

POLITECNICO DI MILANO
School of Architecture, Urban Planning & Construction Engineering
a.a. 2021-2022 October

RESEARCH ON THE FUNCTIONS OF URBAN PUBLIC SPACE
AND GREEN SPACE IN THE POST-EPIDEMIC ERA

Take Pinghefang cultural and creative industrial park,
Wuhan,China as an example

Supervisor: Prof. Tzortzi . N. – Georgi J.
Candidates: Yang Yaru 926323 Zhong Hongfei 913071



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ABSTRACT

Keywords: Pinghefang block, post-epidemic era, urban public space, public health

In January 2020, Wuhan issued a notice to close the city, which is the first city in the world to be affected by the epidemic. So far, all parts of the world have experienced the impact of the new coronavirus. With many efforts, more and more regions are gradually returning to the normal rhythm of life. However, the spread of the virus around the world is still one after another. Unknown public health incidents may also occur. People who are traumatized during the epidemic need a lot of time and activities to relieve stress and anxiety. This is a prevention and emergency response for cities in the post-epidemic era. The plan was a wake-up call on the wall. As the first country to recover from the epidemic, how to design and use urban public space in the post-epidemic era has become a hot topic and object of practice.

Therefore, this article takes the design of Pinghefang block in the urban area of Wuhan as an example to find new ideas and new methods of urban park space design in the post-epidemic era. Chapter 1 is the theoretical background. Chapter 2 is about methodology and thesis framework. The third chapter is a case study and strategy summary. By studying the design techniques and usage rules of public spaces during the COVID-19 incident, we summarized strategies suitable for the current situation of the site. In the fourth chapter, the site is located in the former British concession area as the scope, and a variety of analysis methods of time, space, scale and perspective are used to clarify the basic research before the site design and provide a reference for the design of the Pinghefang block. In Chapter 5, going back to the present, urban planning perspective, analyzing the scope of the Qingdao Road Historic District where the site is located, analyzing the functions of public spaces and public buildings, as well as potential users, and identifying the potential needs of the site. In Chapter 6, the scope is further reduced. It is the analysis of Pinghefang Cultural and Creative Industrial Park, focusing on the analysis of site circulation, functional layout and lighting, so as to prepare for the landing design. Chapter 7 is the final display of the Pinghefang block design, which is divided into two parts: strategy and design proposal. Strategically propose public health, flexible use and sustainability. The design part starts from the internal analysis of the site to show the evolution of the design. In addition, from the design details, the site's materials, plant selection and storm water management are considered, and the flexible use of the site under different special events is conceived, aiming to create a healthy public urban space. Finally, the enlightenment of urban public space in the post-epidemic era is drawn, and it is expected that it can provide reference for the design and use of public space in cities in the future.

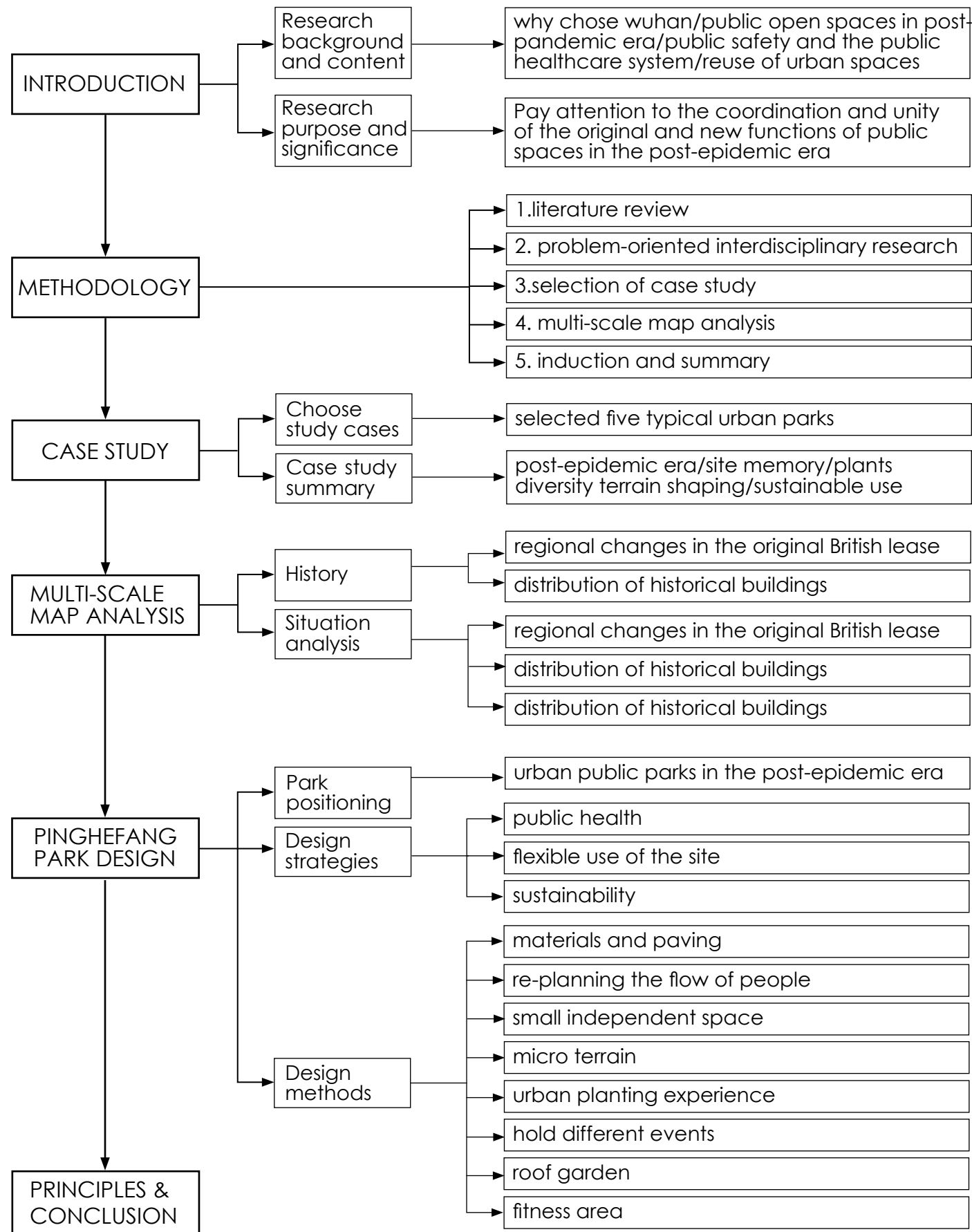
ASTRATTO

Parole chiave: blocco Pinghefang, era post-epidemia, spazio pubblico urbano, salute pubblica

Nel gennaio 2020, Wuhan ha emesso un avviso per chiudere la città, che è la prima città al mondo ad essere colpita dall'epidemia. Finora, tutte le parti del mondo hanno subito l'impatto del nuovo coronavirus. Con molti sforzi, sempre più regioni stanno gradualmente tornando al normale ritmo di vita. Tuttavia, la diffusione del virus in tutto il mondo è ancora una dopo l'altra. Possono verificarsi anche incidenti di salute pubblica sconosciuti. Le persone traumatizzate durante l'epidemia hanno bisogno di molto tempo e attività per alleviare lo stress e l'ansia. Si tratta di una prevenzione e di una risposta di emergenza per le città nell'era post-epidemia. Il piano era un campanello d'allarme sul muro. Come primo paese a riprendersi dall'epidemia, come progettare e utilizzare lo spazio pubblico urbano nell'era post-epidemia è diventato un argomento caldo e oggetto di pratica.

Pertanto, questo articolo prende come esempio il design del blocco Pinghefang nell'area urbana di Wuhan per trovare nuove idee e nuovi metodi di progettazione del parco urbano nell'era post-epidemia. Il capitolo 1 è lo sfondo teorico. Il capitolo 2 riguarda la metodologia e la struttura della tesi. Il terzo capitolo è un caso di studio e una sintesi della strategia. Studiando le tecniche di progettazione e le regole di utilizzo degli spazi pubblici durante l'incidente del COVID-19, abbiamo riassunto le strategie adatte alla situazione attuale del sito. Nel quarto capitolo, il sito si trova nell'area dell'ex concessione britannica e vengono utilizzati una varietà di metodi di analisi di tempo, spazio, scala e prospettiva per chiarire la ricerca di base prima della progettazione del sito e fornire un riferimento per la disegno del blocco Pinghefang. Nel capitolo 5, tornando all'attuale prospettiva urbanistica, analizzando l'ambito del Qingdao Road Historic District in cui si trova il sito, analizzando le funzioni degli spazi pubblici e degli edifici pubblici, nonché i potenziali utenti, e identificando i potenziali bisogni del sito. Nel capitolo 6, l'ambito è ulteriormente ridotto. È l'analisi del Parco Industriale Culturale e Creativo Pinghefang, focalizzata sull'analisi della circolazione del sito, del layout funzionale e dell'illuminazione, in modo da preparare il progetto di atterraggio. Il capitolo 7 è la visualizzazione finale del progetto del blocco Pinghefang, che è diviso in due parti: strategia e proposta progettuale. Proporre strategicamente la salute pubblica, l'uso flessibile e la sostenibilità. La parte progettuale parte dall'analisi interna del sito per mostrare l'evoluzione del progetto. Inoltre, dai dettagli di progettazione, vengono presi in considerazione i materiali del sito, la selezione delle piante e la gestione delle acque piovane, e viene concepito l'uso flessibile del sito in occasione di diversi eventi speciali, con l'obiettivo di creare un Nell'era post-epidemia, fornire ai residenti un spazio urbano pubblico sano. Infine, viene disegnata l'illuminazione dello spazio pubblico urbano nell'era post-epidemia, e si prevede che possa fornire un riferimento per la progettazione e l'uso dello spazio pubblico nelle città in futuro.

FRAMEWORK



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PART I

INTRODUCTION

Urban public space has greatly enriched people's lives, recording every bit of entertainment and sports, and has become the most diverse place during the epidemic. During COVID-19 prevention and control in 2020, maintaining a certain distance between people has become a basic requirement for daily social interaction. Indoor gathering activities had been restricted, and some activities had been moved to green Spaces and open spaces. It is of great guiding significance to study the new functions generated during the epidemic period and record them as strategies for the construction and development direction of urban green space and public open space in the post-pandemic era.

1.1 Research Background

1.1.1 Why Chose Wuhan?

-The new way of life in the post-pandemic era

The epidemic concerns all of humanity. My first thought was of my country. The world's first novel coronavirus was found in Wuhan, the first big outbreak of the outbreak of the city, is also Wuhan. Naturally, it was the focus of the world's attention in the early stages of the epidemic. At that time, Wuhan's medical supply and strategic reserve were insufficient, as well as the lack of emergency prevention and control plans, which put tremendous pressure on the overall fight against the epidemic. After overcoming the biggest difficulties, Wuhan took the lead in summarizing the rules from experience and formulating a new plan.

Interpretation of the Work Plan of Building a High-starting point Planning System in Wuhan. We will improve public facilities and services to improve people's well-being. With the goal of comprehensive coverage and balanced benefits for all, we will strengthen the weak links of public service facilities such as education, elderly care, convenience stores and vegetable markets, and build a 15-minute life circle. We will promote the construction of neighborhood centers and build a batch of high-quality community construction samples. We will coordinate the construction of small and medium-sized stadiums, cultural centers and other recreational and sports facilities, as well as the renovation of community football facilities, so as to create a 12-minute recreational and sports circle. Improve the micro public space network, improve the service coverage level of 500 meters of green, and create a 10-minute public activity circle. We will improve the comprehensive level of medical and health services and the capacity for emergency treatment, build a number of high-level medical research projects, improve the layout of community-level "sentinel" community hospitals and the network of facilities for pre-hospital emergency treatment, and build a 10-minute emergency medical circle in the central city and a 12-minute circle in the new city.

According to the above policies, in this paper, the public space is mainly used by people who are within walking distance of 15-30 minutes. These Spaces no longer only assume the function of urban parks for leisure and entertainment, but also play their unique functions at special times.

1.2 Research Content

1.2.1 Definition Of Public Open Spaces In Post-pandemic Era

A public open space (POS) is defined as an open piece of land both green space or hard space to which there is public access. Under China's national conditions, public open space includes urban public open space (green space, park, water body) and public open space opened up by land use units within the scope of construction land. Kevin Lynch determines an open space by its "accessibility". POS studied in this paper is the outdoor space accessible to ordinary people in the city, belonging to the country or unit land. This kind of POS is an important place for people to have a rest, exercise, socialize and other activities.

Pos has a new function during the epidemic period, and the public space, which was not used by organizations before, also becomes particularly important in special periods. After the epidemic, the public space seems to return to normal, but the problem of public safety and health is also exposed. These corresponding strategies should be recorded as a manual, which can be used as a reference for the design and use of public space in the future.

The sudden outbreak of the Novel Coronavirus lungs in late 2019 has put cities worldwide to a huge test. As a densely populated area of human beings, cities are one of the places where infectious diseases are most easily concentrated. In the early stage of the epidemic, urban public places and any indoor space can be the site of an infectious event. During the spread of the epidemic, the Chinese government adopted stricter quarantine policies compared with those of European and American countries. Home quarantine completely restricted the travel and communication of residents, and the public space near residential areas was more used for medical treatment, disease testing and temporary makeshift hospitals. In the period of the epidemic plateau, public places were gradually opened. Since public indoor places were the last open Spaces, outdoor Spaces were used first, and all kinds of activities were carried out here.

1.2.2 Importance Of Public Safety And The Public Healthcare System

Urban public space is closely related to public health. In 1984, the World Health Organization put forward the concept of "Healthy City", which symbolizes the promotion of attention to urban health and the implementation and advocacy of multiple cooperation.

It believes that "healthy" is not only the absence of diseases, but also the state of complete physical, mental and social health.

The threat of this epidemic to people's health is reflected in the whole stage from the outbreak to the stabilization of the epidemic. In the early stage of the epidemic, the health of individuals and the physical environment was highly valued, with large-scale procurement of epidemic prevention materials and people paying close attention to the trajectory of confirmed cases. During the spread of the epidemic, home quarantine measures further restricted residents' travel and communication, causing mental health problems such as fear, anxiety and depression. During the period of the epidemic plateau, the social adaptability and environmental health of the public were tested again, and the public places began to reduce the contact between people by means of traffic restriction and zoning, leading to new social isolation. In the process of fighting COVID-19, a major public health emergency, public awareness of the concept of health has also risen to an unprecedented height.

These undoubtedly show that urban construction should take the security of the people as the starting point, and the city security should be treated from the perspective of resilience, and strategic storage and planning should be fully considered for extreme conditions.

1.2.3 The importance Of Reuse Of Urban Public Space In The Post-pandemic Era

In the period of social isolation, indoor space became the most important place for people to gather and spread the epidemic, and people turned to outdoor public activities. In the transition period, the former urban public space includes both indoor and outdoor space, but in special periods, the importance of social distance and air flow makes the urban open public space become the most important social and activity place.

Now China has entered the post-epidemic era. This will be an era of high attention to public health and public safety. Chinmey Sarkar, in *Healthy Cities-Public Health Through Urban Planning*, also refers to "Healthy Cities" as a new approach to Public Health and Healthy Cities. It is argued that in order to have a positive impact on the health outcomes of urban populations - urban layout, land use setting, transport infrastructure and the provision of support and services must work together to remove barriers to access. The spatial structure of big cities lays down the basic form of urban spatial layout and directly determines the direction of future spatial policy *.

Recent Chinese news showed that during the last holiday, the number of people going out for travel was twice as much as in previous years. Double travel and double consumption are everywhere. It seems that after a long period of closed life, people instinctively turn outward.

1.2.4 Incorporating public health into urban design & urban Planning in response to Public safety and public health

-The guarantee of fair distribution of social resources

Fairness guarantees the right to survival and development of every member of society and provides equal rights and opportunities for individual development. According to a study on global healthcare accessibility and healthcare quality published by the Lancet in 2018, there is an obvious imbalance in medical resources and healthcare level in China, with significant differences between eastern and western regions. This prevents residents from getting to the nearest clinic in a short period of time during the outbreak, leading to a large influx of people to large hospitals, increasing medical stress and the risk of cross-transmission. Therefore, in future planning, service resources such as medical care, sports and education need to be distributed more intensively and evenly, so as to improve the matching of human and land elements of resources and enhance the equity and accessibility of resources.

In the *Death and Life of Great American Cities*, Jane Jacobs proposed the theory of "Street Eye", pointing out that maintaining the safety of cities is the fundamental task of streets. In the early stages of the epidemic, Wuhan's medical supplies and strategic reserves were insufficient, and there was a lack of emergency response plans for epidemic prevention and control, which put tremendous pressure on the city to comprehensively fight the epidemic. These undoubtedly show that urban construction should take the security of the people as the starting point, and the city security should be treated from the perspective of resilience, and strategic storage and planning should be fully considered for extreme conditions.

Therefore, it is of positive and practical significance to analyze the impact of the epidemic on urban development, and to discuss the deficiencies in the health and safety aspects of urban renewal and the direction of improvement in the future for the promotion of urban health and sustainable development.

1.3 Research Purpose

Wuhan is the most severely affected city in China. The site of the Heping Historic District is also located in an expansion space of urban public space, and is also close to hospitals, health service centers and communities. Research provides basic information.

In the study of outdoor public spaces in the era of epidemics, we should look for schematic theories, design methods, and design strategies for reuse, and pay attention to the coordination and unity of the original and new functions of public spaces.

Now that the epidemic is a global phenomenon, every government is paying attention to the changes in the use of urban space brought about by the epidemic. It is hoped that the research on this subject can provide constructive reference for urban design and park design.

1.4 Research significance

1. Expand the function of public space.
2. Strengthen public safety and health.
3. Improve self-positioning.
4. Green spaces and open spaces were the first to be allowed to adjust mask wearing requirements during the epidemic, and they were opened in an orderly manner, providing operational feasibility for these areas to undertake more functions on the basis of their original functions such as rest and sports.

PART II

METHODOLOGY

Because in the first part we have clarified our research content and research purpose. So in this part we mainly list the five methods used in our entire set of studies, and expand the explanations of these five methods separately. Let everyone better understand how we completed our papers and research.

1.Literature review

Through Google search, CNKI, and book reading, we can learn about existing cities' response strategies to the epidemic and China's prevention strategies in the post-epidemic era as the analysis content and conclusions of the paper.

2. Problem-oriented interdisciplinary research

In the past year or so, the break-down caused by covid-19 has affected all walks of life, including the use of urban public space. It was originally the content of public health and sanitation research and will be taken into account in urban design.

3.Selection of case study

Through analysis of park squares in different scales and different cities, research cases are evaluated according to needs, and strategies and design techniques that are helpful to the subject are learned and summarized.

4. Multi-scale map analysis.

It mainly includes three scales. It analyzes the potential needs of public space design from the perspective of the entire city, from the 15-minute walk to understand the current situation and potential needs around the site, and analyzes all buildings and outdoor spaces and streets in the block where the site is located. Carry out the landing design.

And from the perspective of time development, through the history of urban changes, the memory of the site is collected.

5. Induction and summary

Combining and comparing the methods of preliminary theoretical research with the mid-term site analysis, summed up the design strategy and method of public space in the post-epidemic era, combined with the historical background of the site to create applied strategies, and formed a more systematic design theory.

PART III CASE STUDY

Since we have clarified the research content, the five typical cases we selected in the case study part are all related to our research content. Mainly include changes in urban parks in the post-epidemic era and small urban parks in dense residential areas that mainly serve communities. A more thorough case study can help us complete the research better.

3.1 Biblioteca degli Alberi Milan, Italy

Research Directions:

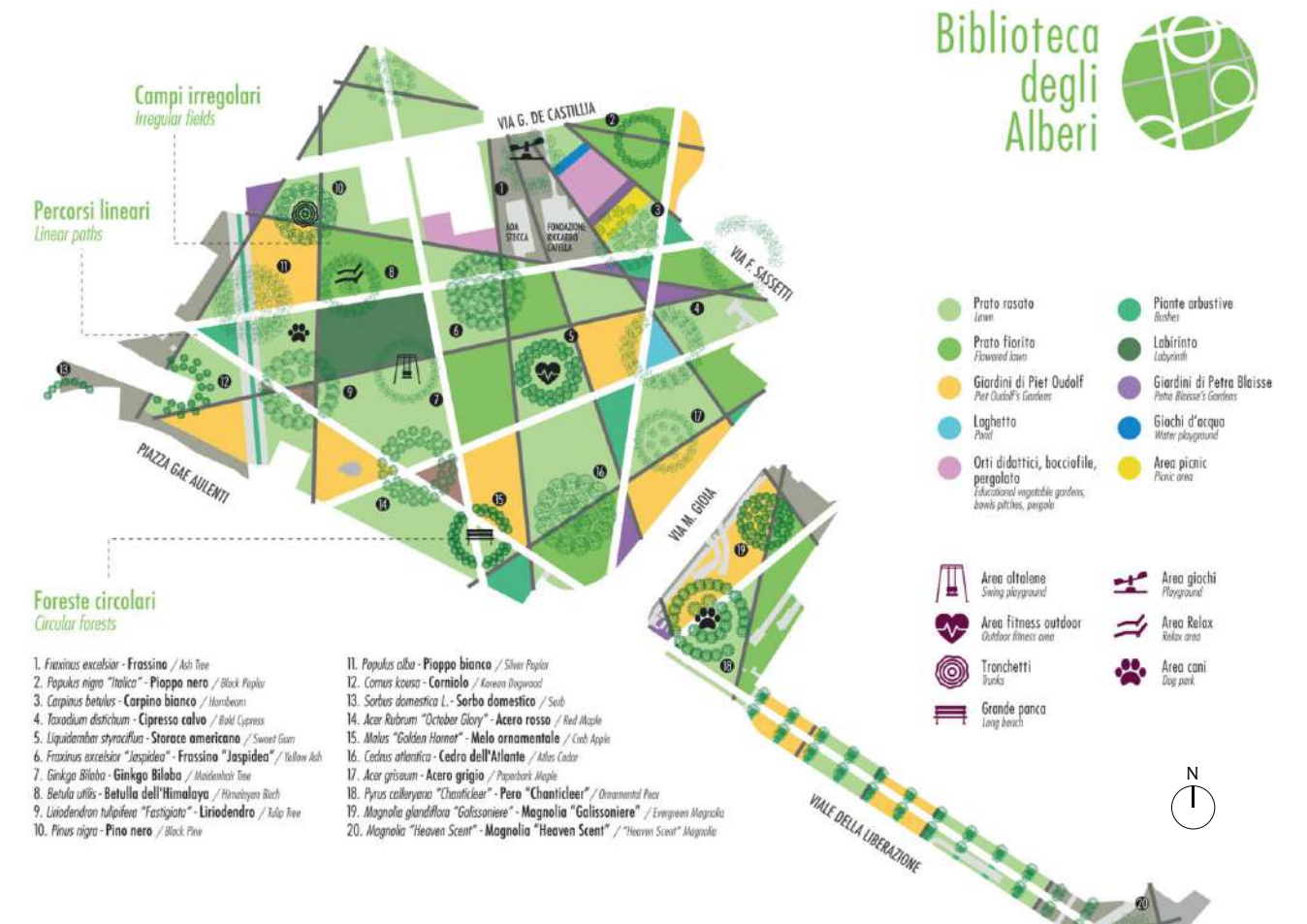
- Under the background of the concept of the plant library of the Milan government, the problem of the site was discovered, how to create a vibrant outdoor space in the city that can serve different groups of users at the same time
- The redesign and adjustment of the park during the epidemic



www.google.com

The 'Biblioteca degli Alberi' (Library of Trees) is a new form of public park that exhibits a collection of different trees and that represents a modern version of the Botanic Garden. It is a park that through its connective web of paths and its varied cultural program becomes a Cultural Campus; a place where people can meet, enjoy and educate themselves; a place for leisure, sports, beauty and learning; a place that connects all areas and inhabitants that surround it and that is itself connected to all sides and on all levels.

Site Plan



www.asils.it/la-biblioteca-degli-alberi-milano

Paths are drawn to connect different areas (residential, commercial and governmental) around the site, creating a grid of paths that overlap and cross through one another. These paths, together with the irregular plots that are created in between, bridge height differences, streets and create usable spaces.

The planting design for the plots is composed of a series of carefully selected species. Each plot offers a different type of growth and program. Circular forests are scattered over the site and will grow into roofs of foliage with different color and structure that float above the park. A series of cultural, educational, social and commercial buildings are integrated in the park and along its edges, their program triggering interest, activity and social control for the area.



<https://www.insideoutside.nl/Biblioteca-degli-Alberi-Milan>
<https://mooool.com/biblioteca-degli-alberi-by-inside-outside-petra-blaisse.html>

Trees will envelope the visitor with their colour, shape and structure, the Circular Forests will form inhabitable 'vegetal rooms': spaces for the public to use.

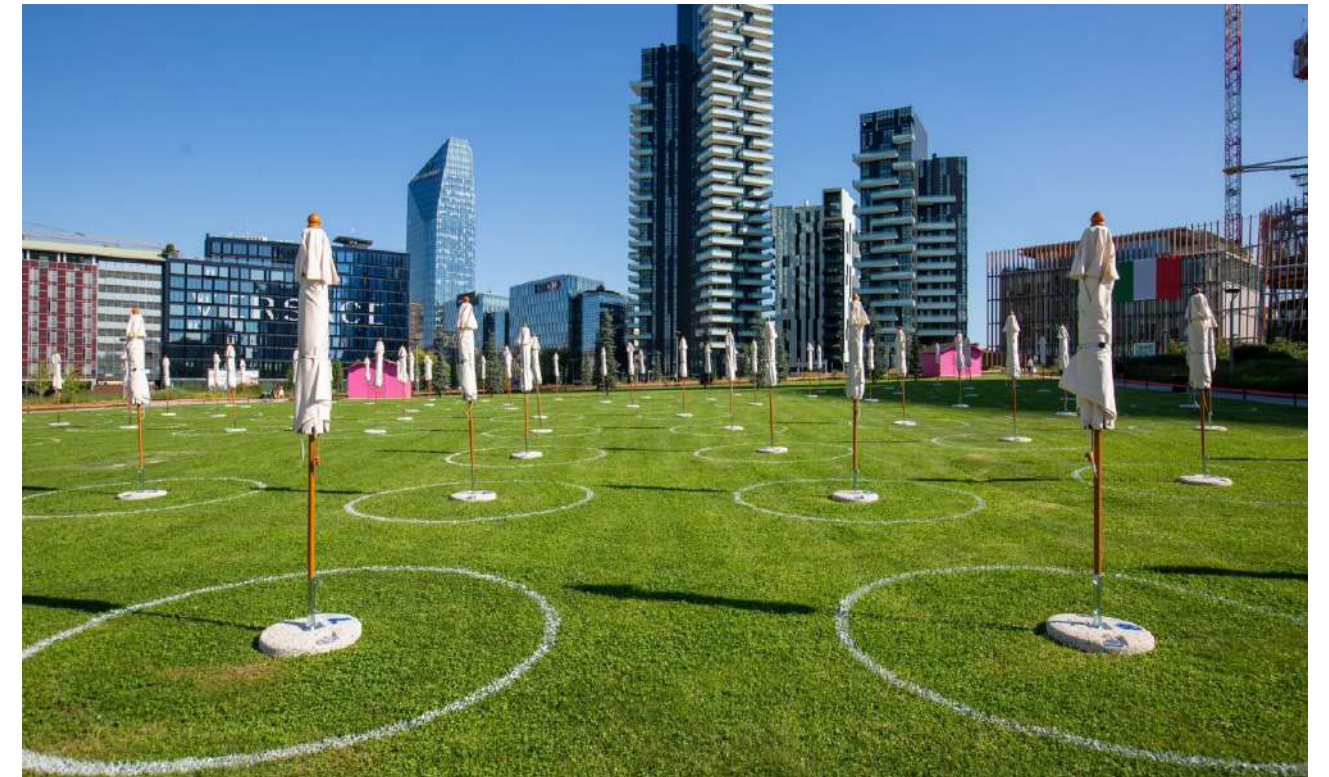


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<https://mooool.com/biblioteca-degli-alberi-by-inside-outside-petra-blaisse.html>

From the historical map, we can know that it has broken through the original urban texture and pattern, and re-divided the site space under the principle of adapting to the new city, creating multiple interconnected spaces with their own personalities.



Usage during the Post-COVID period: The grid-like space division provides a good foundation for the use of partitioned outdoor spaces. Open until 31st August, it is designed as an urban beach "Lido Bam". A temporary array of circles is drawn on the grass to divide the distance between each unit, while ensuring that people have outdoor sunbathing activities.



www.google.com

<https://tg24.sky.it/cronaca/2020/06/21/milano-spiaggia-biblioteca-alberi#35>

3.2 Fashion Factory Office Area - Courtyard B Beijing, China

Research Directions:

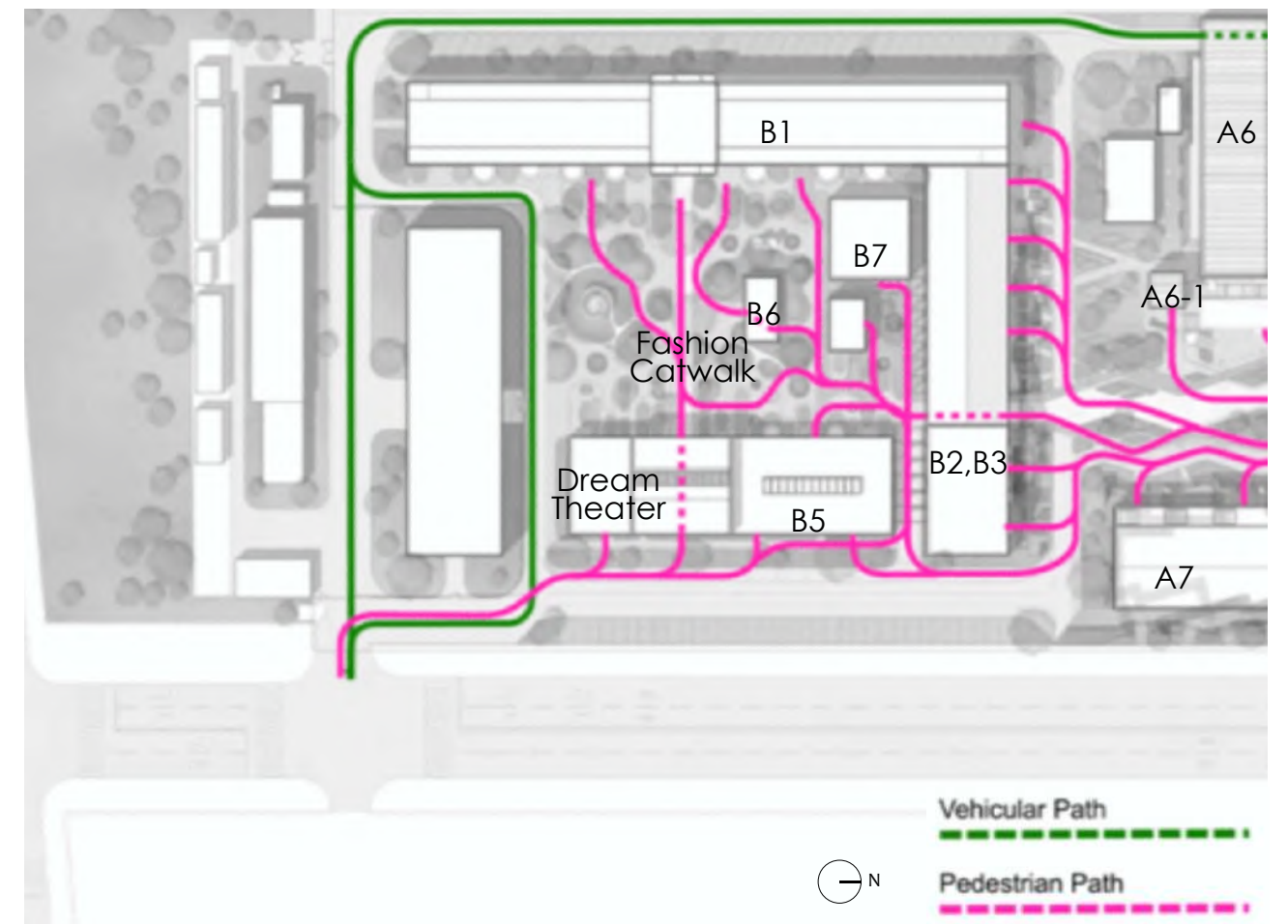
- Rejuvenate a former industrial site into a diverse creative work spaces
- Post-COVID office complex, indoor gatherings are reduced, a shared space for collective gatherings is provided through spacious courtyards and newly-added platforms protruding from the building surface
- The connectivity between buildings' facades and landscape



www.map.baidu.com

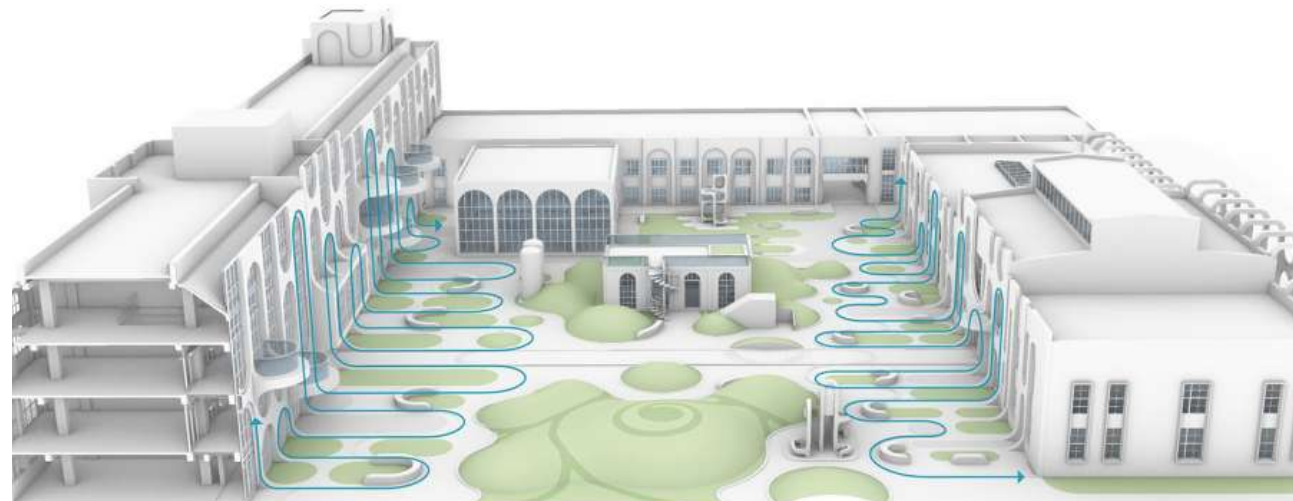
The public spaces of the site offer further amenities to both on site users as well as outside parties. Featuring theater and screening spaces, fashion runways, the site is adaptable to both large- and small-scale events. Beijing Fashion-Factory is entirely capable of handling a wide range of public programs and events, this will not only serve to enhance the experience and profile of those working on the site, but additionally bring outside parties to the space along with the general public invited to attend. In this way, the park operates as an attraction point within the city, not simply a destination for work, but rather a cultural destination expressive of the immense creativity and production of the city.

Site Plan



<https://www.gooood.cn/beijing-fashion-factory-courtyard-b-antistatics-architecture.htm>

The Fashion Factory B courtyard has the most “fashionably experimental” moment and design. This courtyard, in its given context already established and feeling as a distinct and unique environment from the expansive entry courtyard. Playing with the idea of the stitch at the macroscale as an architectural language, the space is interconnected through a large-scale graphic of the microscale stitch. The simple deployment of the line and arch creates continuous linearity throughout the space, sewing together the façade of one building, through the plane of the courtyard into the façade of the other building. These simple and repetitive moves develop a strong rhythm and gesture to the space, allowing the eye to trace from landscape to façade and back



<https://www.gooood.cn/beijing-fashion-factory-courtyard-b-antistatics-architecture.htm>

Taking advantage of the existing industrial infrastructure, many of the remnant artifacts on site were used within the generous outdoor courtyard spaces creating collective gathering through recycling and reuse. Additionally, the interior renovations of the existing buildings took into account the historic impact of pandemics like COVID, orienting each unit's interior to a private individual entry space. With the spacious courtyards presenting shared space for collective gathering in the age of social distancing, the elimination of any interior collective spaces reduces the potential spread of viral contagions between offices and studios.



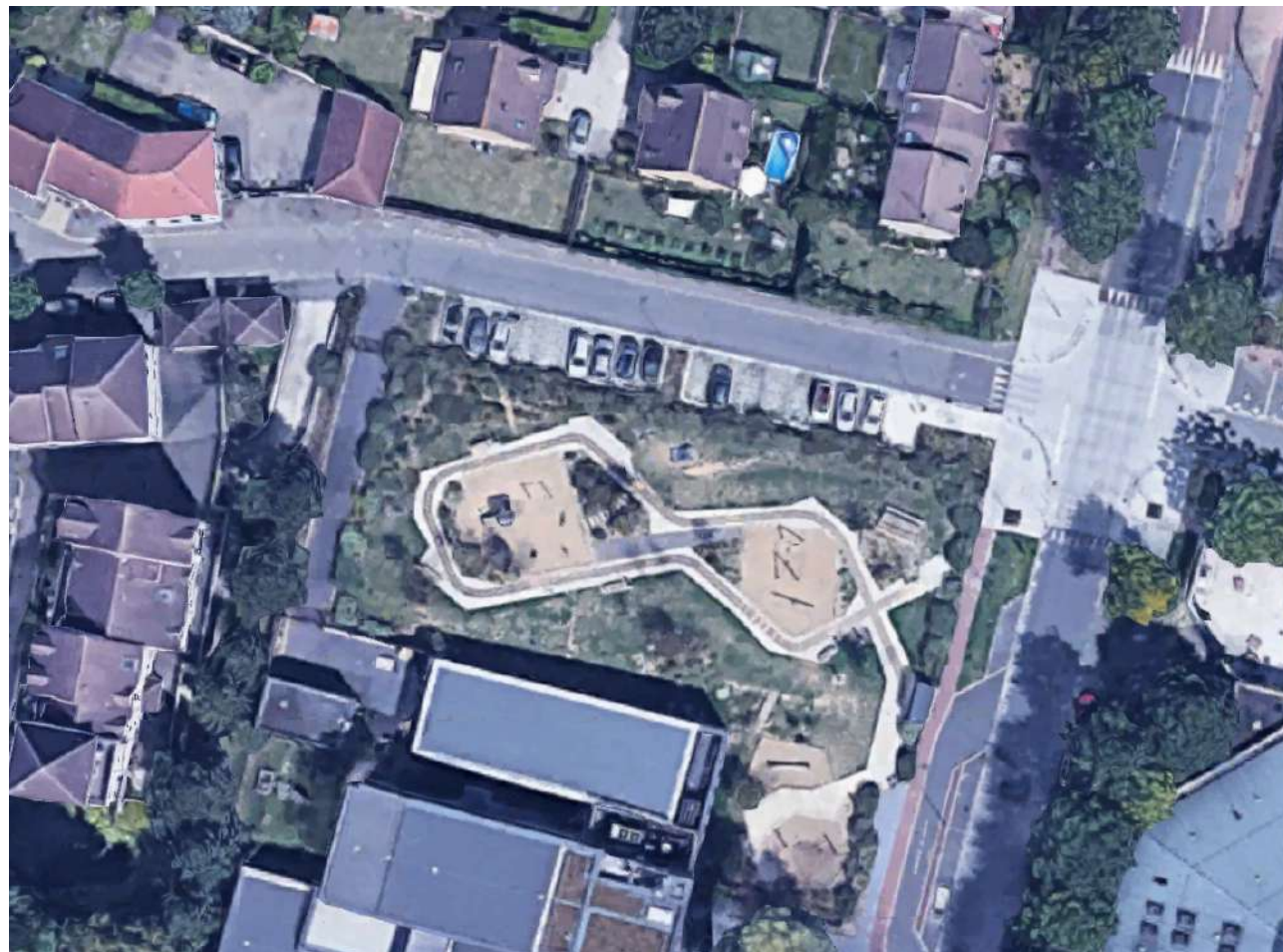
<https://www.gooood.cn/beijing-fashion-factory-courtyard-b-antistatics-architecture.htm>

3.3 Champ Arthur Playground Cergy, France

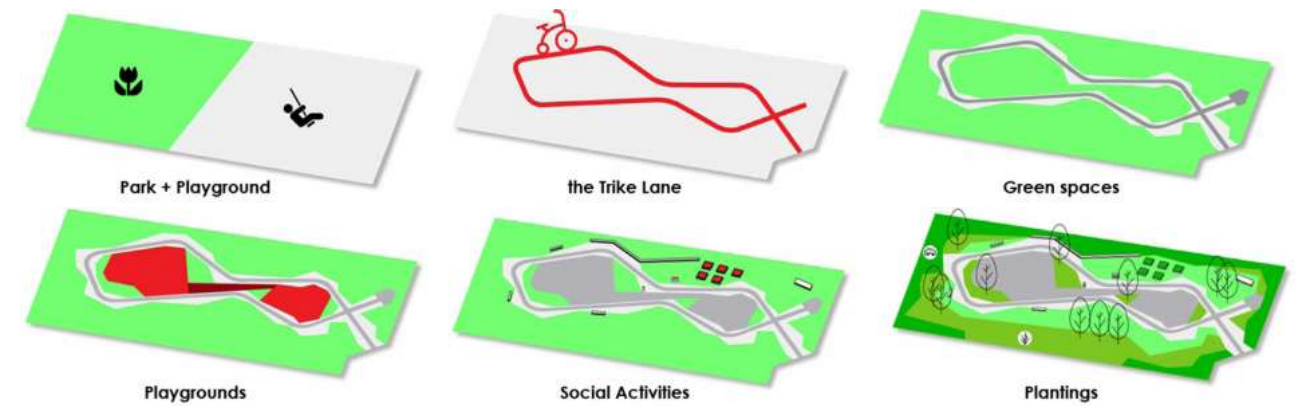
Research Directions:

- The playground as the main public spaces for the community
- Interesting and comfortable small playground serving the community
- Design methods and characteristics of the site

The main concept of this project consists in the combination of a park and a playful public space. The design is marked by a strong linear feature: a Trike Lane that represents at the same time a walking path, a playground and an urban staging, emphasized by the ground markings. The lane is the generating line of the project, it will translate in an encircling path, integrating different activities and micro-spaces: benches, open libraries, lawns, picnic areas, a fountain, a shed for the trikes.



www.google.com



<http://www.espace-libre.fr/projets/le-champ-arthur.html>

The playgrounds are inscribed within the lane, in order to be clearly defined areas. Their position, being at the center of the plot, will favor a sense of security and protection. The two playgrounds are physically linked, thanks to a ground blackboard, an asphalt surface that will work as a free space of graphic expression. And there also has the obvious ground signs in the site.



<http://www.espace-libre.fr/projets/le-champ-arthur.html>

3.4 Henri Dunant Square Mantes-la-Jolie, France

Research Directions:

- Highly green, the area provides a "cool island"
- The square serves as the center, connecting the surrounding blocks
- The area for construction is located near the main neighborhood shops (supermarket, fast food and cinema)
- Playground also acting as a waiting and resting place
- The treatment of the boundary of the square



www.google.com

The place has gotten a makeover. Highly green, the area provides a “cool island” which helps to mitigate high temperatures. It reconnects the different areas and facilitates the flux of pedestrian circulation and multiplies the uses of the square. A playground becomes a meeting point, allowing children of the neighborhood; not only to play and enjoy, but also to wait for their cinema shows.



<https://www.goood.cn/henri-dunant-square-espace-libre.htm>

The circular playground in the square provides a good leisure and waiting space for children and residents. And people can walk through the square and go to different areas. A maximum of materials has been reused from the previous site. Original pavement of the site were removed, then cleaned and finally, they were reused in the new pavement. Some structures made in gravel were stripped, stored and reused. The connection between the square and the surrounding area is also very natural.



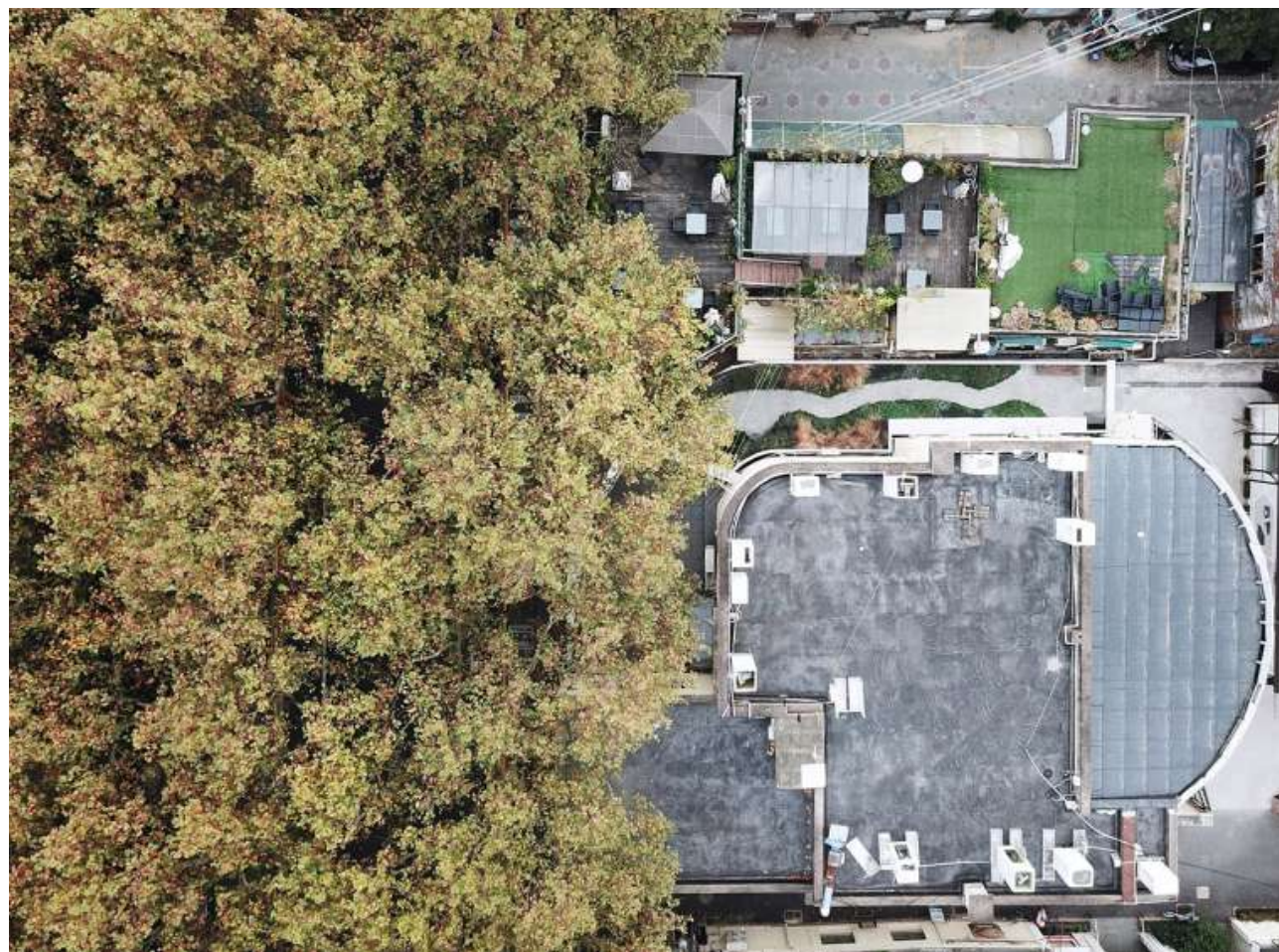
<https://www.goood.cn/henri-dunant-square-espace-libre.htm>

3.5 Pocket park on Xinhua Road Shanghai, China

Research Directions:

- Create a natural and poetic space in urban concrete jungles
- Design methods for pocket parks and small-scale site
- Park design in high-density old residential areas and reactivate the forgotten space in the city and make it serve the community once again
- Pocket park entrance integrate into the street and residential areas

The site is a 22-metre-long alleyway between two buildings. The widest part of the site is less than 4.2m. The site turned to be an unoccupied space after the noodle restaurant was demolished. Create a natural and poetic space in urban concrete jungles. Through the power of space, people could release from the busy city life to a quiet natural garden, where people can take a walk, sit at leisure, enjoy the exhibition, and admire the beauty of flowers. There are two functions for the site, a pocket park that serves the neighbouring communities, and a street gallery that meets the requirements of flexible exhibitions in a long term.

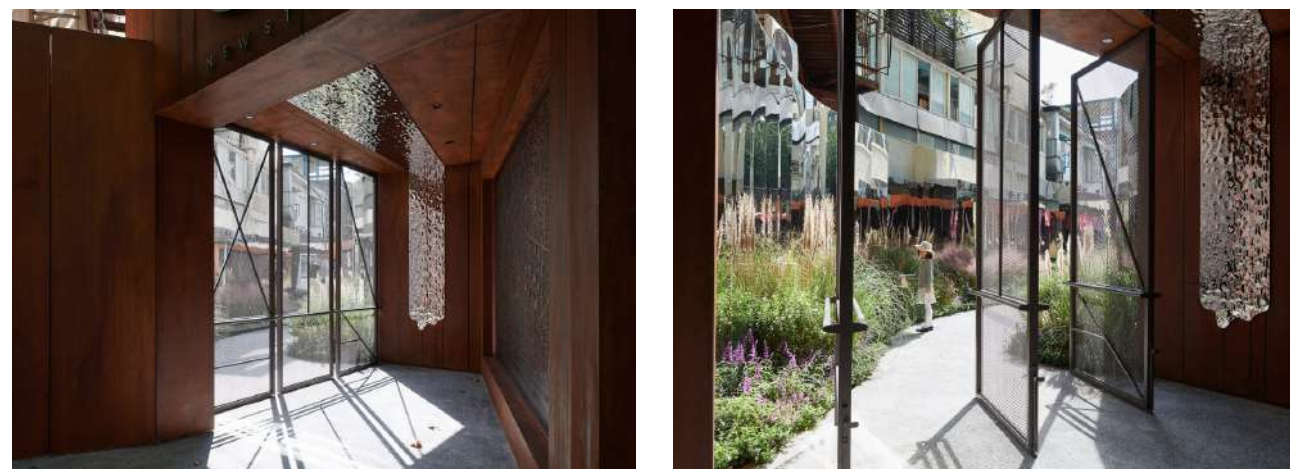
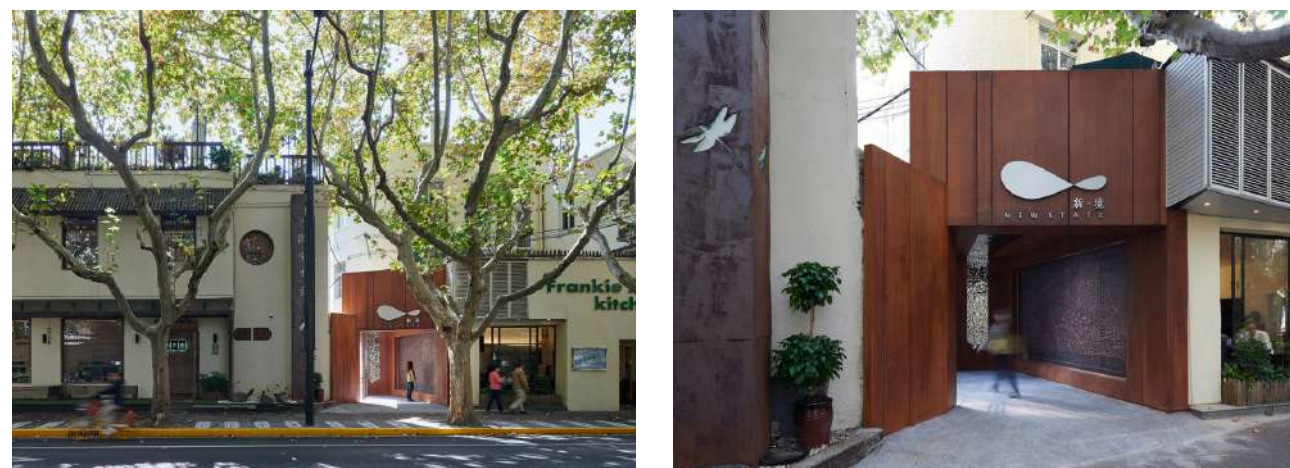


<https://www.shuishi.com/works/832.html>



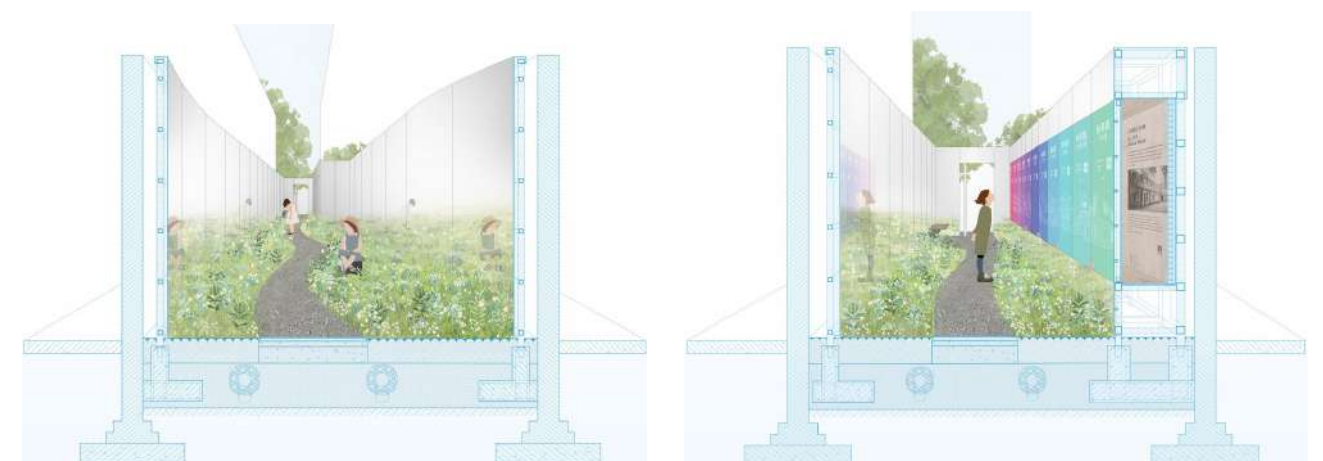
<https://www.goood.cn/pocket-park-on-xinhua-road-by-shuishi.htm>

The entrance to the Pocket Park and the street where it is located. The revolving door entering the entrance can be opened and closed. The entrance is constructed of weathering steel, where there is a permanent exhibition about the historic architecture on Xinghua Road. Xinghua Road as a vivid museum, the entrance would become a small-scale lobby presenting the introduction to a large number of precious historic buildings. The old visual effect of weathering steel makes the response to history, and, at the same time, can intervene in the city streetscape naturally and subtly.



<https://www.goood.cn/pocket-park-on-xinhua-road-by-shuishi.htm>

The mirror-finished stainless-steel system was equipped on the side walls of the alleyway, which was the core move of the design. The garden would be reflected by the side mirrors infinitely. When pedestrians pass the alleyway, the space turns into an infinite natural garden. It is a rare experience in such a metropolitan city. The one side of the mirrors are rotatable. Removable exhibition boards are at the back of the mirrors. the space can transform into a street gallery with the rotation of the mirrors. Visitors can experience infinite exhibition room online after scanning the QR codes on exhibition boards with their phones.



<https://www.shuishi.com/works/832.html>

3.6 Conclusion

Through the research of the previous five cases, we have summarized several directions that can provide design ideas for our subsequent design:

- The spread of the global epidemic and the advent of the Post-COVID Era have had a certain degree of impact on people's range of activities and social distance. Therefore, we should consider these factors in the design and transformation of parks, especially community parks and public spaces. If the local government has corresponding design specifications, we should strictly abide by it. While adding some ideas and changes to the design site to adapt to the epidemic era, it also provides a safer and healthier activity space and social distance for residents or passersby.
- If the site has abundant historical background, we should first combine its history and memory elements for the site analysis. Then combined with valuable site's memory and historical elements (for example: abandoned factory areas, historical blocks, unique cultural elements, etc.) for design and transformation. This can better integrate local history and cultural, and retain the memory of the original history of the site.
- When designing public spaces, the accessibility of this area needs to be strengthened. We can consider the location and relationship of surrounding blocks so that local residents or passers-by can conveniently go through the public space to the area they want to go. When the public space becomes the main activity center of the surrounding communities, the connection between these communities will become closer.
- In higher-density building areas, we need to consider the diversity of people served by public spaces, because there are often many types of people in such areas, such as residents, office workers, tourists, passers-by, the disabled, and children. Even if there are hospitals around, we still need to consider the service the patients and their families.
- Plants are an important part of the design project. While increasing the diversity of plants, we must also consider the original plants in the site. When choosing new plants, consider whether they can survive the local climate and temperature. In the part of plant design, we must also consider the combination of plants, such as: color, type, planting density, height, etc. At the same time, plants can also play a role in creating different spaces and visual atmospheres in the project. Plants can beautify the site while regulating the temperature of the site, so the research on plants and how to increase plant diversity will be an important part of the subsequent design.

- The shaping of the terrain in the site is also very important. There are mainly two construction methods, micro-topography and more obvious topography. The micro-topography can be used to divide some functional areas in the site or can also be used in areas that provide activities and sports. The slight topography can make people feel more comfortable. If the micro-terrain is covered with lawn, it will be very good. In the leisure area, people can chat and rest on the lawn. Another more obvious terrain is applied to a smaller area, such as children's activity areas, professional fitness areas, etc., increasing the diversity of activities will also bring more vitality to the site itself. Therefore, if the shaping of different terrains is strengthened, the design site can be more vivid and interesting.
- The flexible use of site's functions is also an aspect that needs to be considered. The sustainable use of the site can make the site better play its role. For example: in the morning and evening, part of the area may be used as a small market. Then in summer, the site can be used for exhibitions and music festivals, and in winter, it can be made into an ice rink for people to play, thereby increasing the diversity of site's functions.

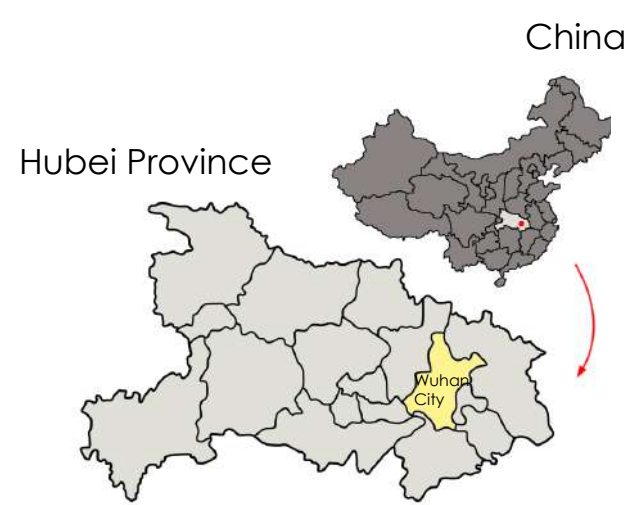
Reference projects conclusion diagram

| | Biblioteca degli Alberi | Fashion Factory Office Area | Champ Arthur Playground | Henri Dunant Square | Pocket park on Xinhua Road |
|--------------------------|-------------------------|-----------------------------|-------------------------|---------------------|----------------------------|
| Post-COVID era | √ | √ | | | √ |
| Original site memory | | √ | | | √ |
| Accessibility | √ | √ | √ | √ | |
| Community Center | √ | | √ | √ | |
| High-density area | | √ | | √ | √ |
| Service people diversity | √ | | √ | √ | √ |
| Plants diversity | √ | | √ | √ | √ |
| Terrain shaping | √ | √ | √ | √ | |
| Sustainable use of site | √ | √ | | √ | √ |

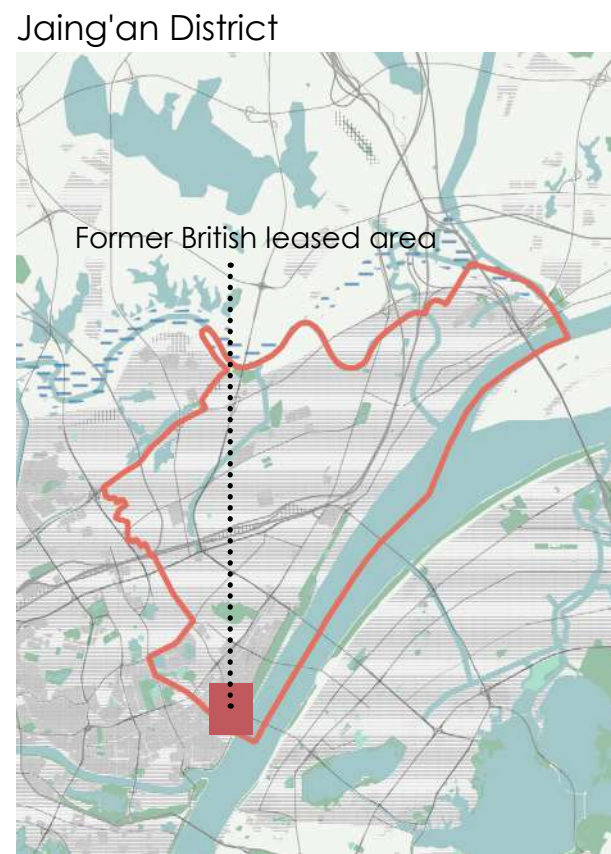
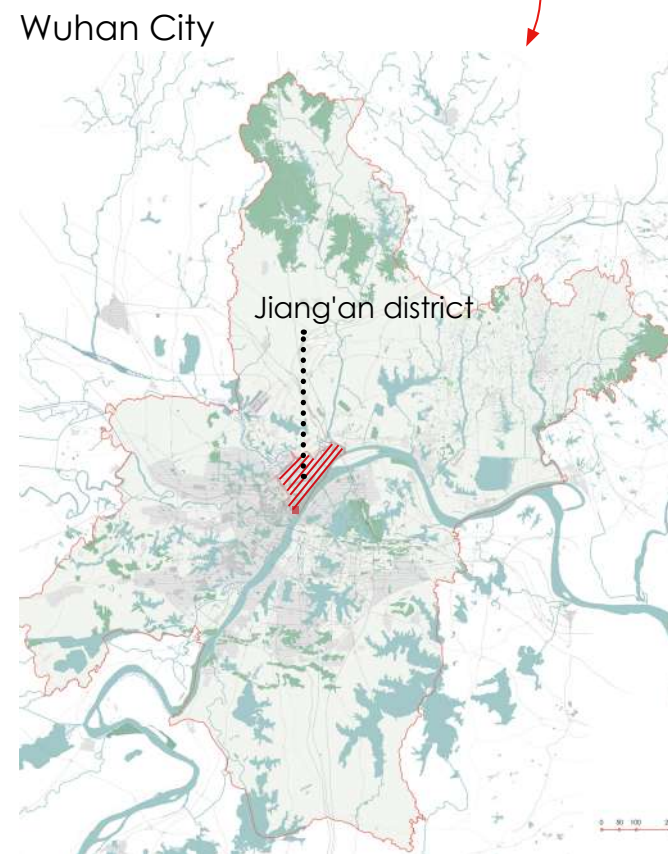
PART IV
ANALYSIS OF
FORMER BRITISH LEASED AREA

Our design site is located in the former British lease area in Wuhan City.
We treat the entire former British leased area as a large-scale analysis.

4.1 Location Analysis



Wuhan is in east-central Hubei, at latitude 29°58'–31°22' N and longitude 113°41'–115°05' E. Wuhan sits at the confluence of the Han River flowing into the Yangtze River at the East of the Jiangnan Plain along the Yangtze's middle reaches. Wuhan's climate is humid subtropical with abundant rainfall in summer and four distinctive seasons. Wuhan is known for its humid summers, when dewpoints can often reach 26°C (79°F) or more.



- Jiang'an district
- green space & woodland
- urban land
- Former British Leased area
- farmland
- water body

Jiang'an District is the core component of Wuhan. The leased area located along the river in Jiang'an District is the third largest leased area after Tianjin and Shanghai in scale. Since 1861, 20 countries including Britain, Russia, France, the United States, Germany, and Japan have established consulates here. Former British leased area where has several century-old protected buildings, such as Pinghefang, Lutz House, Pinghe Packaging Factory and Orthodox church. The process of urbanization has brought about the transformation of the buildings functions of the original concession plots.

Historical Maps Of Former British Leased Area

1905



The initial period from 1861 to 1900. At the beginning of the formation of the British Concession, construction began with consulate buildings, banks, churches and so on.

1933



1938



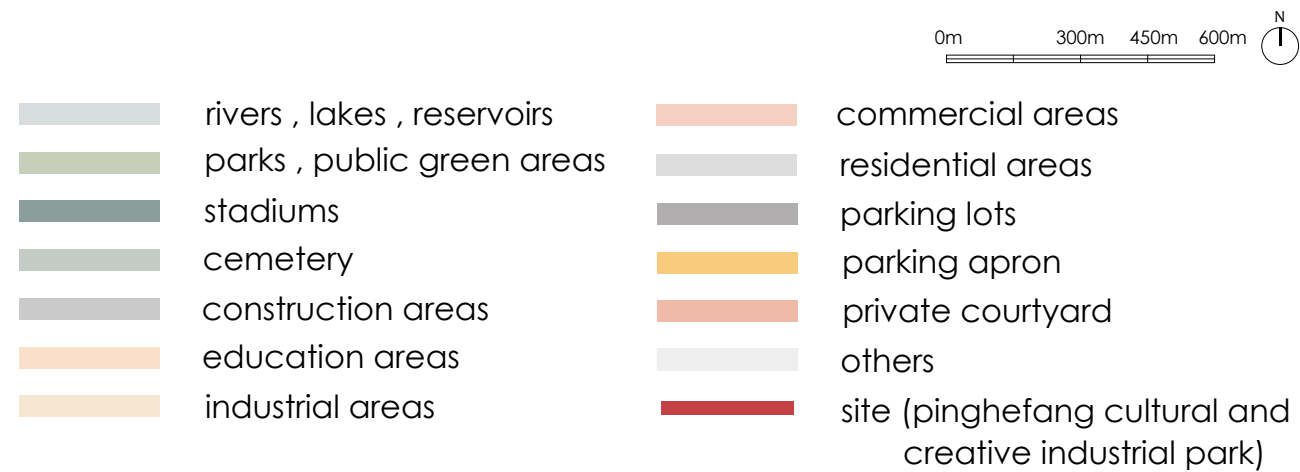
1951



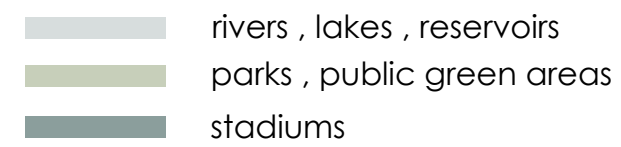
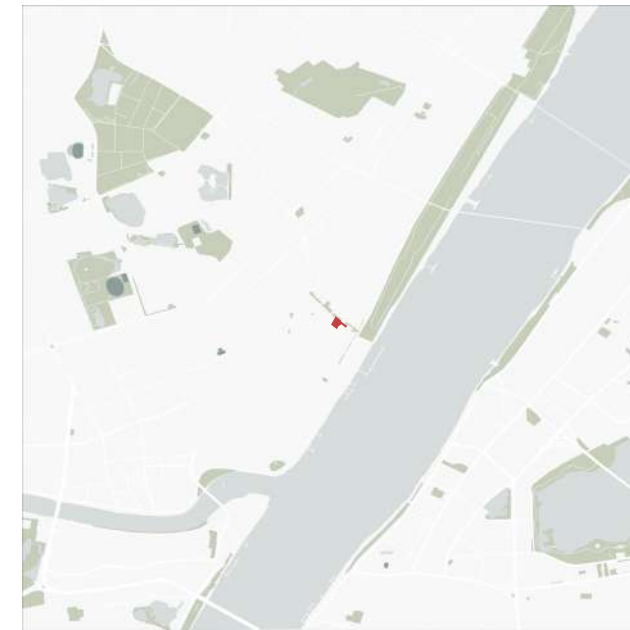
Source : Wuchang Asia New Earth Academy

1900-1927 flourishing period. British businessmen were born in order to compete for the major industrial markets in Wuhan. Economic input and technological progress have produced many new types of buildings, such as foreign houses, apartments, and so on. Continuation period from 1927-1937. In 1927, China reclaimed the British concession, and the area was in a downturn. The withering period from 1938 to 1949. Wuhan's industry went to other inland areas on a large scale. Provinces have moved, other industries have also withdrawn from the Wuhan market, and the overall urban construction has been in decline.

4.2 Landuse Analysis



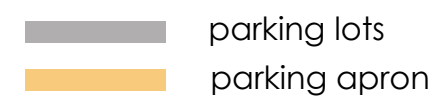
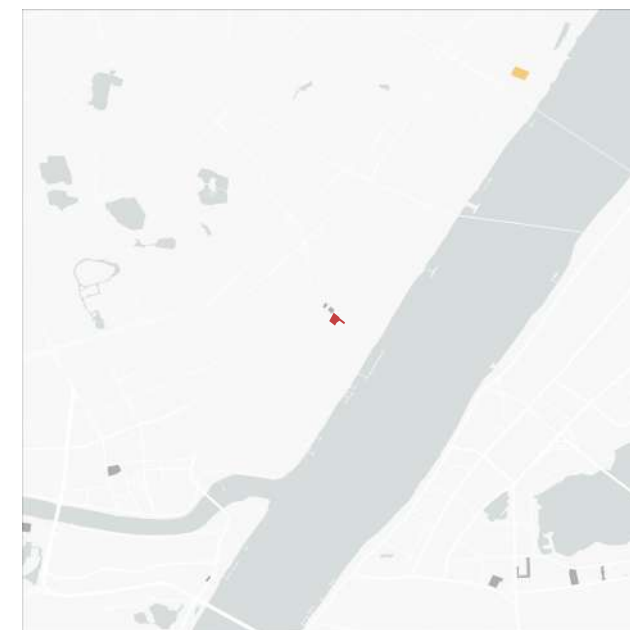
a)



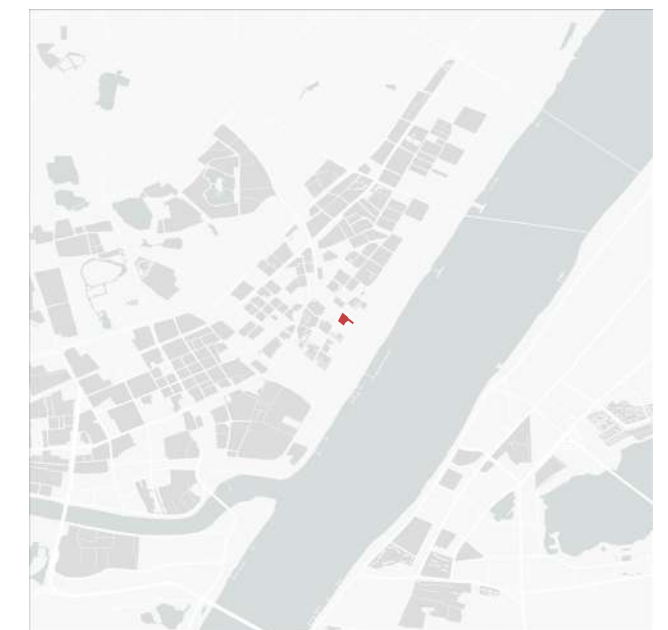
b)



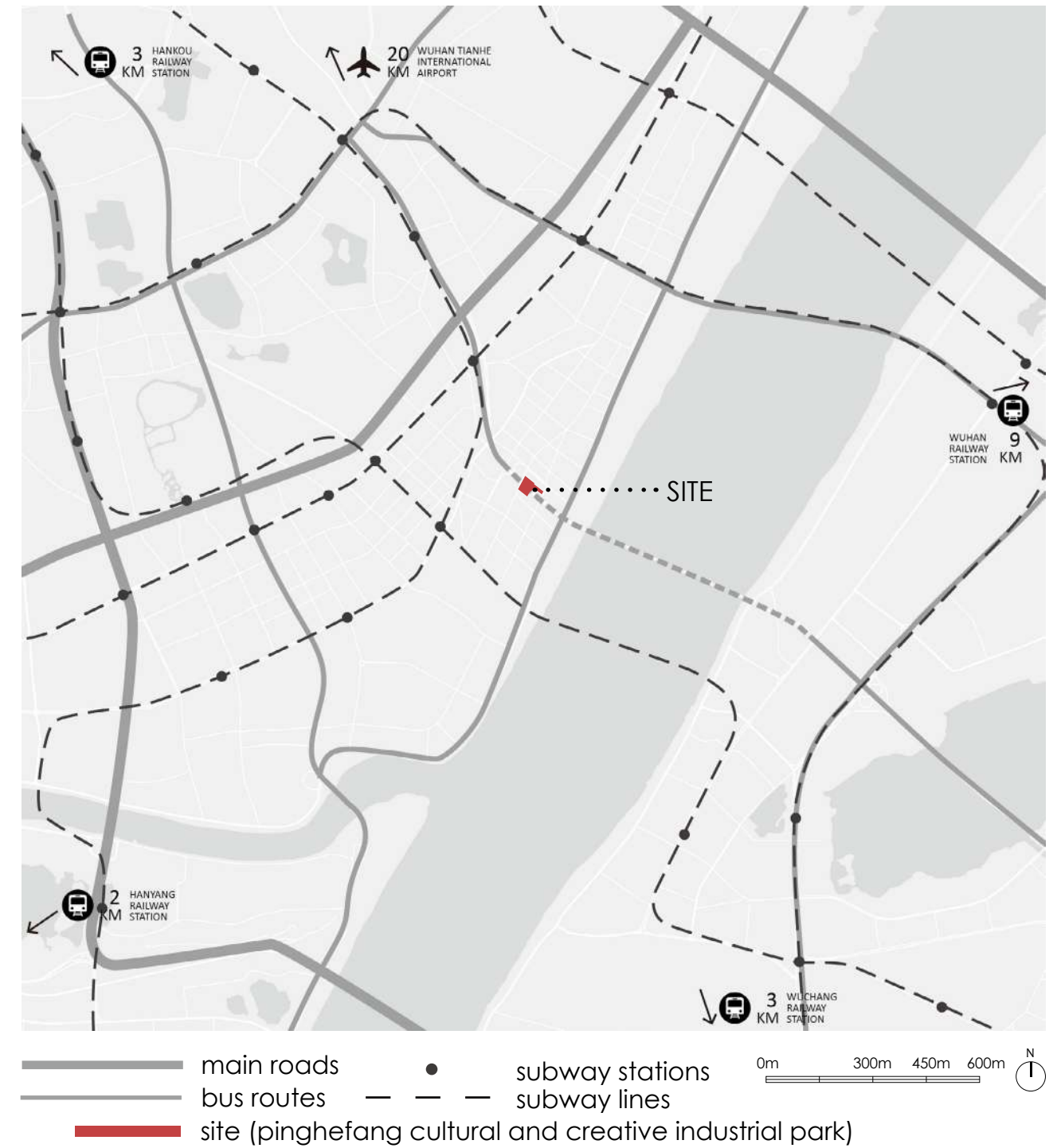
c)



d)



4.3 Traffic Analysis



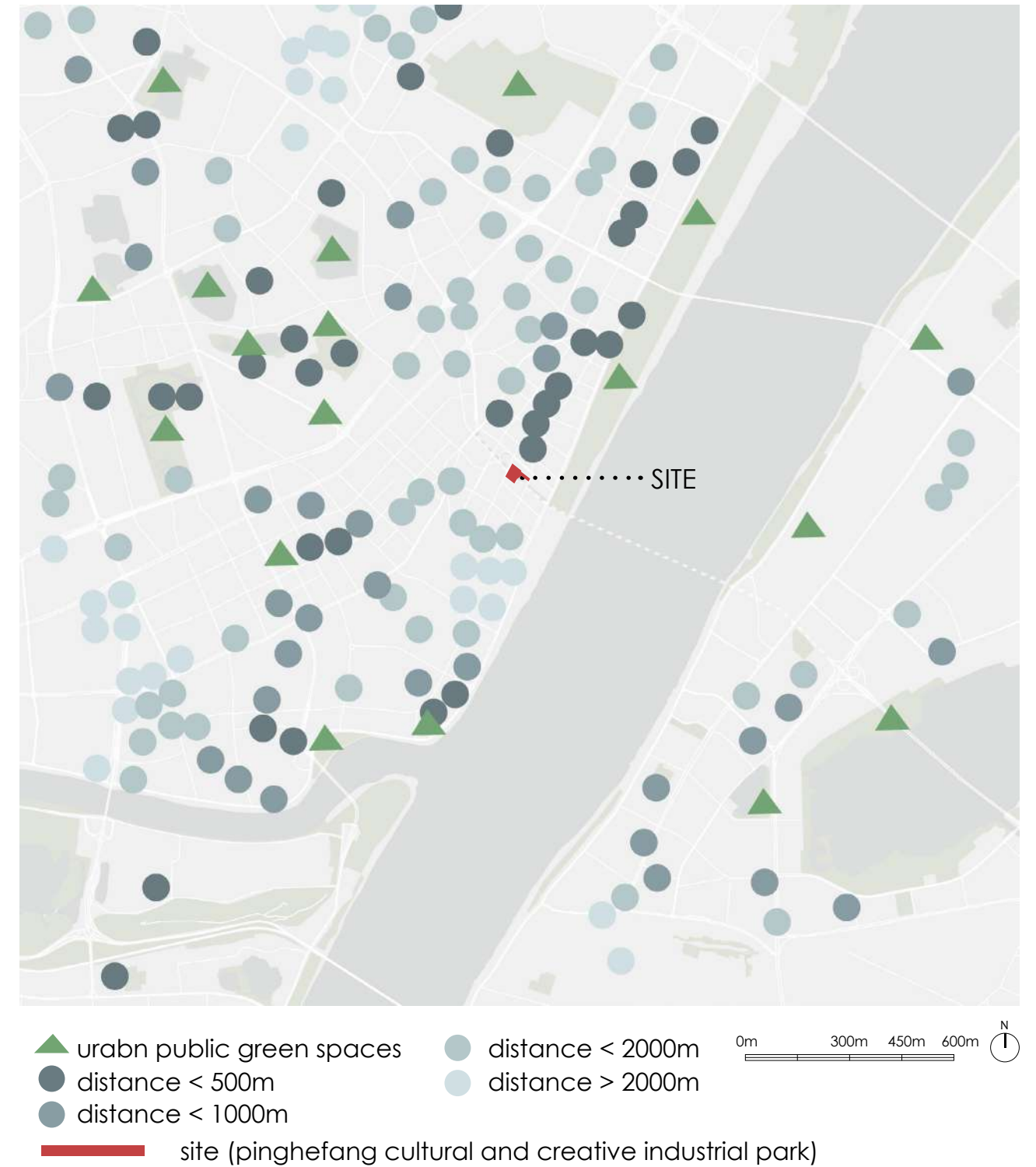
Wuhan is very convenient in transportation, is China's rare set railway, waterway, highway, aviation in one of the transportation hub. The Yangtze River runs through the city, dividing Wuhan into three land areas. Wuhan's traffic is expanded in concentric circles, with the smallest ring connecting three land areas, three Bridges and one Yangtze Tunnel connecting both sides of the River.

4.4 Greenbelt System Analysis



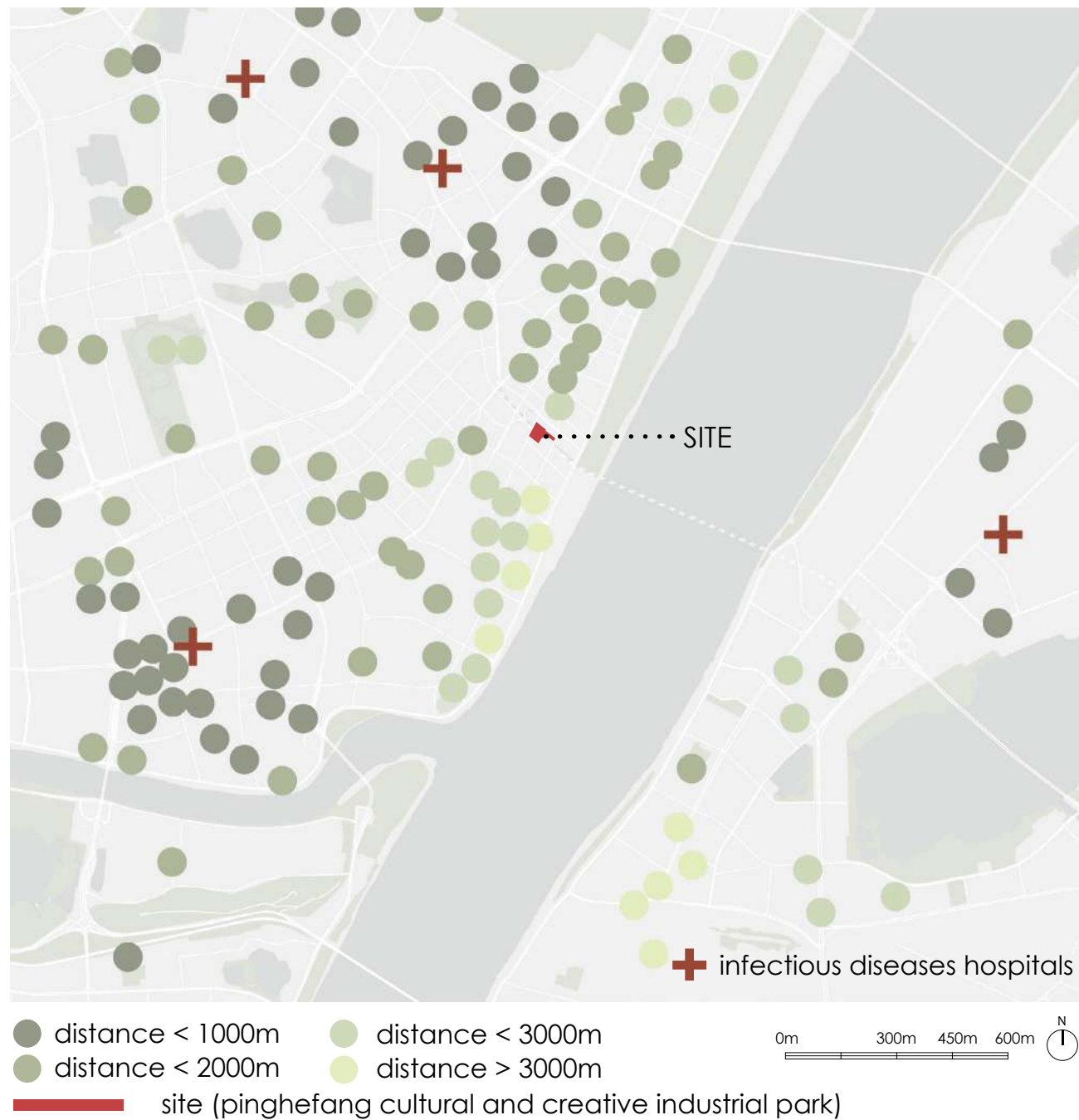
The original green space is scattered scattered in the inland area, and the main idea of the planning is to connect the large green space with green corridors and small pocket parks, so that the entire river bank area becomes a continuous green space accessible by walking.

4.5 Accessibility Of Communities To Public Green Spaces



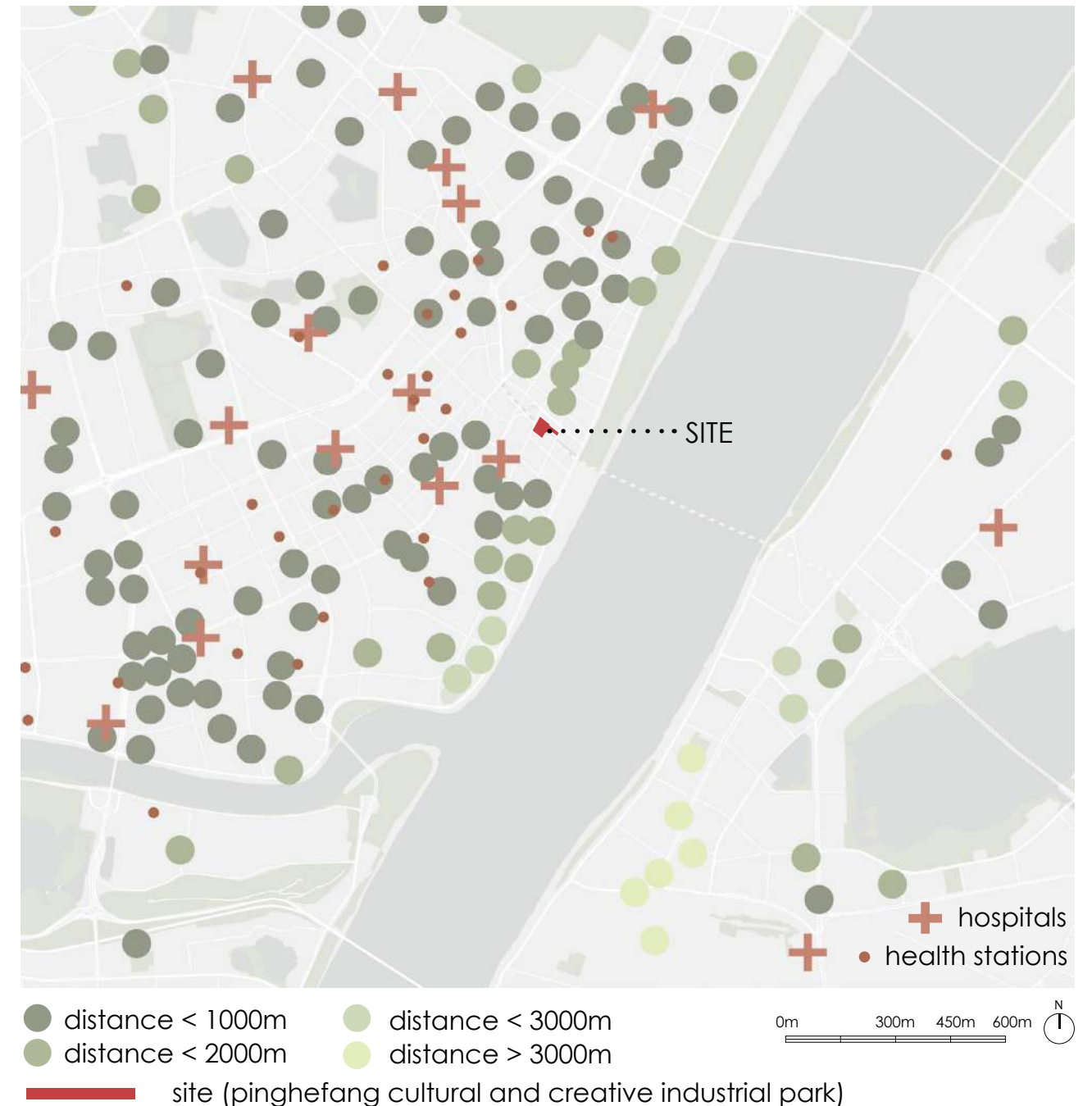
According to the range of 1km-2km-3km-reachable urban green space beyond 3km, all the communities can be divided into 4 types. At present, most communities can find at least an open urban green space within 2km, and only a few riverside communities are remotely located and lack well-designed urban green spaces.

4.6 Accessibility Of Communities To Infectious Diseases Hospitals



As you can see on the map, there are quite a few communities that are more than two kilometers away from the hospital. Second, high-quality medical facilities are concentrated in the central city. According to the statistics of Wuhan, only 40% of the communities within 15 minutes' walking distance of medical facilities are covered. According to the map analysis, the regional medical resources in the northwest direction of the Yangtze River are the best, and only the southeast corner has a hospital gap. On the east bank of the Yangtze River, there was no large infectious disease hospital because of the distance between the communities and the scattered distribution.

4.7 Accessibility Of Communities To Hospitals And Health Stations



There is a serious shortage of health facilities at the grass-roots level. Compared with Singapore, there are more than 880 primary-level clinics in an area of about 600 square kilometers, while Beijing and Shanghai have less than 100 clinics in the same area. Fourth, potential other problems, including high-rise high-density residential areas, office areas, elevator shafts, ventilation system problems, the old community space is not enough, exercise, leisure activities space is seriously insufficient.

4.8 Conclusion

- In the past, urban planning was all about large-scale, regional, and urban spatial structure adjustments. The next stage is more about the construction of human settlements. The location of the site is in the former old city area. The triangular area near the river bank is one of the core urban areas of Wuhan. Half of this area is commercial and office land. Under the new urban planning, there will be more and more green spaces in Jiang'an District, and there will also be more green spaces for recreational space for surrounding residents and tourists, at the same time, the originally scattered small green spaces will better pass the green space. The corridors are built up, so that the leisure public green space in Jiang'an District can be reached on foot.
- The transportation around the site is very convenient, especially public transportation such as buses and subways. Since the site is located in the Jiang'an District of Wuhan City, close to the Yangtze River, this area can also be reached on the other bank of the river through an underground tunnel.
- The concentrated outbreak of the epidemic has exposed various problems in Wuhan's public medical system: first, the shortage of public medical resources and unreasonable structure. For example, Wuhan leads the country in the number of beds per thousand people and the number of grade-A hospitals, but the number of hospitals and beds for infectious diseases is insufficient. After the outbreak of the epidemic, Wuhan is in a state of supersaturation. In general, during the COVID-19 period, the shortcomings of our urban construction mainly focus on the protection of health, safety and people's livelihood at the grassroots level.

PART V ANALYSIS OF QINGDAO ROAD HISTORIC BLOCK

The Qingdao Road Historic Block is a typical block in the former British leased area where many historical buildings have been preserved. At the same time, the Qingdao Road Historic Block is still a densely populated area. Our design site is located in the middle of the Qingdao Road Historic District, so we regard the Qingdao Road Historic Block as a mid-range analysis area.



Qingdao Road historic block

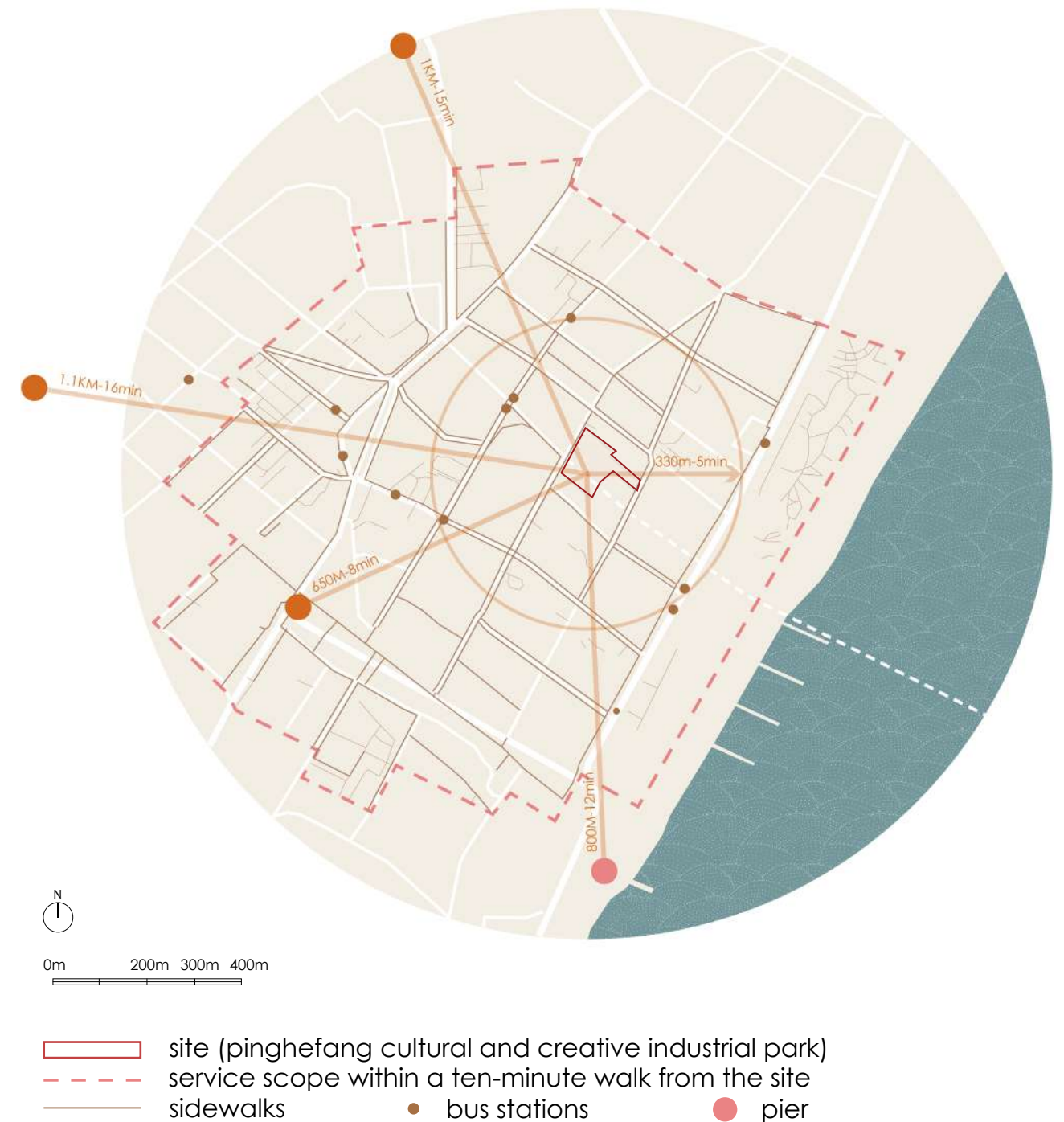
Former British Leased Area

5.1 Roadway Analysis



The site is located in the center of the former British concession. The river-crossing tunnel passes through the base area underground and faces the Hankou River Beach in the southeast. In addition, there is also the longest pedestrian street in China-Jiangnan Road Pedestrian Street, which is very convenient for transportation. The British Concession uses a grid network road system. The angle between the road and the Yangtze River is 75 degrees, and most of them are 125 feet wide (about 38.1M) and 268 feet long (about 81.7M) parallelograms. The block size Pleasant, so traffic jams generally do not occur.

5.2 Pedestrian Traffic And Stations Analysis



Public transportation for pedestrians is very convenient. Traffic Within a 5-minute walk, there is a subway station 650m to the northwest, two bus stops within 500m, and three subway stations and ample bus stops within 1km. However, the sidewalk is still completely covering all roads. For shared bicycle parking spots, there is currently no separate arrangement area, which can be placed together with non-motorized parking spots.

5.3 Accessibility Of The Buildings To The Urban Public Spaces



- site (pinghefang cultural and creative industrial park)
- urban public spaces
- service scope within a ten-minute walk from the site
- two public spaces can be reached within a five-minute walk
- one public space can be reached within a five-minute walk
- no public space can be reached within a five-minute walk

Most of the buildings on the site meet the needs of a city public space within a 5-minute walk, and half of the buildings can also reach two public spaces. There are still buildings in the south and north corners of the center of the site that cannot meet this demand. Fortunately, the current design site can meet the needs of most buildings.

5.4 Historical Buildings Analysis



- site (pinghefang cultural and creative industrial park)
- service scope within a ten-minute walk from the site
- built in 1861-1900
- built in 1900-1927
- built in 1927-1937

The Qingdao Road Historic District has a long history, so there are many historical buildings in this district. Five of these buildings were built between 1861-1900. There are also seven buildings built between 1900-1927. The remaining historical buildings were also built between 1927-1937.

5.5 Privacy Of Buildings Analysis



The use of buildings is divided according to the degree of privacy: public buildings, commercial and residential complexes, and residential buildings. The periphery of the former British concession blocks are mostly public buildings and commercial-residential complexes, and the core is residential buildings. Each block has the characteristics of isomorphism. The distribution map of building public registration expresses this urban spatial relationship. The central area of the block is mostly residential, and the public level is low.

5.6 Functions Of Public Buildings Analysis

a) office



Most of the area is government offices and corporate offices, a small number of scattered office buildings are rented out, and part of the upstairs space of the original Heping Packing Factory inside the site is rented out for creative offices. This is far from enough for a neighborhood with rich historical heritage and artistic flavor. It is hoped that the office types will be enriched and more creative industries will be settled in the region.

b) culture



There are various types of cultural buildings in the region, including exhibition halls, historical memorials, libraries, and cultural training institutions. Combined with its own historically valuable buildings, there is a great potential demand for exhibitions here.

c) medical care



- large hospitals
- outpatient clinics
- inpatient departments
- pharmacies



The types of medical care can be divided into large hospitals, inpatient departments, general outpatient clinics and pharmacies. There are sufficient medical resources in this area, ranging from large hospitals to pharmacies. The only problem is that the outdoor buffer area is not enough in special periods. Considering that the venue can be used in disaster events At the time, it is used as a temporary medical inspection point or a replenishment supply point.

d) catering

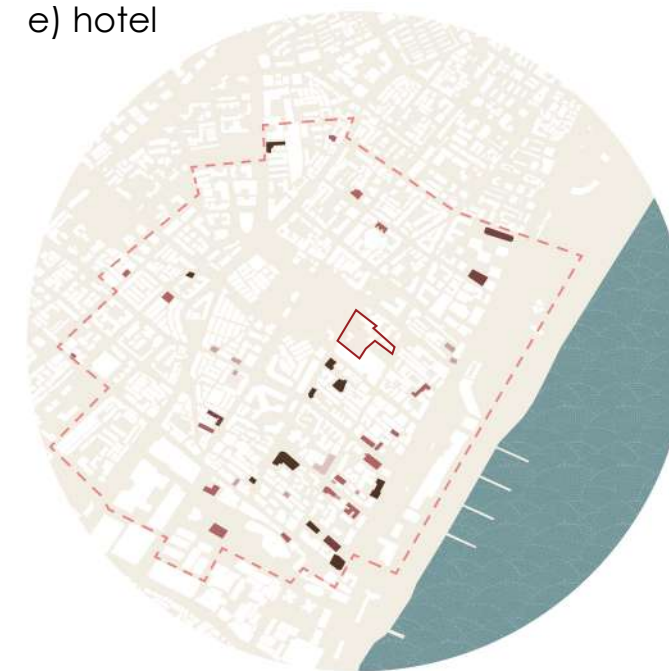


- bars and clubs
- cafes, drink shops
- restaurants



The catering industry in this region is developed, especially concentrated in the vicinity of Jiangnan Road and Yanjiang Avenue. There are many types and types of catering, especially around the venue, there are also bars and coffee shops suitable for young people. This raises many possibilities for the design of the site.

e) hotel



- boutique hotels
- business hotels
- economic chain hotels
- youth hostels
- government guesthouses



The main types of hotels in the area include youth hostels, economic chain hotels, business hotels, boutique hotels and government guesthouses. There are a large number of boutique hotels and chain hotels. Youth hostels are concentrated in the southern area of the venue, while other types are relatively few. It can be speculated that business people and young people have more needs.

f) entertainment



- gyms
- entertainment activities



There are many kinds of entertainment activities in the area, including chess and card rooms, massage parlors, KTV, etc., mainly serving local and nearby residents. The gym is obviously concentrated near Jiangnan Road in the south and on the north side of Tianjin Road.

The author speculates that the height and space of the old building do not meet the requirements of the gym, so it is concentrated in the new building. At the same time, the old community lacks outdoor facilities. The vacant space downstairs is mostly dominated by parking lots, and a small part of it satisfies the residents' needs for exercise. Therefore, we will focus on designing outdoor spaces for outdoor social and fitness activities, arranging fitness facilities that are convenient for maintenance and management in the venue, or providing a certain area of flexible space.

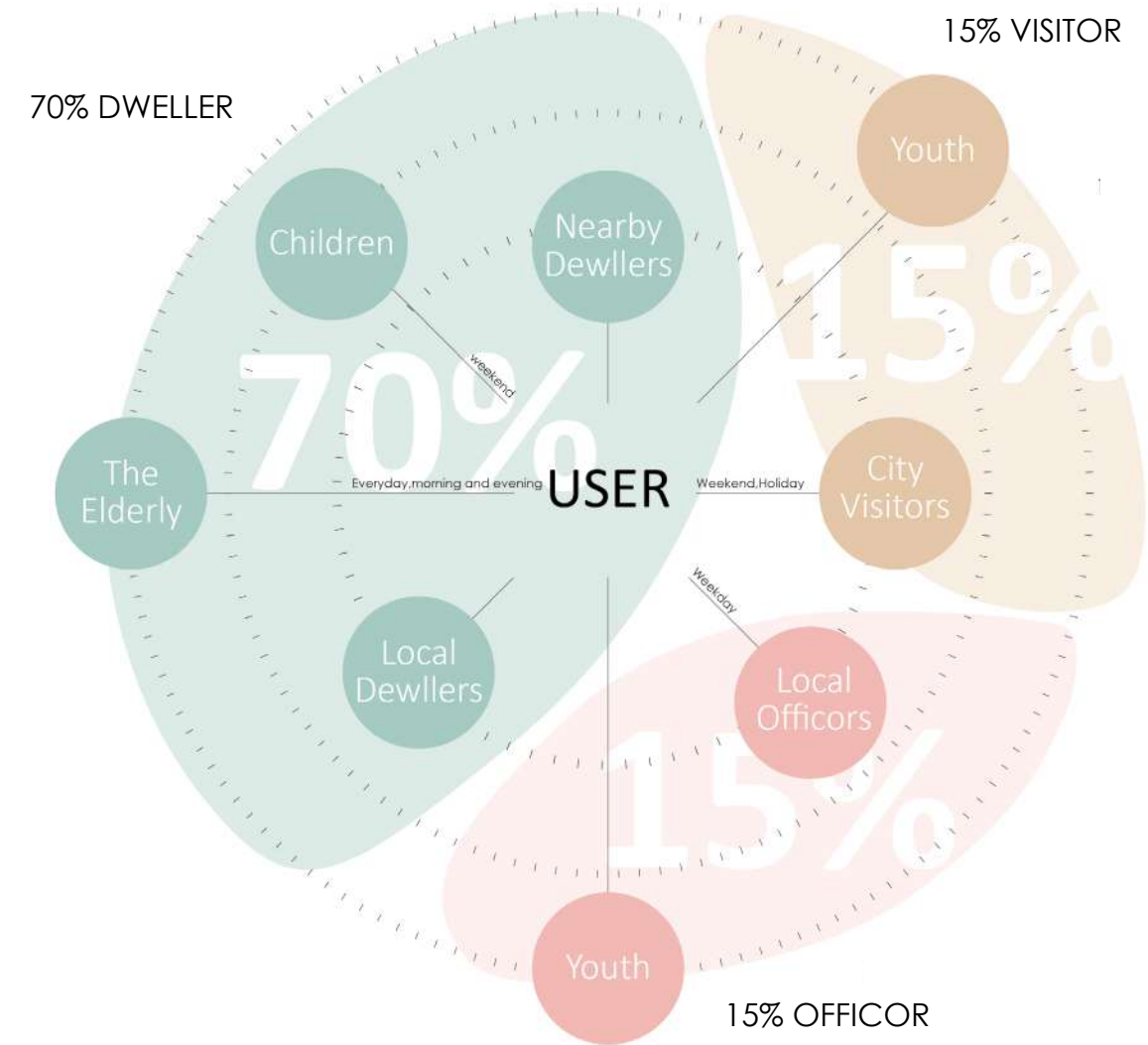
g) retail



The retail industry is divided into two types: internal for communities and external for public. The internal business is mainly community-oriented service retail, such as convenience stores, hair salon, pharmacies, etc. Community-based retail and services can currently sustain the daily needs of people in the community. The external commercial formats (three commercial complexes in the southwest corner of the site) are mainly clothing jewellery and electronic products. There are creative formats of cultural goods, luxury goods, and creative home furnishings near art galleries and museums. Office buildings are near art galleries. The format of business is relatively single, and most of them are cultural goods.

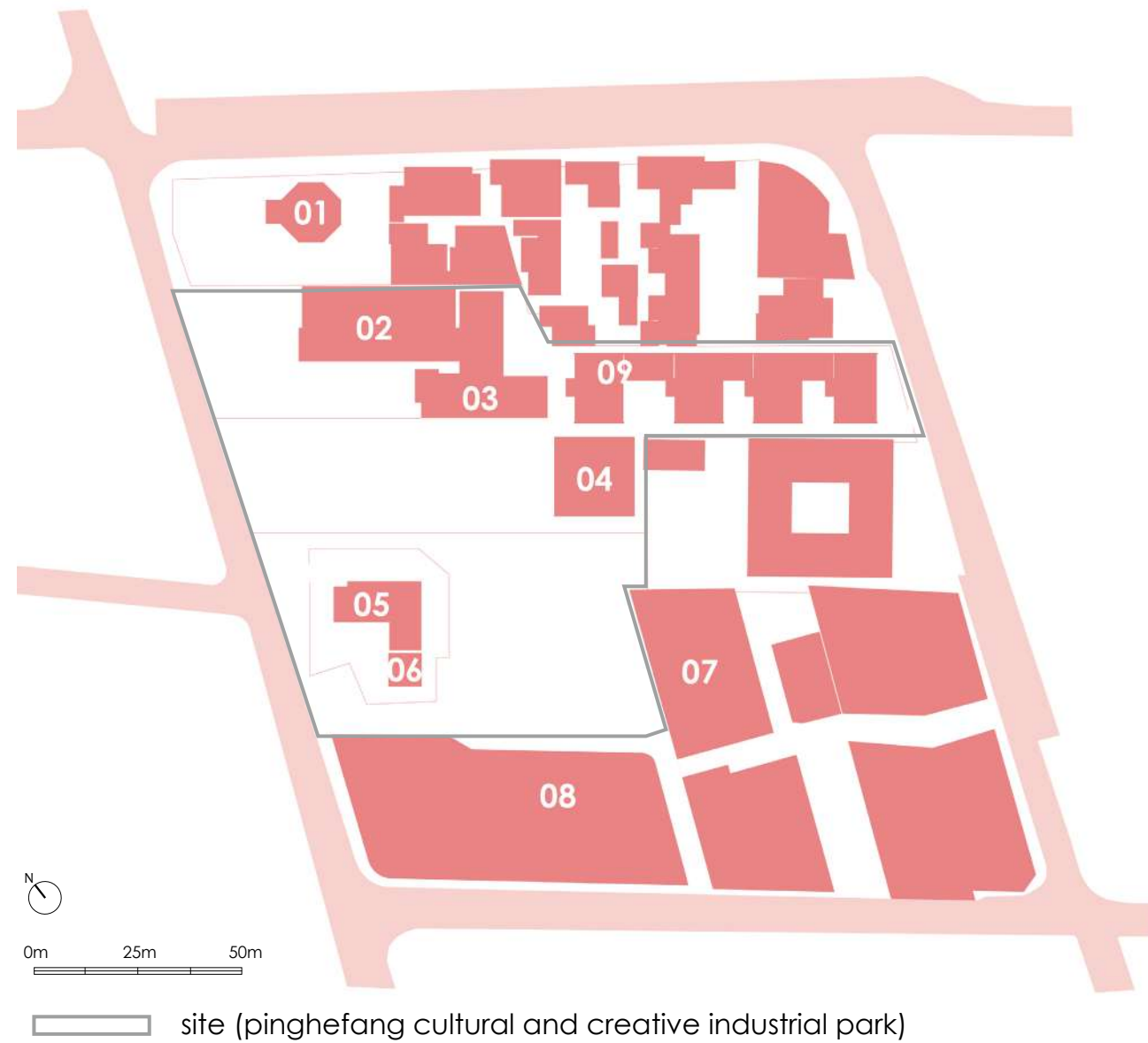
In daily use, the venue can be considered as a supplementary outdoor venue for nearby businesses, which is a place for leisure and relaxation. In special periods and holidays, arrange intensive business formats (temporary markets) and art exhibitions of new business formats, as well as the possibility of outdoor office.

5.7 Main Activity Personnel Analysis

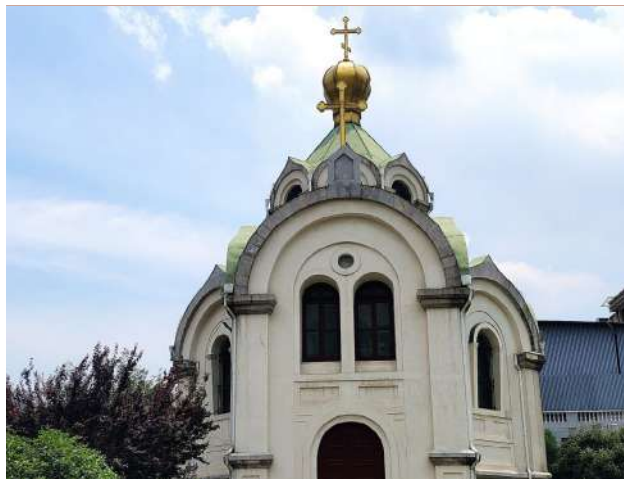


The main activity personnel in the area are the aborigines, tourists visiting and shopping, and nearby office workers. The communities of the original inhabitants are mainly the old-fashioned communities in Wuhan built in the 1920s and 1930s. Through existing surveys, it has been found that the permanent residents of this type of community are mainly elderly and children. Based on the data survey of Jiangnan Road, only 15% of visitors from outside the site, 15% of nearby working people, and 70% of local tourists, half of the population are nearby residents (30min walk), accounting for 35%, and local residents accounting for the remainder Half of it. Young people and the elderly are the main age groups.

6.1 Buildings Analysis



01 The former Orthodox Church



02 The First Building of Pinghefang



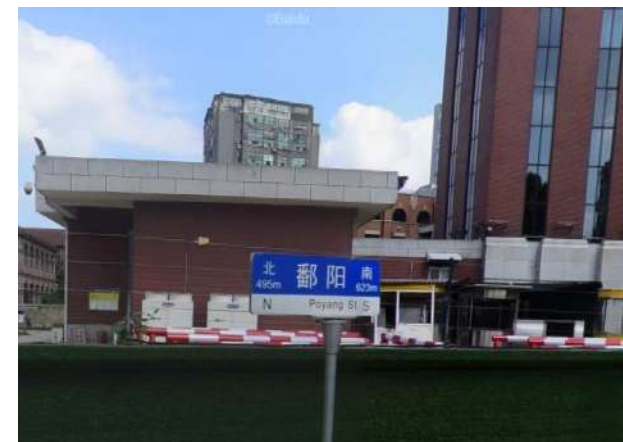
03 The Second Building of Pinghefang



04 Museum (former house of Luzi)



05 Yangtze River Tunnel Air Shaft



06 The Clock Tower



07 Building C of Former Pinghe Factory



08 Building A of Former Pinghe Factory



09 The Third to The Sixth Buildings of Pinghefang



6.2 Underground Tunnel Analysis



From the picture, you can see that a part of the underground tunnel runs through the middle part of the site. This underground tunnel is a tunnel for vehicles, mainly connecting the two banks of the river, and there are also some bus routes that include this tunnel. Building No. 5 in the site is the air shaft of one of the underground tunnels.

6.3 Main Flows Analysis



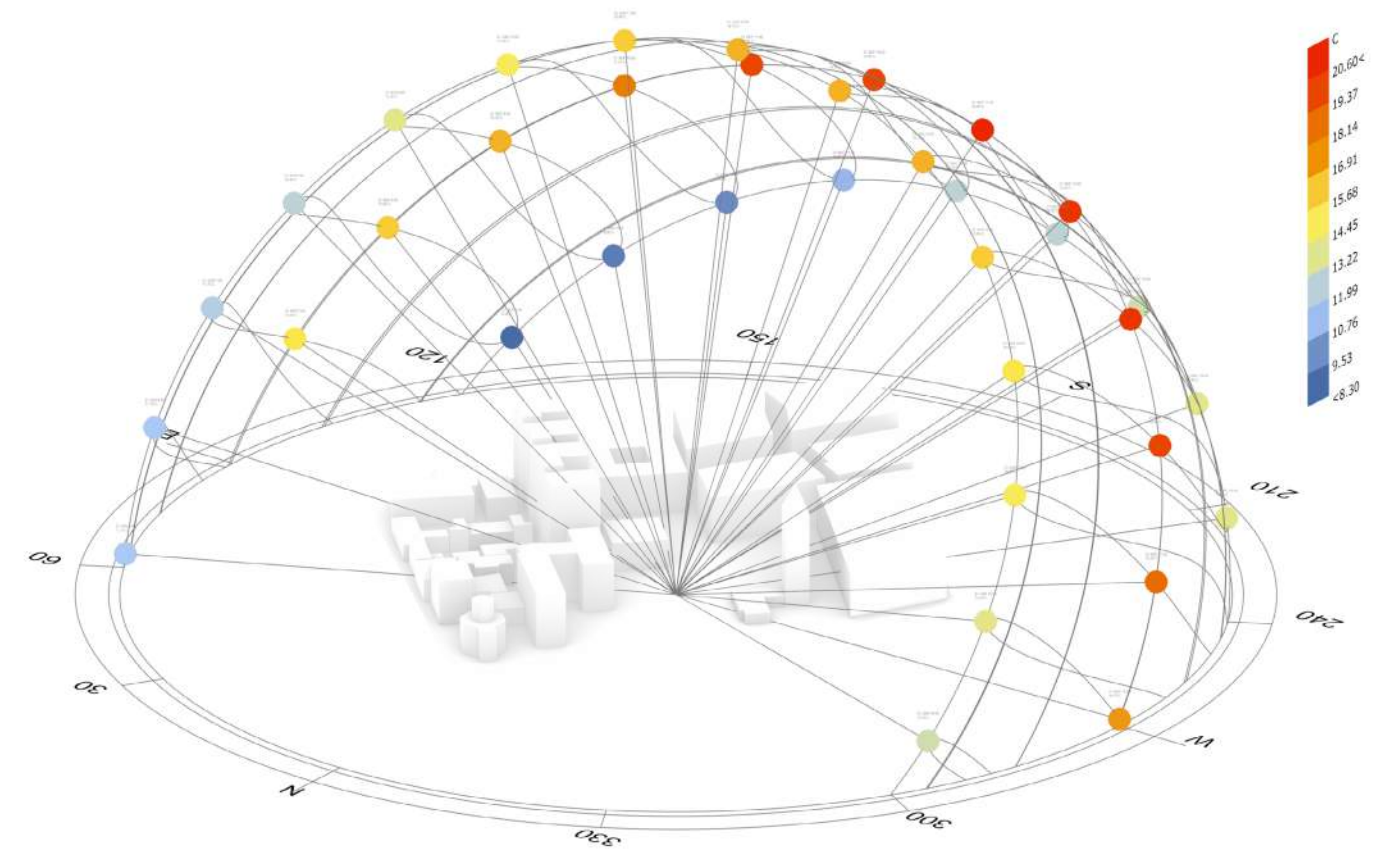
Through the map, we can see the current situation of the main flow of people in the venue. People can enter the site from many entrances. And it can be more convenient to reach every building, but there are some pedestrian routes that are not the most reasonable route. The subsequent design can re-plan the flow of people in the venue. The small yellow dots on the map are the entrances and exits of each building. These large buildings of Pinghe Packing Factory also have relatively many entrances and exits, and each building has an entrance and exit. Some residential buildings above the site have fewer entrances and exits.

6.4 Buildings' Functions Analysis



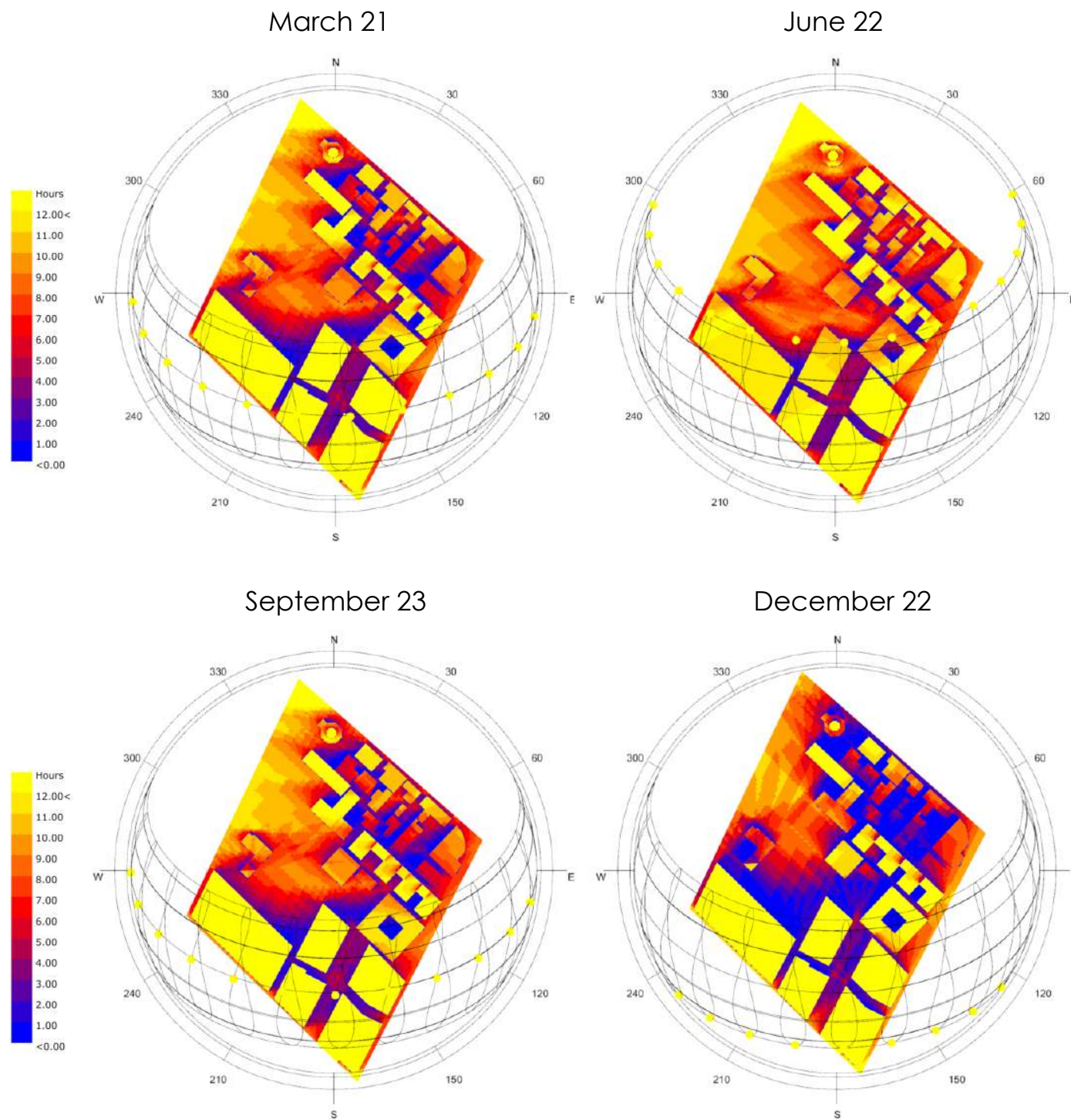
It can be seen that there are parking lots in four directions of the site, the underground parking lot on the right, and the other three parking areas on the roadside. The buildings in the site have also been transformed into buildings with more functions and activities through government planning in recent years, such as adding restaurants and beverage shops, as well as bookstores and camera bases, and shopping spots. Therefore, we designed the area in the middle of the building, which can attract more people to come here, and also bring more customers to the shops and restaurants in the surrounding buildings, promote the economic development here, and bring it here. More vitality and choice.

6.5 SunlightHours Analysis



The sunshine environment directly affects the physical and mental feelings of outdoor activities. Wuhan, where the venue is located, is hot and rainy in summer and cold and wet in winter. In summer, for local residents, it is necessary to increase shade to avoid the craze, and the same is true for tourists and workers. In winter, you need to avoid the cold wind from the northwest, so the southeast is more suitable for winter outdoor activities. Consider arranging the space on the west side of the site close to the street as a fitness area with plenty of sunshine. Since trees cannot be planted in the central area, grassland and temporary pools will be arranged to relieve the heat in the dry season and add ornamental value in winter.

6.6 Sunlight Analysis



We lists the analysis of sunshine duration and shadows on four representative dates: the vernal equinox, summer solstice, autumnal equinox, and winter solstice. It can be seen that the overall sunshine duration of the venue is sufficient, more than 3 hours in total, more than 10 hours in some areas in summer, and 5 hours in half of the area in winter.

6.7 Conclusion

In general, the site building has a unified and clear British colonial architectural style, with red bricks and white walls, and the site has a strong sense of enclosure. After the new underground tunnel was built, the original small buildings on the open space were cleaned up, forming a new urban texture, and tall trees could not be planted above the tunnel. There are two surrounding walls in the site, causing the traffic flow to be unsmooth, but it is smooth in the east-west direction. The existing parking lot has met the basic parking needs, but there is a lack of bicycle parking spots. There are rich construction formats in the site, and the north and south formats are different from each other, and they make up for each other.

PART VII PROPOSAL

This Part is the proposal of Pinghefang Cultural And Creative Industrial Park. This Chapter includes two sections: design strategies & detail design.

7.1 Design Strategies Part

7.1.1 Overall Design Strategies



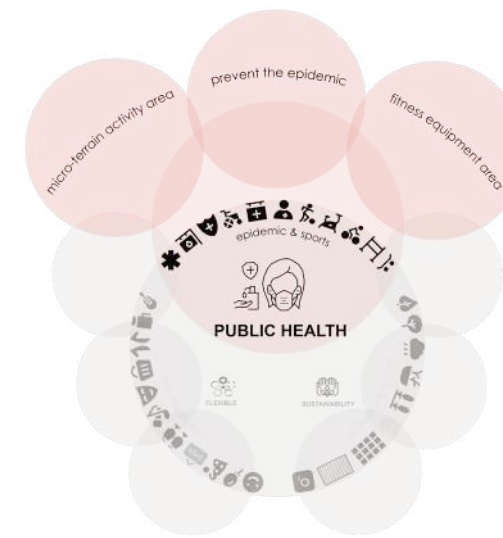
- Our design strategy is mainly divided into three parts: public health, flexible use of the site and sustainability design. For the public health part, we mainly focus on epidemic and sports.

- And for the flexible use of the site, We will make better use of the venue according to different times, different seasons and different needs.

- Finally, for the part of sustainability, first, there are many things that can be done for ecological sustainability. Next, for the sustainability of material use, use recyclable materials for paving and construction of infrastructure. Then, through the sustainability of ecology and materials, we can reduce subsequent maintenance costs for the site, and ultimately achieve economic sustainability.

7.1.2 Design Strategies - Public Health

1. prevent the epidemic



In order to avoid people gathering, some more independent small spaces may be designed. Then some circular micro-topography is used as activity areas

There are more independent small spaces to avoid unnecessary crowds.

2. micro-terrain activity area



Then some circular micro-topography is used as activity areas, especially to provide leisure and entertainment space for children and nearby residents.

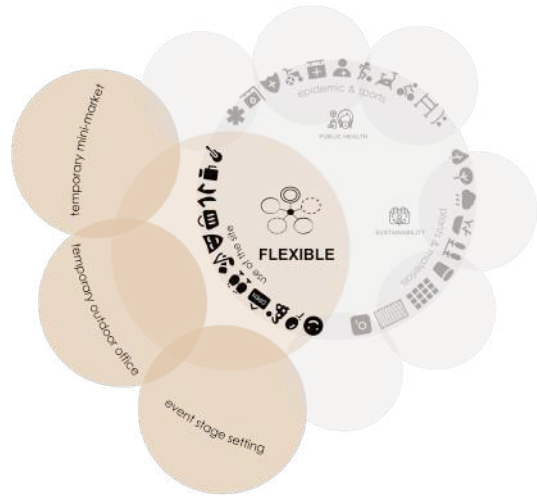
3. fitness equipment area



Provide public fitness equipment for the surrounding residents. But the equipment should not be arranged too densely, and some spacing should be maintained

7.1.3 Design Strategies - Flexible Use Of The Site

1. temporary mini-market



And for the flexible use of the site, We will make better use of the venue according to different times, different seasons and different needs.

In the morning or on weekends, the venue can be used as a temporary mini-market. Some fruits, vegetables and other commodities may be sold in the market.

2. temporary outdoor office area



Due to the flexibility of the seat, he can easily change the shape or form a circle, which will become a temporary office or meeting area.

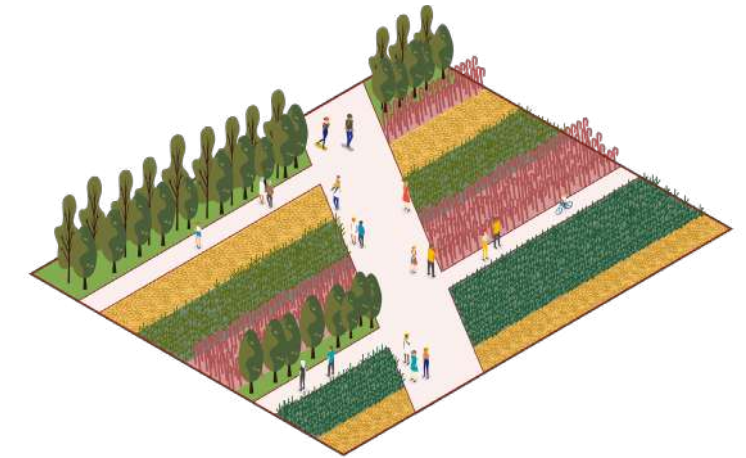
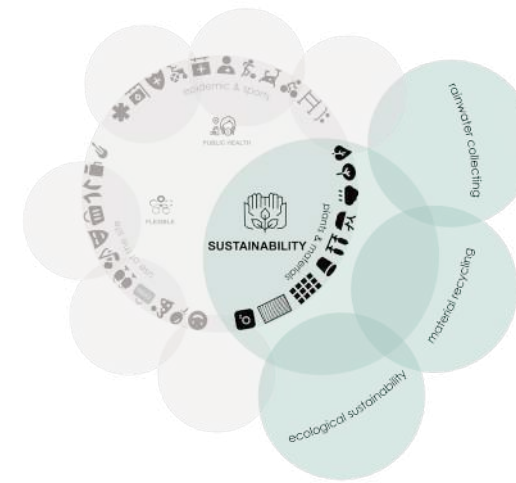
3. events stage setting



You can also set up a temporary stage to hold summer concerts and other events.

7.1.4 Design Strategies - Sustainability Design

1. ecological sustainability



Sustainable design is mainly divided into three parts: ecological sustainability, sustainable use of materials and rainwater collecting.

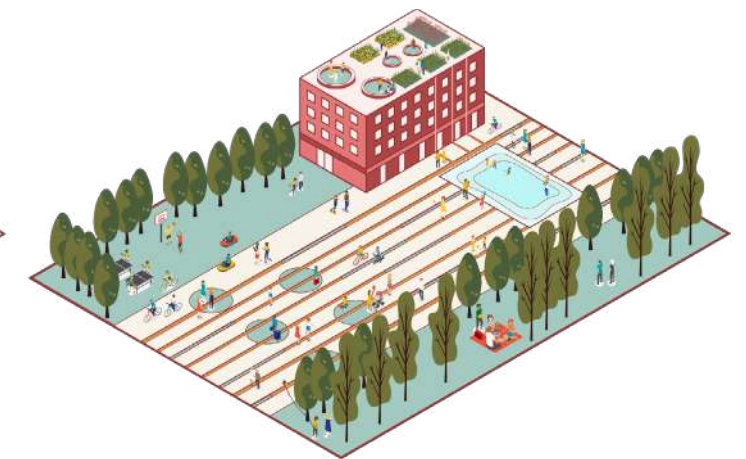
An agricultural experience area has been set up to provide a richer experience for surrounding residents and tourists. At the same time, it can also promote the sustainable development of the economy.

2. material recycling



use recyclable materials for paving and construction of infrastructure. And the infrastructure in the site should also be easy to install and disassemble.

3. rainwater collecting



For the collection of rainwater, there is a shallow water tank running through the site in the field. When it rains, the rainwater will be collected along the tank to the large pool. At the same time, the roof garden can also collect rainwater.

7.1.5 Strategies Conclusion

1. prevent the epidemic



2. micro-terrain activity area



3. fitness equipment area



1. temporary mini-market



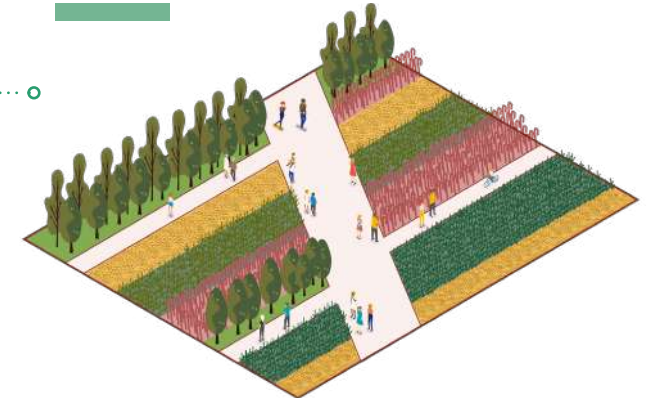
2. temporary outdoor office area



3. events stage setting



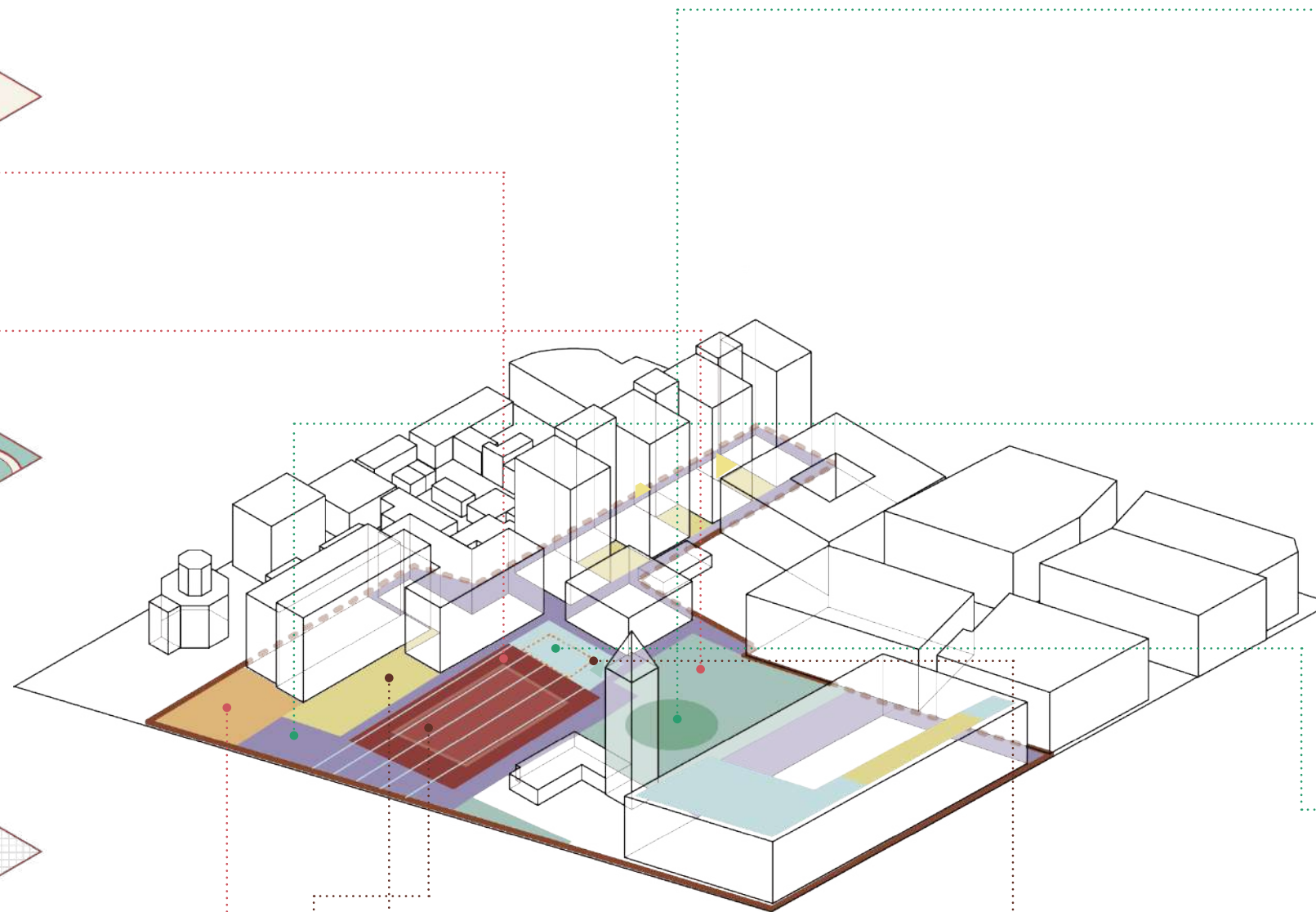
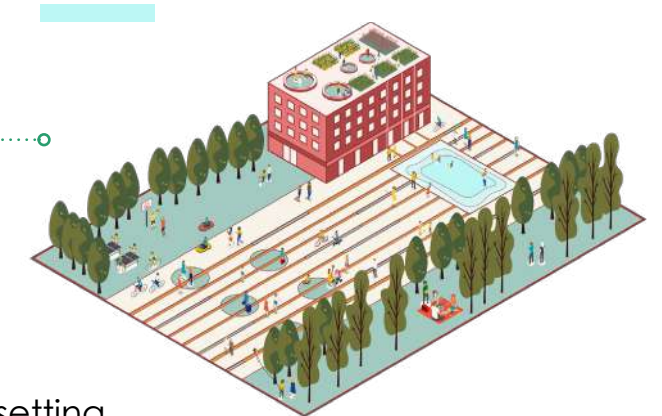
1. ecological sustainability



2. material recycling

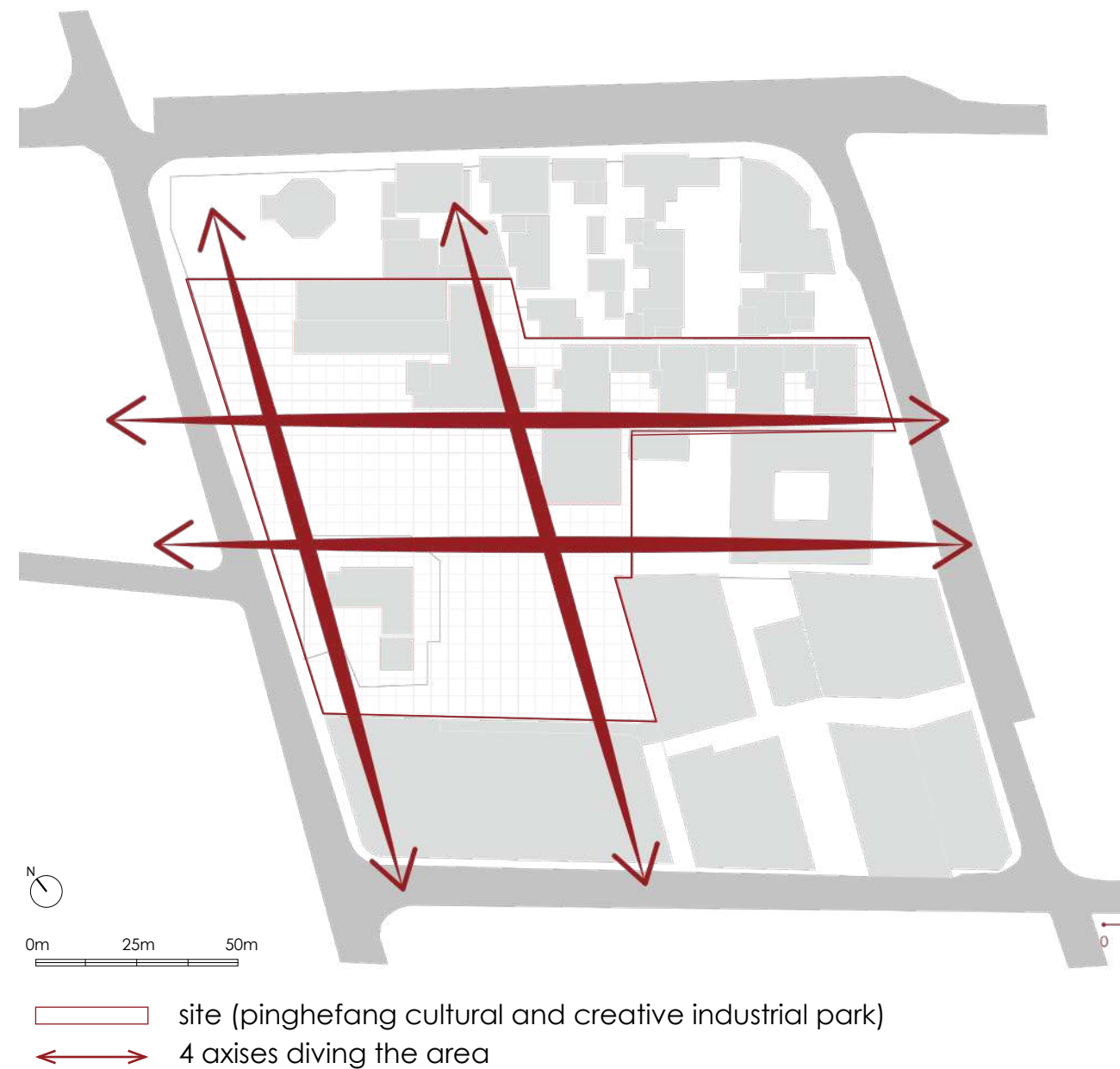


3. rainwater collecting



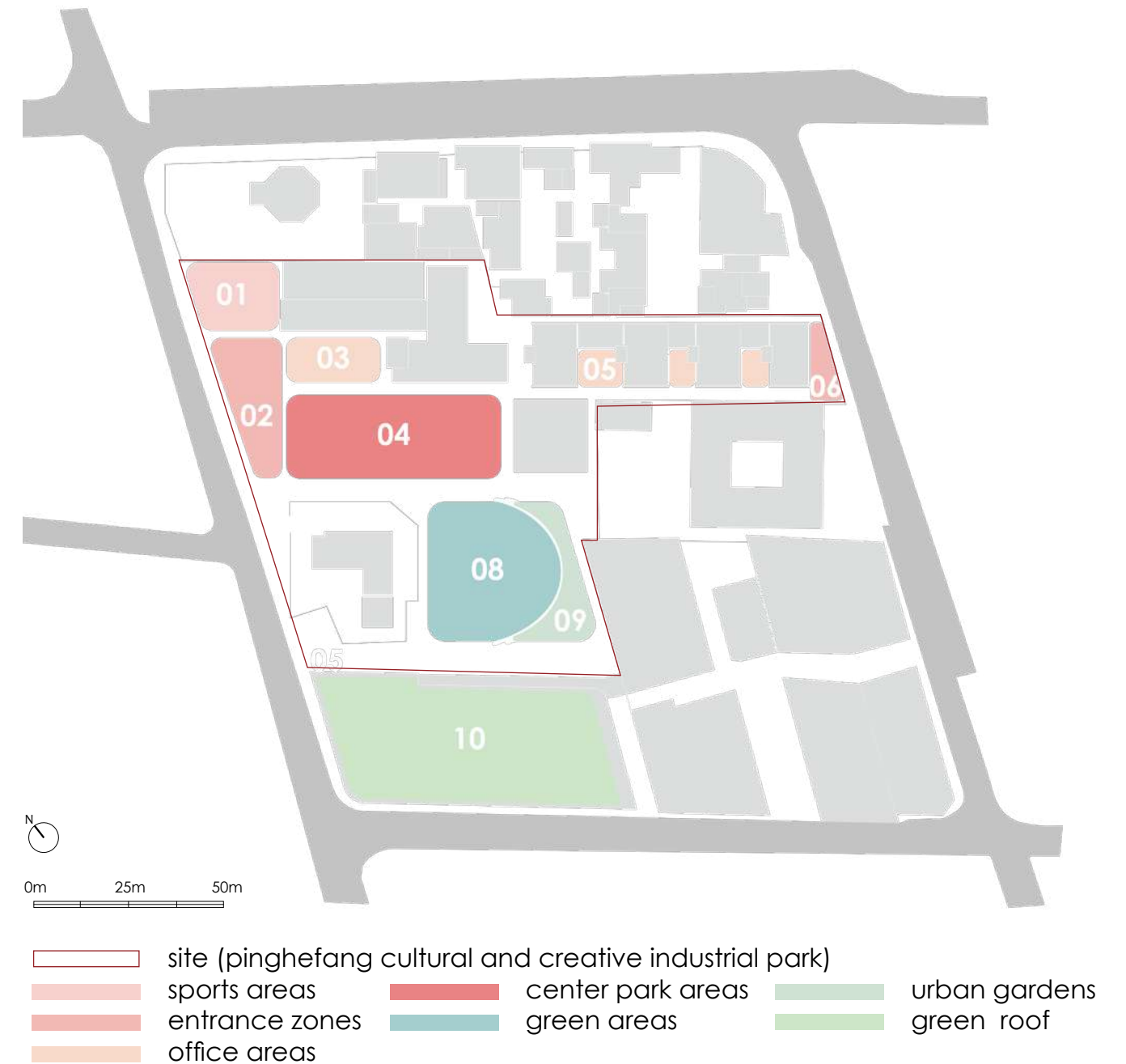
7.2 Detail Design Part

7.2.1 Design Processing Step 1: Guidelines



As the first step of the design, we must first understand the scope of the designed area of the entire site and the basic conditions around it. According to the size and shape of the design area, we have determined the four main axes passing through the site, and the intersection area of the axes will also be the central part of our design.

7.2.2 Design Processing Step 2: Functional Division



The second step of the design is to roughly divide the function of the site on the existing four axes. The intersection area of the four axes is the central square. Then due to the surrounding buildings and traffic conditions, areas 2 and 6 are the main access areas for people. No. 1 is the sports area, and the No. 3 and No. 5 areas are in front of the office building, so it is used as an area with temporary outdoor office functions. No. 8 is a circular green area with micro-topography, and No. 9 next to it is an outdoor planting experience area. No. 10 is the roof of one of the buildings on the old site of Pinghefang Packing Factory, which serves as a small rain garden and a small roof planting area.

7.2.3 Masterplan

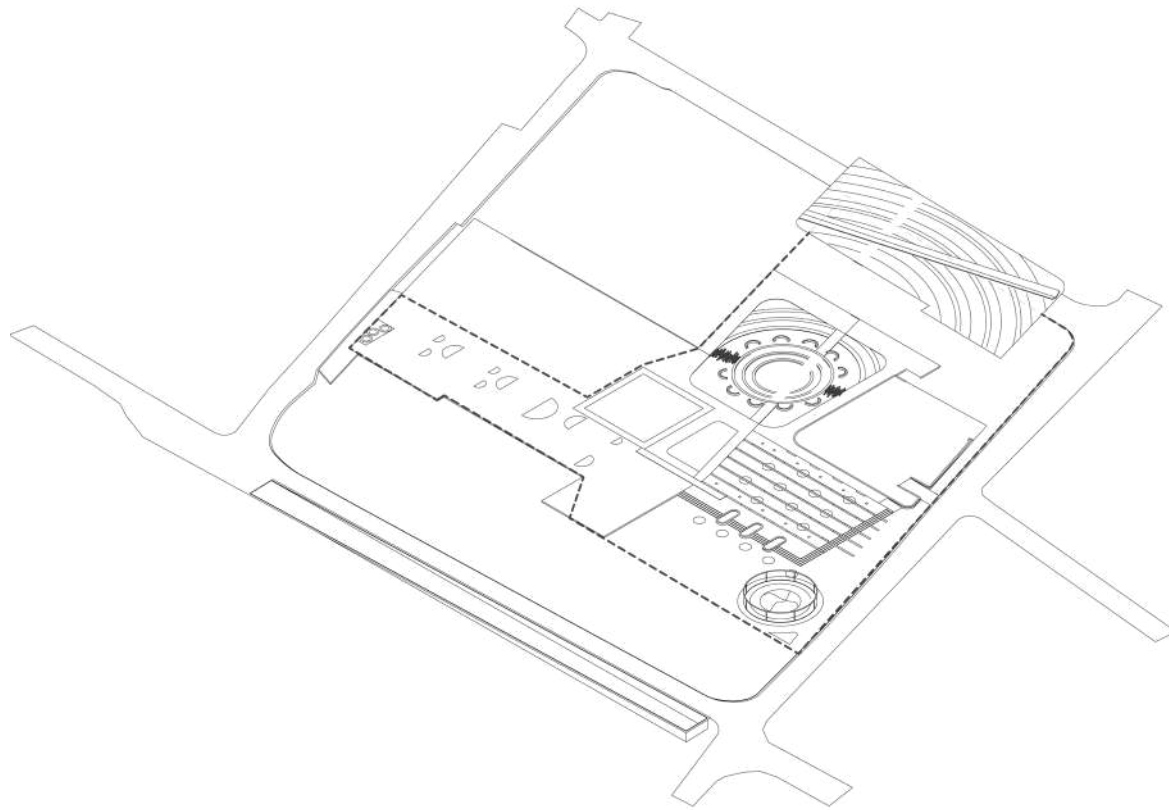


- 1 fitness park with micro-topography
 - 2 small outdoor temporary office areas
 - 3 center park area with rainwater drainage grooves and small green spaces
 - 4 pool connected to rainwater drainage groove
 - 5 a path with different pavements connecting the entire site
 - 6 circular green space for outdoor leisure activities
 - 7 outdoor agricultural experience planting area
 - 8 small spaces between the office buildings
 - 9 roof garden with rainwater harvesting
 - 10 rooftop vegetable garden
 - 11 people's main entrance zone
 - 12 people's minor entrance zone
- └ aerial view angle

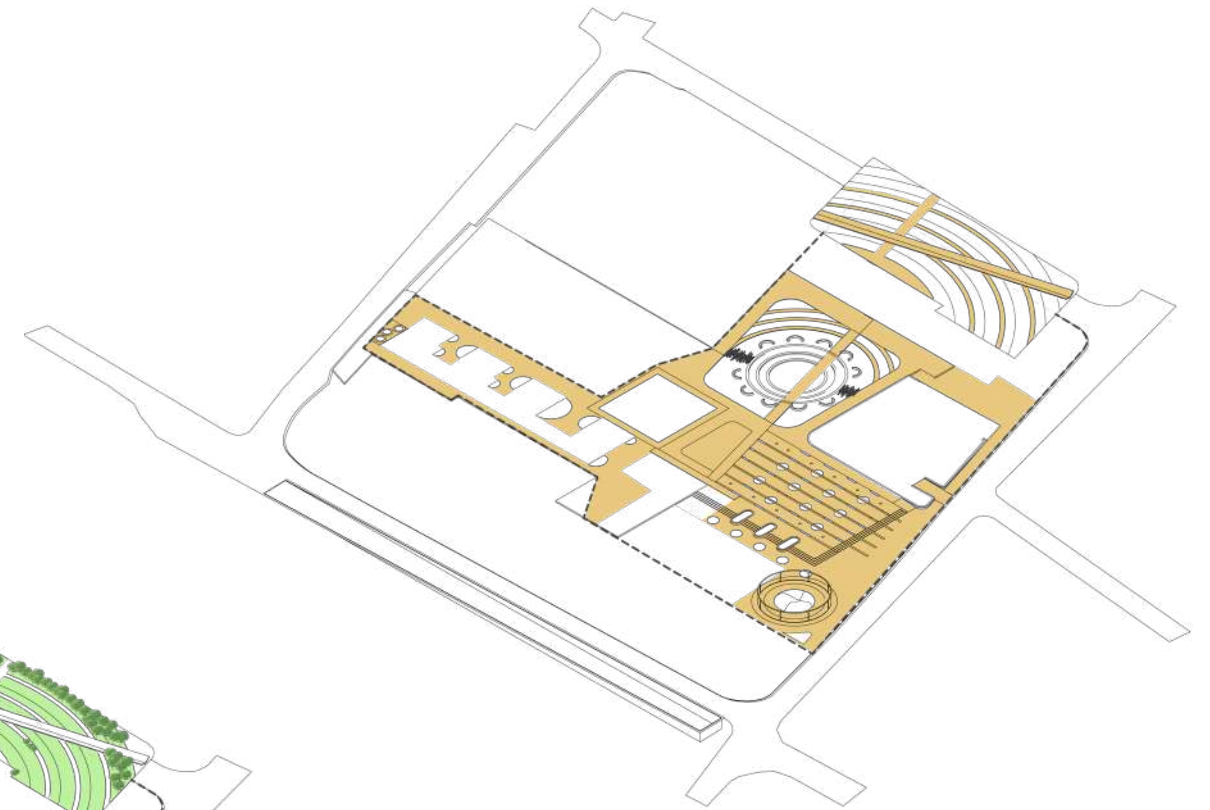
No. 1 is a circular sports area. The yellow circle is mainly set up with some fitness equipment. The green part in the middle is the grass with micro-topography, where people can rest and perform activities. No. 2 is the area in front of the office building, so any small space here can be used as a temporary outdoor office space. No. 3 is the central square of the entire site. People enter through the No. 11 entrance area. There are some small green spaces inside, which can be used as a temporary small market during some special festivals or holidays. The longitudinal narrow strips of the central square are small grooves for drainage, which eventually converge into the No. 4 pool. Pool 4 can also be used as a temporary stage for performances on special festivals, and can hold some music festivals or party dances. No. 5 is a small road paved with small bricks, which runs through the entire site, and people can quickly go to other areas through this small road. No. 6 is a green leisure space that gradually sinks from the outer circle to the inner circle. No. 7 is the outdoor planting experience area. No. 9 is a small rain garden on the roof, and No. 10 is a roof planting area. Number 8 is a small green space between office buildings. No. 12 is another entrance and exit area of the venue.

7.2.4 Functional Structure Analysis

base surface



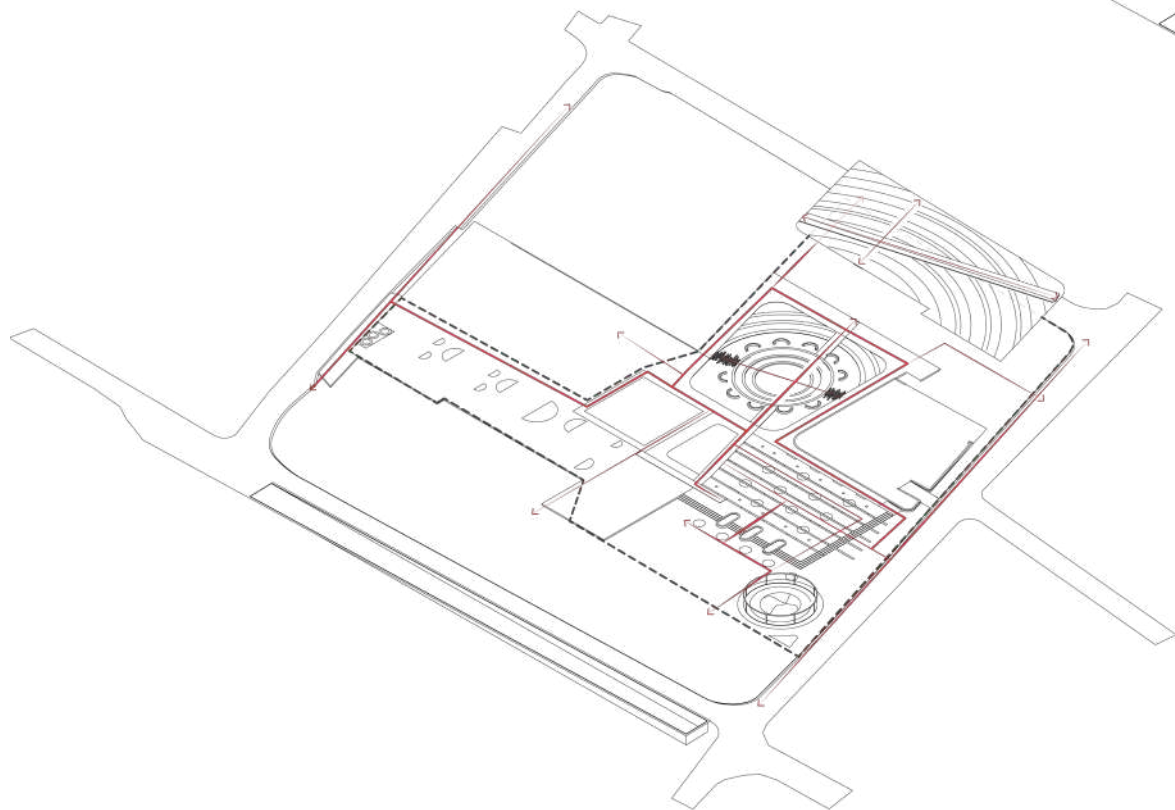
hard pavement



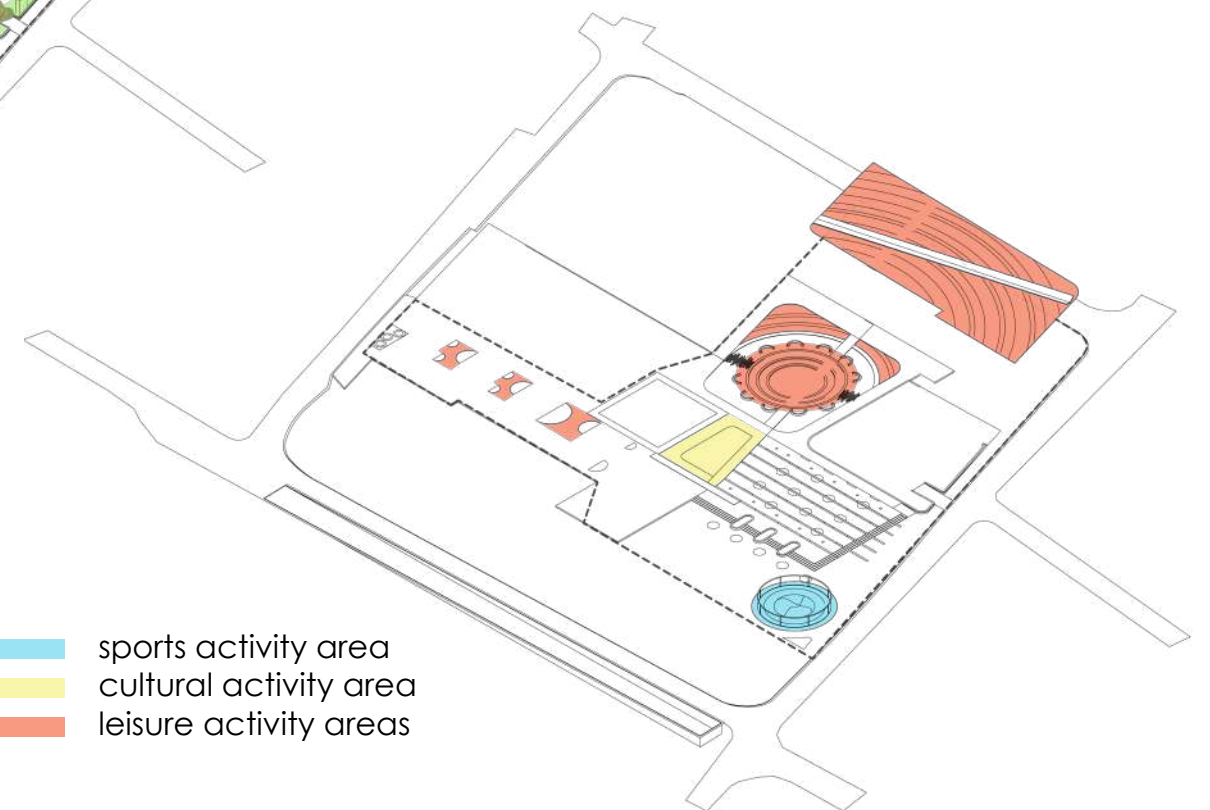
green areas



circulations

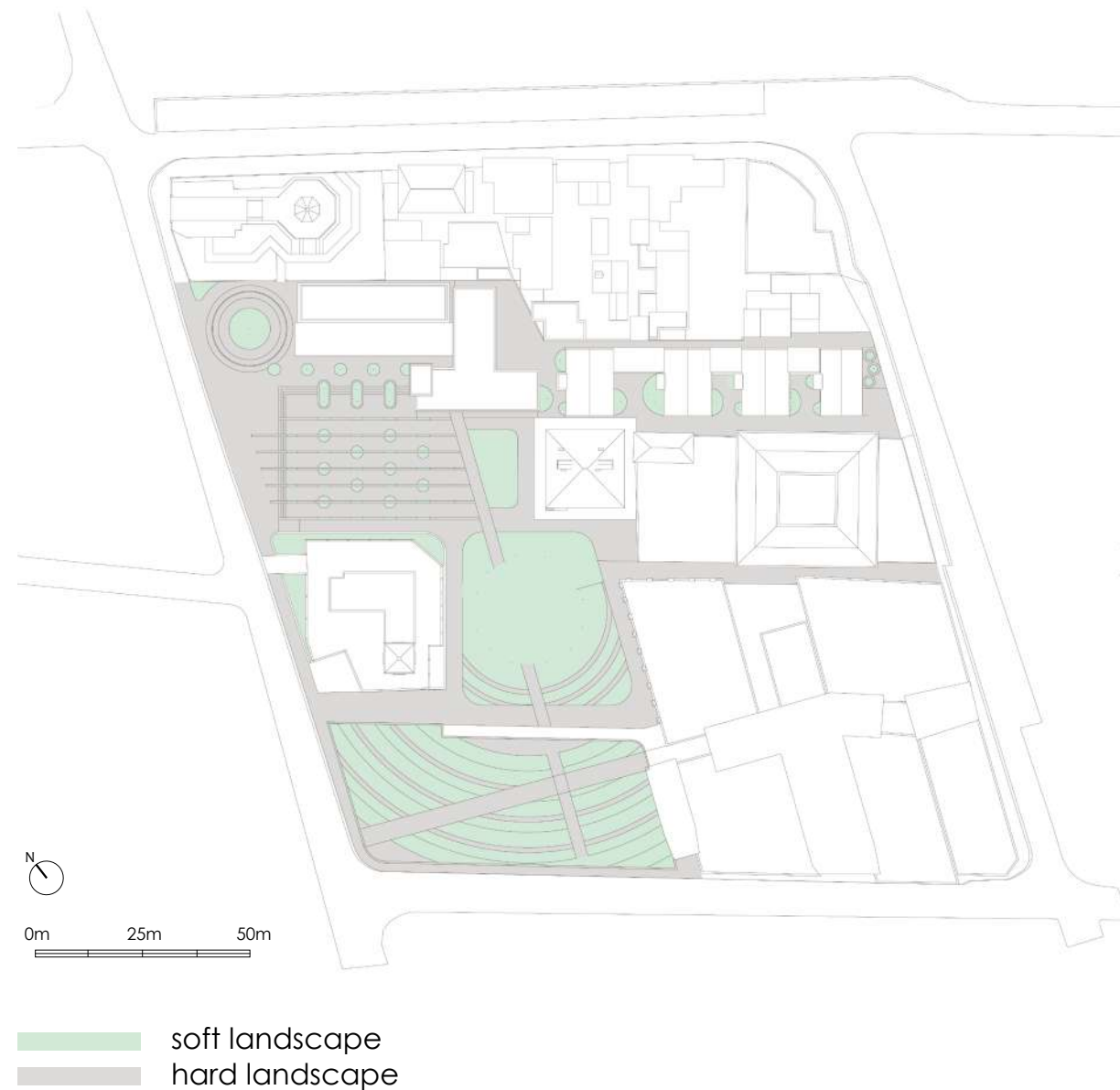


activity areas



-  sports activity area
-  cultural activity area
-  leisure activity areas

7.2.5 Soft&Hard Landscape Analysis



Through the distinction between soft landscape and hard landscape, we can find that there are relatively few soft landscapes in the upper half of the site, and most of them are soft landscape locations with small sides, because there are many small green spaces and planting ponds. However, in the lower half of the site, soft landscapes are the mainstay, with hard landscapes as a supplement. There is a large area of recreational green space and agricultural experience area. The roof is also dominated by soft landscape, because it is mainly a roof garden and planting area.

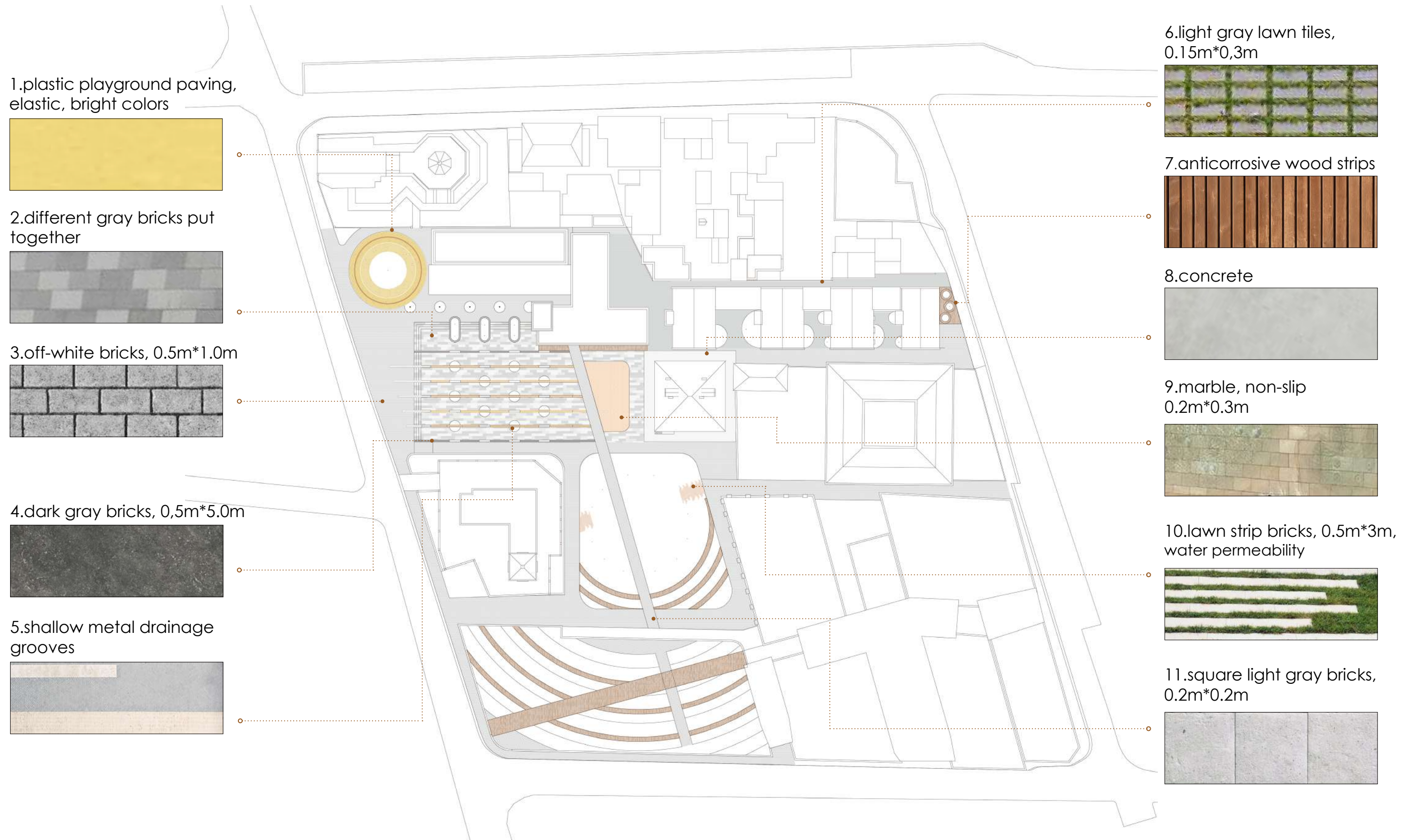
7.2.6 Plants Analysis



| plan | latin name | height(m) | width(m) | note |
|------|---------------------------------------------------------------------------------|-----------|----------|----------------|
| | <i>Cinnamomum camphora (Linn) Presl</i> | 20-25 | 2-3 | evergreen |
| | <i>Cryptomeria japonica</i> | 30-38 | 3-5 | evergreen |
| | <i>Magnolia grandiflora</i> | 20-30 | 1-3 | evergreen |
| | <i>Ligustrum compactum Hook. f.</i> | 7-12 | 1-2 | evergreen |
| | <i>Platanus acerifolia (Aiton) Willdenow</i> | 20-30 | 3-5 | deciduous |
| | <i>Ginkgo biloba</i> | 20-45 | 3-5 | deciduous |
| | <i>Metasequoia glyptostroboides</i> | 20-35 | 1-2.5 | deciduous |
| | <i>Viburnum odoratissimum Ker-Gawl. var. awabuki (K. Koch) Zabel ex Rumphl.</i> | 1-2 | | evergreen |
| | <i>Ilex crenata f. convexa (Makino) Rehder</i> | 0.5-1 | | evergreen |
| | <i>Hyacinthus orientalis L.</i> | 0.05-0.25 | | herbal flowers |
| | <i>Camellia sasanqua Thunb.</i> | 0.5-1 | | evergreen |
| | <i>Cercis</i> | 0.5-1.5 | | deciduous |
| | <i>Camellia sp.</i> | 0.5-1 | | evergreen |
| | <i>Orychophragmus violaceus</i> | 0.1-0.5 | | herbal flowers |

Since Wuhan is located in the middle of China, many plants from the south and the north can be used. We mainly focus on evergreen trees, supplemented by deciduous trees. At the same time, it matches two kinds of evergreen shrubs and one herbaceous flower that are common in Wuhan.

7.2.7 Pavement Material Analysis

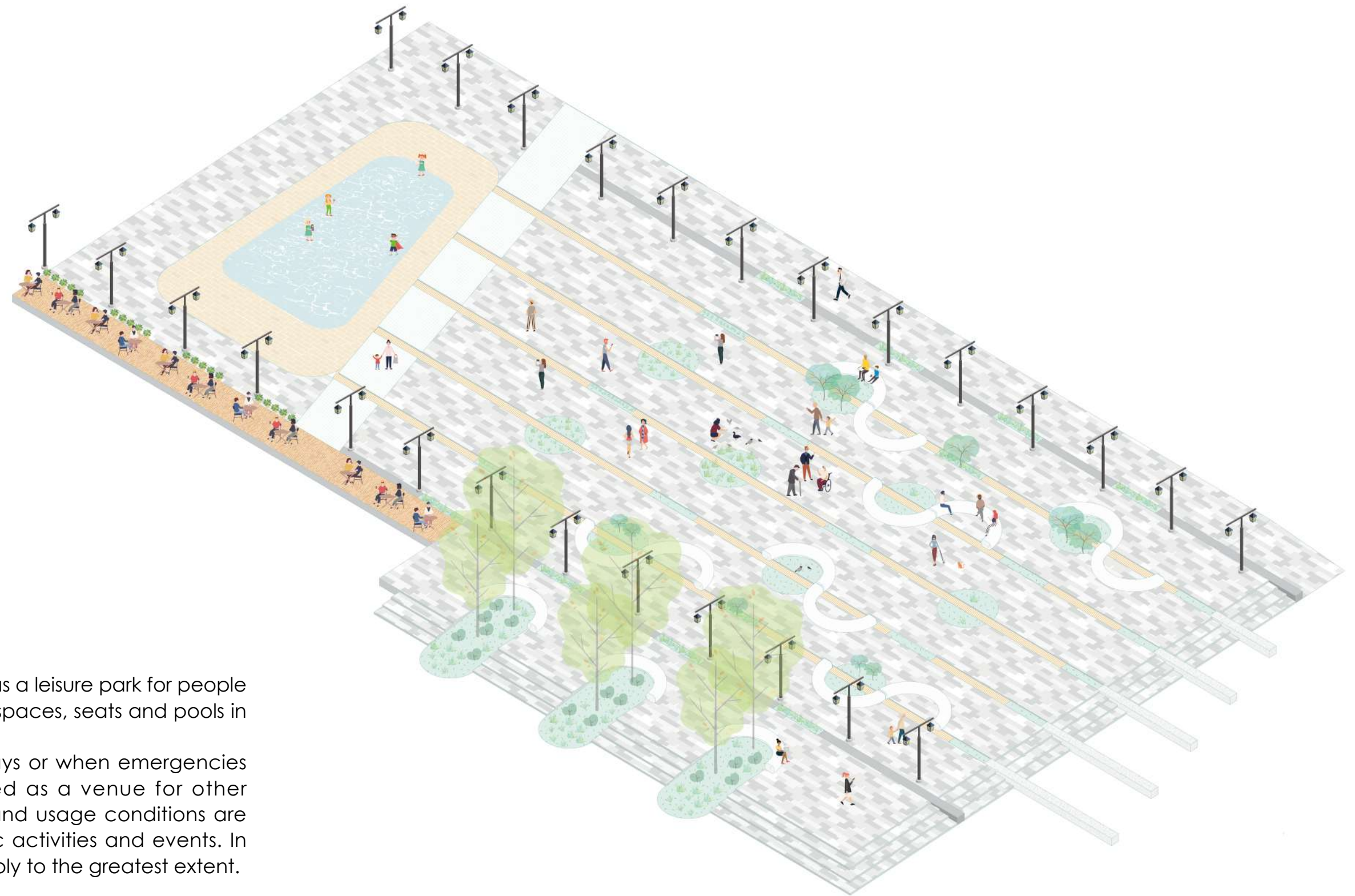


7.2.8 Different Functions And Activities In The Center Park

Center Park in daily life



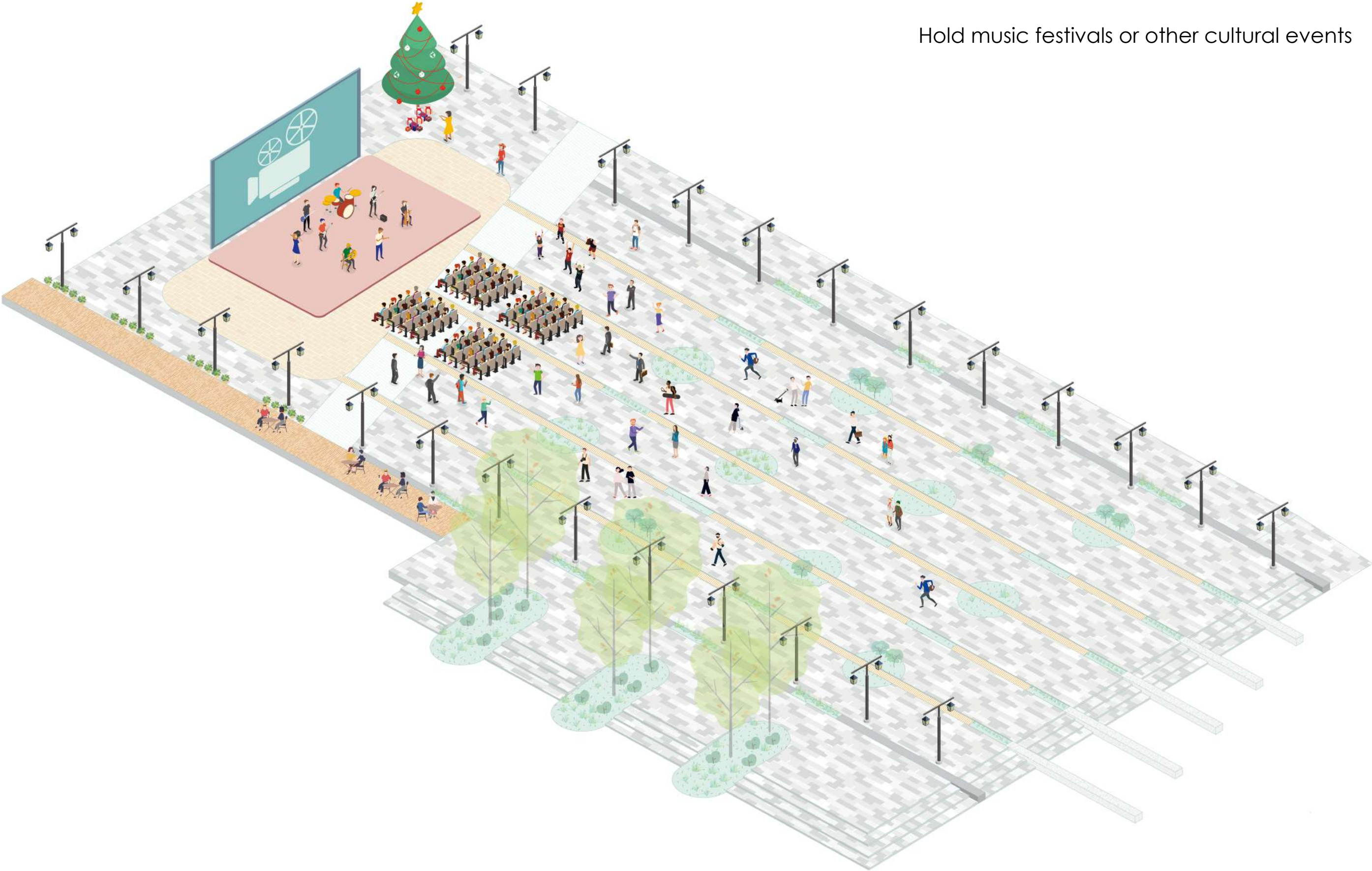
Center Park area



The Center Park area is only used as a leisure park for people in daily life. There are small green spaces, seats and pools in it.

But in certain festivals and holidays or when emergencies occur, Center Park can be used as a venue for other activities and events. Functions and usage conditions are determined according to specific activities and events. In this way, the site can be used flexibly to the greatest extent.

Hold music festivals or other cultural events



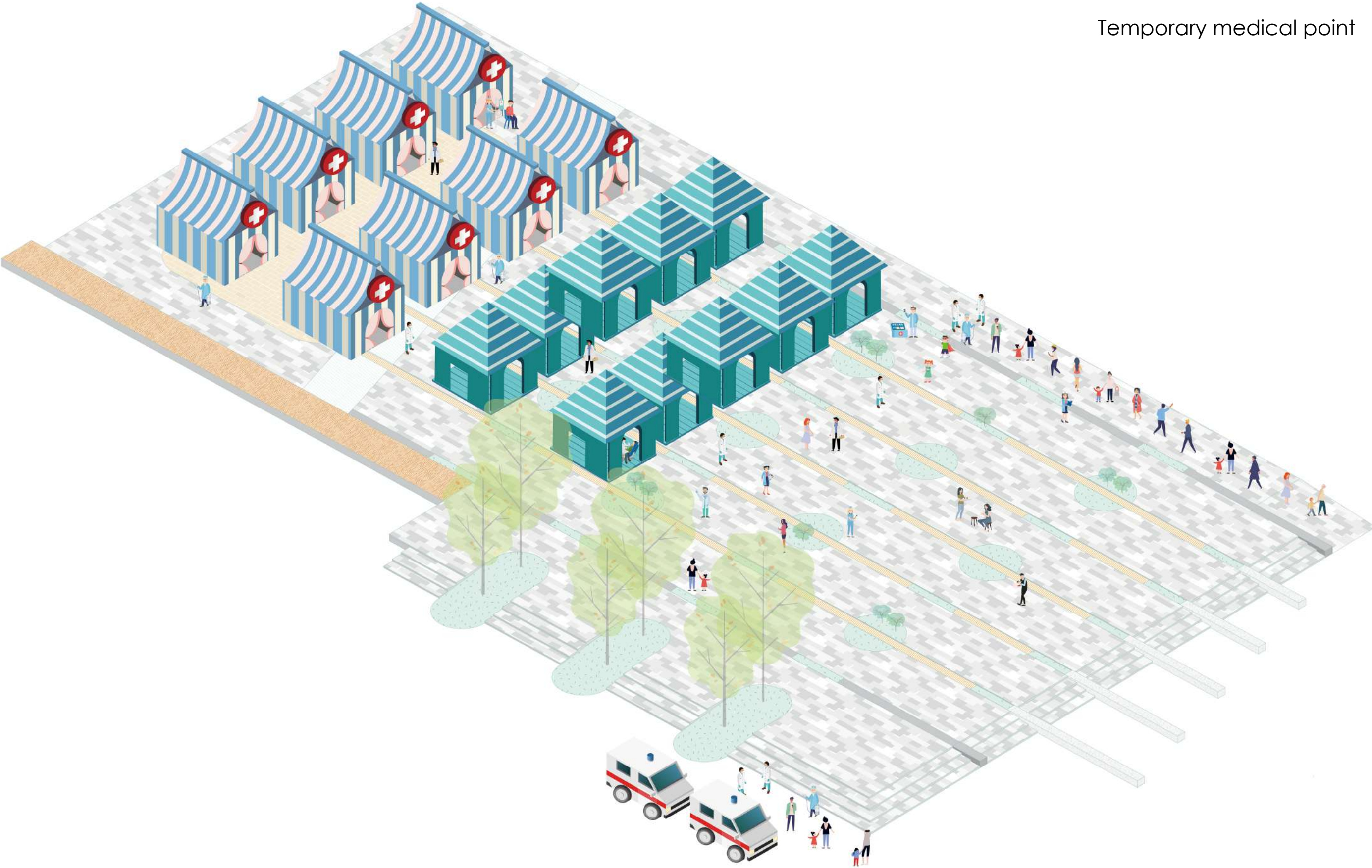
The venue can be used to host some music festivals or cultural events. Set up a stage on the pool, the area in front of the pool can be set as an audience area with seats.

Hold small markets and food festival



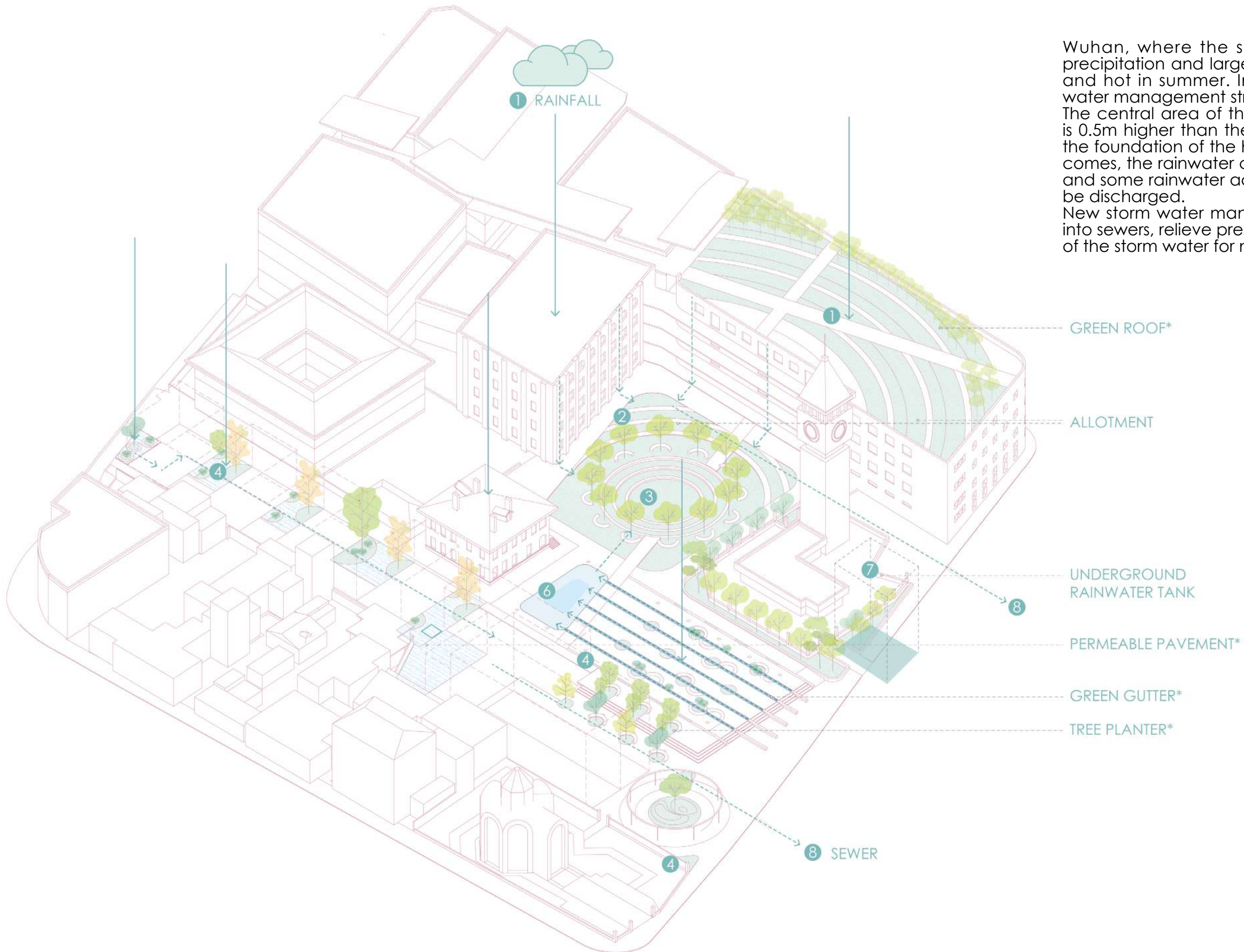
The venue is used to hold small markets and food festivals. Some food cars and temporary stalls. And can also build some temporary entertainment projects for children.

Temporary medical point



In the post-epidemic era, repeated epidemics will be the norm in the future. So when epidemic occurs again, it can be used as temporary testing point or vaccination point.

7.2.9 Water Management Analysis



Wuhan, where the site is located, has sufficient annual precipitation and large surrounding water area, so it is humid and hot in summer. In view of these characteristics, storm water management strategies are considered.

The central area of the site and the south side of the terrain is 0.5m higher than the street, which is the raised part left by the foundation of the historical building, so that when the rain comes, the rainwater collects to the street for drainage faster, and some rainwater accumulates in the pit of the site can not be discharged.

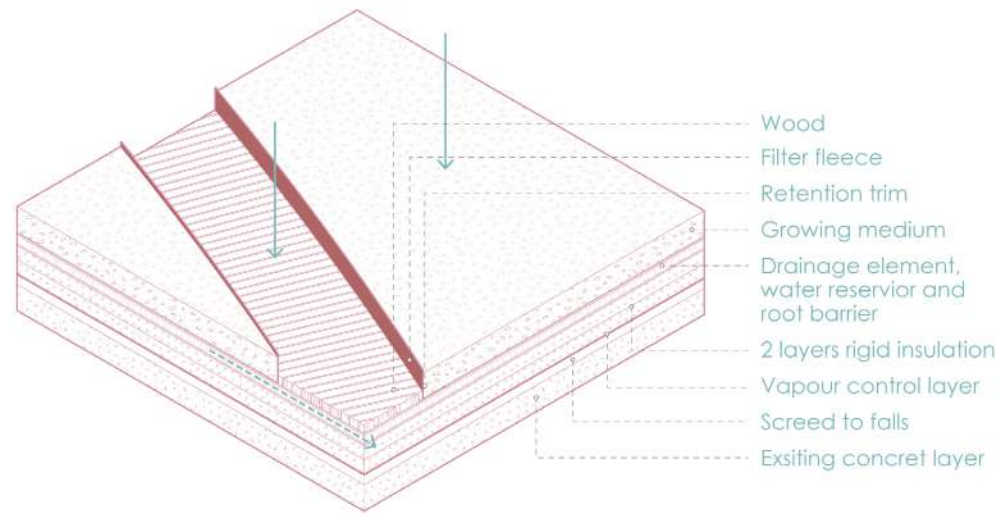
New storm water management measures will slow drainage into sewers, relieve pressure on road drainage, and store some of the storm water for non-monsoon irrigation.

STORM WATER MANAGEMENT

- 1 Rain falls onto the roof, green roof and grounds
- 2 Some of the water from the roof is collected in the rain pipe planters
- 3 Rainwater from the roof and the playground is collected in the basin
- 4 Rainwater from the courtyard and the park center is collected in the tree planters
- 5 Rainwater from the park and the roof is collected in the allotment
- 6 Some of the overflow water is collected in the basin by pipe
- 7 Some of the water is stored in the underground tank
- 8 Eventually some of the water reaches the sewer

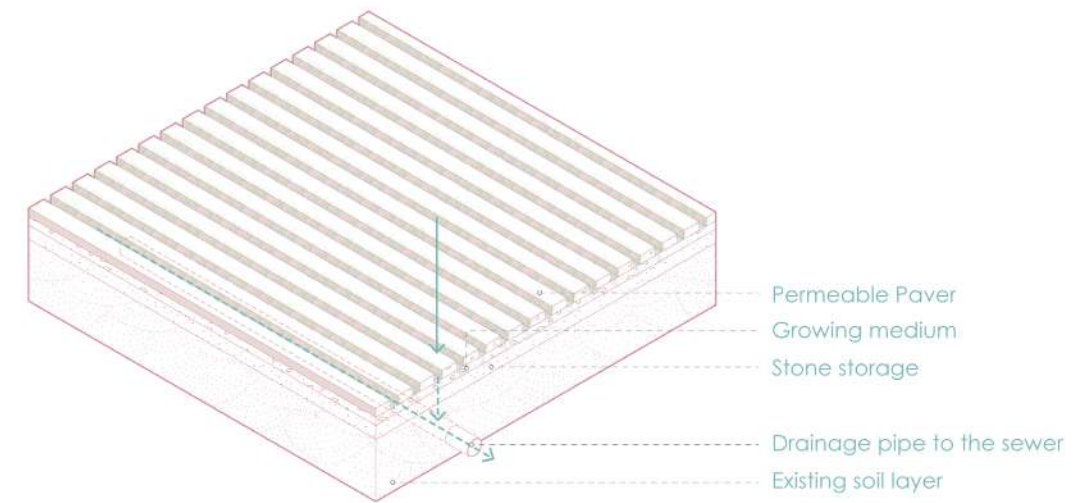
Specific measures

GREEN ROOF



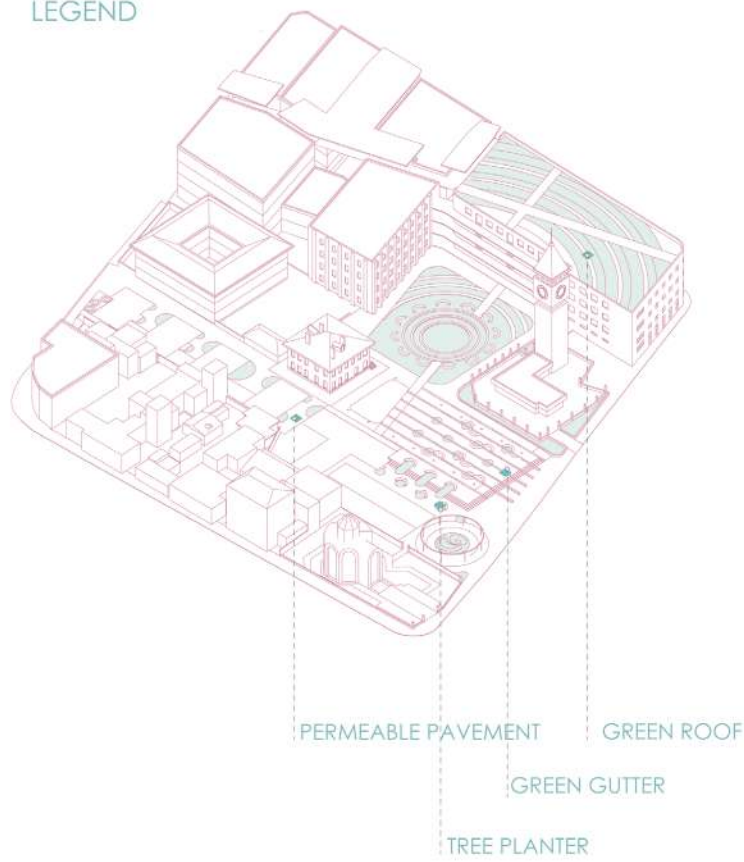
- 1 Rain water flows onto the soil and wood paving
- 2 Some water is stored in the growing medium and water reservoir
- 3 Some water goes into the drainage pipe through the drainage element

PERMEABLE PAVEMENT

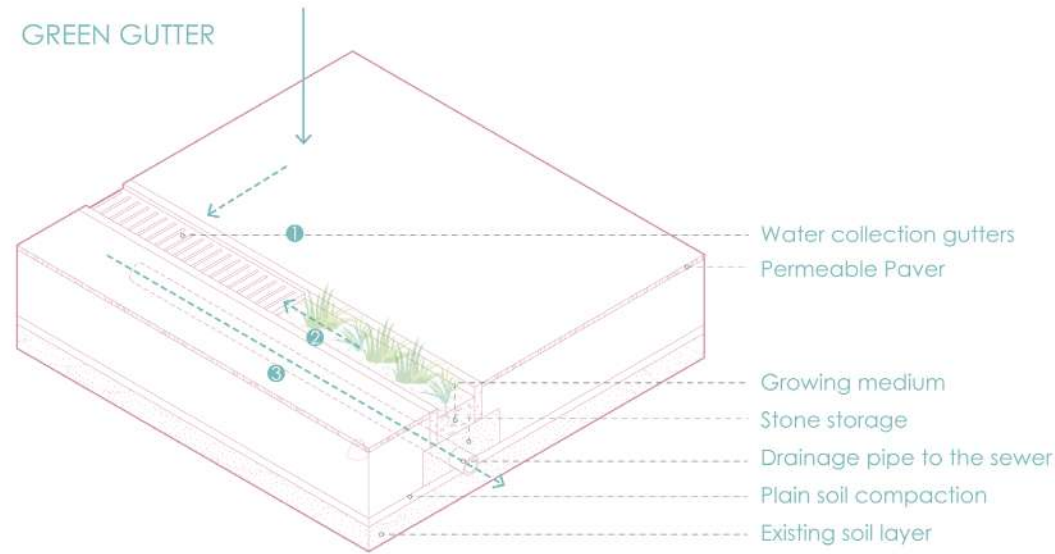


- 1 Rain water flows onto the paver and soil
- 2 Some water goes into the drainage pipe
- 3 Somewater is stored in the soil
- 4 Eventually water falls into the drainage pipe

LEGEND

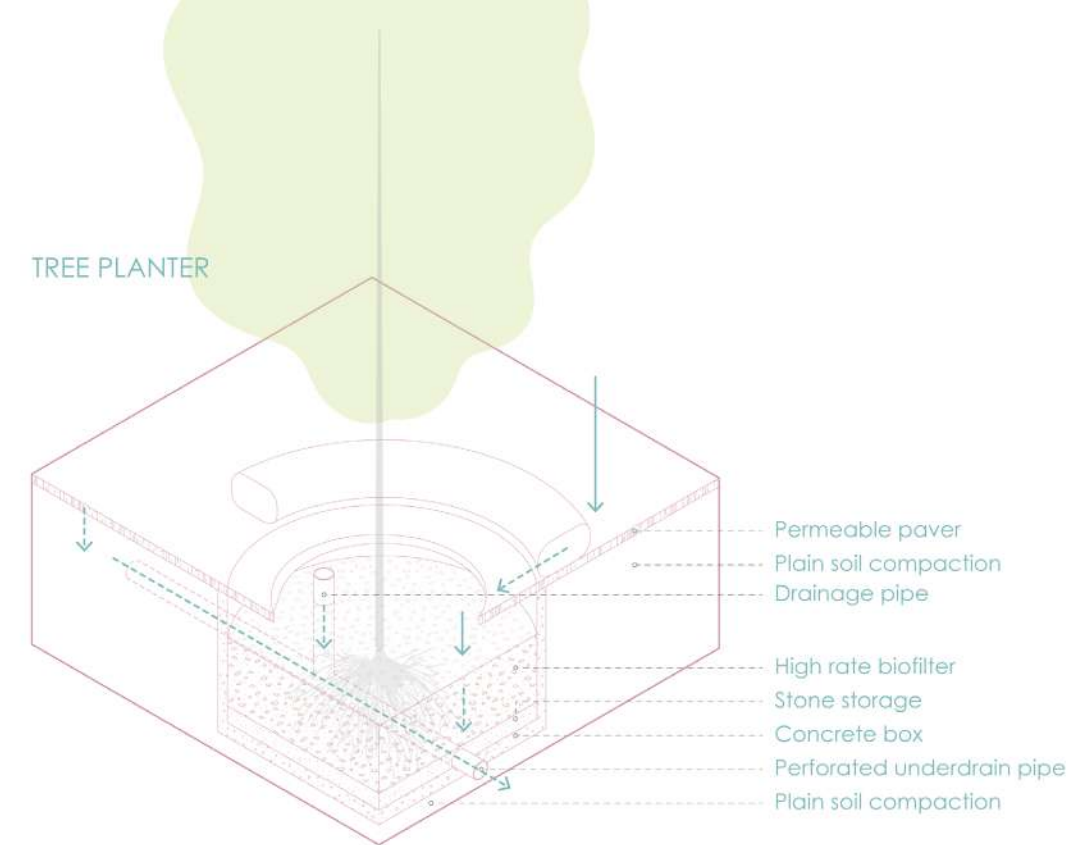


GREEN GUTTER



- 1 Rain water flows into the drainage pipe
- 2 Overflow of the planter goes into the drainage pipe
- 3 Eventually somewater reaches the sewer

TREE PLANTER

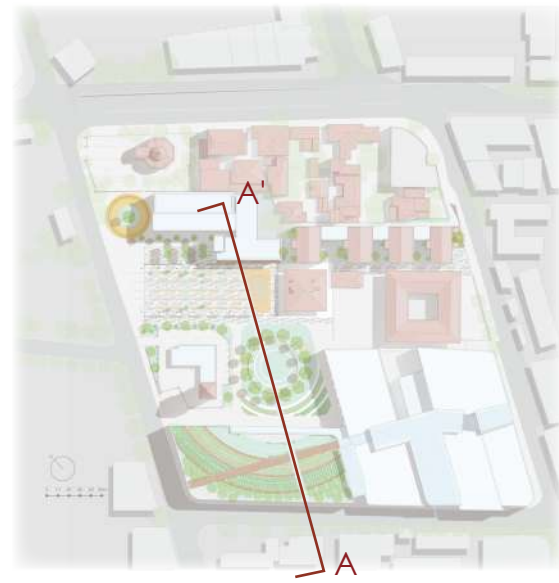


- 1 Rain water flows into the tree planter
- 2 Overflow of the planter goes into the drainage pipe
- 3 Somewater is stored and infiltrated in the soil
- 4 Eventually water falls into the drainage pipe

1. The roof garden intercepts part of the rainwater, and the excess rainwater is discharged to the ground green space, and then stored in the underground water storage tank.
2. Water permeable pavement in some areas leads directly to groundwater.
3. The water storage design of planting pond stores excessive rainwater in a short time, forming a transition space and guiding water to flow slowly to sewer.
4. Multiple drainage ditches should be arranged for the central high-lying area to avoid instantaneous water accumulation.

7.2.10 Sections

Section A-A'

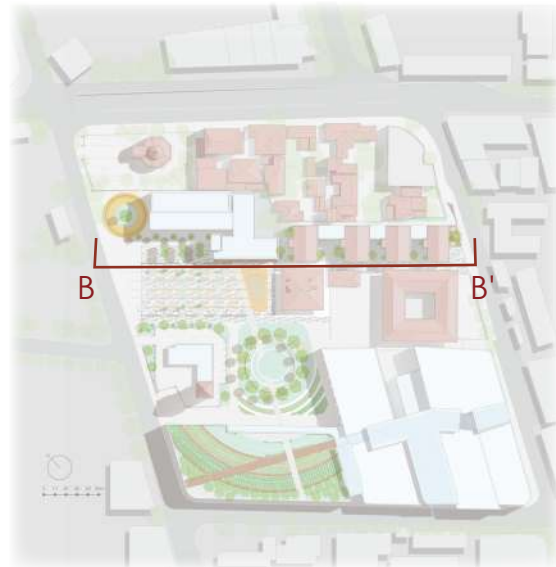


0m 5.5m 11m

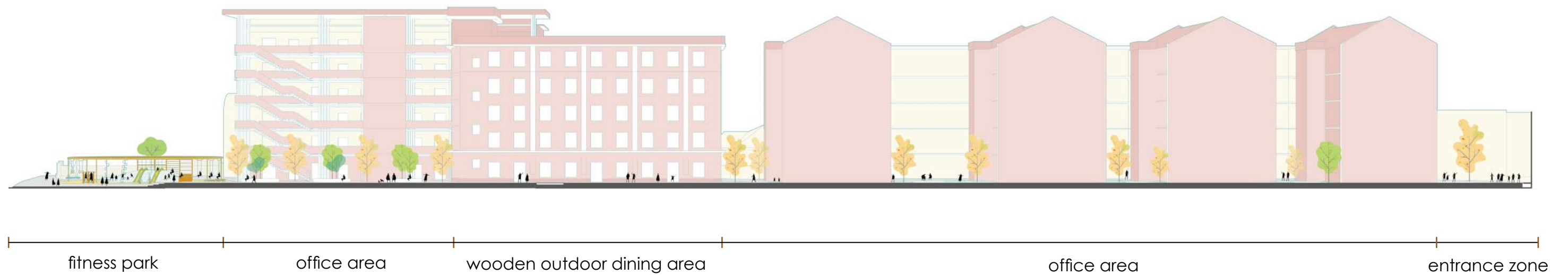


Section A-A' mainly shows the specific situation of the site facing the clock tower. We can see that the site is mainly composed of a sunken circular green space and a central square. And they are next to each other, separated by a pedestrian walkway. This trail belongs to the entrance and exit area, so people can quickly reach the central square and the sunken circular green space when entering the site. The sunken circular green space is an important space for leisure activities and communication, and the micro-topography adds to the fun here. In the central park, in addition to the pedestrian area, there are also some small green spaces and seats. Among the two buildings in this section, the roof of the Pinghefang factory serves as a roof garden. The other building is an office building. There is a wooden paved area in front of the building where people can eat and drink coffee and enjoy a good time.

Section B-B'

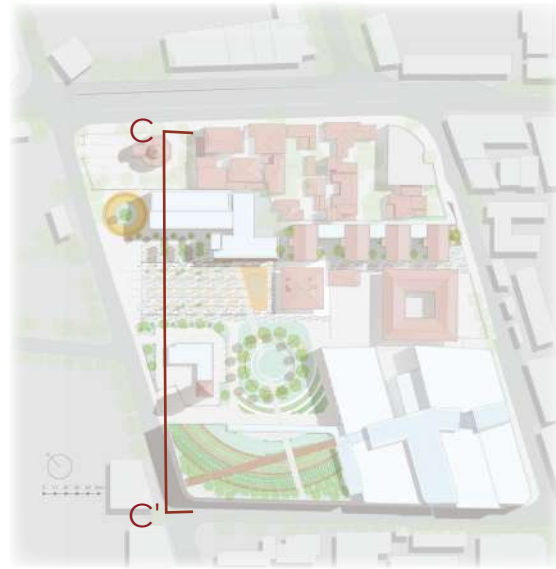


0m 6m 12m

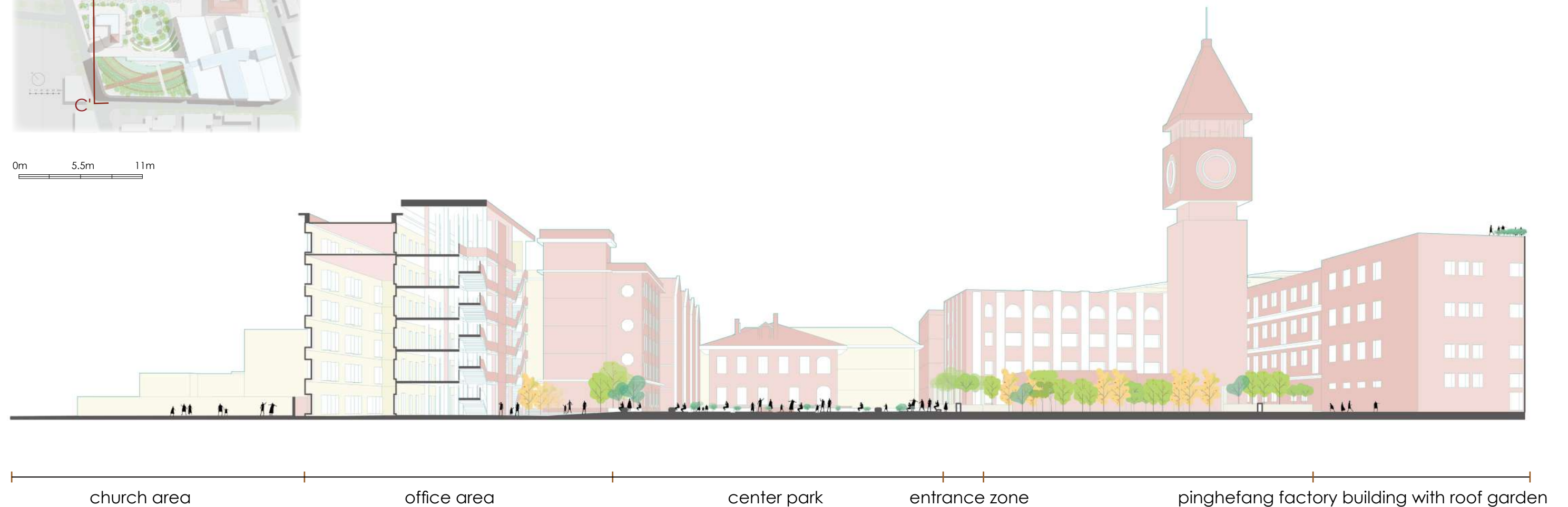


Section B-B' mainly shows the basic situation facing office buildings. On the far left is a circular fitness park. In the center of the park is a circular micro-topography green space. There are some children's entertainment facilities. In other places, some fitness equipment is placed for nearby residents. People are healthy. It is also an important indicator of public health. The several buildings in the picture are all office buildings, so in order to better serve the office workers, we have designed small green spaces in the middle of the office building, which can allow people to spend more time outside during work and reduce the amount of trouble. Necessary indoor gathering. At the same time, those small green spaces with chairs can also be used as temporary office and meeting locations. On the far right is another entrance area of the venue.

Section C-C'

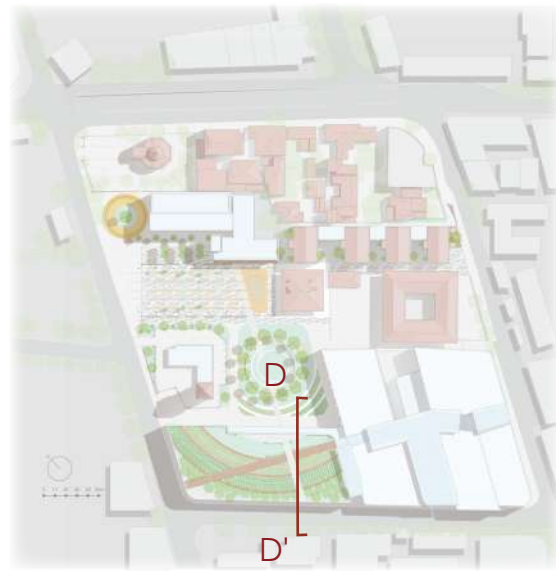


0m 5.5m 11m

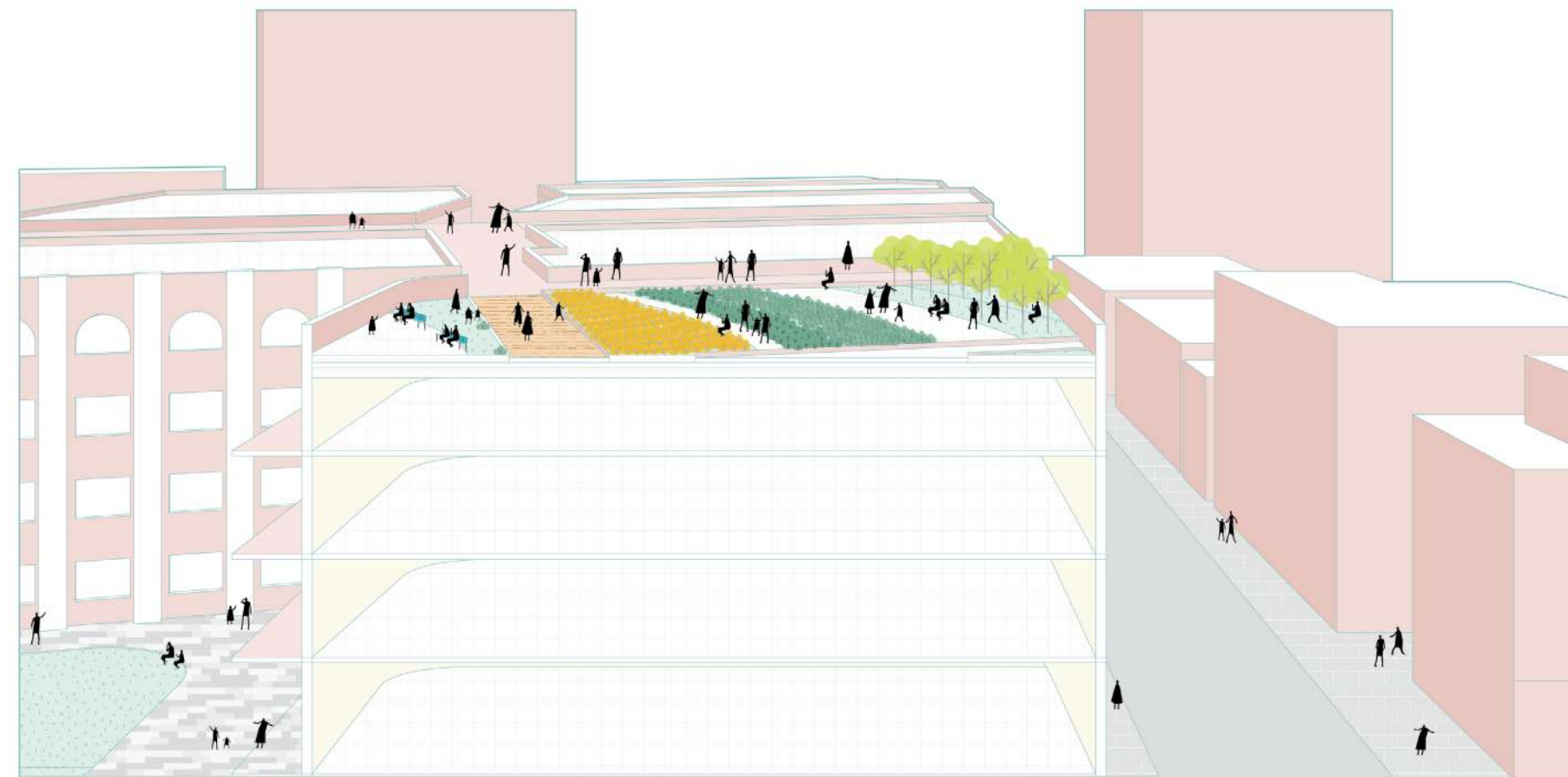


Section C-C' shows the basic situation of the side facing Lutz's former residence. The buildings on the left are the office buildings mentioned before, and the two-story building with a pointed roof a little further away is the former residence of Lutz. We can see that the middle part of the picture is the central square. The drainage grooves on the central square finally converge in the pool in front of Lutz's former residence. Then the pool is also a place where people gather, especially children. To the right of the central park is the main entrance area of the site. The surrounding wall next to the entrance and exit area is filled with trees where the underground tunnel maintenance house and the clock tower are located. The building on the far right is the aforementioned Pinghefang factory building and the roof garden for people to relax and experience the fun of planting.

Section D-D'



0m 25m 50m



sinking circular space roof garden with planting areas road around the site

Section D-D' is mainly to show the roof garden. Our roof garden is connected to the roof of the adjacent building. The adjacent roof was originally used as a place for leisure and activities. So we designed the roof of the building of Pinghefang Packing Factory. In order to provide people with more leisure and entertainment space, we changed part of the roof into a rainwater garden and let it participate in the water circulation system of the entire site. The other part of the roof becomes a planting experience area. There are also some seats for people to rest.

7.2.11 Aerial View



1 roof garden

2 sinking circular green space

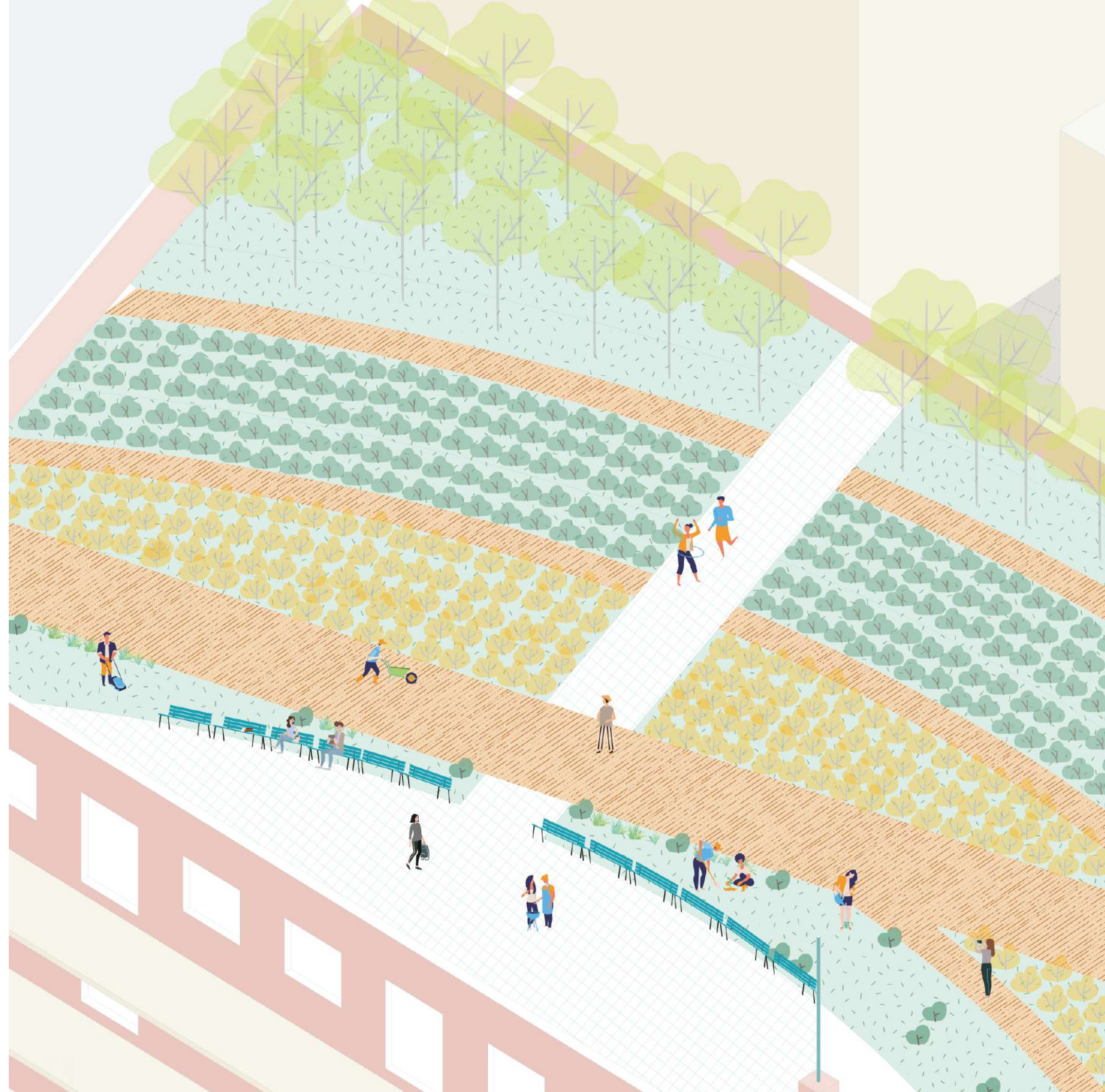
3 pool

4 fitness park

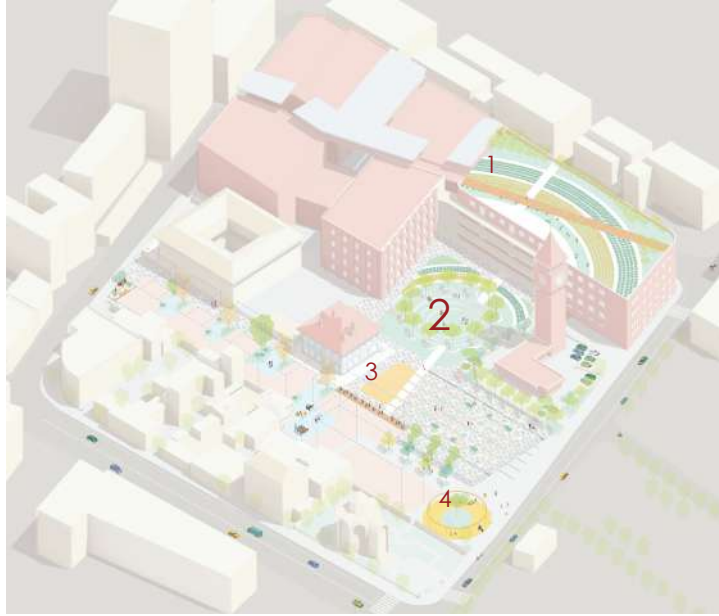
1. roof garden



The roof garden is located on the roof of the original Pinghefang factory. The roof garden is a very important part of the site's water collection system. The roof garden has a hard-paved seating area with seats, a green area planted with small trees, and a planting experience area. Due to the particularity of the planting area, we have adopted all the paths in the middle of the planting area. Anticorrosive wood is used as paving material.



2.sinking circular green space



The sunken circular green space is a very important area in the site where people can relax and talk. The terrain sinks from the outside to the inside, which can better divide the space and make the space more interesting at the same time. There are semi-circular seats distributed on the outermost circle of grass, and there is a tree in front of the seats, so that there is both an open space and a relatively semi-enclosed space. A hard-paved walkway that runs through the sunken green space can better connect here with the rest of the park.



3.pool



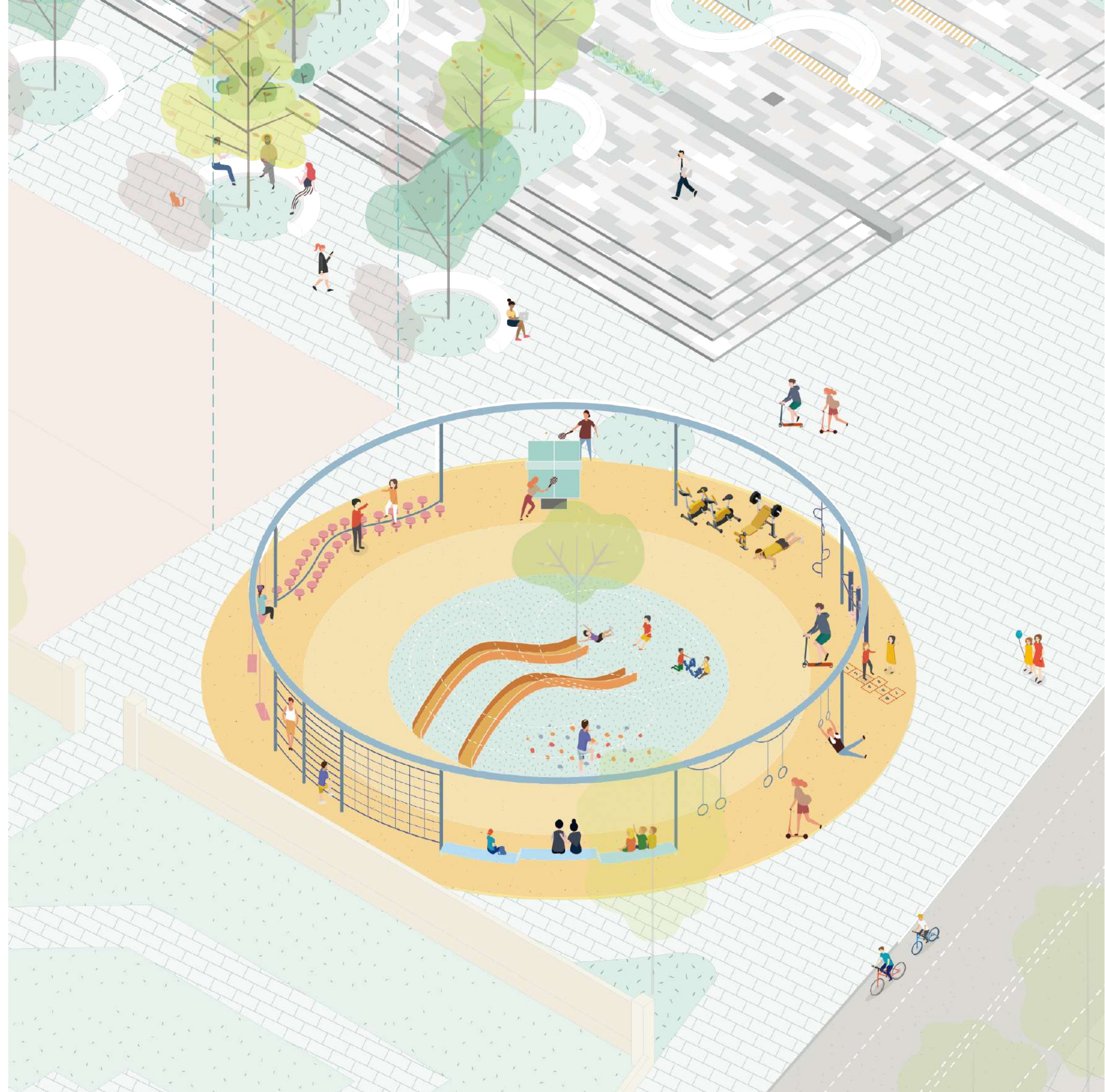
The pool partly belongs to Central Park. At the beginning of the entrance and exit area, there are several drainage grooves that are finally connected to this pool. The groove can let rainwater flow into the pool more conveniently and avoid unnecessary water accumulation. The pool is a favorite place for children and parents when there is water. People can play in the water, which is fun and cool. In some special festivals, temporary performance stages can be set up on the pool to enrich the lives of local residents. Then the wooden paving area next to the pool is made of anticorrosive wood material, which is located in front of the office building, so people can eat fast food or drink coffee here.



4. fitness park



The fitness park will also be an important activity area in the venue. We use a concentric circle design. The outer circle is equipped with some fitness equipment and rock climbing equipment, and the inner circle is more for children to provide some entertainment facilities, and the inner circle is a grass with a small terrain. Many facilities are based on the terrain. Placed. For some parents, they can exercise or chat with others in the outer circle, and at the same time can see the children playing in the inner circle, which is safe and convenient.



PART VIII
PRINCIPLES & CONCLUSION

Principles

1. Principles for safer urban centres and green spaces

Guidelines on social distancing, protection of high-risk groups, face masks, cleanliness and hygiene are as follows:

1.1 Social distancing

Public Health Agency has advised maintaining 2 metres distance from others (outside of your immediate household) to minimise your risk of exposure to the virus and potential to spread the infection.

Guidance on 'staying safe outside your home', which includes guidance on 'Keeping your distance from people outside your household' and 'Guidance on social distancing for blind and partially sighted people' is available at: Coronavirus (COVID-19): staying safe outside your home | nidirect

1.2 Protecting people who are at higher risk

The NI Executive has updated its guidance for 'clinically extremely vulnerable' and 'vulnerable' people. Further details are available at: Coronavirus (COVID-19): guidance for 'clinically extremely vulnerable' and 'vulnerable' people | nidirect

If you are 'clinically extremely vulnerable' or 'vulnerable' it is important to continue to be particularly careful in following the advice on limiting household contacts, keeping social distance, hand washing and wearing a face covering.

1.3 Face coverings

"Face covering" means a covering of any type which covers a person's nose and mouth.

The use of face coverings is now required in certain indoor settings. This includes shops, shopping centres, public, private and school transport services, taxis, airplanes, public transport stations and airports, banks and some government offices.

Requirements to wear a face covering are outlined in The Health Protection (Coronavirus, Wearing of Face Coverings) Regulations (Northern Ireland) 2020 (as amended).

Some circumstances make it difficult for some people to wear face coverings. In these circumstances people may have a 'reasonable excuse' not to wear a face covering. Examples of 'reasonable excuse' are outlined in the Regulations and included in the guidance on face coverings detailed below.

1.4 Cleaning

Owners and operators are advised to implement cleaning protocols to limit coronavirus transmission in public places. It is advised that touch points (e.g. handrails and gates) should be particular areas of focus for increased cleaning.

1.5 Hygiene - hand washing, sanitation facilities and toilets

Objective: To ensure that toilets are kept open and to promote good hygiene, social distancing, and cleanliness in toilet facilities

Public toilets, portable toilets and toilets inside premises should be kept open and carefully managed to reduce the risk of transmission of COVID-19.

1.6 Volunteering

Organisations have a duty of care to volunteers, to ensure as far as reasonably practicable they are not exposed to risks to their health and safety. They will therefore need to take a risk based approach to the restarting of services.

1.7 Staying safe outside the home

People should minimise the time spent outside of their homes and when around other people ensure they maintain two metres apart from anyone not in their household or support bubble.

People must not meet socially indoors with family or friends unless they live with each other in the same household, or have formed a support bubble.

People can exercise or visit outdoor public places with the people they live with, their support bubble, or 1 person from another household (children under school age, as well as those dependent on round-the-clock care, such as those with severe disabilities, who are with their parents will not count towards the limit on two people meeting outside).

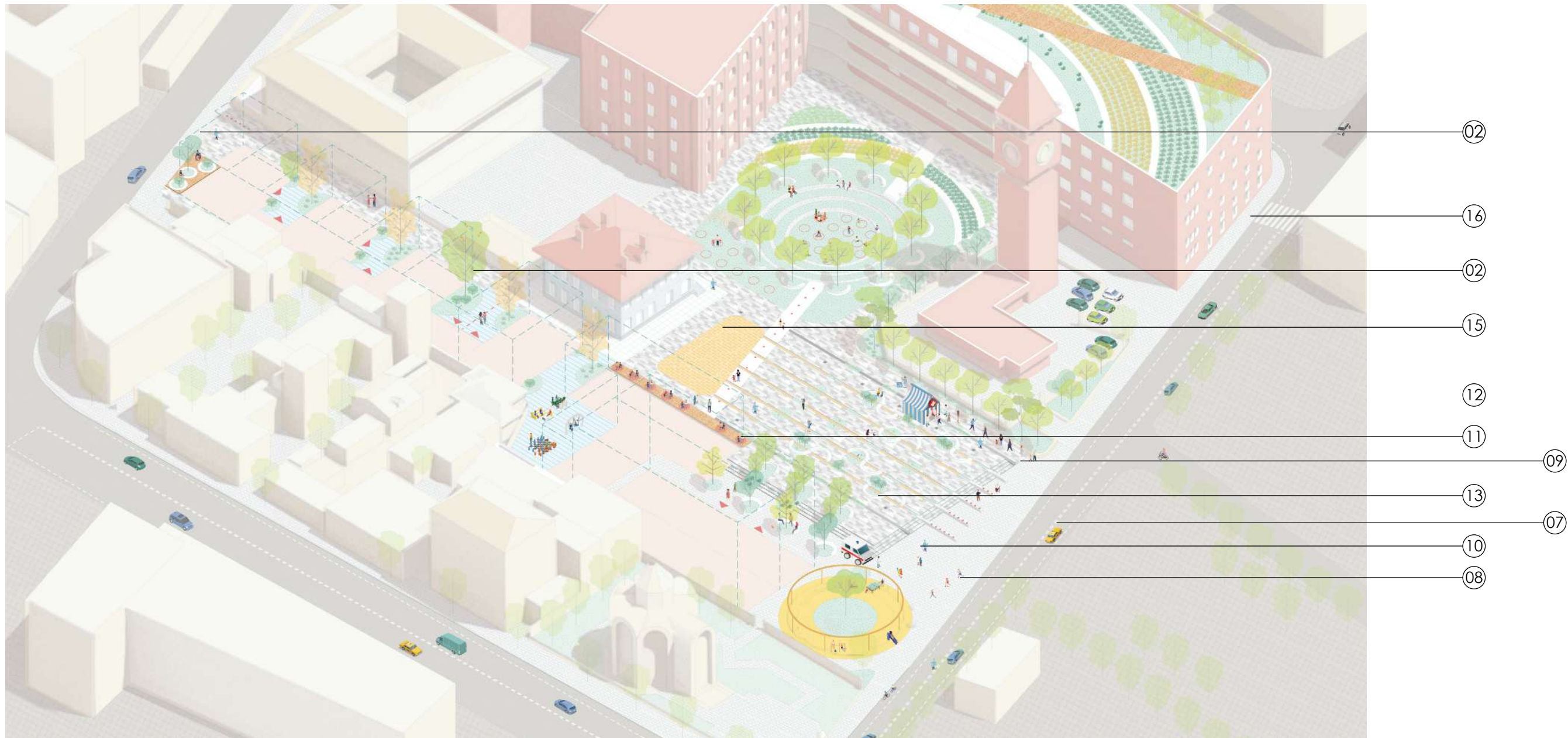
2. Management of Social distancing in Project Site

Our site include public space and green space. The use of these spaces will be heavily influenced by the working patterns of the tenants of these offices. Commercial spaces will typically have higher volume and density of use at the start of the working day particularly 8-9am and at the end of the working day between 5-6pm. Owners and operators should be aware that businesses and other commercial operations may implement staggered opening times to support the facilitation of social distancing in public spaces or on public transport. Any changes to opening hours / hours of operation and the impact this may have on foot traffic in public spaces should be considered.

Green space is likely to be enclosed by a variety of boundary treatments with 'pinch point' at entrances. The surrounding streets tend to have limited space. Green spaces will have higher levels of use during warmer weather and daytime hours. Those in urban centres typically have high levels of footfall and greater likelihood of congestion at entrance and exit points.

1. Queue marking indicators outside office entrances
2. Maximise access and introduce one-way entry and exit points
3. Phasing of access and opening times
4. Keep building entrances clear
5. Widen footways on approach streets to main entrance
6. Provide movement guidance around park including consideration for one-way circulation
7. Reduce traffic speeds
8. Increase space for pedestrians and cycles beside entrances
9. Minimise pinch points, whilst taking into consideration security and the needs of disabled people and older people.
10. Reduce unnecessary obstacles, for example planters and add markings/ tape on seating to maintain social distancing
11. Queue marking indicators at main entrance and toilets
12. Signs on social distancing and circulation, particularly at conflict points such as junctions and crossings

13. Use existing street furniture for signs to avoid impacting on pedestrian flows
14. Stewards to help manage queues and pedestrian flows
15. Maximise access and introduce one-way entry and exit points
16. Additional cleaning regime and maintenance
17. Safe level crossing points to access park



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- 14. Stewards to help manage queues and pedestrian flows

- 15. Additional cleaning regime and maintenance
- 16. Safe level crossing points to access park

Conclusion

Green spaces and open spaces are important places for residents to perform leisure, sports and other activities. During the prevention and control of the new crown pneumonia (COVID-19) epidemic in 2020, keeping a certain distance between people has become a basic requirement for daily social interaction, indoor gathering activities are restricted, and some activities are transferred to green spaces and open spaces. Therefore, studying the new functions people expect for public space and green space during the epidemic prevention and control period, and whether public space and green space should assume new responsibilities, are of important guiding significance for the construction and development of public space in the post-epidemic era. In the end, our research results are mainly concentrated in three aspects:

1. The epidemic is sweeping the world. Although Wuhan has already contained the epidemic and has not added any new cases, the epidemic may continue to repeat or even make a comeback. None of us dare to be sure when social life can completely return to normal. Therefore, we should also change our landscape planning and design in the post-epidemic era. We should shift our focus from the macro to the micro, such as 15-minute living circle and street planning. In other words, we should pay more attention to micro-renewal at the community level, and make planning and design closer to the residents. Reduce spatial structure adjustments at the regional and urban levels. Attention should be paid to improving the service level of public facilities and increasing the welfare of residents. Build a 15-minute living circle, promote the construction of activity centers in small neighborhoods, and create a batch of high-quality communities. At the same time, we will improve the micro-public space network, improve the service coverage of 500 meters of greening, and create a 10-minute public activity circle. It is also very important to improve the comprehensive level of medical and health services and emergency treatment capabilities, improve the basic community hospital layout and network, and build a 10-minute medical emergency circle in the central city. Such a plan can better deal with sudden outbreaks while being closer to the neighborhood and ordinary residents. In short, this epidemic has exposed the overall and structural problems of society, and the uncertainty is increasing. But as long as we persist in taking people's life experience and experience as the center, public space and green space planning and design adhere to the path of safe, healthy and sustainable development, the future of the city will definitely be better.

2. Due to the peculiarities of the post-epidemic era, people's living areas have been compressed into a small area. For a while, the Internet has become the main way for people to communicate with the world. The spirit can make up for it, but the quality of physical experience has dropped drastically.

During the isolation period, depressive life experiences generally appeared. And through this sudden global epidemic, we should really consider the role of public health in the design of urban public spaces and green spaces. This painful lesson also made people realize the importance of public health. Therefore, it is particularly important to control the number of people and visit behavior in public space, and to strengthen the fine management system of environmental sanitation and disinfection and public space sanitation. It is recommended that the health improvement projects of parks and green spaces be carried out regularly in the post-epidemic era, and regular evaluations should be carried out. Public health will certainly play an increasingly important role in the design of public spaces and green spaces in the future.

3. When we have selected the planning and design site, the evolution of urban space should be a continuous collage, rather than a complete replacement of fractures. Even if it is a small renewal of the community's public activity space, it should not be renewed, but should be the "new and old collage" and "organic symbiosis" of the built objects in different periods. Therefore, especially for places with certain historical elements and memories, the design strategy should adhere to the methods of "repair" and "organic renewal", and retain the original local environment, cultural characteristics and architectural style. For historical buildings such as industrial heritage and the original site, it should not be completely demolished, but a more reasonable reuse method should be adopted, which is to add a new identity to the previous heritage to better meet the needs of the current society. At the same time, when researching and planning public space and green space, we should also pay attention to the site should provide residents with more diversified and high-quality participatory places. At the same time, the site must be prepared to provide a certain amount of emergency blank space for emergencies like this epidemic. For example, when a sudden disaster occurs, these public spaces can be used as refuge and shelter for everyone in time. Temporary resting place. Or a place that can be used for unified testing or vaccination of the community in the event of a large-scale infectious disease. Strengthen the role of public space and green space in urban disaster prevention and mitigation.

PART IX
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