square, so we can extend the existing location and develop an underground parking lot to meet the needs.



[Figure 5-1] Road Planning

5. 1. 2 Water Space Planning

The southern part of the square design for subsidence and the river connects with the square by the underground passage.



[Figure 5-2] Water Space Planning

5. 1. 3 Plant Planning

To plant local plants which is suitable for growth in the square.

Classification	Function	Spaces	Species of plant
Functional planting	Fruit trees	Yaodong garden/ Weeke ndfarm	(1) <i>PrunusCerasiferaEhrharf.atropurpurea</i> (Jacq.) Rehd. (2) <i>Crataeguspinnatifidavar.major</i> N.E.Brown (3) <i>Ligustrumobtusifolium</i> Sieb.etZucc. (4) <i>pyrusussuriensis</i> maxim (5) <i>Ulmuspumila</i> L. (6) <i>Amygdalustriloba</i> (7) <i>Pyrusbretschneideri</i> Rehd

	Crops	Community farm/Weekend farm	(1) <i>Acer ginnala</i> Maxim. (2) <i>Lonicera japonica</i> Thunb (3) <i>Tilia tuan</i> Szyszyl. (4) <i>Acer ginnala</i> Maxim.
Aesthetic Plants	Rest/Appreciate	Wild-flower garden/Agriculture landscape garden	(1) <i>Syringa pubescens</i> Turcz. subsp. <i>microphylla</i> (Diels) M.C. Chang et X.L. Chen (2) <i>Leptodermis parkeri</i> Dunn (3) <i>Physocarpus opulifolius</i> var. <i>luteus</i> (4) <i>Rosa rugosa</i> var. <i>cathayensis</i> (5) <i>Acer pictum</i> Thunb. ex Murray (6) <i>Albizia kalkora</i> (7) <i>Acer triflorum</i> Komarov (8) <i>Salix babylonica</i> (9) <i>Pinus tabulaeformis</i> Carr. (10) <i>Hibiscus rosa-sinensis</i> Linn.
Induction plants	Entrance to various spaces/Road	Entrance to various spaces/Road	(1) <i>Spiraea thunbergii</i> Bl. (2) <i>Spiraea japonica</i> Gold Mound (3) <i>Forsythia suspensa</i> (4) <i>Hosta plantaginea</i> (Lam.) Aschers. (5) <i>Rhododendron dauricum</i> L. (6) <i>Pharbitis nil</i> (L.) Choisy
Buffer/ Shielding plants	Block noise/ sight/ Boundary	Parking lot/Compost facility	(1) <i>Ulmus pumila</i> L. cv. 'Jinye' (2) <i>Swida alba</i> Opiz (3) <i>Sabina vulgaris</i> Antoine (4) <i>Pinus thunbergii</i> Parl. (5) <i>Picea asperata</i> Mast (6) <i>Fraxinus rhynchophylla</i> Hance (7) <i>Alnus cremastogyne</i> (8) <i>Quercus mongolica</i> Fisch. ex Ledeb. (9) Lawn

[Table 5-1] Planting

5. 1. 4 Building Planning

The unique architectural form of Yanbian Prefecture is Hanok. The traditional corridor and Library in the site are all in the way of Hanwu. However, the traditional corridor is hollow out, and there are no facilities. The appearance of the traditional corridor should be preserved. Glass or inner wall of Hanwu form should be placed in the hollowed-out place to make it a sealed building, and then the facilities can be used all the year round Space to use.



[Figure 5-3] Traditional Building Corridor⁵³⁾



[Figure 5-4] Transforming Corridor to Traditional Architecture

53) Data source: <https://www.meipian.cn/28qbpt68>

5. 1. 5 Facilities Planning



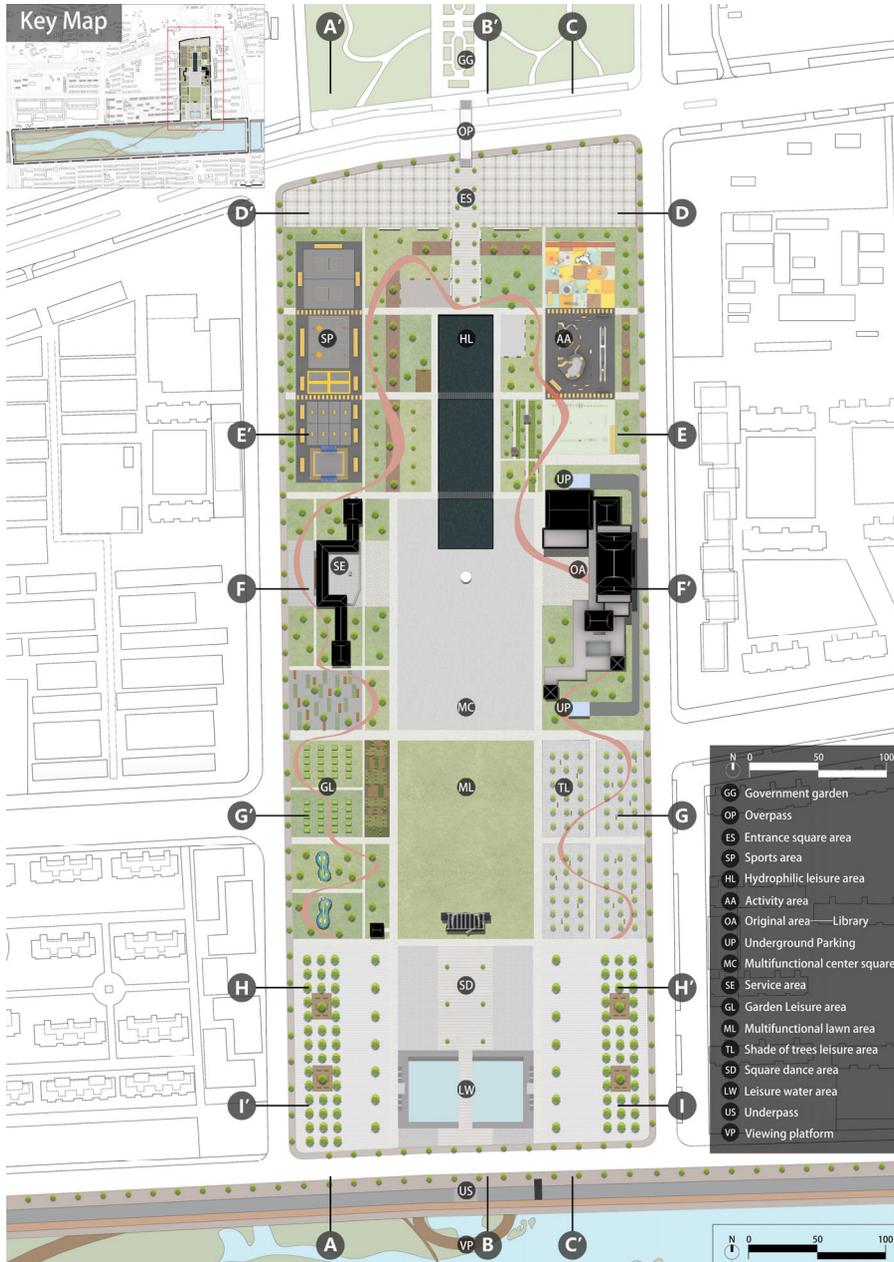
[Figure 5-5] Facilities Planning

5. 1. 6 Master Plan

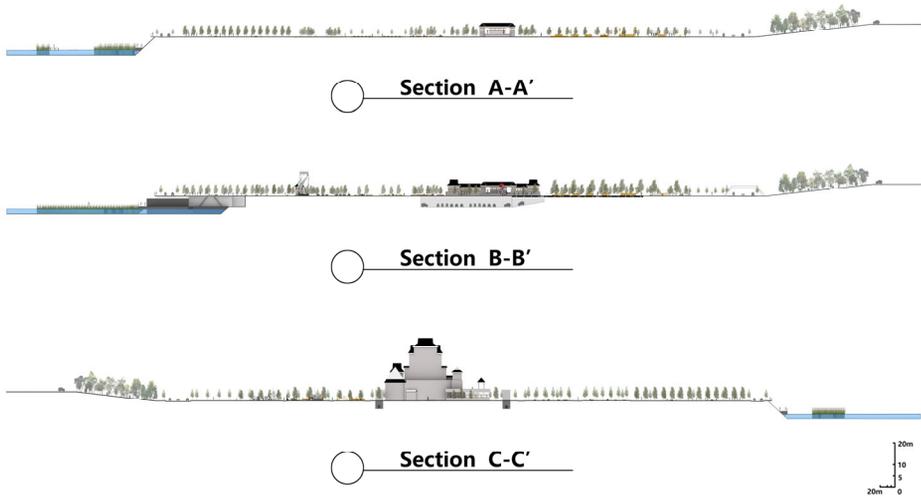


[Figure 5-6] Master Plan

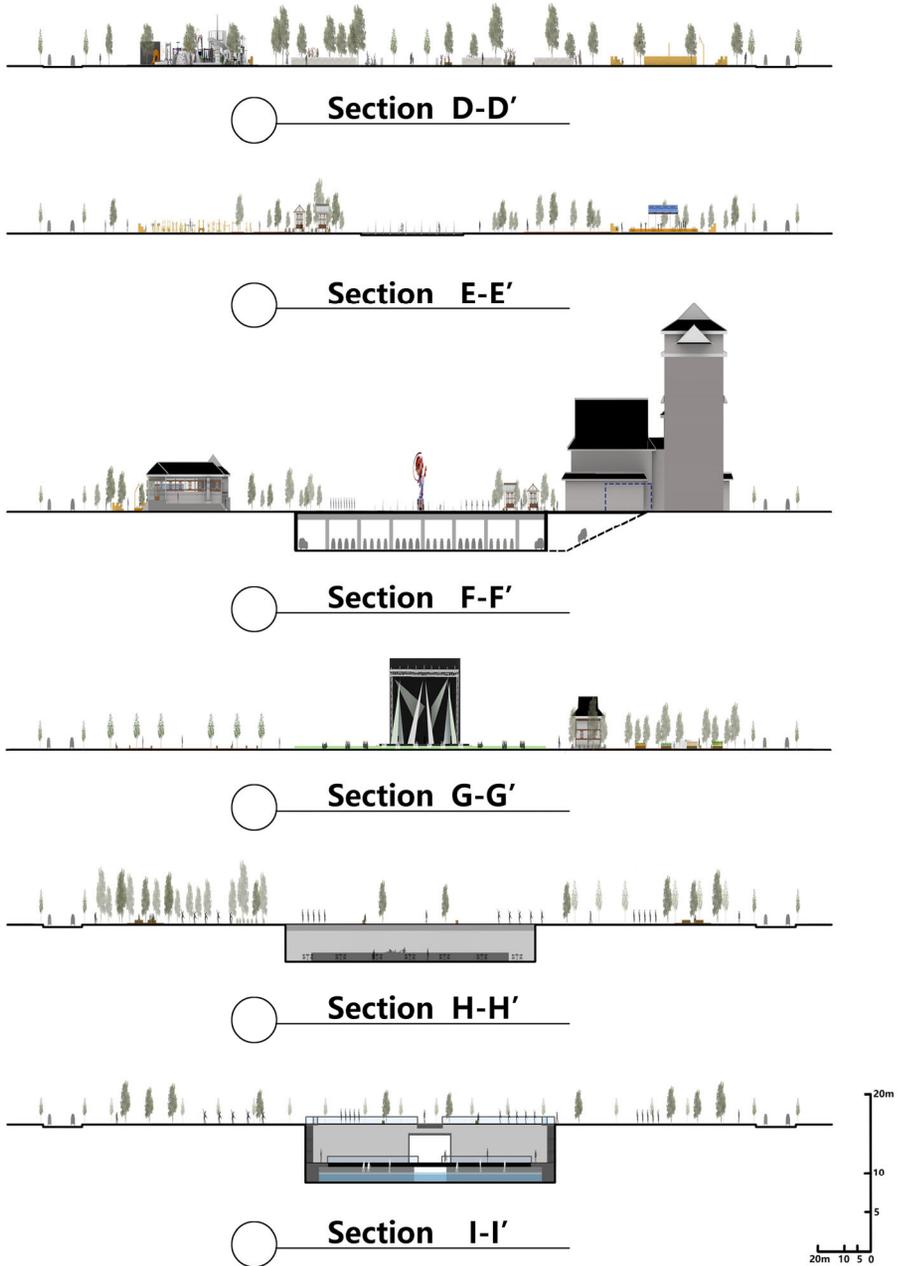
5. 2 Details of Design Space



[Figure 5-7] Ailang Square Master Plan



[Figure 5-8] Alilang Square Section 1



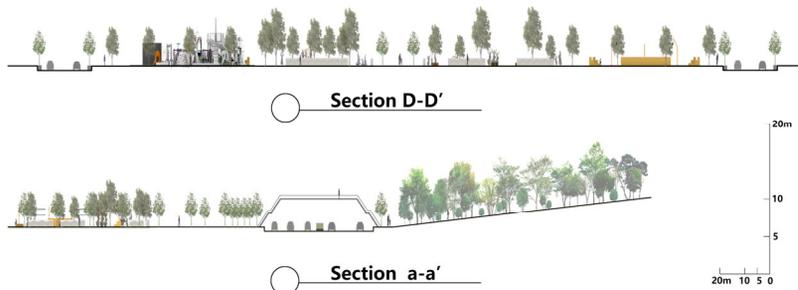
[Figure 5-9] Allang Square Section 2

5. 2. 1 Entrance Square Area

The entrance square is connected with the government garden, extending the whole greening and connecting with the overpass. The entrance square is open as a whole. The government can carry out various activities here, place relief works of art about Korean—Chinese culture in the passage deep into the square, and place Korean sculpture works on the lawn to carry out subtle cultural publicity.



[Figure 5-10] Entrance Square Area Master Plan



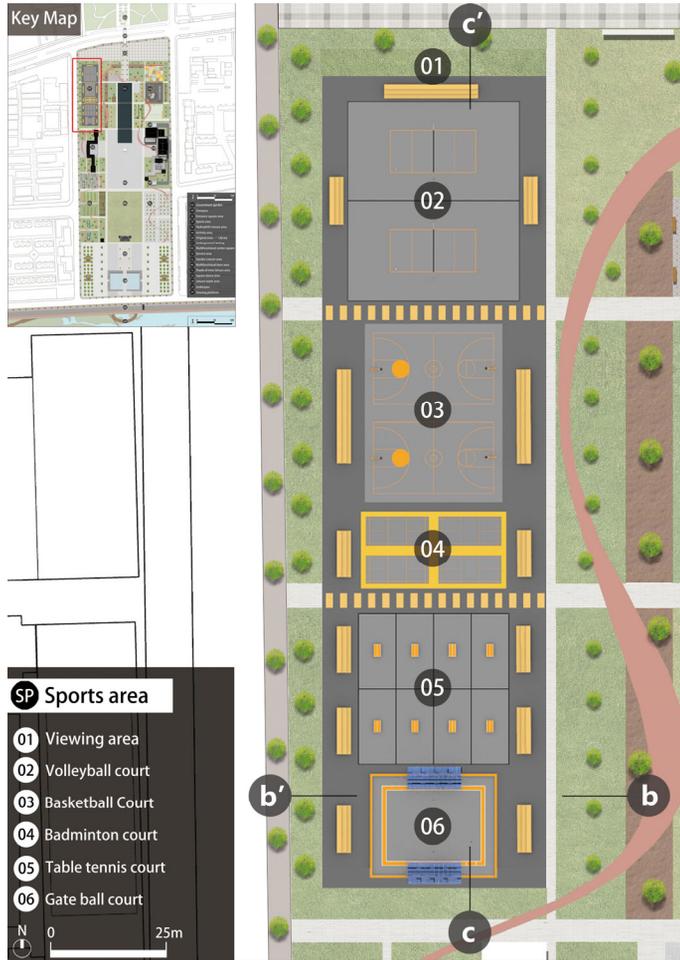
[Figure 5-11] Entrance Square Area Section



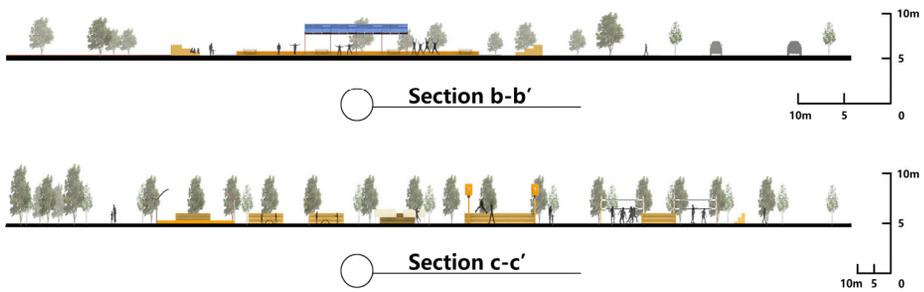
[Figure 5-12] Entrance Square Area Renderings

5. 2. 2 Sports Area

There are volleyball court, basketball court, badminton court, table tennis court, and gate court in the sports area from north to south. Among them, basketball, volleyball, badminton, and table tennis are the top five that Chinese people like. Usually, women like to play volleyball, men prefer to play basketball, and badminton and table tennis are the sports that men, women, old and young like, while goalball makes the older adults prefer. Besides, the government often holds internal sports meetings, and have sports to communicate during the rest period.



[Figure 5-13] Sports Area Master Plan



[Figure 5-14] Sports Area Section



[Figure 5-15] Sports Area Renderings 1



[Figure 5-16] Sports Area Renderings 2



[Figure 5-17] Sports Area Renderings 3

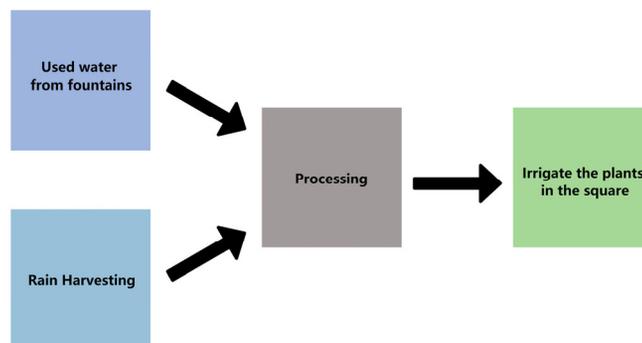
5. 2. 3 Hydrophilic Leisure Area

In a large area of water spraying area, the ground of the water spraying area is 10 cm downward, making it easy to accumulate water when spraying water. Shallow water can not only let people enjoy the water, but also reduce the risk. When the water surface is calm, a large landscape mirror form reflects the surrounding landscape and the sky on the water surface. People can sit nearby and watch the water surface quietly and watch the changing landscape. At the same time, it can also change the microclimate in the square.

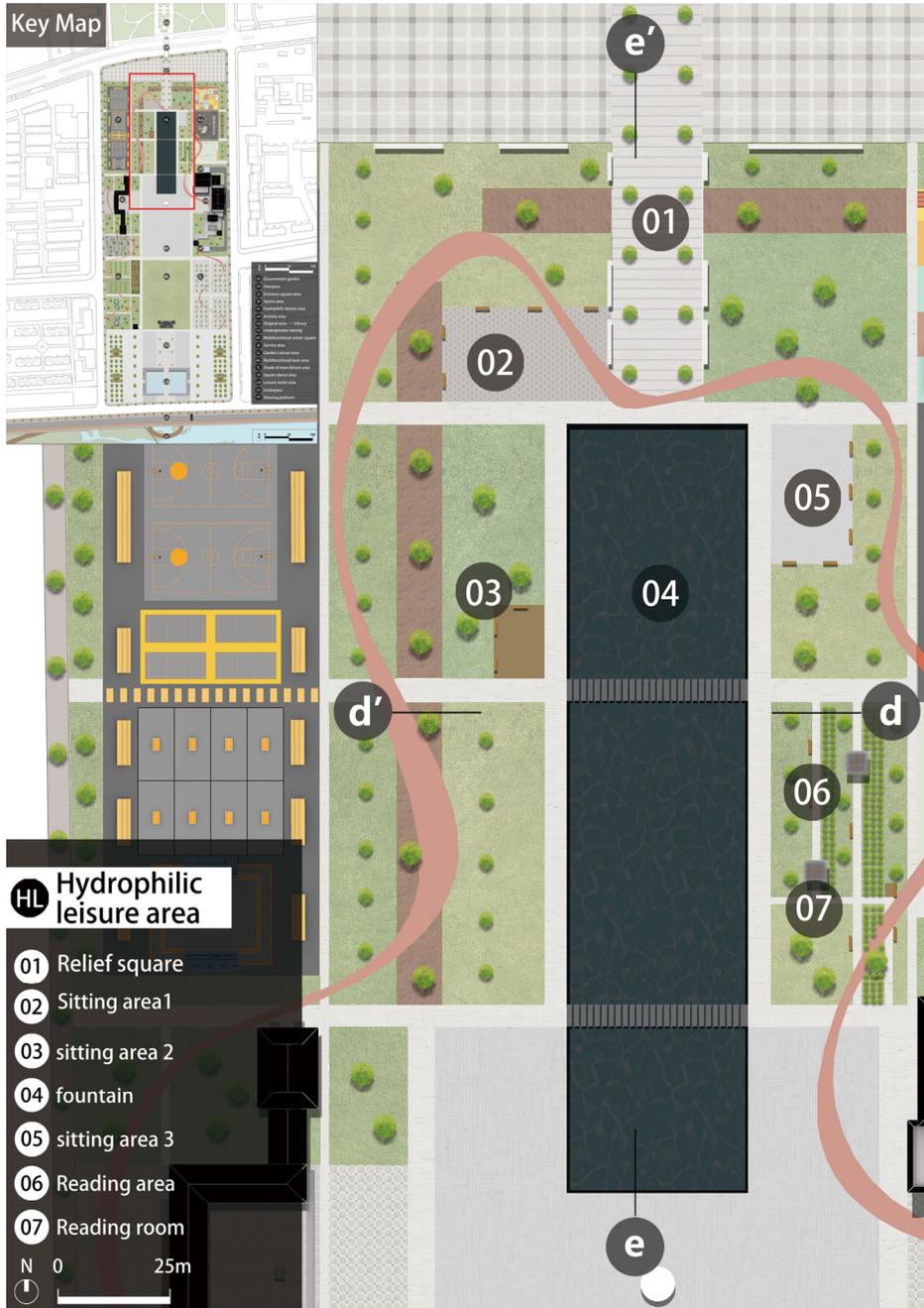
The rainwater can be collected, the rain and the fountain water after people's play treated, and the water can be reused in the irrigation of the square to save water resources.

In winter or big events, the sluice gate is closed and connected with the entrance square and multi-functional square to form a large square.

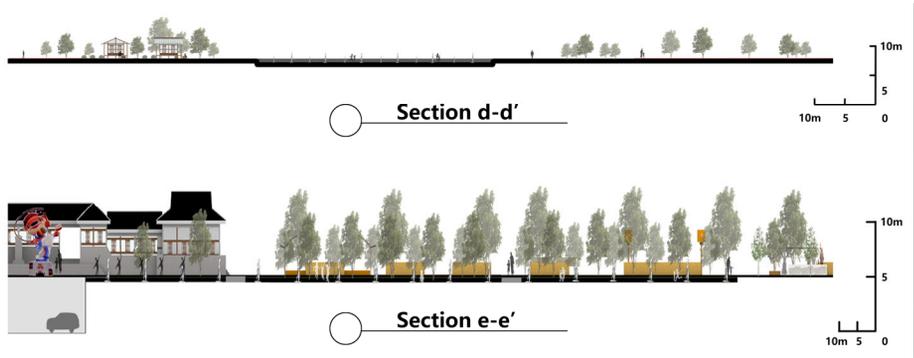
A rest area placed on both sides of the water spray area. People can watch the water quietly, or it can be a rest area for parents waiting for their children to play with water. There are two enclosed spaces on the southeast side, adjacent to the library, where people can read all year round.



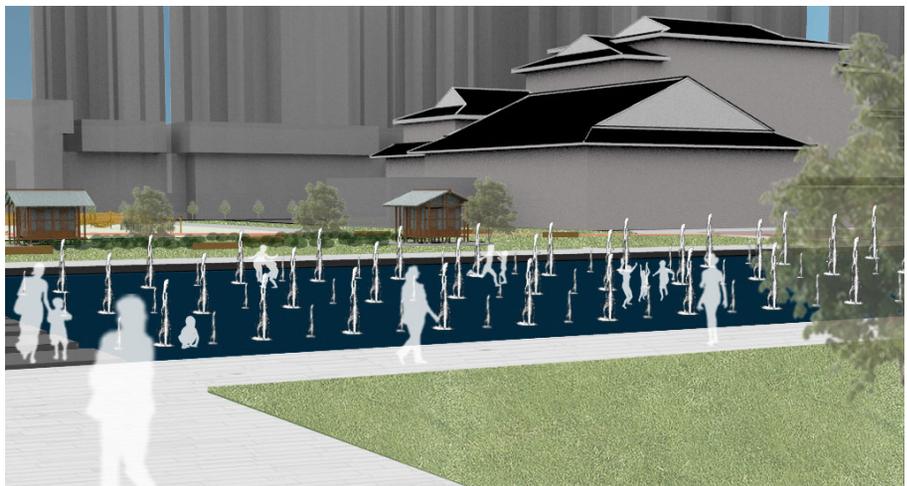
[Figure 5-18] Use Water in the Square



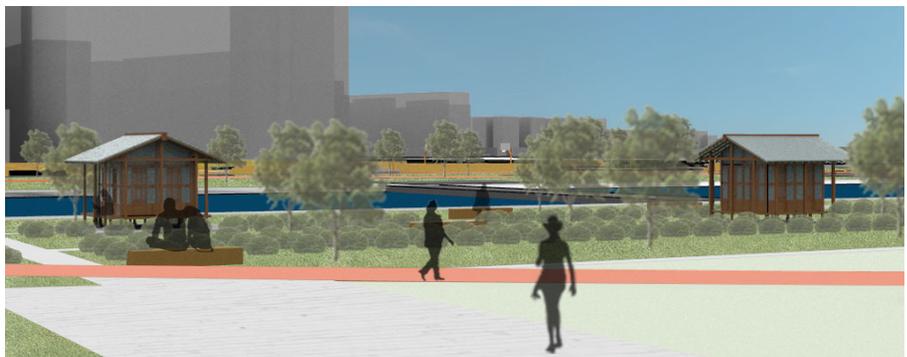
[Figure 5-19] Hydrophilic Leisure Area Master Plan



[Figure 5-20] Hydrophilic Leisure Area Section



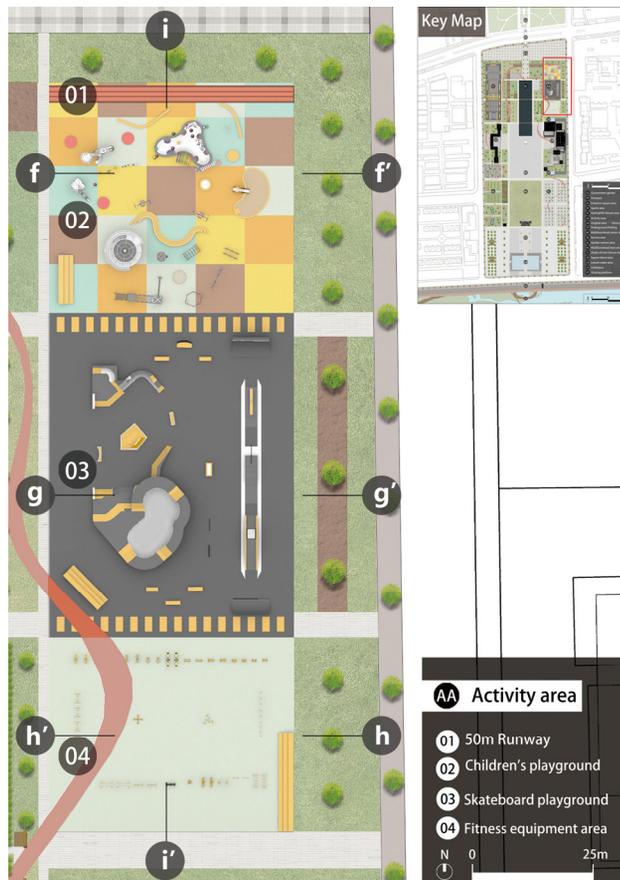
[Figure 5-21] Hydrophilic Leisure Area Renderings 1



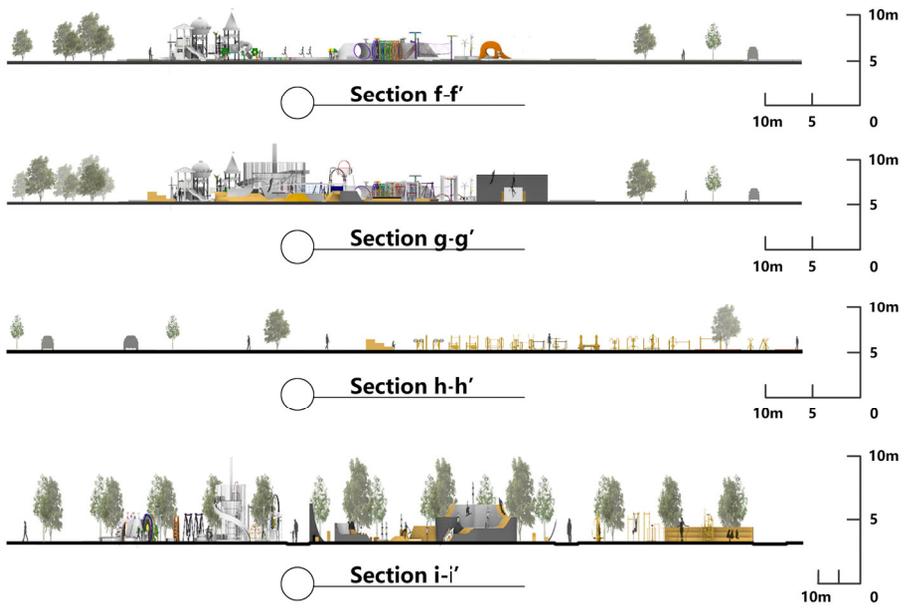
[Figure 5-22] Hydrophilic Leisure Area Renderings 2

5. 2. 4 Activity Area

It is mainly divides into three areas: children's amusement park, skateboard area, and fitness equipment area from north to south. Children's amusement park is specially set up for children under the age of 10 to play in the amusement park. The skateboard area specially prepares for young people. Recently, there are more and more skateboarders, roller skaters and extreme bikes. Individual places can attract young people to come to the square for sports and exchanges. The fitness equipment area can be used at any age conveniently and efficiently.



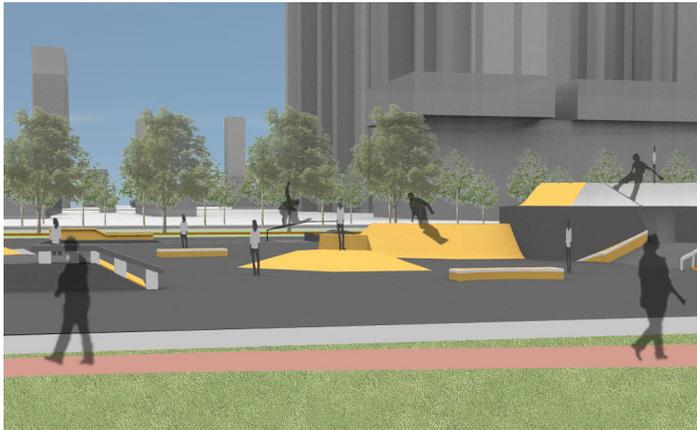
[Figure 5-23] Activity Area Master Plan



[Figure 5-24] Activity Area Section



[Figure 5-25] Activity Area Renderings 1



[Figure 5-26] Activity Area Renderings 2



[Figure 5-27] Activity Area Renderings 3

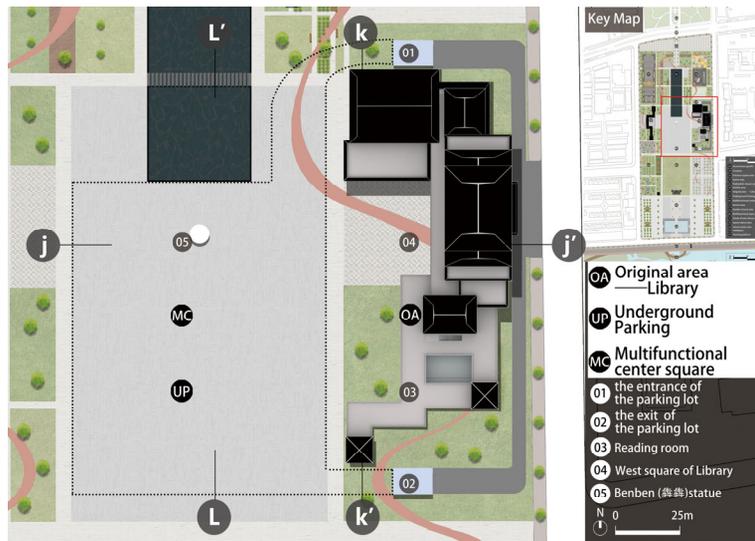
5. 2. 5 Library and Parking Lot

The parking lot's entrance and exit set on both sides of the library and the parking lot with 200 vehicles can be set under the multi-functional square area to facilitate people's access to and use the square. The north side is the entrance of the parking lot, the south side is the exit of the parking lot, and the north side is the location of the first parking lot.

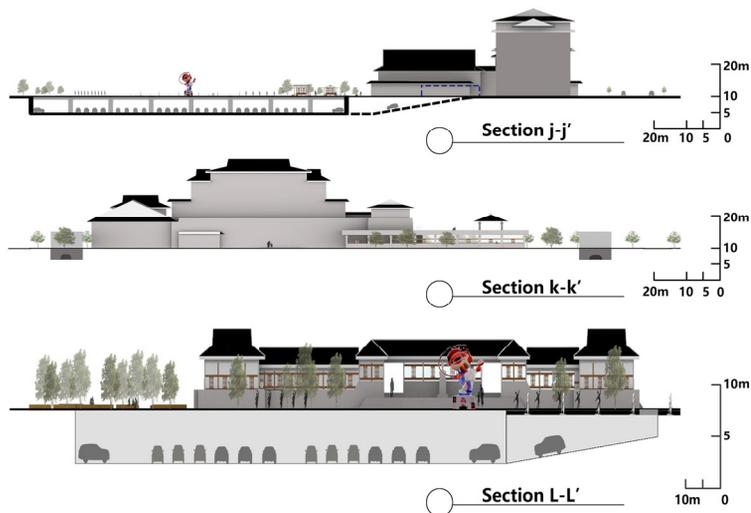
Corridor connecting the library is turned into a closed building , a coffee shop so that regular reading sessions can be held here.

5. 2. 6 Multifunctional Center Square

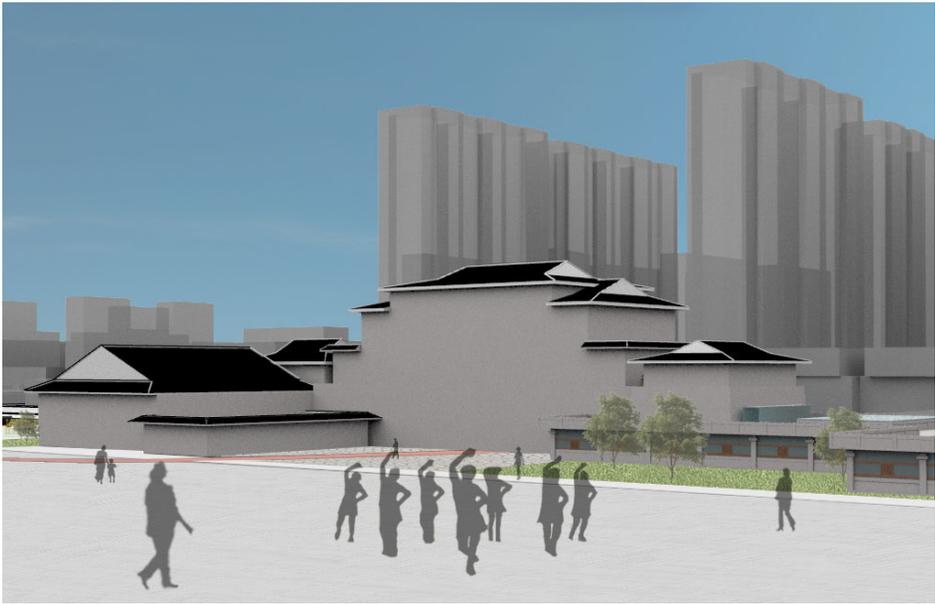
It can carry out various activities here and use the open space without restriction.



[Figure 5-28] Library and Parking Lot, Multifunctional Center Square Master Plan



[Figure 5-29] Multifunctional Center Square Section



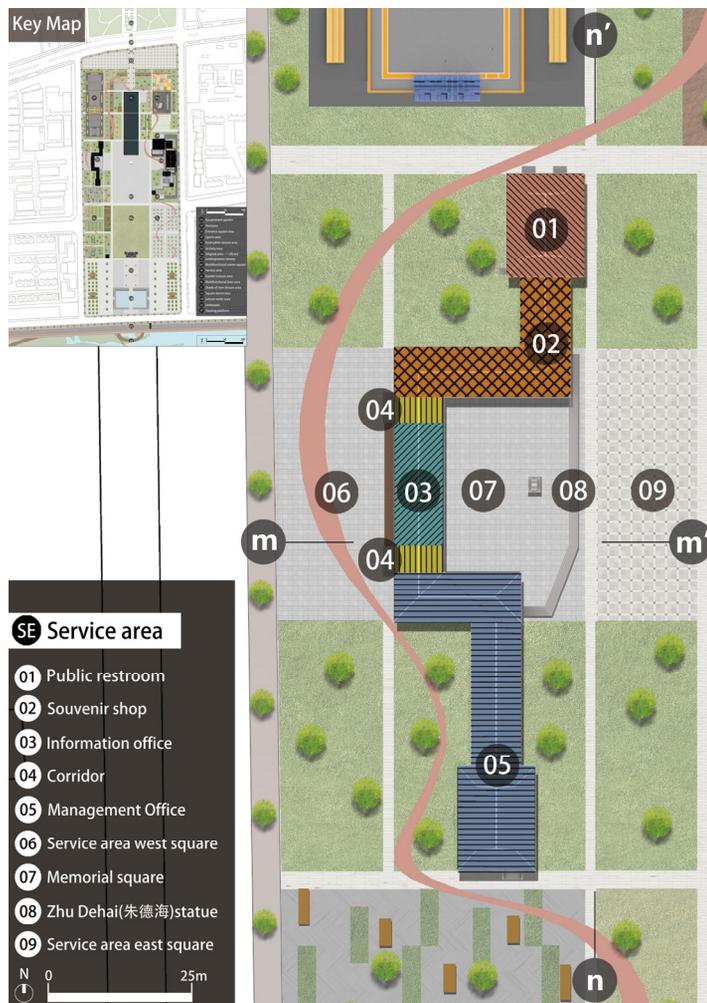
[Figure 5-30] Multifunctional Center Square Renderings 1



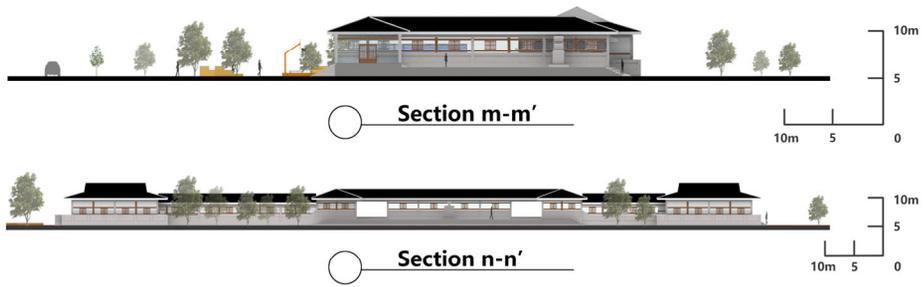
[Figure 5-31] Multifunctional Center Square Renderings 2

5. 2. 7 Service Area

The first traditional building corridor on the west side of the square covers a large area, but there are no facilities or even sitting chairs. It can be redesigned to build it into a sealed traditional style building altogether, and it will be used as a square management office, a tourist information office, and a place to provide public toilets.



[Figure 5-32] Service Area Master Plan



[Figure 5-33] Service Area Section



[Figure 5-34] Service Area Renderings 1



[Figure 5-35] Service Area Renderings 2

5. 2. 8 Garden Leisure Area

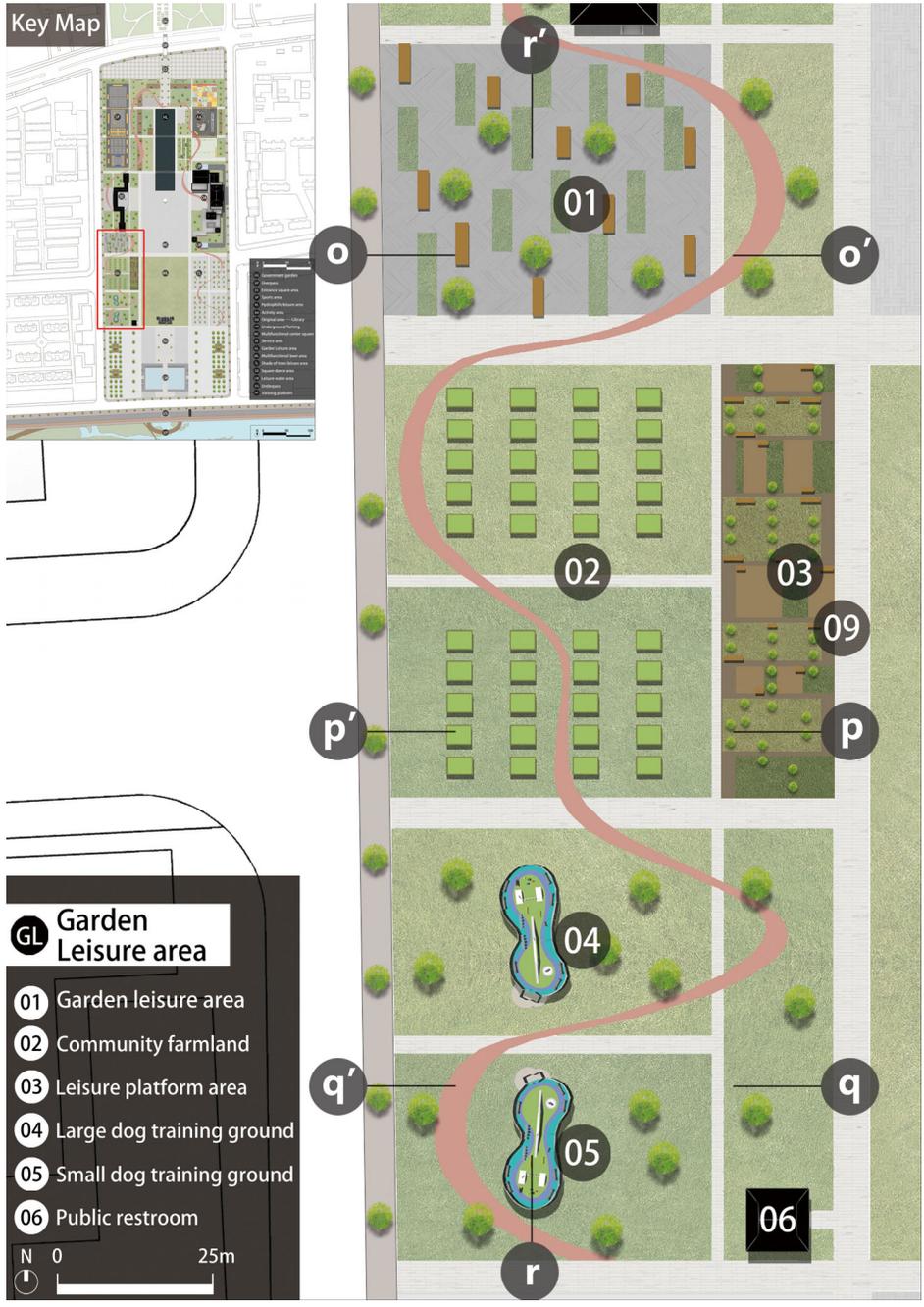
Place 01: Place lawns and trees in it, where people can rest quietly.

Place 02: The community farmland experience area, before the square-built, it is the vegetable field. While preserving the history in front of the square, transform the vegetable field mode into community farmland. To observe plants' growth process in the form of planting vegetables and fruits, can increase knowledge in labor, and strengthen the relationship between people through an interactive experience.

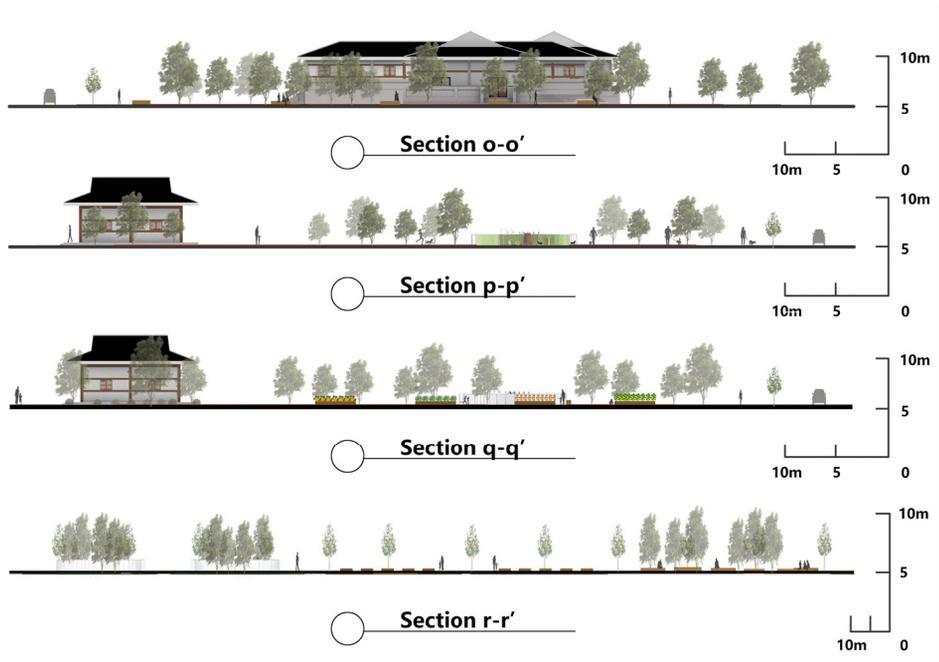
Place 03: A simple rest area, which can be used for a picnic or rest quietly, can also be seen during a public performance.

Place 04,05: pet park is divide into two areas, one for large dogs and the other for small dogs. Dogs can smell on the lawn to decompress.

Place 06: Public toilet is convenient for the use of large floating people in the South and East.



[Figure 5-36] Garden Leisure Area Master Plan



[Figure 5-37] Garden Leisure Area Section



[Figure 5-38] Garden Leisure Area Renderings 1



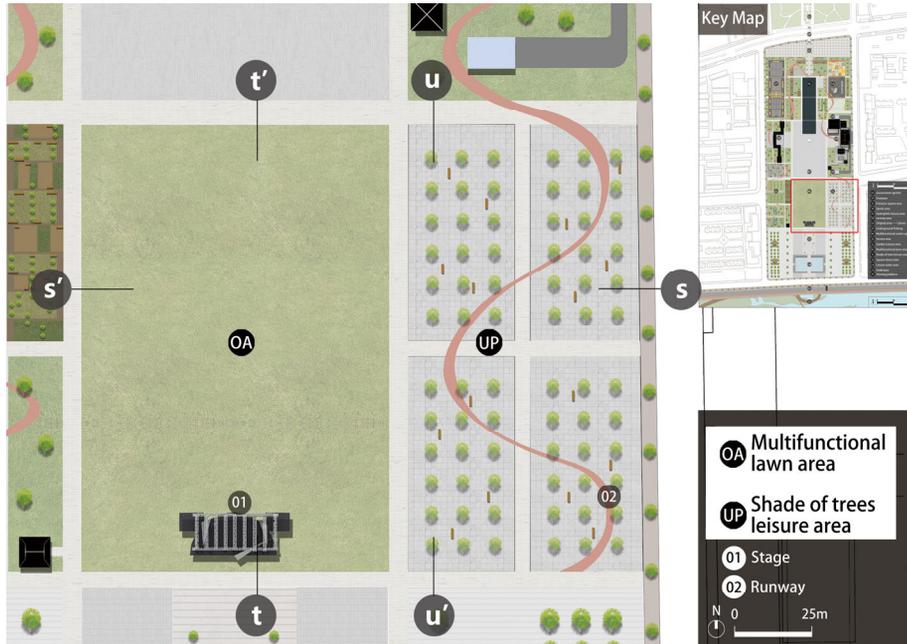
[Figure 5-39] Garden Leisure Area (Community Farmland) Renderings 2



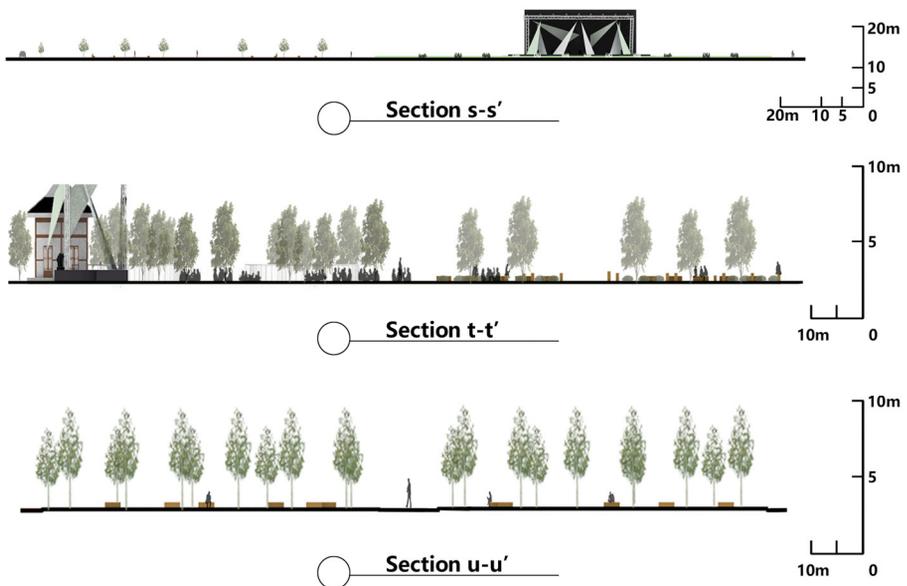
[Figure 5-40] Garden Leisure Area (Plump Pop) Renderings 3

5. 2. 9 Multifunctional Lawn Area

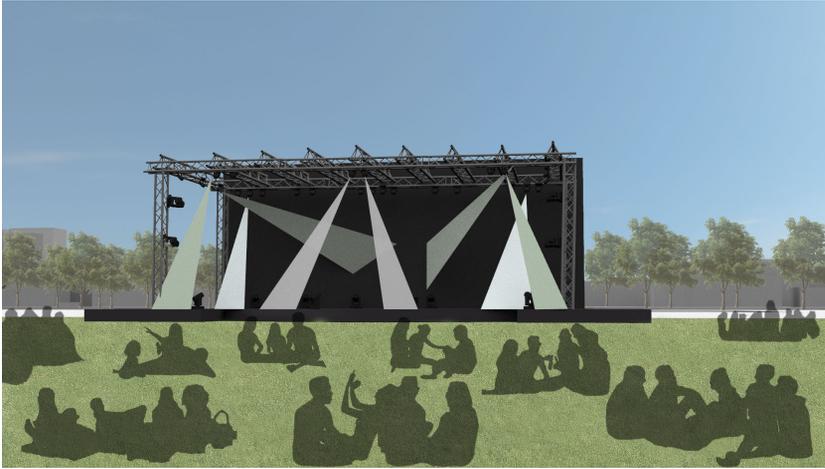
There is a stage on the lawn, which can regularly perform cultural exchange performances, square dance conferences, large-scale performances, and also play a movie once a week. People can make use of the lawn, picnic on the lawn, watch performances, read books, and so on.



[Figure 5-41] Multifunctional Lawn Area, Shade of Trees Leisure Area Master Plan



[Figure 5-42] Multifunctional Lawn Area, Shade of Trees Leisure Area Section



[Figure 5-43] Multifunctional Lawn Area Renderings

5. 2. 10 Shade of Trees Leisure Area

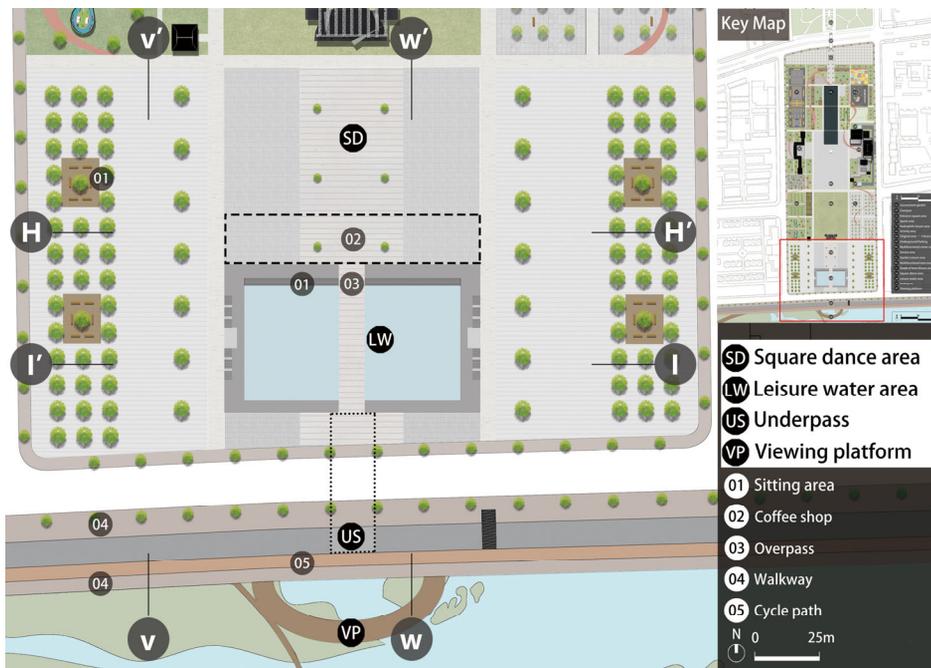
Put some leisure chairs under the tree array, next to the library on the north side. Come here to read after borrowed the books.



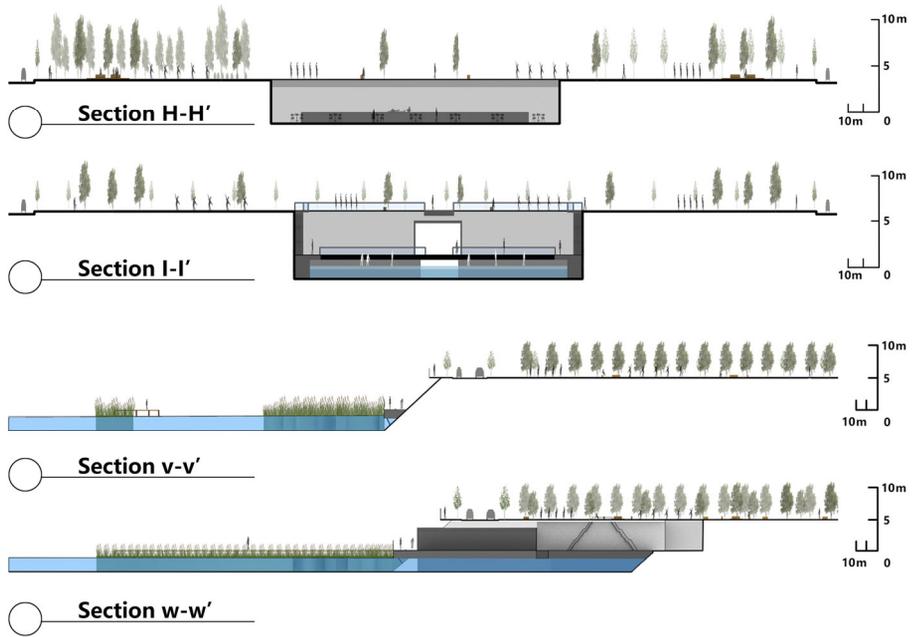
[Figure 5-44] Shade of Trees Leisure Area Renderings

5. 2. 11 Square Dance Area

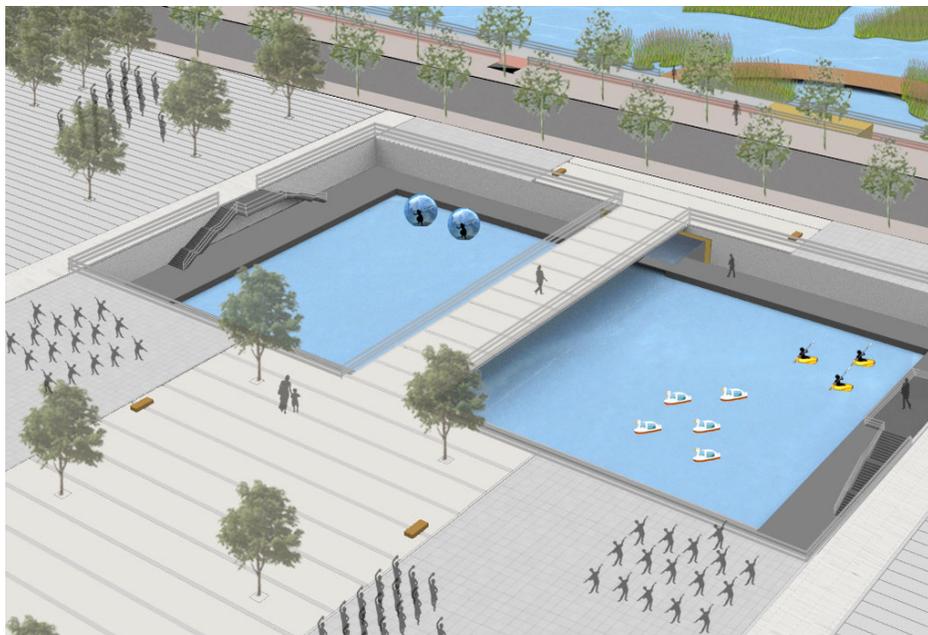
In a relatively open space, people can enjoy dancing. The trees on both sides can spread relatively less noise, and a rest area is placed in the tree array. Generally, the people who dance in the square dance are mostly middle-aged and elderly people, who are tired of dancing and can rest. In the daytime, this rest area can also be a good place to play chess.



[Figure 5-45] Square Dance Area Master Plan



[Figure 5-46] Square Dance Area Section



[Figure 5-47] Square Dance Area Renderings 1



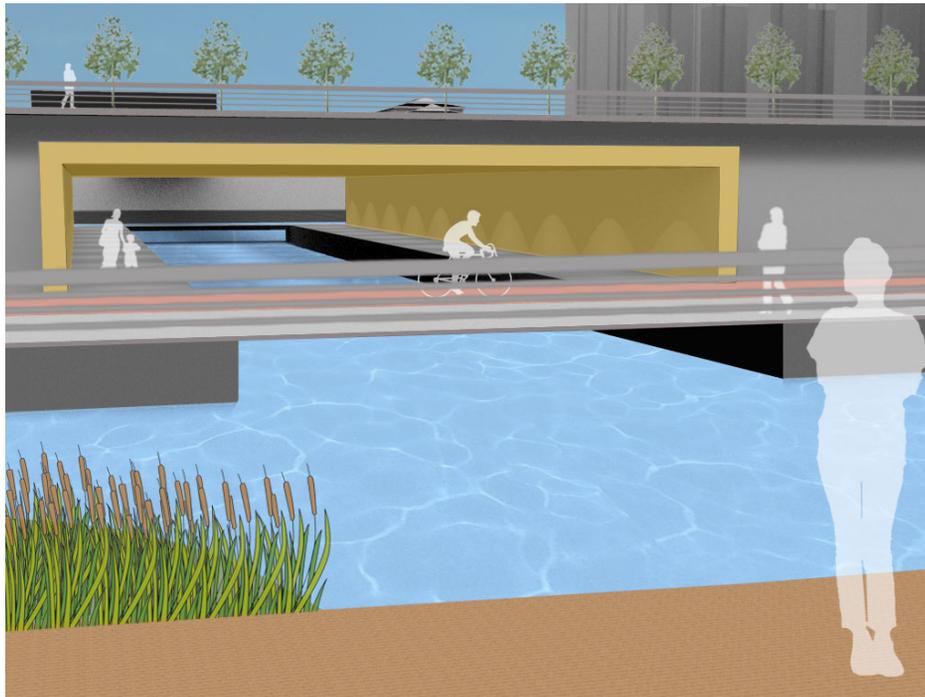
[Figure 5-48] Square Dance Area Renderings Winter 2

5. 2. 12 Underground Passage

In the south of the square, the river water is introduced into the square by underground connection to form a small enclosed space. People can go down to the water surface to rest or watch the water's change. In winter, an ice field can be formed and people can do ice sports here.

5. 2. 13 Viewing Platform

After reaching the river, there is a platform to see the river scenery. When the flood happens, the access of the platform is closed to ensure the safety of users.



[Figure 5-49] Riverside Landscape Renderings

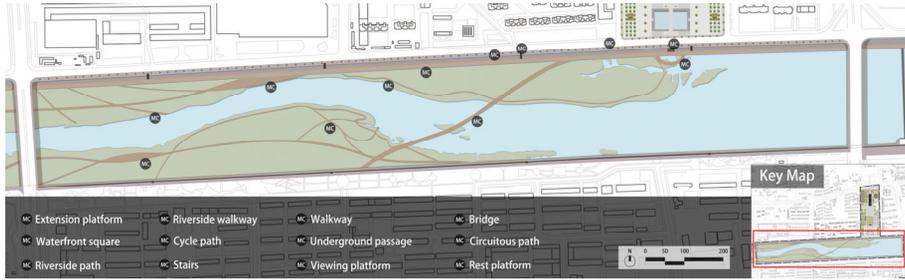
5. 2. 14 Riverside Landscape

The reeds in the river section should be kept as much as possible, and sidewalk beside the road should be expanded.

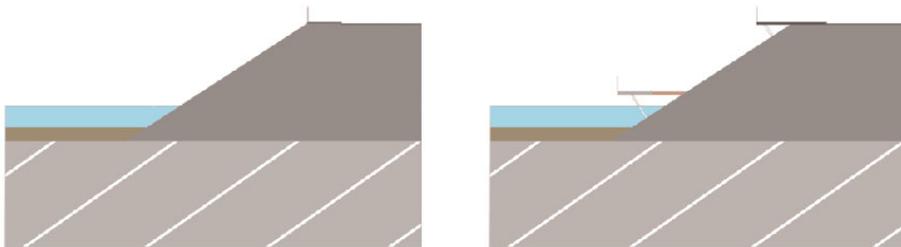
Bicycle and pedestrian roads should be set up on the river. In case of flood, the access road should be closed to ensure safety.

A particular walk should be set up in the reeds. People can walk according to the established route to walk, watch the river, photography, fish, and other recreational activities. The particular walk also reduces the reed's damage and reduce people's certain danger.

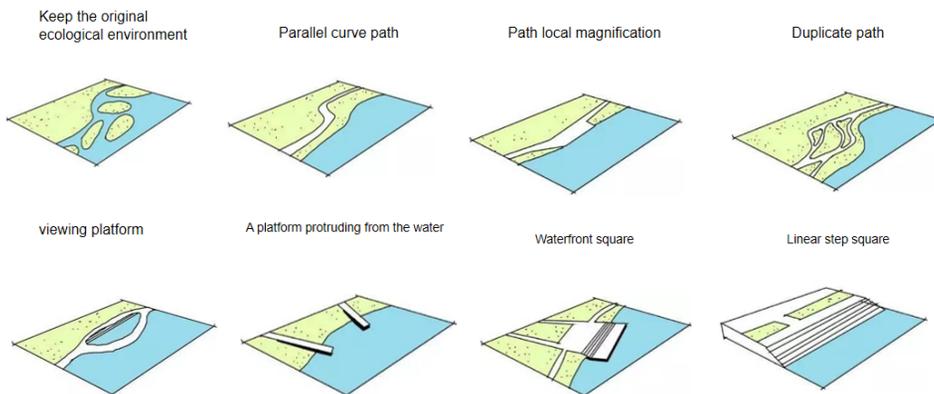
Preserve the wild landscape and provide it to nearby farmers for sheep and ducks.



[Figure 5-50] Riverside Landscape Master Plan



[Figure 5-51] Riverside Section



[Figure 5-52] Style of Riverside Platform ⁵⁴⁾

54) Data source: <https://mp.weixin.qq.com/s/9z5kUifukX6ruUt48HVjqw?>

5. 3 Management and Operations

After the construction of the square, the later management needs the government to manage, maintain the equipment, irrigate the plants, and plan some activities.

It mainly bases on the existing square management model, including the Government-led Management Model , Government-led Company Model , Community Management Model, and civil Club Model.

5. 3. 1 Government-led Management Model

To maintain the current mode, to set up a special department to manage Arirang square so that comprehensive management such as green space management, equipment management, facility maintenance, etc can be carried out.

5. 3. 2 Government-commissioned Company Model

The current mode should be maintained. plant management, facility management, maintenance, sanitation, and lighting issues should be contracted.

5. 3. 3 Community Management Model

The current mode, community management, activity management, site management, and other issues should be maintained.

On this basis, activities planning should be set up to promote the activities and promote the relationship between residents. For example, a regular open market in the square, weekly reading club, weekly watching a film, monthly dance competition, monthly sports competition, etc should be held.

5. 3. 4 Civil Club Model

People can spontaneously form a variety of clubs, organize activities automatically, declare to the community without destroying the square, and carry out activities in the square after approval.

Chapter6 Conclusion

With China's rapid development, the leisure time of Chinese urban residents is gradually increasing. How to improve the leisure time of urban residents, provide more and higher quality cultural life, promote and change the way of life and communication with cultural life is the issue of people's livelihood that should be paid attention.

In the past 10 years, the square has been keeping the original appearance of the lawn. The private facilities are backward, which can not adequately meet the needs of users around it. Therefore, in various conditions, it is necessary to renovation the Alilang square.

Based on the users, the inconvenience of people's use should be carefully understood. To analyze the basic situation around and inside the square, and reasonably arrange the space size and location of various facilities in the square so that the needs of most users can be met. To meet the most basic needs, people can make new changes to the square, so that more users of different ages and identities can use all kinds of places without any burden, and make every corner of the square ring a happy smile. When people arrive here, they use the square to connect with various surrounding facilities. On the premise of not losing their original appearance, they add various functions to improve the atmosphere of the square, so that people can integrate into it without any burden.

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초록

중국 연길시 아리랑 광장 리노베이션 설계

중국은 경제가 발전함에 따라 도시화 건설도 부단히 빨라지고 있다. 연길시는 중국 연변조선족 자치주 정치, 경제, 문화, 교육, 교통의 중심인 동시에 중국 소수민족 지역에서 가장 빠르게 도시화가 진행되고 있는 지역 중 하나이다. 특히 연변조선족자치주 건주 60주년에 다수의 혜민(惠民) 프로젝트가 실시되어 연길시의 도시형상이 대대적으로 변화하였으며 도시가 대폭 현대화된 형상을 지니게 되었다. 현재 연길시 도심은 끊임없이 서-북쪽 두 방향으로 확장 건설되고 있으며, 그중 정치의 핵심인 연변조선족자치주 주 정부 청사가 서부로 이전되었다. 이는 장차 연길 도심부가 서쪽으로 이동될 것임을 뜻한다.

아리랑 광장은 연변조선족자치주 건주 60주년 혜민 프로젝트 중 하나의 프로젝트에 해당하는 광장으로 부지면적 21헥타르에 이르는 대형 광장이다. 아리랑 광장 북부는 연변조선족자치주 주 정부 청사와 연결되어 있고 남부는 연길시를 가로지르는 부르하통하와 연결되어 있다. 이러한 특징은 아리랑 광장이 주 정부 청사와 부르하통하를 연결하는 중요한 연결 거점임을 의미한다. 따라서 연변조선족자치주 주 정부는 이러한 지리적 입지를 기반으로 아리랑 광장이 연길

시의 새로운 문화관광 랜드마크로 부각될 수 있기를 희망하며 또한 이 공간이 연결시 도시민들의 여가, 오락, 문화, 교육, 관광 등 수요를 만족시킬 수 있는 하나의 종합광장이 될 수 있기를 바라고 있다.

하지만 아리랑 광장은 현재 잔디와 도로 두 개만 펼쳐져 있는 임시 광장이다. 주변에 거주하는 주민들 많아지면서 광장환경에 불만을 느끼고 있다. 정부는 2022년 연변 조선족 자치주 70주년 주경 전투자를 통해 새로운 면모로 개발할 수 있게 되기를 기대한다. 그동안 아리랑 광장 남쪽 신민교에서 천지 대교까지의 부르하통하 수역에 이르기까지는 개발되지 않고 있었으나 최근 도시가 끊임없이 서쪽으로 발전하여 새로운 거주자들이 점차 늘어나게 되면서 이 지역에 대한 개발과 이용에 대한 수요도 높아졌다.

이에 본 연구에서는 아리랑 광장 및 신민교에서 천지 대교로 이어지는 구간의 부르하통하 수역을 대상으로 연결시의 새로운 중앙광장지구로서 부각시킬 수 있는 방안을 모색해 보고자 한다. 이를 통해 거주민의 수요에 맞는 수변공간 활성화에 초점을 두고 아리랑 광장과 부르하통하를 설계하여 인근 거주민의 생활 질을 높이는데 일조하는 새로운 설계방안을 제시하고자 한다.

주요어 : 광장, 리노베이션 설계, 하천

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