MRP

by Jiayun Li

How can public open space design

help improve social interaction among diverse social groups?

Within high density
community

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Major research project

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MAJOR RESEARCH PROJECT

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Abstract

The public open space is the carrier of social, economic and cultural activities for the residents. In the process of urbanization, the public space is constantly compressed. Social interaction serves as a link between communities and plays an important role in the sustainable development of residents' life and the whole society. However, differences and gaps in space and culture make social interaction less frequent that community members are reluctant to communicate with each other. This had adverse effects on public life and the physical and mental health of individual residents.

This research summarizes the importance of social interaction with literature review. It also highlighted the underlying determinants of providing attractive open spaces in mixed communities to encourage interaction. The study of the leisure behaviour of different groups of people also emphasizes the basic understanding of the ideal way of living for all groups and the use of public places. The case study puts forward the possibility of space arrangement of public space, encouraging public participation in design and construction, renovation of existing facilities and promotion of sustainability. This research attempts to combine these findings into a comprehensive study of public open spaces in complex communities.

From the key findings, a practical toolkit is proposed. The toolkit includes physical design principles as well as policies to support the provision of spaces that are attractive and able to encourage interaction by promoting participation, shared activities, joint design and overcoming physical barriers. Then, on the application side, a site was chosen from a fast-growing city in a developing country to gain a broader perspective. The toolkit was configured at the site to test and evaluate its usefulness and feasibility. It's also used to spot potential conflicts. The research aims to promote public interaction and encourage people to live more sustainable lives.

Introduction

Defining the problems

First of all, during the rapid urbanization, communities with high density housing appear to accommodate the increasing population. Problem then occurs that there is lack of loose public space in quantity that residents may not have enough open space to relax and communicate with others. Urban forms cannot be considered sustainable if people cannot accept cities as places to live, work and interact, or if their communities are unstable and dysfunctional (Bramley et al., 2009).

In addition, among regions and social groups, the differences and gaps when it comes to crime, safety, employment, education, overcrowding, social services and participation may form significant segregation. Segregation and conflicts between people with lower income and higher income, local residents and migrants has become a major problem. The social segregation could lead to social unrest and distrust (Growth and Regional Planning Administration, 2017, p.159). Moreover, segregation is an inherently spatial concept (Marcus, 2007), while other socio-economic factors together reinforce each other.

The Segregation requires regional integration to bring about a change. Since integration may help develop trust and sense of belonging among local people, which underpins successful communities (Uslaner, 2012). Besides, it is good for social stability and fairness as well as economic growth (Social Integration Commission, 2014). In addition, it also contributes to the social and economic pillars of sustainability.

Social interaction has the function of strengthening social communication network and making the connection between people closer. Loose interpersonal relationships within the existing community need to be closely linked through enhanced communication. In urban life, the more time people spend outdoors, the more likely they are to meet and communicate (Gehl, 1987). Thus，attractive public open space may act as an ideal place to accommodate various activities and encourage interaction. However, the complicated population composition in urban area indicates that different groups have different requirements for public spaces in different locations as well as public activities in different time. Thus, high quality public open space is needed. Solutions are needed to make up for deficiencies in urban functions, substantially increase urban public space, significantly improved the quality of the regional environment, make communities more attractive in appearance and content that is more conducive to innovation and suitable for living and working.

F1

In the case of Haidian in Beijing, China

Especially in the northern part of Beijing, College Road sub-district, mixed population and a lack of open public space bring serious problems. Over the past few decades, urban density has increased, and serious urban sprawl there has led to the occupation or disappearance of numerous public spaces. The expansion of cities has led to the relocation of many households and increasing settlement of migrant workers. Add to this, the concentration of universities and the continued increase in the number of children and the elderly among the local population formed a complex community. However, physical and psychological barriers greatly affect the integration of communities and accelerate the isolation of local communities. This type of problem is common and is being challenged in other regions of China and in many cities around the world.

Research Question

How can public open space design help improve social interaction among diverse social groups within the high density community?

Research Objectives

In summary, the four main objectives for the project are as follows:

• Investigate and assess the underlying factors in the mixed community to provide public open spaces that facilitate interaction among social groups. Figure out possible ways of social interaction within the community.

• Find out urban strategies that encourage social interaction to happen, by focusing on facilitating social interaction in public space. Propose a design toolkit as guideline for the interventions in a public places to encourage people to spontaneously interact with other neighbours in either verbal or non-verbal way.

• Influence community residents in behavior, bring together people with different lifestyles and routines; and improve the residents' quality of life with a more sustainable life style.

• Strengthen community interaction and integration to build unique community character.

Methodology

The research method of this project is mainly divided into four stages.

In the first stage, the research focuses on academic articles and related research reports. At the beginning of the project, the purpose of the literature review is to summarize the existing academic discussions and to guide the subsequent design project. Several site visit and observations were then made over a period of two months. The patterns of daily activities and characteristics of the local residents were recorded. In addition, this will verify the cognition in the existing academic discussion in the practice, so as to draw a conclusion more consistent with the situation on the site. Based on the questions raised in the above study, a number of case studies have analysed public sites built for different purposes around the world, providing answers to the questions and further enriching the conclusions. The research then enabled the design objectives, principles and strategies in the conclusion to be adapted to different social background and economic conditions.

The research stage creates more feasibility for the generating of a design toolkit in the second phase. It combined key findings form the research, and generated design strategies to encourage interaction in public space.

In the third stage, application of the toolkit aim to addresses the major problems of college road sub-district. The identification of specific site is based on an analysis of the status and distribution of the existing public spaces throughout the region. In order to make the strategies in the toolbox be used in a way more suitable for the region, site visit makes a further visual observation of the urban landscape of the area, including traffic, street section, existing land use, urban layout, etc. Relevant design strategies and interventions are proposed according to the toolbox and illustrated through various diagrams.

The actual use of the toolkit and intervention allow for reflection at the last stage as well as analysing the success of the project and the content that can be further optimized.
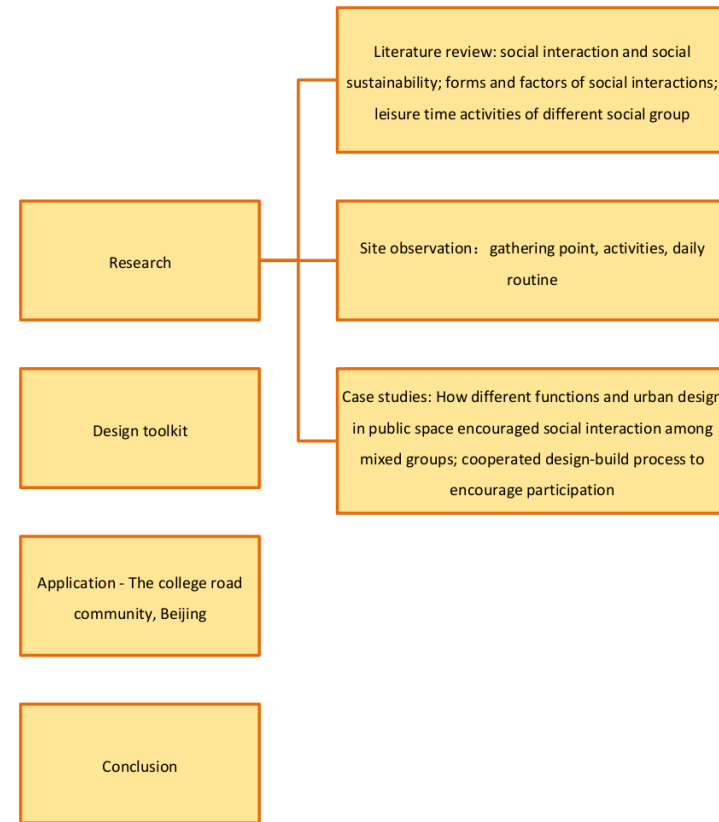
F2

Justification of the question

Urbanization trends are accompanied by social, economic and environmental challenges that have a significant impact on physical and mental health. The quantity and quality of public open space are related to the mental health of residents. Especially when seeing from mental health perspective, the quality of public space in a community seems to be more important than the quantity of public space. Specifically, residents living in high-quality public space communities are more likely to have better mental health than those living with lower quality ones (Francis et al., 2012).

In addition, public space may enhance the potential for social interaction. In urban areas, the spaces and facilities for rest, entertainment and recreation shared by all are the main places for urban residents to carry out leisure activities, which are of great significance to the quality of life of urban residents. In Beijing, China, with the upgrading of people's consumption demand, the demand for loose urban space keeps increasing, and the yearning for quality urban life promotes the transformation of urban planning and urban construction concept (Haidian district people's government office, 2020). Interpersonal communication, cultural communication and other social and cultural functions are needed. The government is planning to improve the quality of community and lead a sustainable life by focusing on building small and micro community parks to create community culture and form a space for urban cultural exchanges. Thus, it is important to understand the mechanism behind and figure out how the design of public space can help improve social interaction.

Literature and practice have carried out extensive discussions and experiments on the interpersonal relationship in public space. This project, however, focuses in particular on developing countries and on the expanding high-density urban areas, where public space issues have a very limited focus on social interaction between residents. The project seeks to address the underutilization and neglect of public space in the expanding city by developing a local approach, and to encourage residents to work together to create a special local social atmosphere and personality, and to promote social cohesion.

Literature Review

Social interaction and social sustainability

The pursuit of social sustainability is a process of understanding the needs of people in their daily lives and then creating a sustainable urban environment based on those needs to promote well-being. Social sustainability combines physical design with social planning. It supports the infrastructure of social and cultural life, the system of civic participation, and the development of human and space (Woodcraft et al., 2011).

Social Interaction is beneficial to social integration and strengthens interpersonal relationships in the community. This kind of social interaction often exists in people's daily lives, and it covers a wide range of forms, from large events and celebrations to low-key encounters and everything in between(Carmona, 2019). In terms of the measurement of social interaction, the respondents' circle of friends in the community, their understanding of their neighbors' personal information, the frequency of chatting with each other, borrowing things and other actions can all be referred to (Bramley et al., 2009).

When mentioned about social interaction, it is often included under other academic terms related to social sustainability. For instance, it may be mentioned with the term 'social capital', which is usually used to measure the degree of social cohesion; or 'social inclusion' that represented the engagement of all innovation of society; as well as 'participation' in various public activities or community events (Langergaard, 2019). In addition, social interaction is related with many factors that influencing social sustainability, where they each overlap, influence and encourage each other. In some cases, if the neighborhood provide a safer environment, people will be more likely to interact with other in the community, thus lead to greater participation in public events (Bramley et al., 2009).

Factors for social interaction

Physical factors

Firstly, from the perspective of urban environment, the following factors are summarized according to the development from larger scale at urban level to smaller details with in the public space, which is related to the occurrence of interpersonal interaction within a region.

Factor 1 Urban form

The term urban form describes the spatial configuration of fixed urban elements and the characteristics embedded in it (Anderson et al., 1996). The characteristics of these urban elements have a fundamental impact on the generation of social interaction within the region.

Firstly, most studies have shown a positive correlation between increased population density and the frequency of interpersonal interactions. In other words, high-density areas have more opportunities for encounters and interactions than low-density areas. The reason may be that people living in denser areas are more likely to meet in everyday life and in public places (Bramley et al., 2009; Duany and Plater-Zyberk, 2001; Talen, 1999). Nevertheless, the anonymity of urban life in high-density area may also bring adverse effects. As a result, pressure increases and traditional connections are cut off, leading to the reduction of social ties and the gradual estrangement of interpersonal relations (Bramley et al., 2009; Wirth, 1938). Thus, in order to enliven the community with a lively atmosphere for communication, the quantity and size of public spaces need to be taken into account. In urban planning process, especially in high-density cities, enough public space should be provided to residents (Francis et al., 2012).

What is more, the spatial arrangement of the urban element may also influence social interaction. The change of the spatial structure of the city will change the way of life of the residents. It is possible to create a new social order in the city through spatial arrangement. Complex social diseases, barriers within communities can be cured through the interaction of different housing environments, parks and new spatial arrangements (Uslu & Gökçe, 2010). For example, high-density mixed-use streets can contribute to social interaction by attracting more people, making them more motivated to use the street (Jacobs, 1961). Moreover, narrow streets and small spaces can bring people experience at close range and with considerable intensity, creating an intimate, warm and private atmosphere (Gehl, 1987).

Factor 2 Function of the space

Gehl (1987) categorized outdoor activities in public spaces into "necessary activities, optional activities, and social activities", with each demands different physical environment. The public spaces can accommodate a wide variety of functions and activities, which may exist either individually or in combination.

Necessary activities depends less on the quality of public space, but because of the regularity and necessity of its behaviour, as mentioned by Dines and Cattell (2006), chance of encounters between people who would not otherwise meet may be encouraged. Thus, public spaces that provide daily services such as local markets, schools, streets and transportation hub are important. Besides, in literatures and researches, the following functions are specifically mentioned as contributing to facilitate optional and social activities thus may encourage social interaction to happen.

Leisure and urban parks are mostly mentioned since they usually provide activities that can be shared. As Peters (2010) argued, is important to provide potentiality of interaction, especially between local and migrants. Besides, in high density communities, pocket parks may take smaller outdoor space while still meet a variety of needs and functions, providing local residents with place for relaxing, meeting friends or taking lunch breaks (Salih & Ismail, 2017). When the space is further adapted with large screen or stages, more events or celebrations may also happen (Carmona, 2019).

Furthermore, recreational areas in the park can create a variety of physical games that can be shared and participated as social interaction. The physics game can involve teaming, cooperation, multi-player competition or one-on-one competition, which enriches the way of interaction. It also invites people, especially children, to replace electronic entertainment with physical games to engage with others in open spaces (Bekker et al., 2010). However, as Kelly (2011) emphasized, sports-based interventions It may instead highlight individual deficits. Confront the problem it is helpful to increase chances of participation or provide training to all the members.

Factor 3 Design of the space

In urbans environments, to enhance the development of supportive relationships, the quality of public open space is critical (Francis et al., 2012). While, creating high quality public space requires proper design that will influence the spaces to be more or less conducive to social interactions of all types (Carmona, 2019).

Good urban design should provide convenient facilities for potential observers and users (Jacobs and Appleyard, 1987). Within the public open space, small and large dimensions of spaces can be provides to fit activities in different social distances (Hall, 1969). Furniture and facilities such as walking trails, benches, fountains, children's play areas, sitting areas, and green space in human scale will provide the opportunities for more people to use the space (Salih & Ismail, 2017).

More importantly, accessibility of the space also influence whether residents may use the space. Key public spaces should be seamlessly connected. The walking environment needs to be friendly for pedestrians (Gehl, 1987).

Last but not least, arrangement of movement and layout are also critical. Through movement in higher frequency will usually stimulate higher levels of activity in the area. The highest density of social activity and social contact usually occurs between the main tracks of pedestrians, and people are more likely to be drawn to the main facilities around the gathering point (Carmona, 2019).

Factor 4 Comfort and safety in environment

The environmental condition of public spaces is an important measure of their quality. As Jacobs and Appleyard (1987) suggest, good urban environment design takes all potential amenities into concern, including sights, sounds, feels, smells as well as trees, sun, and shade. Those amenities with in microclimate may affect people's choice of activities, while adverse effects can reduce the quality and usability of outdoor areas, and lead to safety concerns in extreme cases.

When controlling the micro-climate specific criteria and guidelines of each element need to be considered jointly. The bottom-up approaches to climate adaptation are continually becoming more essential for local urban design and decision making (Nouri et al., 2018).

In general, the combine of blue and green design will help moderated microclimate (Nouri et al., 2018). Besides, public green space with vegetation and plants may also provide key social benefits, including promoting a sense of community and social belonging thus encourage social interaction (Viniece & Kate, 2019).

In the Lawson Comfort Criteria (Bendini, 2019) and wind guidelines for the city of London (2019), the appropriate wind speed for public events is specified, as well as corresponding recommendations for building height and inter-building wind speed.

Lighting, shading and thermal condition are usually connected with the safety and comfort level of the place (Khabazi & Foroughmand, 2018). Instead of direct bright lighting, warm and friendly light or an adequately bright level of lighting directed or reflected toward the horizontal surfaces may create better experience (Gehl, 1987).

In acoustic aspect, noise has adverse effects of annoyance, cardiovascular, physiological problem and mental health effect (World Health Organization, 2020). To create a suitable space for public activities, noise control and abatement is fundamental, however, city planning can no longer be content with that, but must pay attention to soundscape design, which help create the character of the acoustic atmosphere of public spaces (Bohme, 2000).

Last but not least, for the reason that microclimate keeps changing with time, it's necessary for public spaces to adjust to the changing circumstances (Gehl, 1987).

Social interaction

Physical

Factor 1
Urban form

Factor 2
Function of the public space

Factor 3
Design of the public space

Factor 4
Comfort and safety in environment

Principle 1
Proper Quantity and size of public space that suited with density

Principle 2
Proper spatial arrangement that motivations people to use the space

Principle 3
Ensure public facilities for necessary activities.

Principle 4
Accommodate various recreational activities

Principle 5
Involve various dimensions of activity spaces

Principle 6
Adopt human scale furniture and facilities

Principle 7
Ensure connectivity and accessibility.

Principle 8
Proper arrangement within public space

Principle 9
Create suitable environment for outdoor activities

Proper Location

Mixed use

Proper street scale

Public services(school, market etc.)

Create combination of activities

Leisure and urban park, recreation zone, pocket park, sports-based interventions

Provide spaces that serves from public activities to private conversations

Walking trails, benches, fountains, children's play areas, sitting areas, and green space

Arrange through movement and other possible movements

Arrange lay out of the space to avoid conflicts and encourage encounter.

Lighting design, shading system

Noise control, soundscape design

Wind control

Green and blue infrastructures

F3: Summary of physical factors

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Non-physical Factors

Since sustainable urban development involves both physical and social level, many of the features that support the social dimension of sustainable development are difficult to provide simply by physical environment. Especially, social sustainability contains predominantly non-physical nature (Dempsey et al., 2011). Instead of focuses only on physical aspect, When estimating the social sustainability in community, social interaction and networks also related to inclusiveness, involvement in collective groups and sense of place (Dempsey et al., 2011; Carmona, 2010; Fletcher, 2006).

Factor 5 Inclusiveness

Design and manage the built environment inclusively, will help overcome the frustration and hardship experienced by disabled people, older people and families with small children (Fletcher, 2006). Inclusive design requires putting people first. In the design process, it is necessary to recognize diversity and difference, because to some extent, everyone is likely to experience limited mobility. Carefully observe and learn people's living habits and needs is helpful when identifying the obstacles that they are facing (Carmona, 2010). When a single design solution cannot accommodate all users, multiple choices are needed to be offered. In order to treat all users equally, the design standards should be in same level and meet the access requirements of all. In other ways, design with flexibility in use may also enable a place to adapt to changing uses and demands (Fletcher, 2006).

Factor 6 Participation in social activities

Familiarity and regular use of the space are two basic elements that influence people's preference to engagement in social activities. As interactions between strangers are often difficult, but the opportunities for interaction may increase as familiarity with the site and its frequent visitors increase (Ujang, Moulay & Zakariya 2015;Dines & Cattell, 2006; Bramley et al., 2009). In order to encourage people to engage in unfamiliar interactions, it is important to bring unique feature to the place and cultivate people's attachment to the place.
In addition, in the implementation process of social activities, local organizations or volunteers with common interests can also be involved to attract more individuals in the community to participate in the activities and achieve a collective co-evolution all Actors (Teh, 2014)
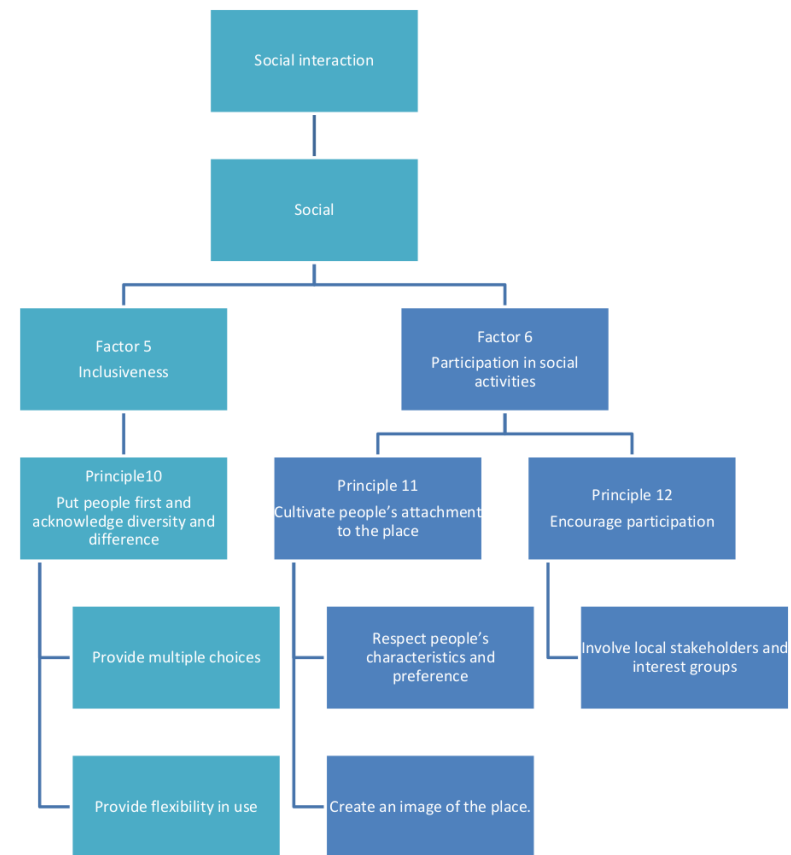
F4: Summary of social factors

Leisure time activities for different groups

The previous review on factors of social interaction indicated the importance of studying different social groups and their behavior. As different social group may have different preference in using the public space, it is important to make clear their preference and create attractive atmosphere for all.

When considering about the form of recreation, residents, as the subject of recreational behavior, need to be categorized into different groups. Zhao et al. (2006) suggest dividing people into two main groups: working-age population and non-working-age population. For the reason that working time is one of the factors that determined the time people spend on leisure time activities as well as the form of activity. In addition, in China, the policy divides the population according to the location of household registration in a binary system. Those who own property in cities have urban 'hukou', while the rest have rural 'hukou'. Thus, in cities, people at working-age are divided into local workers and migrant workers (Huang et al., 2013). This policy has had a great impact on the inhabitants of the more developed cities, where migrant workers usually live in rented houses, because they can't afford to purchase property in urban area. As for population outside the working age, they can be classified as children, students and retired people.

Social groups		Job	Features	Leisure time activities	Feature of activities
working-age population	Local	Company staff, teacher...	Medium upper fixed income Higher knowledge level Fix set of leisure time	Leisure activities (go to park, take a walk), Exercise, Study, Entertainment (watch movie, go shopping, see exhibitions), Stay at home.	Rich variety of activities Willing to consume Interact more with friends rather than neighbours
	Migrant	Workers, farmers, service workers including construction workers, courier, handyman ...	Lower income Do manual work Lower knowledge level Less leisure time Mainly come from less developed areas in china. Live alone or only with partner, stay apart with family and children.	Leisure activities (go to park, take a walk, talk with others), Study, stay at home, play card game.	Monotonous activity form Less willing to do exercise due to long working time High demand for interaction Prefer activities with no cost
non-working-age population	Children and teenagers		Have positive leisure time Needed to be accompanied by other people.	Leisure activities (go to park, play with other), Exercise, Study, Stay at home.	High demand for interaction with peers
	University Students		18 to 24 years old No income Have positive leisure time	Leisure activities (go to park, take a walk, talk with friends), Exercise, Study, Entertainment (watch movie, go shopping, see exhibitions), Stay at home.	Mainly interact with friends Spend more time in campus
	Retired people		Have positive leisure time Physiological feature limits their choice of activity	Leisure activities (go to park, take a walk, talk with other, look after children, square dancing), Exercise, Entertainment go shopping); Stay at home.	High demand for interaction.

Table 1 Leisure time activities and features for different social in cities in China
(Zhao et al., 2006; Ma, C., 2007; Xi et al., 2018; Liu, 2010).

The review on social groups and their leisure time activities (Table 1) shows that most groups have the willingness to interact, and the sharing preference of leisure activity (such as go to park, take a walk, exercise, study, watch movie or show, go shopping, see exhibitions and look after children.) opportunities to encourage interaction.

More importantly, several key problems emerged. In order to address the problem, reasons behind their behaviors are also needed to be understood.

Firstly, attracted by the abundance of social media and electronic entertainment, large proportions of residents show their preferences towards indoor activities rather than go to public places. The problem can be solved by enable people to enjoy indoor activities in outdoor spaces such as watch movie, go shopping, see exhibitions and shows.

Secondly, differences exist within the community, which includes different backgrounds with different social habits, different affordability of recreational activities, different physiological characteristics that lead to different ability to participate in activities. This ultimately results in certain social group mostly interacting with same group of people. Thus, the design of public open space also requires consideration about those problems to improve inclusiveness and encourage participation.

Lastly, different groups may use the space for different propose in the same time thus creates conflicts. The arrangement of space need to separates activities that are noisy and quite, lively and steady, public and private.

F5: summery of key findings

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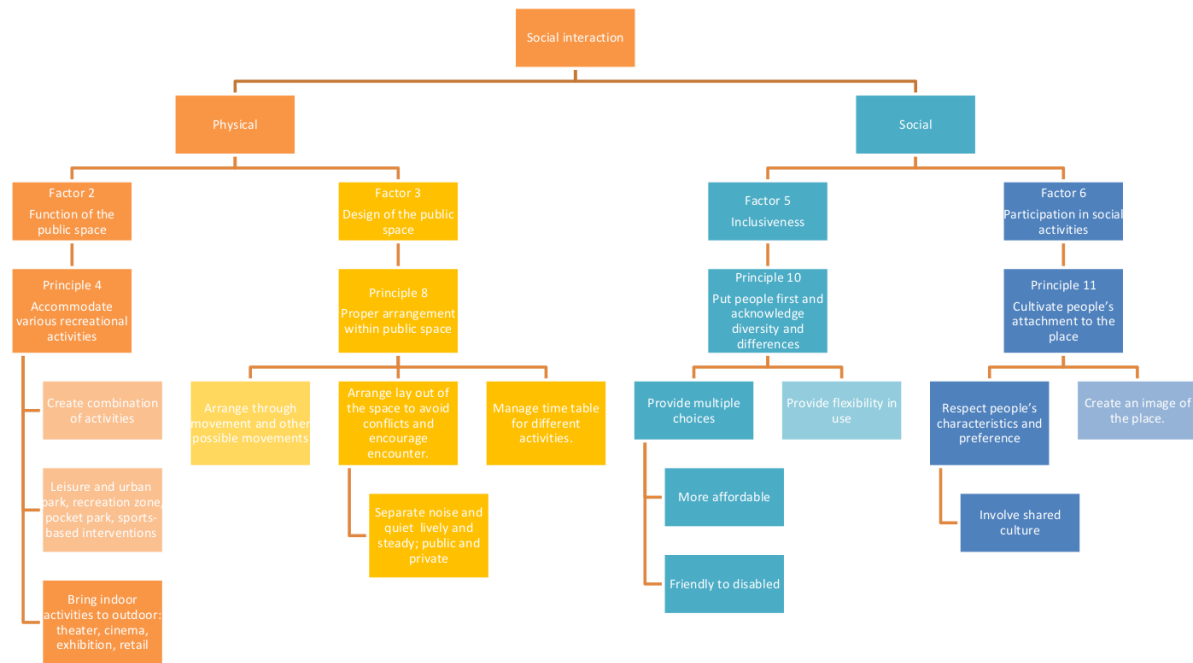
Site observation

Site Observation

In order to better understand the communities studied and to learn the space and time that different groups of people usually have leisure activities, site observation was arranged. It further studies the factors and design strategies needed to promote social interaction in public open spaces.

In the morning, day and night of the day, different social groups have different choices about activities and travel. The pattern of these behaviors formed in multiple observations is shown in the table 2 below.

The Xiaoyue River runs through the College Road Sub-district. There were originally carriage ways on the two sides; however the end of the road is blocked for vehicles and the riverside can only be accessed by pedestrians. This condition provides a potential possibility for creating a good public space, but the local developers and government haven't started to make use of it. Since April 2020, Chinese government has encouraged the resumption of daily life that residents in the community are allowed to go out. However, during the site visit in day time, there were few people on the road.

	Morning	Day	Night
Local workers	Do morning exercise Work	Work Take a walk after meal	Take a walk Play sports Hang out Walk the dog
Migrant workers	Work	Work Take a walk after meal	Take a walk Sit and relax Talk with others
College students	Study Stroll in campus Hang out Play sports Take a walk after meal		
Elderly	Do morning exercise	Go to supermarket	
	Look after children Farm (occupying public space) Chat with neighbours Do handwork Play chess game Play sports Take a walk after meal Square dancing Sit and relax Walk the dog		
Children	Play sports Play games Learn dancing and roller skating		

Table 2 Leisure time activities for different social groups

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Some potential problems were identified in the observations. First of all, although people tend to gather in public green spaces, they lack of the opportunity to play and communicate together. Most people prefer to act individually or in small groups with family of friends. Only children and old people are more likely to talk with unfamiliar people. However, opportunities still exist when people do shared activities (play sports and games, dance, look after dog or children, farming, running or quick walking along river) or have similar routine. A gathering point is formed when people arrive at a place or use certain facilities for their own purposes at the same time. As shown in the figure, people are most to meet in bus station, public green space and other public facilities like malls, retails and restaurants. In addition, most the College Road attracts main foot flow, especially during commute time. On the other hand, square dancing and children playing create noise and light pollution that disturb residents; Pets on the road brings potential hazard for other pedestrians; farmland in public green spaces taken up common area, conflicts between activities prevent some groups from using common land and increased dissatisfaction among users and surrounding residents. Thus, proper arrangement are needed to solve the problem.

F6/7: Conflicts

square dancing and children playing create noise and light pollution

dog threatened others

Morning

Day

Night
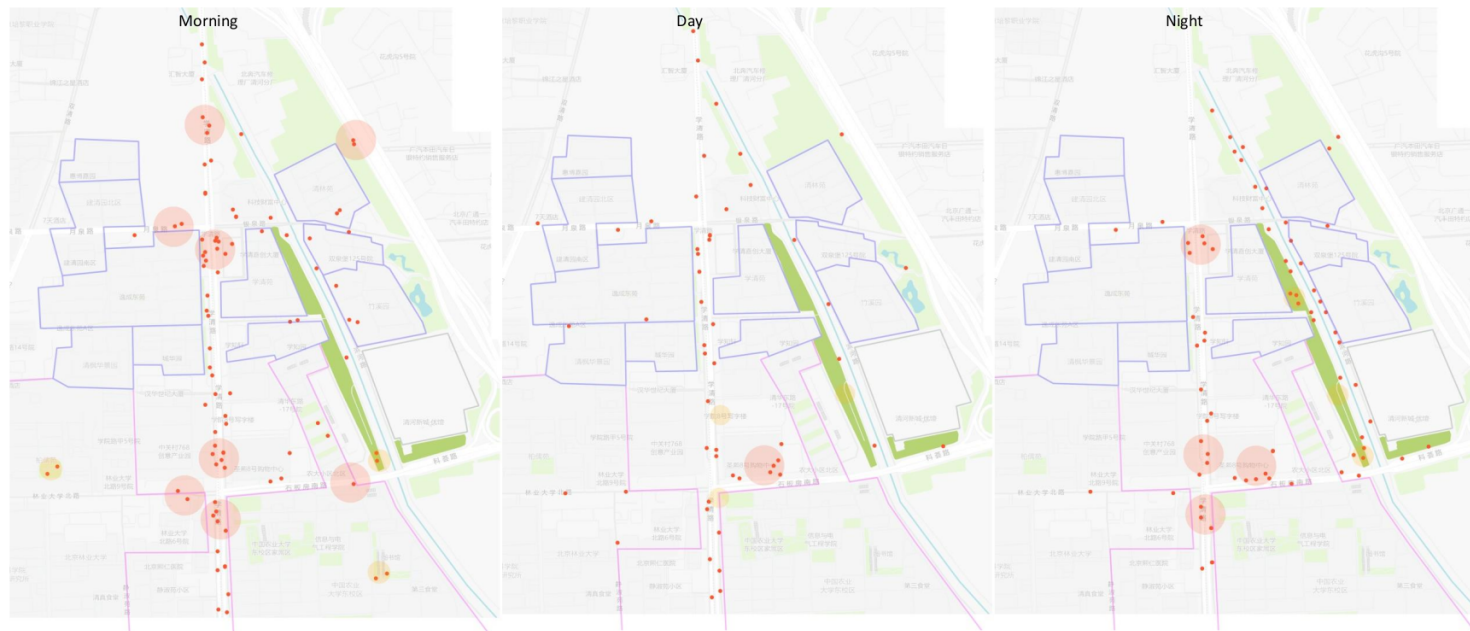
F8/9/10: Gathering points
Bus station: commute, travel
Public green space: initiative activities such as, exercising, playing sports, square dancing, farming, walking the dog, playing games
Malls, Retails and restaurants

Limitation

The site observation required for this project was conducted in a post-COVID-19 environment and experienced the risk reduction of epidemic as well as a short regional re-outbreak. Although site observation was conducted under safe circumstances, the impact of the epidemic on travel and recreation for all social groups could not be ignored. Most people of working age have returned to their normal lives, but children and retired people may have their travel and daily activities restricted by inconveniences and concerns about the epidemic. Universities, in particular, have fewer students on campus during this period. Therefore, the analysis of leisure time activities of various social groups should be combined with the literature review to make the final conclusion.
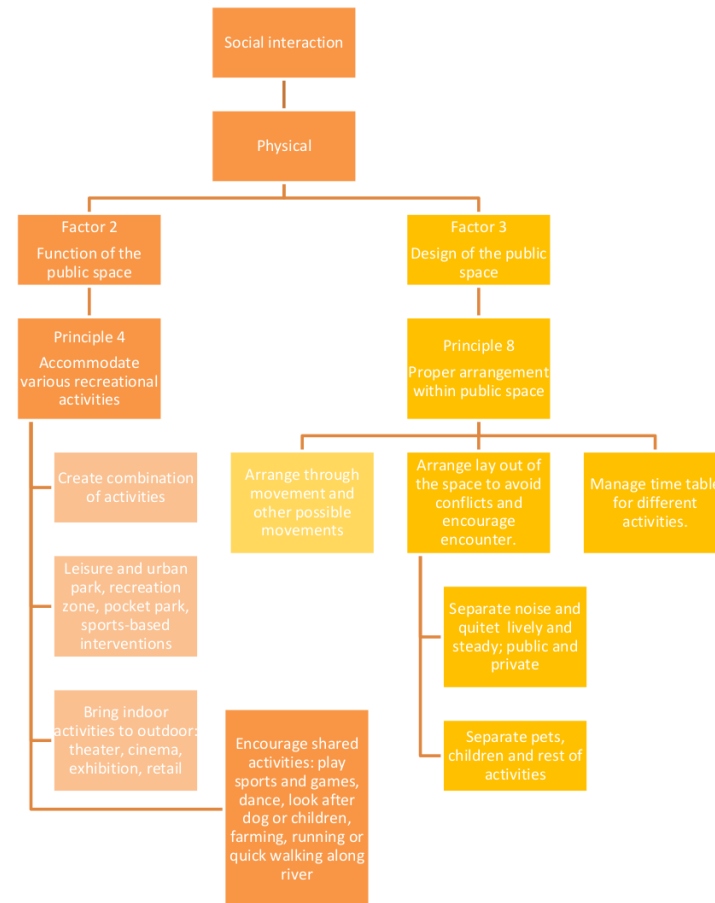
F 11: Summary of findings

Case Study

In literature review and site observations, main factors and design principles to promote interaction in public places are summarized. However, the operation in practice and further solutions needs to be understood. More practical examples are needed to provide guidance. The cases are chosen from cities all over the world, and especially in developing countries that are suffering from similar problem of segregation and rapid urbanization. The study aims to figure out social groups that are integrated in the project, shared activities, design principles, strategies and interventions and way of implementation.

Case study 1

Parc Central de Nou Barris, Spain

The park is located in the middle of the city with a large mix of immigrants. The project involves the destruction and reconstruction of existing urban facilities to provide green space and blear the feeling of isolation created by disjunctive streets, high-density housing, district boundaries and the physical limitation of the site.

Social groups

Migrant & local

From 1950s, worker immigrants from the south of Spain. Led to large-scale urban development happened disorderedly over the generations. The district now experienced a second wave of immigration of people who were attracted by the district's lower housing prices in comparison with other zones of the city. (Cities of migration, 2011)

Objectives

Transforms the feeling of isolation, improve social cohesion.

Reduce physical limitation and boundaries

Create a green community

Neighborhood revitalization

Key findings

Revitalizing old public lands within the city through redevelopment that demolished old buildings and create new public space.

Integrate the area spatially by linking new open spaces to older grounds. Connect the entrance to the park with the existing street, and use footpaths within the park to connect the entrances.

Key principles used

➢ Principle 1 Proper Quantity and size of public space that suited with density

➢ Principle 4 Accommodate various recreational activities

➢ Principle 6 Adopt human scale furniture and facilities

➢ Principle 7 Ensure connectivity and accessibility.

➢ Principle 9 Create suitable environment for outdoor activities

F 12: Lawns and plazas provide gathering space

F 13: The playground is equipped with benches for guardians to rest
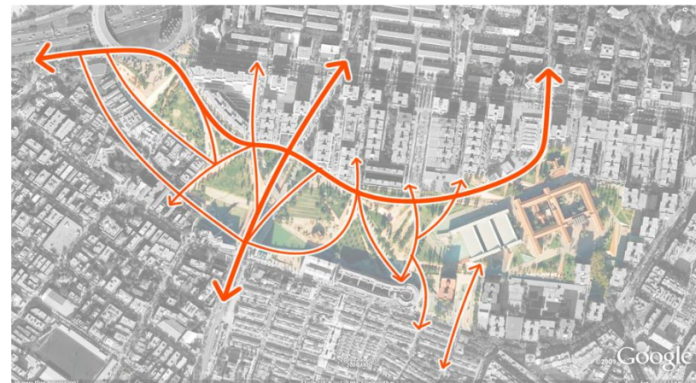
F 14: The park covers a number of north-south shortcuts within the city, making it easier for people to access and use the site.

Case study 2

Wilmington Waterfront Park, USA

The project doubles the size of the community's original open space. As a public amenity, the park integrates a variety of active and passive uses, including informal play, public gatherings, community activities, picnics, sitting, strolling and observations. These modes of activity are determined by the users themselves. The site integrates a range of multi-functional playgrounds, including ball games, children's playgrounds and an open stage. The main walkway is flanked by seats and exhibition gardens. The site provides the basic service facilities to the users without restricting the function, so that it can support various temporary or flexible activities. In that way the park attract more residents to visit, and increase the likelihood that they will encounter (Gooood, 2018a).

Objectives

Neighborhood revitalization

Improve social interaction

F15: Fountain

F16: Lawns and pavilion
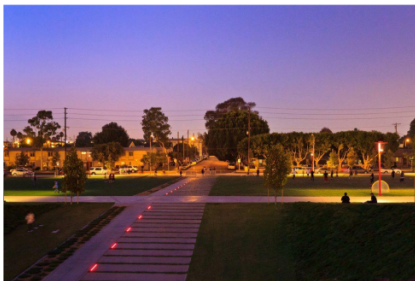
F17: Lighting only highlights key park elements that reduce energy consumption and light pollution.

F18: Bridge connects the main functional areas

Key findings

Use infrastructure and furniture to support various types of active or passive use.

Enhance the level of participation in public activities by providing a flexible space for users to decide on the use of the space

Use trees as noise buffer to keep a quiet environment.

Efficient use of light on key elelments.

➢ Principle 4 Accommodate various recreational activities

➢ Principle 6 Adopt human scale furniture and facilities

➢ Principle 7 Ensure connectivity and accessibility.

➢ Principle 9 Create suitable environment for outdoor activities

➢ Principle 10 Put people first and acknowledge diversity and differences

➢ Principle 12 Encourage participation

F19: Playground

Case study 3

Shenwan Street Park, China

The project is located on the edge of a residential area, close to the main road and underground hub. The pocket park with limit space requests a compact layout to facilitate enough functions to meet the needs from all social groups. At the same time, it maximized the green space, which is enclosed by trees, to bring a sense of freshness and nature to the high density urban setting. It invigorates social interactions of the neighborhood with the theme of health, and inspires children's interest in nature with water landscape (Gooood,2020).

Objectives

Invigorates social interactions of the neighborhood with the theme of health

Inspires children's interest in nature

Bring convenience to residents life

F 20 Water landscape

F21: Skateboard ground rejuvenates sports enthusiasts of different ages to share the fun of sporting

F22: Lawn is illuminated like ripples of water, softening the atmosphere of neighborhood interaction and healing the heavy stress of work

F23: Functional areas
1 plaza 2 lawn
3 fountain 4 stairs and sittings
5 skateboard ground 6 jogging track

Key findings

Avoid conflicts and encourage encounter through design and layout
Human-oriented street scape design meets the pedestrians' need for walking, road-crossing, taking public transport and waiting for interchange.
Lighting design to create relaxing atmosphere
Detail design for safety for children and sports player.

Key principles used

➤ Principle 2 Proper spatial arrangement that motivations people to use the space

➤ Principle3 Ensure public facilities for necessary activities.

➤ Principle 8 Proper arrangement within public space

➤ Principle 9 Create suitable environment for outdoor activities

➤ Principle11 Cultivate people's attachment to the place
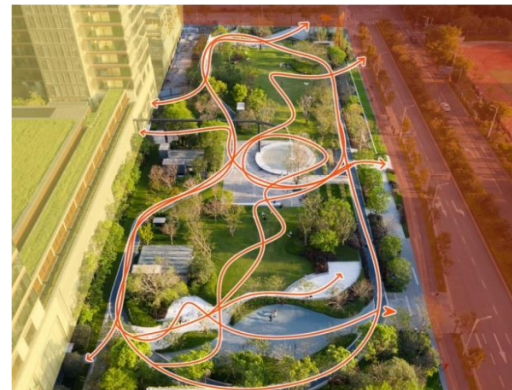
F24: Movements and connectivity

Case study 4

3#/8# transformation, China

The project mixes spaces to provide more convenient, cheaper living space and service facilities for different communities. Interactions between different groups are encouraged by the similarity in culture – food. The daily household activities - cooking raise communications among communities. In traditional culture, cooking and diet activities shared in clan communities are always the carrier of communities' publicity. They are especially more common during festivals, weddings and funerals. However, various local and outsider communities gather together today, and there is certain estrangement in their social network (Gooood, 2018b). 3# focuses on the scale of children, and divides small spaces with partitions so that children can climb, hide and play intimately. The design of 8# focuses on the way the elderly move, providing low steps, a wide viewing platform and a theatre where they can watch traditional plays.

Social groups: Migrant, children & retired people.

Objectives

Provide more convenient, cheaper living space and service facilities for different communities.

Encourage interaction and avoid conflict at the same time.

Key findings

Transform existing building to new public space to provide more chance for people to meet.

Encourage interaction by the similarity in culture – food.

Provide space for different age group.

Key principles used

➤ Principle 1 Proper Quantity and size of public space that suited with density

➤ Principle 3 Ensure public facilities for necessary activities.

➤ Principle 5 Involve various dimensions of activity spaces

➤ Principle 10 Put people first and acknowledge diversity and differences

➤ Principle 11 Cultivate people's attachment to the place

F 25: Bird's-eye view

F26: 3#

F27: 8#

Case study 5

Parque O2, Costa Rica

The installation was built in an abandoned sports center park using colorful bamboo totems. Spatially, the installation linked a railway and an organic market and pass through a public green space. The visual connection is also reinforced by the esthetic work.

More importantly, the establishment of practice got support from local environmental volunteer groups and non-profits. The design process was aided by local architecture students, university faculty and experts. Residents, volunteers and migrants helped in the construction process. These approaches have broadened participants' understanding of the project, strengthened residents' sense of belonging and encouraged more people to participate in community activities.

Social groups

Students, local residents, experts, volunteers & local workers

Objectives

Encourage public participation
Civic and cultural renewal.

Key findings

Use colorful installations to forge a spatial and visual connection between diverse conditions.
Engage the local community, involved them throughout the entire design-build process
Create scenery and image for the space and provide aesthetic atmosphere
Visualize air pollution to alert residents

Key principles used

➢ Principle 1 Proper Quantity and size of public space that suited with density

➢ Principle 7 Ensure connectivity and accessibility.

➢ Principle 9 Create suitable environment for outdoor activities

➢ Principle11 Cultivate people's attachment to the place

➢ Principle 12 Encourage participation

F28: Design

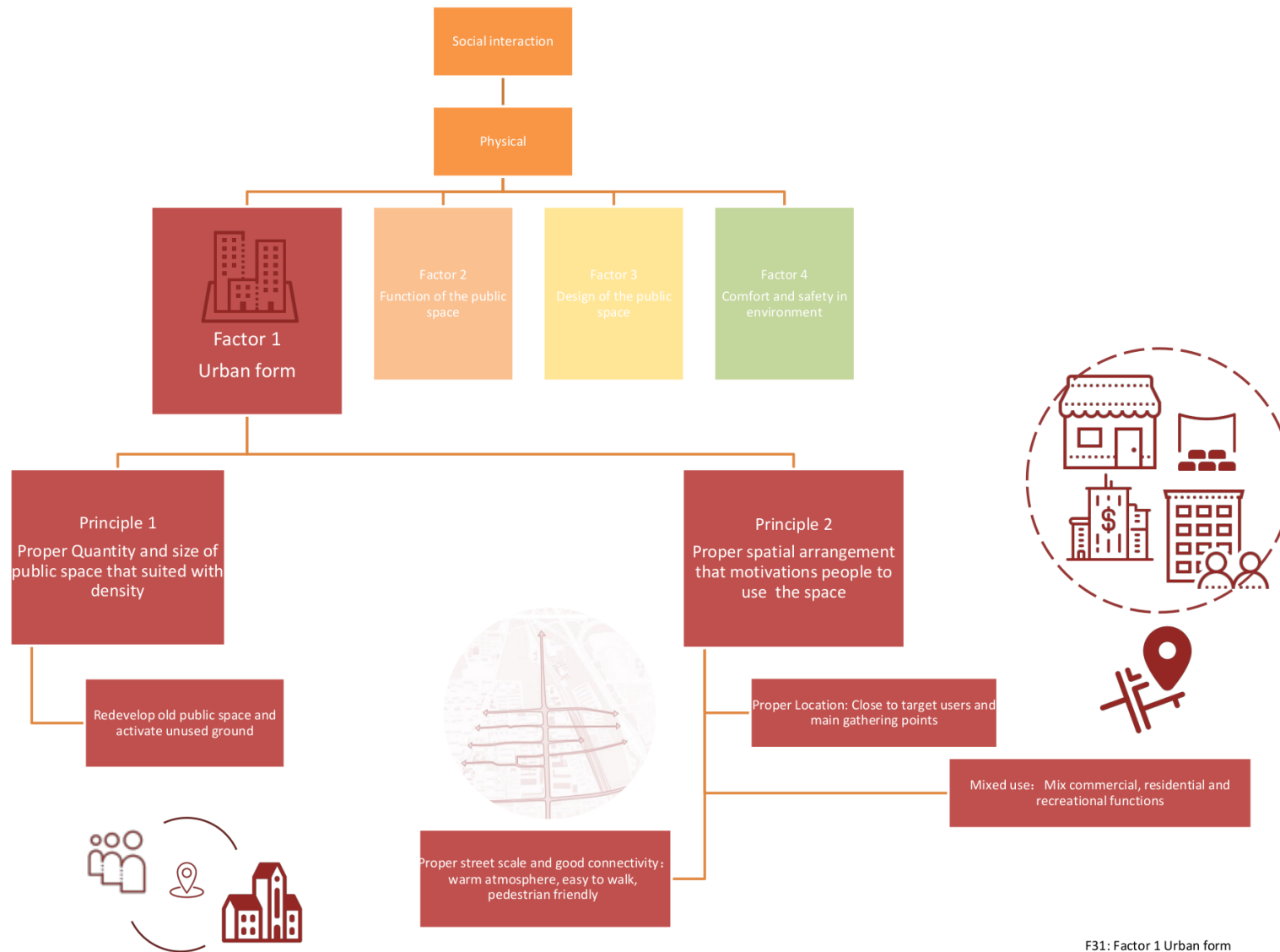F29: Installations

F30: Lighting at nignt

Summary of key findings

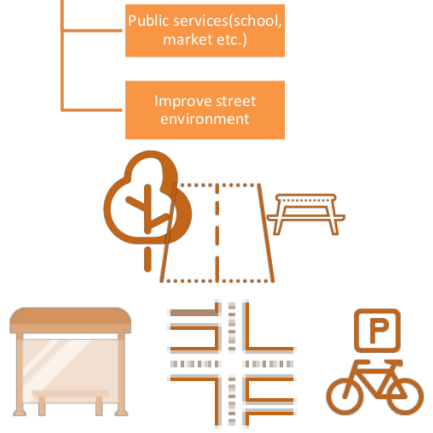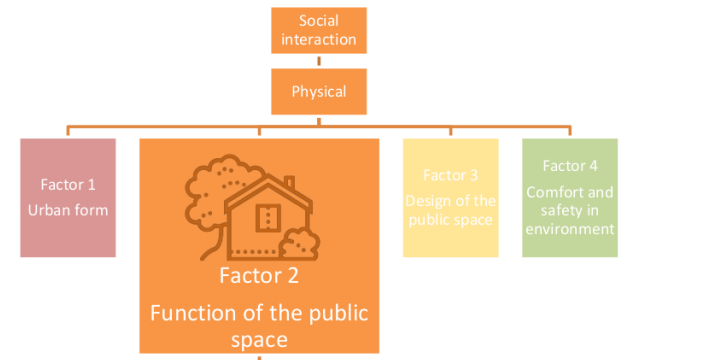Table 3: Design tools and interventions in case studies

Case	Factor 1 Urban form	Factor 2 Function of the public space	Factor 3 Design of the public space	Factor 4 Comfort and safety in environment	Factor 5 Inclusiveness	Factor 6 Participation in social activities
Parc Central de Nou Barris	Demolishing old buildings and create new public space	Transform old buildings to public libraries Urban park with lawn, stairs, children's playing facilities	Integrate the area spatially by linking new open spaces to older grounds.	Use green infrastructures to provide shade	-	-
Wilmington Waterfront Park	-	Intervention: adventure playground, plaza, pavilions, performance venues.	Encourage active and passive uses of the public space by providing seats, interactive water features. Design through movement and offer animated view. Use Bridges to increase connectivity	Use trees as noise buffer Efficient use of light	Provide flexible venues to suit temporary activities.	Encourage participation by allowing community to decide the function.
Shenwan Street Park	-	Intervention: plaza, fountain, skateboard ground, jogging track. Public facilities: all-weather metro entrance, taxi pick-up/drop-off, temporary parking for public bus, waiting area for street- crossing pedestrians, and bicycle parking	Avoid conflicts and encourage encounter through design and layout. Using lawns as buffer to separate different functions. Separate quiet and noisy areas.	Lighting design to create relaxing atmosphere	Detail design for safety for children and sports player.	Rain water recycling fountain to highlight the image of nature.
3#/8# exhibition hall transformation	Transform existing building to new public space	-	Provide space for different age group.	-	Encourage interaction by the similarity in culture – food.	-
Parque O2	Redevelop old public space	-	Use colorful installations to forge a spatial and visual connection	-	Visualize air pollution to alert residents	Involved the local community throughout the entire design-build process Create scenery and image for the space and provide aesthetic atmosphere

30

Design toolkit

Social interaction

Physical

Factor 1
Urban form

Factor 2
Function of the public space

Factor 3
Design of the public space

Factor 4
Comfort and safety in environment

Principle 1
Proper Quantity and size of public space that suited with density

Redevelop old public space and activate unused ground

Principle 2
Proper spatial arrangement that motivations people to use the space

Proper Location: Close to target users and main gathering points

Mixed use：Mix commercial, residential and recreational functions

Proper street scale and good connectivity：warm atmosphere, easy to walk, pedestrian friendly

F31: Factor 1 Urban form

32

Social interaction

Physical

Factor 1
Urban form

Factor 2
Function of the public space

Factor 3
Design of the public space

Factor 4
Comfort and safety in environment

Principle3
Ensure public facilities for necessary activities.

Public services(school, market etc.)

Improve street environment
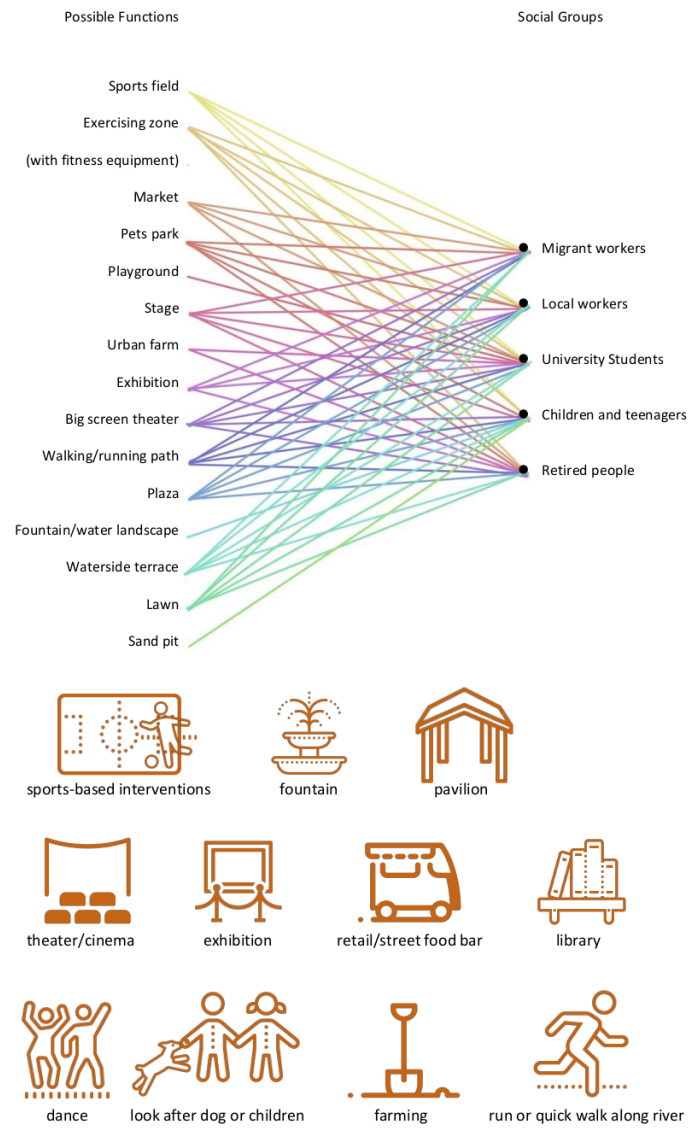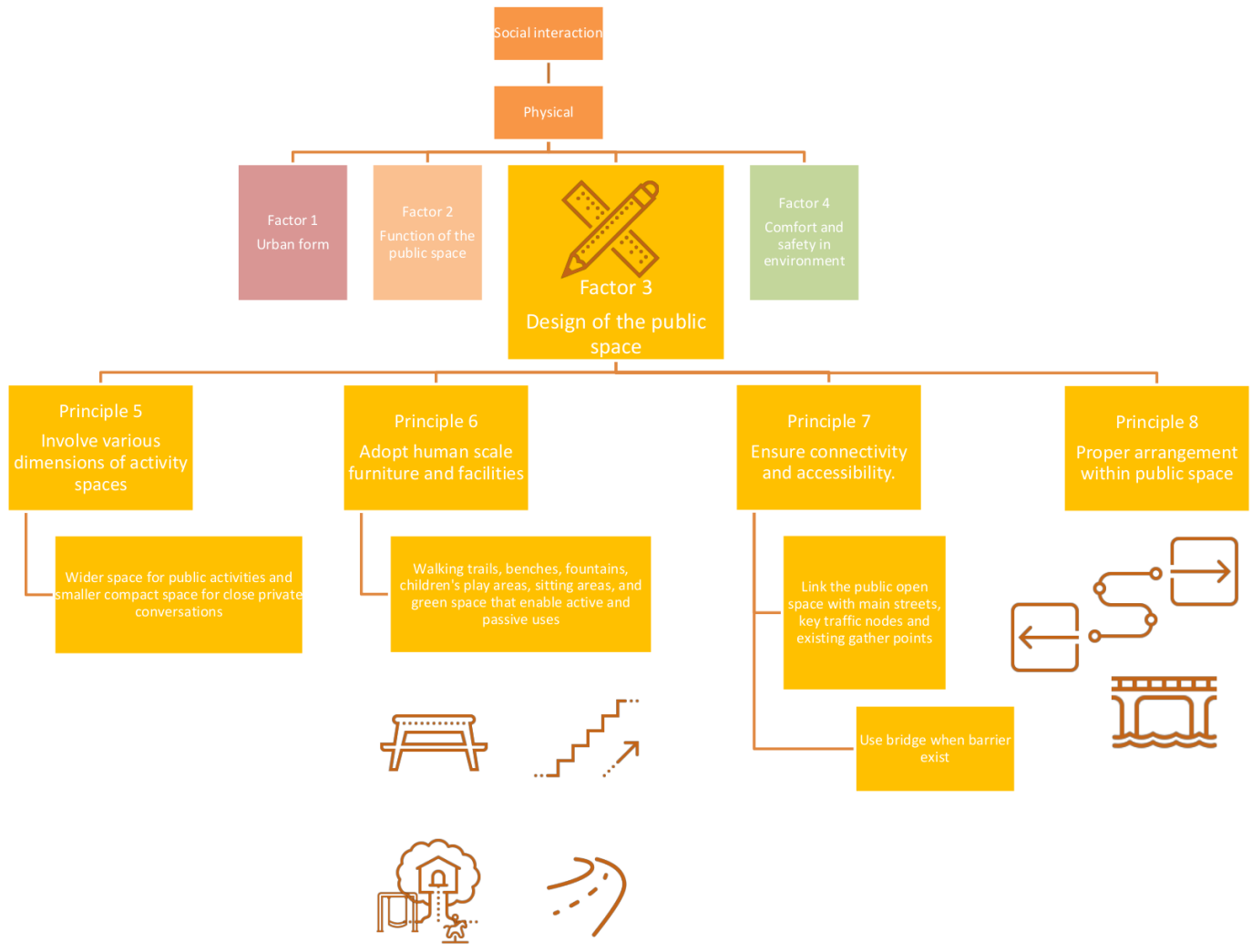
Bus station with shelter, crossings that ensure safety and accessibility, green infrastructures to provide shade, benches for rest, bike parking areas to storage share bike.

Principle 4
Accommodate various recreational activities

Create combination of activities

Leisure and urban park, recreation zone, pocket park, stage, plaza

Bring indoor activities to outdoor

Encourage shared activities dance, look after dog or children, farming, running or quick walking along river

Possible Functions

Sports field
Exercising zone
(with fitness equipment)
Market
Pets park
Playground
Stage
Urban farm
Exhibition
Big screen theater
Walking/running path
Plaza
Fountain/water landscape
Waterside terrace
Lawn
Sand pit

Social Groups

Migrant workers
Local workers
University Students
Children and teenagers
Retired people

sports-based interventions

fountain

pavilion

theater/cinema

exhibition

retail/street food bar

library

dance

look after dog or children

farming

run or quick walk along river

F32: Factor 2 Function of the public space

33

Social interaction

Physical

Factor 1
Urban form

Factor 2
Function of the public space

Factor 3
Design of the public space

Factor 4
Comfort and safety in environment

Principle 5
Involve various dimensions of activity spaces

Principle 6
Adopt human scale furniture and facilities

Principle 7
Ensure connectivity and accessibility.

Principle 8
Proper arrangement within public space

Wider space for public activities and smaller compact space for close private conversations

Walking trails, benches, fountains, children's play areas, sitting areas, and green space that enable active and passive uses

Link the public open space with main streets, key traffic nodes and existing gather points

Use bridge when barrier exist

F33: Factor 3 Design of the public space

34

Left diagram

Social interaction

Physical

Factor 1
Urban form

Factor 2
Function of the public space

Factor 3
Design of the public space

Factor 4
Comfort and safety in environment

Principle 8
Proper arrangement within public space

Arrange through movement and other possible movements

Arrange lay out of the space to avoid conflicts and encourage encounter.

Manage time table and user groups for different activities.

Separate noise and quiet, lively and steady, public and private

Separate pets, children and rest of activities

Use blue and green infrastructure as buffer

F33: Factor 3 Design of the public space

Right side

Table 3 Classification of functions
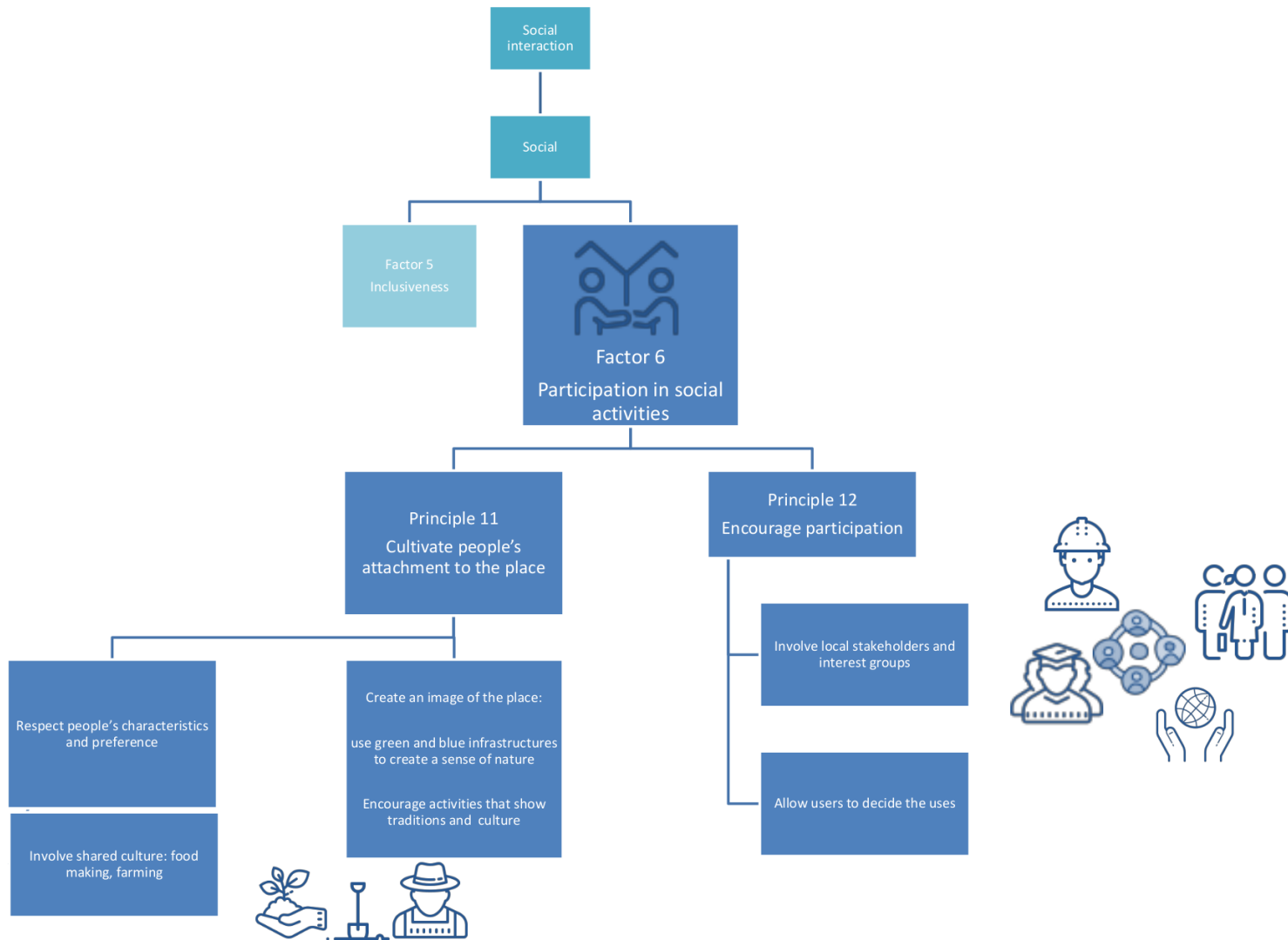
Quiet	In the middle	Noisy
Urban farm	Exercising zone (with fitness equipment)	Sports field
Exhibition	Playground	Market
Walking/running path	Fountain/water landscape	Pets park
Waterside terrace		Stage
Lawn		Big screen theater
Sand pit		Plaza

Stay	Both	Move
Urban farm	Exercising zone (with fitness equipment)	Sports field (movement within the field)
Exhibition	Playground	Pets park (movement within certain area)
Waterside terrace	Fountain/water landscape	Walking/running path (movement follows linear route)
Lawn	Market	
Sand pit	Plaza	
Stage		
Big screen theater		

Fixed uses	Flexible uses	Temporary uses
Waterside terrace (stand, chat, sit, walk)	Urban farm (farming, gardening)	Exhibition
Lawn (walk, sit, picnic)	Sports field (different kinds of sports)	Market
Sand pit (play)	Exercising zone	Stage
Fountain/water landscape (watch, play)	Playground	Big screen theater
Pets park (walk, run, play with pet)	Plaza (square dance, trach and learn, sing, exercise such as Taiji gongfu)	
Walking/running path		

Social interaction

Physical

Factor 1
Urban form

Factor 2
Function of the public space

Factor 3
Design of the public space

Factor 4
Comfort and safety in environment

Principle 9
Create suitable environment for outdoor activities

Shading system: trees, sun umbrella that create cooler areas and provide shelter on rainy days

Lighting design: highlight key element, soft atmosphere light, street lamp.

Noise control: trees and green walls, soundscape design that provide nature sound from water, bird, plants.

Wind control: Plant trees at the edges.

Green and blue infrastructures to create comfortable and relax atmosphere

Social interaction

Social

Factor 5
Inclusiveness

Factor 6
Participation in social activities

Principle 10
Put people first and acknowledge diversity and differences

Provide multiple choices

Provide flexibility in use, support temporary uses

Provide more affordable functions such as open theater and sports field

Friendly to disabled and elderly: slop, handrails, flat soft surface.

Social interaction

Social

Factor 5
Inclusiveness

Factor 6
Participation in social activities

Principle 11
Cultivate people's attachment to the place

Principle 12
Encourage participation

Respect people's characteristics and preference

Involve shared culture: food making, farming

Create an image of the place:

use green and blue infrastructures to create a sense of nature

Encourage activities that show traditions and culture

Involve local stakeholders and interest groups

Allow users to decide the uses

F38: Factor 6 Participation in social activities

Application

Site Location – College Road Community, Beijing, China

F39: China

F40: Beijing

F41: Haidian

F42: The college road community

China has a vast and its culture is far stream long, profound and colorful. Due to the differences of geographical location and natural conditions, each province or city has own characteristics in humanity and economy.

As the capital of the People's Republic of China, Beijing also serves as a political center, a cultural center, a center for international exchanges, and a center for scientific and technological innovation. Among the 21.536 million permanent residents, the number of migrants reached 7.943 million. Beijing's climate is a typical warm temperate semi-humid continental monsoon climate, high temperature and rain in summer, cold and dry in winter, short in spring and autumn.
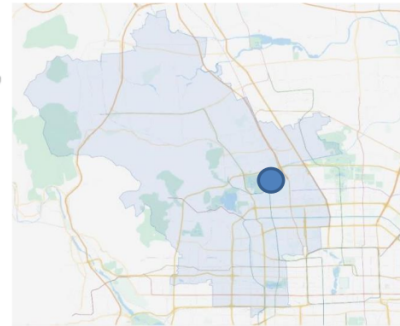
Haidian district gathered many scenic spots and historical sites. It occupies the first place in the area of water in the outskirts of Beijing, and there are many lakes and springs in history. The Xiaoyue canal is 10.25 kilometers long and has a basin area of 27 square kilometers. The river run through the district from south to north. As for industry, Zhongguancun Science and Technology Park is responsible for computer, communication, electronic equipment manufacturing and high-tech manufacturing, which occupies an important position in China

Located close to the North Fifth Ring Road, the college road community is in the outskirts of Beijing, with many residential areas being renovated and rebuilt. It has a diverse social structure as well as many domestic first-class institutions such as China agricultural University, Beijing Forestry University. The community locate close to the large ecological park (10mins by car), the Olympic Forest Park, which provides open public space for the northern part of the city, but the park large in size. So that people usually stay with friends and family, rather than interact with strangers. In addition, in side the college Road community less public open space can be found.
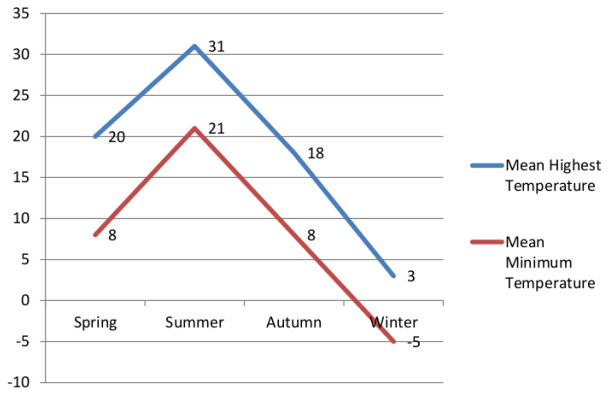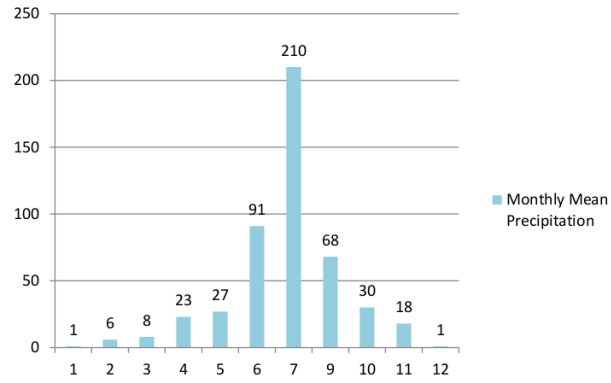
Weather

Table 4 Mean Temperature
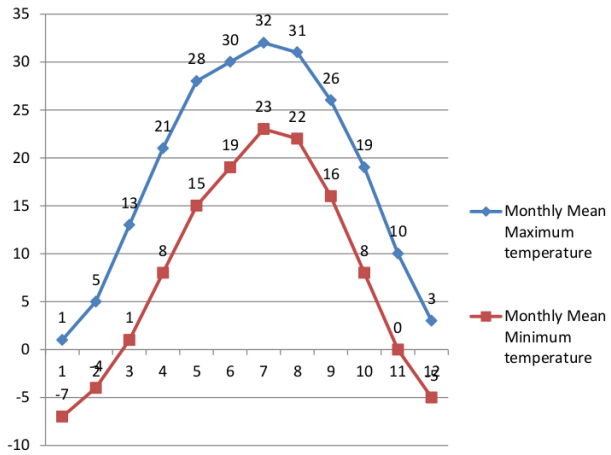

Table 5 Mean Precipitation

Table 6 Monthly mean maximum and minimum temperatures

The climate of Haidian District is characterized by high temperature and rain in summer and cold and dry in winter. The coldest month is January and the hottest month is July. In summer, from June to August, the humid weather usually accompanied by sudden thunderstorms. In winter, the temperature is relatively cold, but it has less impact on people's daily life. In snowy weather, the phenomenon of icing will have a certain impact on outdoor activities. In the history of Haidian District, the main natural disasters are earthquake, drought, flood, strong wind, hail, insect pests and so on (Lishitianqi, 2020).

Culture

Chinese Opera

Chinese opera is mainly composed of folk song and dance, rap and burlesque. It originated from primitive singing and dancing, which is a kind of comprehensive stage art style with a long history. It consists of literature, music, dance, fine arts, martial arts, acrobatics and performing arts. It is characterized by the aggregation of many art forms and standard, reflecting their individual characteristics in the common nature (Li &Chen, 2011). People can learn about local cultures through the performance and appreciation of operas. And in the process of communication the culture will be carried on.

F43: Chinese Opera

Poetry and Literatures

The poetry culture deeply and vividly embodies the basic spirit of Chinese culture. Among the three basic categories of literature -- poetry, prose and narrative literature, traditional Chinese literature has made particularly brilliant achievements in poetry and prose.. In the school, students can deeply read ancient poems and classics, appreciate the charm of traditional culture, enhance cultural heritage, and promote independent development, which is an important topic for the school to promote traditional culture and education. It is also the mission that Haidian district, as a large area of education, culture and science and technology, has been carrying out (Wang, 2018).

F44

Traditional sports

The martial arts used in folk training (Wushu) mainly focus on fist and palm activities. People make consistent and physical exercises by referring to the inherited fist and palm techniques. This activity is considered to be an even exercise method in daily life by very advanced theory. Taiji is the most popular traditional martial arts in China. It has a long history, and a variety of activities from fist and palm to sword.

The shuttlecock itself is made of a special base and several feathers on it. People can hit the ball with all parts of their bodies. The number of participants can range from single person to multiple participants. Shuttlecock kicking is also considered to be an activity that can promote health.

Diabolo is a kind of Chinese folk entertainment activity. People hang a special object named diabolo on the top of two sticks. Players hold a stick in each hand and pull it back and forth, which can produce rotation and buzz with the speed. This activity allows people to enjoy the acoustic happiness while exercising their bodies.

F45/46/47: Taiji, Shuttlecock kicking, Diabolo

Land Use

Land use in this area is dominated by high-density residential areas, with many apartments of 20 stories or more. In the case of high density of residents, there are still two large area of vacant land under the construction of residential buildings. Along the north-south main road (the college road), there are a number of office buildings, most of which have retail such as convenience stores and public services such as gyms on the lower floors . However, those functions are usually not open directly to the street, but more for the people inside the buildings. On the one hand, it protects privacy and improves security. But on the other hand, they are not open enough, making it difficult for the public to use them as public resources and reducing the possibility of people meeting between different clusters. In addition, each functional area is usually isolated, and buildings are usually enclosed which form semi private courtyards, that makes various functions isolated from other functions. Mixed use is not enough in the region.

F49/50: High density communities

Residential

Educational

Commercial

Mixed office and retail

Mixed resi. and retail

Industrial

Institutional

Construction site

(residentional)

F51: Residential buildings under construction

Social Background

In the 'College Road Sub-district' over 240,000 populations share 8.49 square kilometers of land. Yet there is no enough public open space to adapt with the population. People in the community are lack of chance to interact with neighbours. As a result the social network is not strong enough.

According to the Haidian district people's government office (2020), relocation household, migrants, students and registered population together formed a diverse community. In College Road Sub-district, approximately 22% of the population are migrants. In communities such as Jianqingyuan and Yicheng certain blocks of replacement building allocated people that affected by housing demolition and relocation policy. In communities such as Jianqingyuan, staff dormitories for construction companies also provide accommodations for the migrants. What is more, 8 campuses also accommodate students, faculty members and their families.
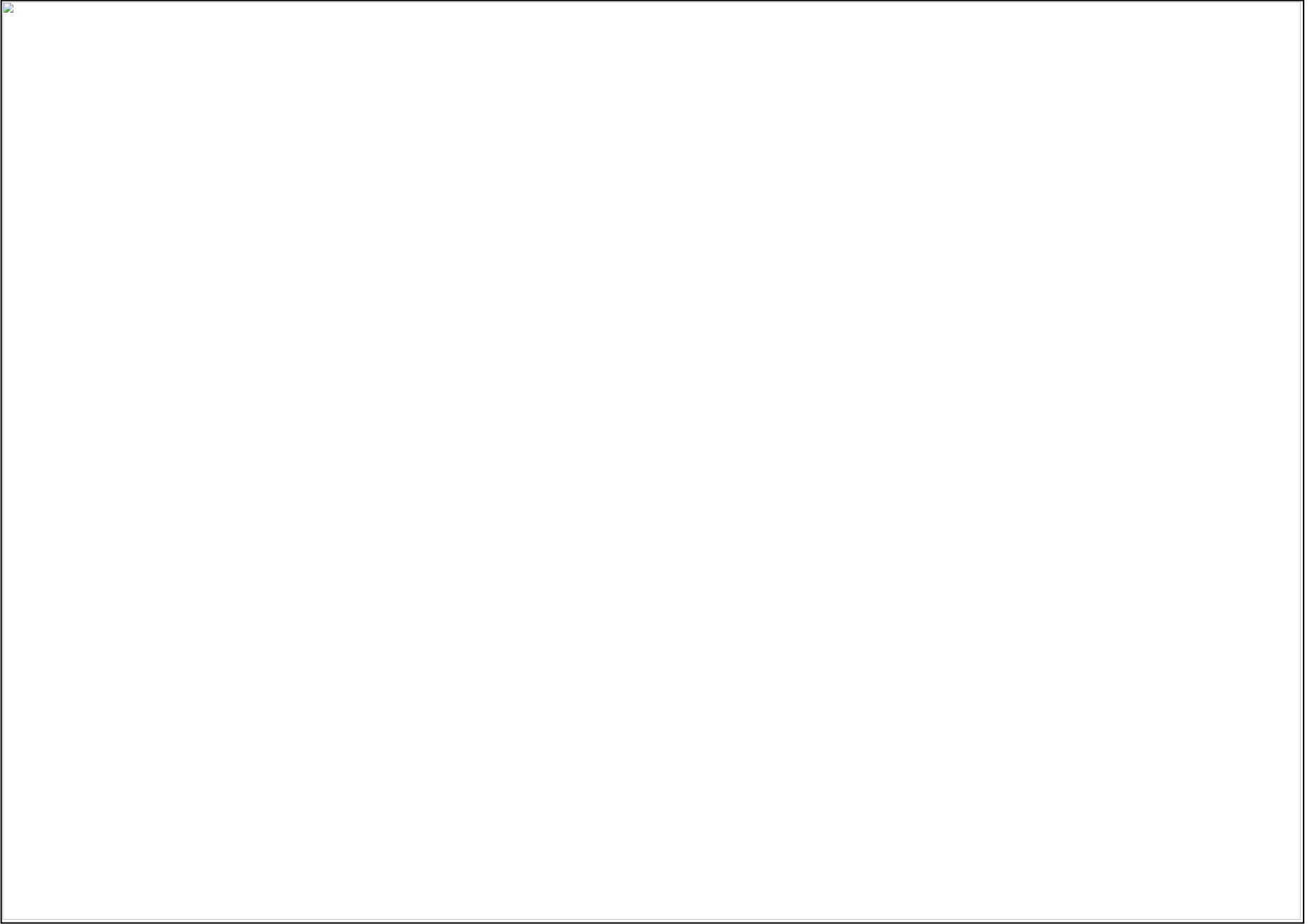
Migrants

Students

<div>
☐ Residential area

☐ Residential area under construction

☐ University campus

■ Office and commercial area
</div>

F52

Another problem is that people often ride shared bikes to and from work, so many unused bikes are piled up on both sides of the road during the weekday. On the one hand, these bikes take up the pavement and block traffic, on the other hand, they reduce the cleanliness of the area and discourage people from using the roads.

What is more, there is usually large amount of space between the road and roadside buildings occupied by parterres and lawns above the ground. Sometimes it's also used as a parking lot. Such spaces create physical isolation, making it difficult for the public to directly reach the shops on the ground floor and the public space in front of the building. So public activities are much less likely to take place.
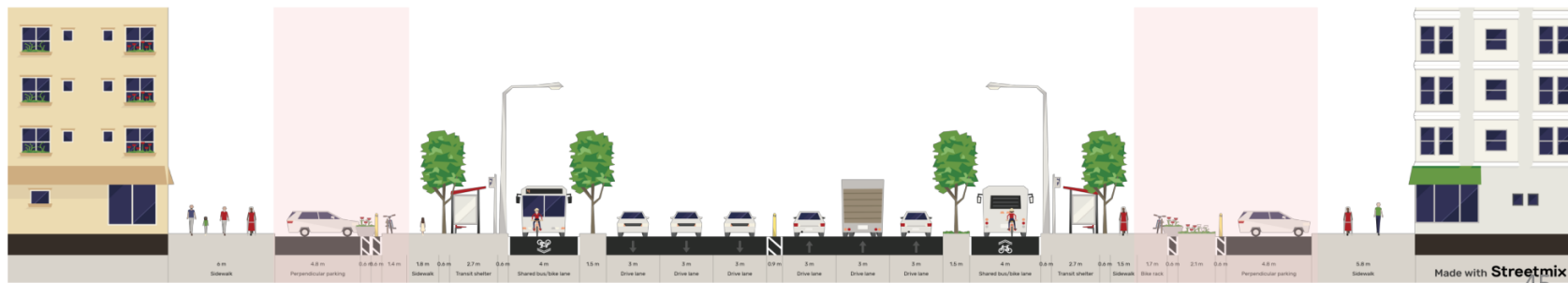

F53
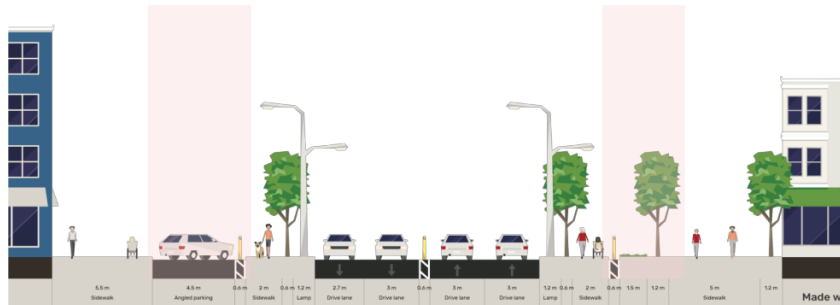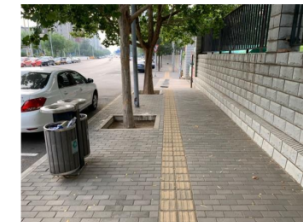
F54: Section of secondary road

F56-61: obstruction on the side walk

F55: Section of primary road

On

Application of Toolkits

Active Urban Form

Activate the existing green spaces at the riverside to provide recreational park for all the residents.

Upgrade existing riverside paths and small public gathering Spaces

Increase the level of mix-use in the area. Especially along primary road and secondary road. Involve local retail, food shop, bookstore, gym and community centres.
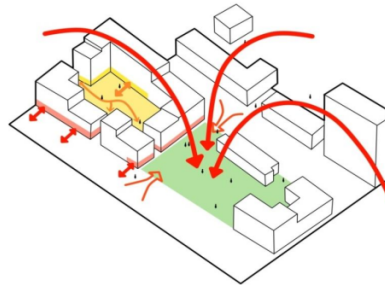
F67: The public spaces are mainly divided into public space and semi-public space. Public space like the recreational park that can be accessed by all the residents and visitors. Some ground floor facilities facing the main street also provide services to everyone.

F68: Proposed land use

■ Existing mixed-use

■ Proposed mixed-use

F69: Proposed public open space

■ Proposed recreational park

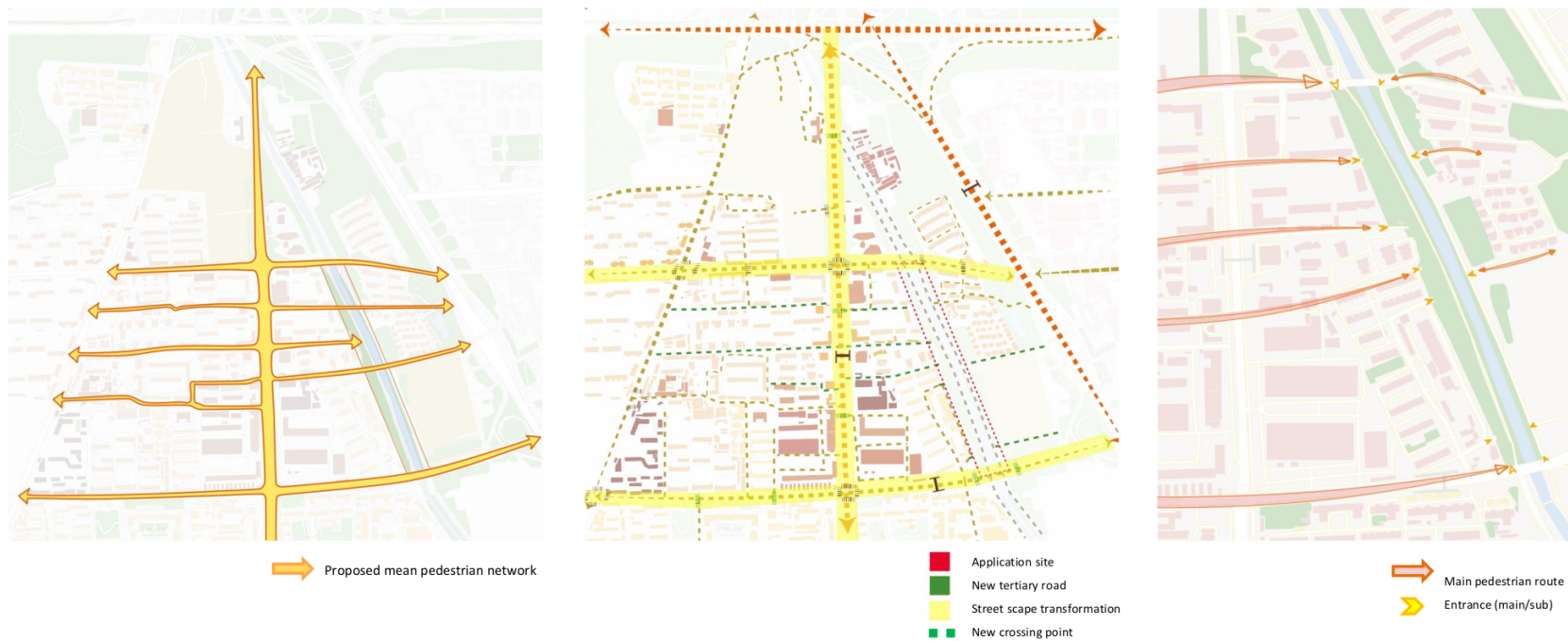■ Existing green space

■ Existing public open space

Application of Toolkits

Active Urban Form

Increase the accessibility of the site by connecting a number of east-west to third-level roads. These roads are usually located between two residential areas. The unblocked roads formed a new network of roads, allowing residents of residential areas in the west to walk or cycle to the park in less than 10 minutes.

The layout of the main roads has also been changed to make them more pedestrian-friendly through new street designs. Crosswalks will also be added where the new tertiary road connects to the main road.

In addition, according to the new road network structure, the Application Site will open more entrances to meet people's needs.


Proposed mean pedestrian network

Application site
New tertiary road
Street scape transformation
New crossing point

Main pedestrian route
Entrance (main/sub)

Application of Toolkits

Intervention

Pedestrian friendly streets

The boundaries between public and private spaces are deliberately blurred, allowing streets and other outdoor spaces to be used for work, entertainment, display and social activities

The pedestrian walkway is separated from the open space in front of the building by a lower flower bed or lawn, which on the one hand provides privacy and on the other hand makes the public open space more accessible. Add pocket park with mobile flower beds. Stay open as much as possible during the day when there is a lot of business.
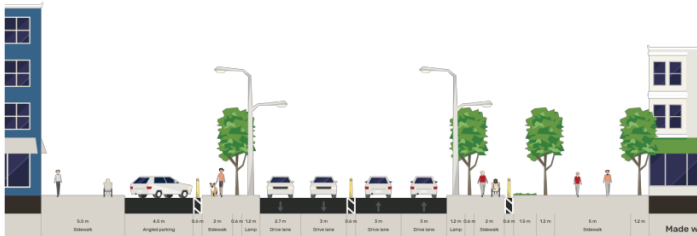
Original section

F73: Secondary road section

F74: Public facilities

Improve the quality of public facilities at existing public gathering points by providing seating, awning and planting flowers at bus stops. Advertise community events on billboards. The bike parking area is used to store the cluttered shared bikes.

Eco-friendly Bike Parking Area

Original section

F75: Primary road section

Application of Toolkits

Design

Arrangement of movement

According to the proposed network of new walking trails and new entrance to the site planned according to the urban form planning tools, look for possible action tracks. Create new paths and bridges to improve connectivity and plan major routes within the site.

Keep key movement such as circular pathway at the edge of the space and cross pathway that links the entrances. So the space is divided into small pieces, within each small area residents can walk and move freely, rather than restricted by the route.
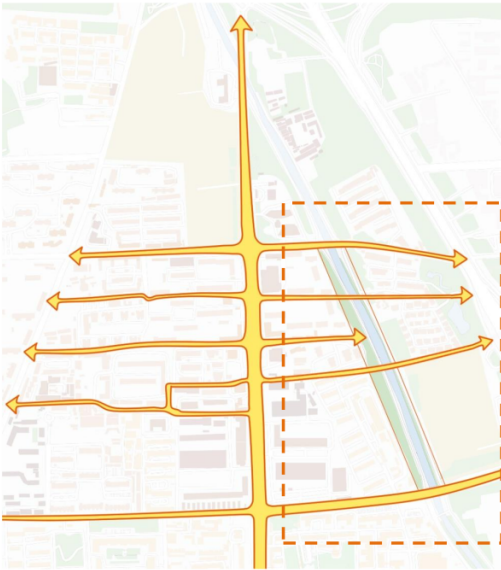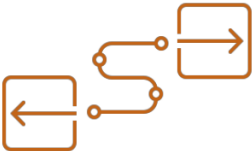
F76-79

New Route

Bridge

Walking route

Running path

Application of Toolkits

Design

Arrangement of space

Within each small area that is partitioned, set new functionality. Use trees, shrubs, lawns and Bridges to isolate quiet and busy areas. Enrich the rhythm of the space

Temporary functions such as local market and exhibitions can be hosted on the small square s that connected by the two main entrances on the north and south. Circular jogging paths are available for people to go for a quick walk or jog together. Green facilities along the road can be flowers and crops raised by residents themselves in form of green walls and farming zone. Lawns and benches along flagstone pavement provide space to rest, picnic or chat. in the central part of the park, the large square can be easily set up as a stage or projection screen to bring happiness to the whole community during holidays or special occasions. Fitness and sports areas, pet parks and playgrounds are linked together to provide a means of recreation for people of all backgrounds.
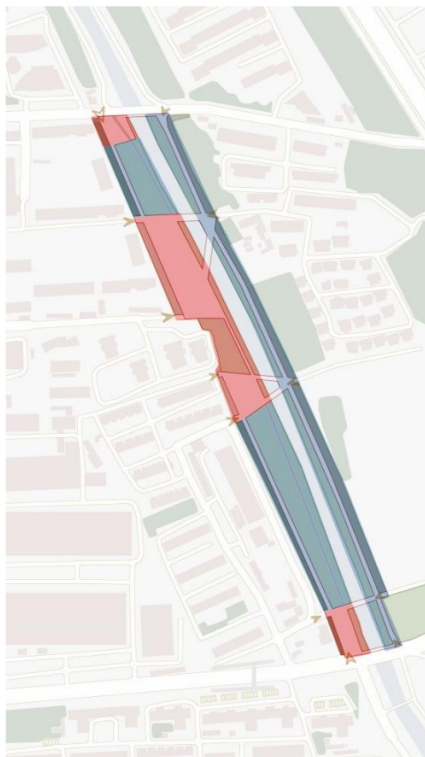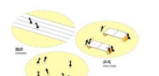
Noisy zone

Quiet zone

F80

1 Square

2 Lawn

3 Exercise zone

4 Pets park: Enclosed space surrounded by railings

5 Playground with fountains, sandpits and waterside terrace

Solid surface

Flagging

Lawn

Green wall and farming zone

Sound barrier

Canal

Entrance

F81 functions

52

Application of Toolkits

Environment

Lighting
High and low street lamp

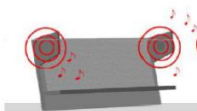
Atmosphere lamp

Acoustic
Noise barriers for residential areas

Sound from fountains and streams

Sound speakers in quiet place

Green infrastructure

Use fruit tree (such as apricot, plum, hawthorn or persimmon tree); crops (heat, corn, sweet potatoes) and flowers (Chinese rose, Chinese herbaceous peony) adapted to the local climate to enrich the landscape and enhance its attractiveness

Thermal
Trees provide shade

Lawns

Fountains and streams

Safety
Guardrail around water and pet park

Rubber flooring for sports areas

Key lighting areas

Application of Toolkits

Social

Inclusive through culture

Events held in markets, exhibitions, stages and open-air theatres should come from the daily life of citizens. The community can arrange to create a culture-friendly atmosphere for the whole area, so that people can be more willing to participate in the activities. Those activities may also enable all social groups to exchange, share their own experience and knowledge, and at the same time, learn more from each other. This will help them build good interpersonal relationships and strengthen mutual understanding and trust between people.

For example, in the local market, both locals and migrants from various provinces or countries can sell and exchange products or food that are unique in their homeland. Let citizens communicate with each other in the process of exchanges and purchases. The exhibitions, can also reflect the integration of cultures.

In the exhibition, it can also reflect the integration of cultures. The content of the exhibition can include the history, traditional culture and art of Haidian District, and introduce the residents to the places worth visiting in Beijing. The exhibition can also make use of the advantages of electronic technology and innovative technology in Haidian District to have a novel and interesting interaction with the public. Cooperating with surrounding universities, it can also provide a platform for students to display their research achievements.

The detachable stage and screen can either provide a way for residents to present themselves, or be managed by the community, in collaboration with volunteers and civil society organizations, to bring traditional Cultural performances such as Traditional Chinese operas and skits, or to broadcast films and sport matches.

Application of Toolkits

Social

Public engagement

Communities can encourage the participation of residents in the decision-making and preparation of many of these cultural events. The existing neighborhood committee system in the community provides a way for all residents to express their opinions. Make full use of the system to learn about the activities that residents really love and want to participate in. In this way, residents' sense of belonging to the community is strengthened, and the community's tolerance to different voices is also improved.

In particular, many of the community's migrant workers come from urban construction groups, which are responsible for the entire site. At the same time, students and teachers from China Agricultural University and Beijing Forestry University, young people and retired people with farming experience can participate in activities such as planting trees, planting crops and building flower beds or green wall. Social interaction will be embedded in the process. And since people communicate more with each other, they will be more familiar to the place as well as making more friends. In the completion, all social groups, can usher in the accomplishment together. Also ushered harvest happiness together from witness the growth of flowers and crop. In the harvest season, residents and share the food together and sell the rest of the goods in the local market.
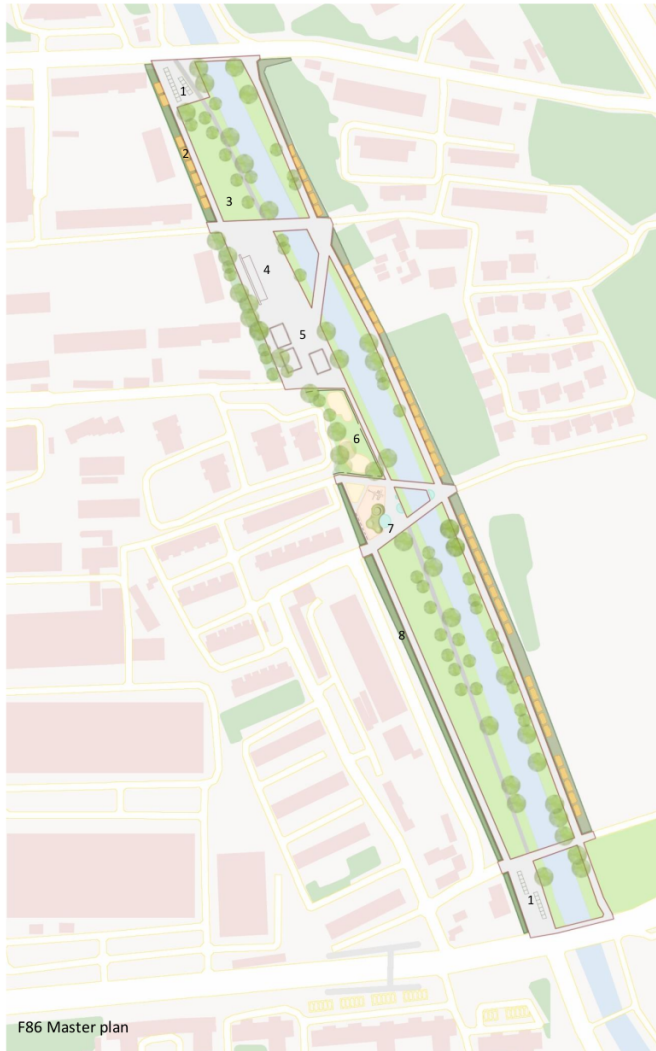

F83/84

F85

Combined intervention
Recreational park

Children's playground, with hydrophilic amusement facilities, let children interact with nature. Accompanied by parents can take a rest and sit on the steps.

Markets and community farms provide a way for residents to produce and sell their own food, allowing them to communicate with each other as they farm and buy food.

The bridge is protected by guardrail. The plants add visual coherence for the place and give people pleased feeling.

1 entrance square
(markets/exhibitions)
2 community farm
3 lawn
4 central square(open theater)
5 sports field
6 pet park
7 children's play ground
8 green wall sound barrier

Conclusion

Conclusion

China has a vast and its culture is far stream long, profound and colorful. Due to the differences of geographical location and natural conditions, each province or city has their own characteristics in humanity and economy. One side of the soil and water samples one side of the people. Such economic and social and cultural differences have a profound impact on people's eating, behaviour and travel habits in different provinces. However, when the population began to migrate as a result of economic development and rapid urbanization, people from diverse cultural and socio-economic backgrounds gathered. Especially in big cities, there is a natural gap between people.

This project is based on the concern that in order to enhance social cohesion within an area, strengthen social networks and care for the physical and mental health of each individual, the urban environment, especially the public spaces, should provide a conducive environment for people to communicate as much as possible. However, with the rapid urbanization in developing countries, planners often blindly pursue benefits and efficiency in the practice of urban planning, which ignore the role of public space. The project looked at these phenomena and thought about the power of public space and social interaction by asking questions and try to provide strategies that encourage interpersonal communication by providing and designing public spaces, although this is not just a simple solution.

The project helps to address how to systematically deliver high quality public space design and interventions by providing a toolkit that focuses on a variety of influencing factors, on underperforming sites. At the same time, based on literature review and case study, the project realized that because social interaction is a human behaviour, the encouragement of its occurrence should not rely solely on top-down planning, design and one-way unidirectional provision. Bottom-up changing pattern is more important, which involves encouraging communication to occur naturally and participate voluntarily in the development. Therefore, the project proposes to pay attention to both physical and non-physical factors, that is, while paying attention to the urban environment, the influence of social factors is added. Based on the five important factors of urban form, function, design, environment, inclusiveness and social participation, the project further proposes twelve development principles, covering all aspects of the design and construction process.

The application of the toolkit attempts to illustrate the way these principles are presented in practical practice and to demonstrate their feasibility in high-density residential areas and the possibility of extending their application to a larger scale. Such tests were arranged on the College Road community in Beijing and demonstrated the usability of public space interventions to promote social interaction.

Although it is obvious that this is a theoretical experiment, and other difficulties may exist in practice in terms of implantation, such as negotiation with surrounding developers, financial and policy support or limitations. Another potential limitation of this toolkit is that, in the process of application, the measures in these toolboxes are extensive, but when they are implemented in different socio-economic and cultural contexts, they still need to be adjusted according to local requirements。The third limitation is that the user's response to the intervention is uncontrollable, and in practice the project needs to be adjusted and changed according to the response, in order to provide the public environment that the residents really need and want.

Finally, small changes are only the starting point for large-scale evolution. When all the public open spaces and detail designs in the city are valued, it will achieve a more powerful support of the elimination of barriers and give citizens a sense of trust in their place of residence, thus improving social cohesion and promoting social sustainability.
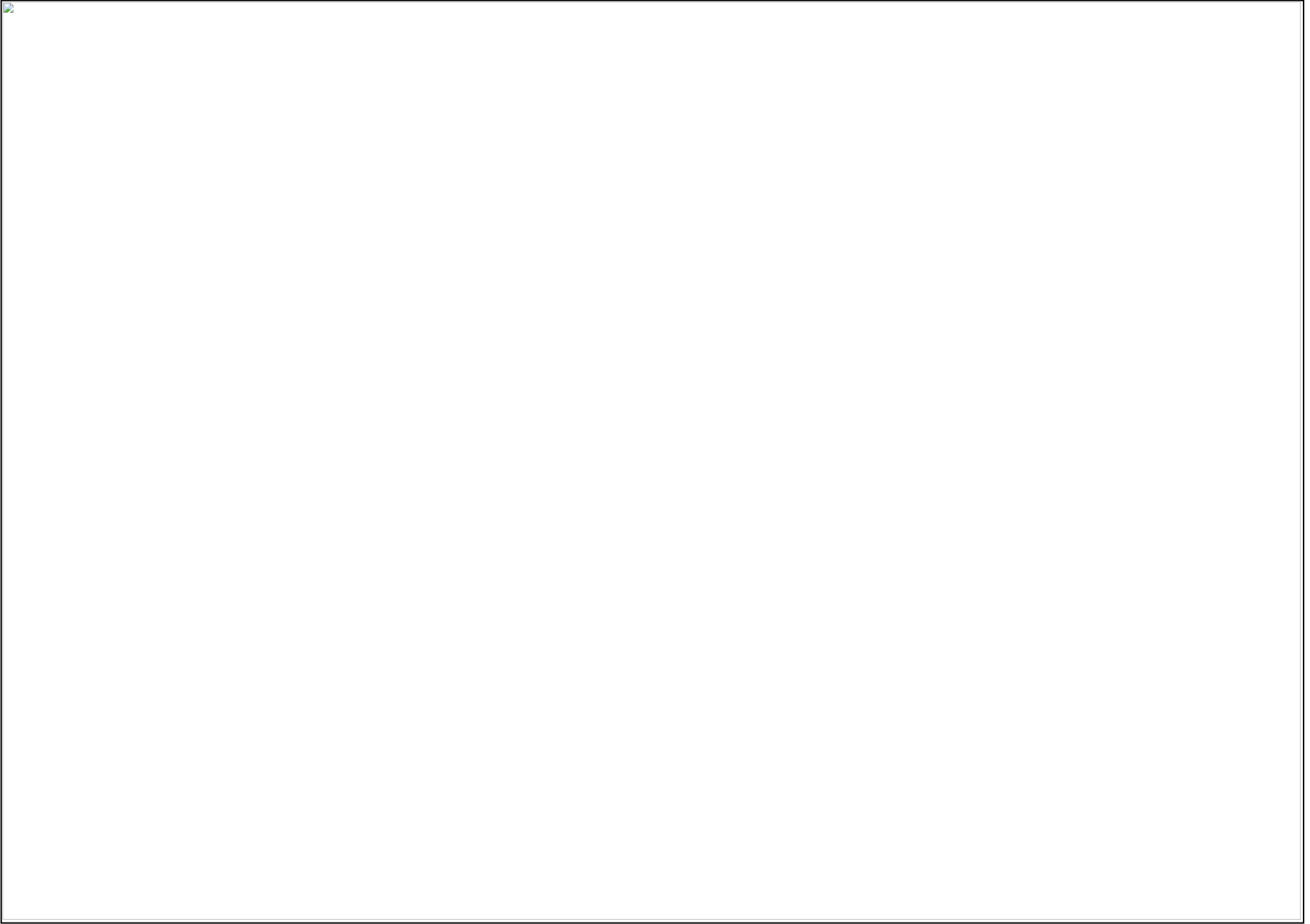
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