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November 26, 2021

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Dear Ms. Zhou

Here is my report for improving the road planning of Guixi Park to enhance the motivation of the community to the park. Thank you for the valuable comments you have given me during the data collection and information compilation process. And I appreciate your continued guidance.

The purpose of this report is to provide recommendations for improving the planning and construction of Guixi Park. The significance is to improve access to the park for residents of the Guixi community and to improve the experience of walking in the park.

Through the analysis, this report accomplishes the following components:

1. Find out the current level of participation of community residents going to Guixi Park.
2. Identify the nuisances that the current planning and design of Guixi Park causes to residents' access and enjoyment.
3. Provide recommendations for cost effective solutions to increase residents' use and experience of Guixi Park.

I hope the information in this report will be helpful to you. If you have any questions, please contact me via email at mengxichen1997@gmail.com

Sincerely,



Coco Chen

*Report for improving the road planning of Guixi Park to
enhance the motivation of the community to the park*



Prepared for: Chengdu Planning and Design Institute

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Abstract

Guixi Park is a community park located in the southern high-tech district of Chengdu, Sichuan, China. However, its current internal road plan makes the park's internal connectivity poor, and the highway group to the north of the park separates residents of the northern Guixi community from accessing the park. This ultimately results in Guixi Park not fully reflecting its functionality as a community park. In this report, a sample of Guixi community residents and park visitors were surveyed through a combination of online surveys and on-site interviews. The final sample of 104 collected indicates that the inadequate internal and external road design of the park is indeed one of the major dissatisfaction factors for residents and visitors. It also hinders the internal communication of Guixi community residents and indirectly causes the park to be less functional. Based on the results of the data analysis, ecological bridges are commonly used to address internal park connectivity, while pedestrian bridges can be used to separate pedestrian and vehicular traffic.

Based on these results, this report recommends that

1. Adding an ecological bridge connecting the east and west parts of Guixi Park internally.
2. Adding a pedestrian bridge at each of the northeast and northwest corners of Guixi Park to facilitate safe access to the park for visitors from the northern community.

Introduction

1. Background information

Chengdu is the capital of Sichuan Province in Southwest China, with a city history dating back 3,200 years. It is the center of logistics, commerce, finance, technology, culture, education, transportation, and communication in Southwest China. As of 2020, 16,581,000 permanent residents converge on these 14,335 square kilometers plain (Chengdu Bureau of Statistics). Communities are the cells of urban society and are the basic elements of urban society. With the development of modern cities, the pace of community building in Chengdu is also accelerating. Community Park, as an important part of residential areas, directly affect the daily behavior and psychological and physical health of residents. A good community park can provide an outdoor communication place for community residents, improve neighborhood relations, and enhance emotional communication between people in an increasingly indifferent city. With the development of society, the requirements of people for living environment are also increasing, and community parks have become the closest place for outdoor activities in people's lives. As a basic component of urban communities, the degree of construction of community parks and community planning has an increasing impact on community development, and community building is of great importance to promote the development of Chengdu.

Guixi Park is a community park of about 1.2 million square meters in the southern high-tech zone of Chengdu City, Sichuan, China. As a green space for sponge city (a new

urban construction model for flood management, strengthening ecological infrastructure and drainage systems), Guixi Park relies on natural topographic conditions to reshape the water system pattern, ecology, and landscape (Tianfu Greenway). It is also a park that functionalizes the existing flood drains, lakes, and ponds, and strengthens the flood detention and storage capacity. Its design maximizes the park's rainwater re-infiltration capacity and forms a rainwater re-circulation system. At the same time, providing space for nearby residents to interact with each other and make new friends is one of its important meanings as a community park (Chengdu Municipal Development and Reform Commission). The Guixi community is an area with a high concentration of high-tech industries in Chengdu, and most of its residents are engaged in high-intensity technology industries. Due to the long hours of indoor work, these residents have a strong need for a park within walking distance (Patrick and Regina). Guixi Park is an excellent place for people in the Guixi community to hold events and conduct recreational activities. The Park planners hope that this will strengthen the sense of community among the residents of the neighborhood.

The map of Guixi Community and Guixi Park is shown in Figure.1, where a highway divides Guixi Community (the highlighted blue section in Figure 1) into two parts and Guixi Park (the highlighted green section in Figure 1) is located to the south of the Highway (the darkened yellow line above the Guixi Park in Figure 1). Due to this road plan, it is difficult for people in the northern community to access the park, even though it is an open park with no fences on all 4 sides. Residents of the northern community

often complain that there are no parks nearby for recreation: Guixi Community Park is difficult to access on foot or by bike, and other community parks are too far away.

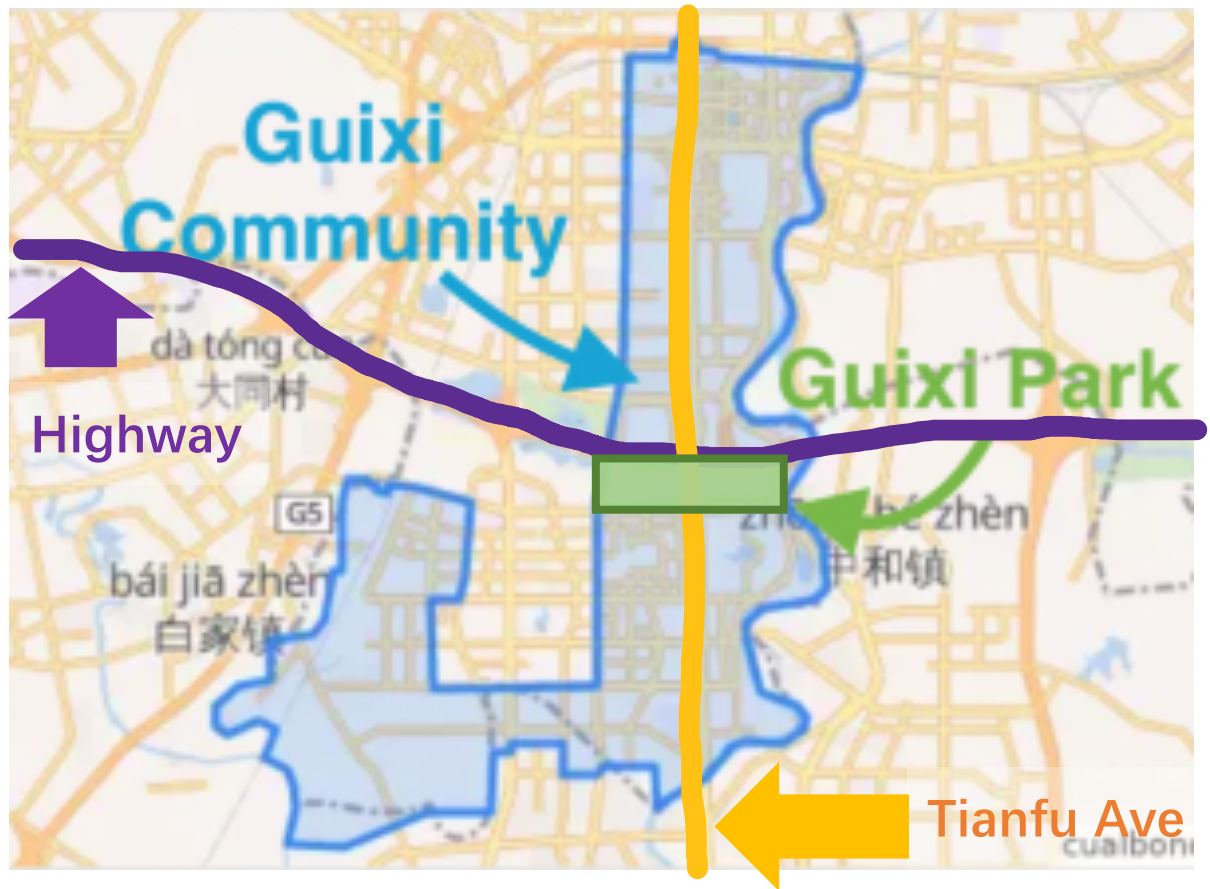


Figure.1: The extent of the Guixi community (The blue part on the figure) and the location of Guixi Park within it (The green part on the figure) (Google Map).

At the same time, the community park is separated by an avenue that runs north and south into two small parks of the same size with no intersection (shown in Figure.2). Thus, the park loses its meaning to bring communication to the surrounding residents.

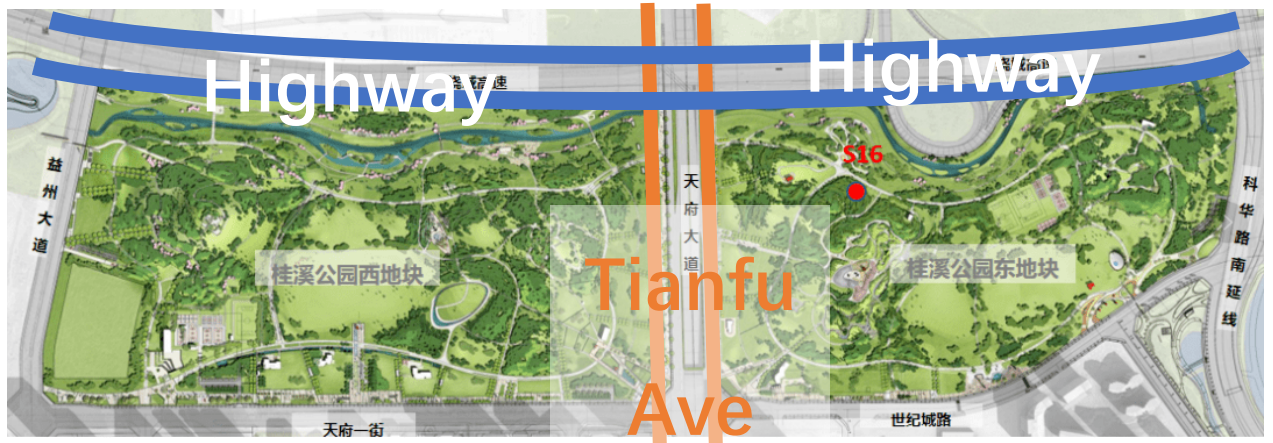


Figure.2: The map of current Guixi Park (Chengdu Municipal Development and Reform Commission).

2. Purpose of Report

The purpose of this report is to provide recommendations for improving the planning and construction of Guixi Park. The final version of the report will be submitted to the Chengdu Planning and Design Institute, which is the current designer of Guixi Park. The staff of this department is responsible for the planning of most of the city's community parks as well as the overall ecological green space planning of the city. As such, they clearly understand the focus and significance of community park design and the importance of the project to the Guixi community. The significance of this report is to enhance the ease of access to the park for residents of the Guixi community and to enhance the strolling experience within the park.

3. Description of Research Methods

- a) Primary data collection will be done through an online questionnaire

distributed to the public service section of the community forum and random interviews with visitors at the park. Since this project was not targeted at UBC students and staff, Survey Monkey was used to create a survey for all users who saw the post.

- b) Secondary data will include :
- i. Basic Requirements for Urban Park Construction prepared by the Chengdu Municipal Government, the Chengdu Urban Park Management Standards, and the 14th Five-Year Plan of Chengdu.
 - ii. Online access to current academic articles related to urban park planning through the UBC Library, and excellent case studies of community park planning in other cities around the world.

4. Scope of Project

The scope of this report focuses on the residents of the Guixi community and visitors to Guixi Park. To assess the feasibility of the revised road scheme, I will plan to conduct the following surveys to guide the study :

- The address where you live.
- How often do you usually go to Guixi Park?
- What do you think are the obstacles that prevent you from visiting the park?
- Are you willing to cross the street to go to the other side of the park without any special circumstances?
- Who do you usually come to the park with?

- Have you ever interacted with other residents at Laurel Creek Park?
- Have you participated in any community events in the park?
- Do you feel that Laurel Creek Park contributes to your sense of belonging to the community?
- What suggestions do you have for planning the park that would increase your willingness to come to the park?
- Would you be willing to come to the park more often if it was planned to make access to the park easier and safer?

Data Section

1. Primary data

The survey data came mainly from an online survey published within the Guixi community and a random sample of visitors to Guixi Park. The survey results are shown in the following table.

Table 1: Number of sampled people

	South	North	Other community
Number of sampled people	43	62	2

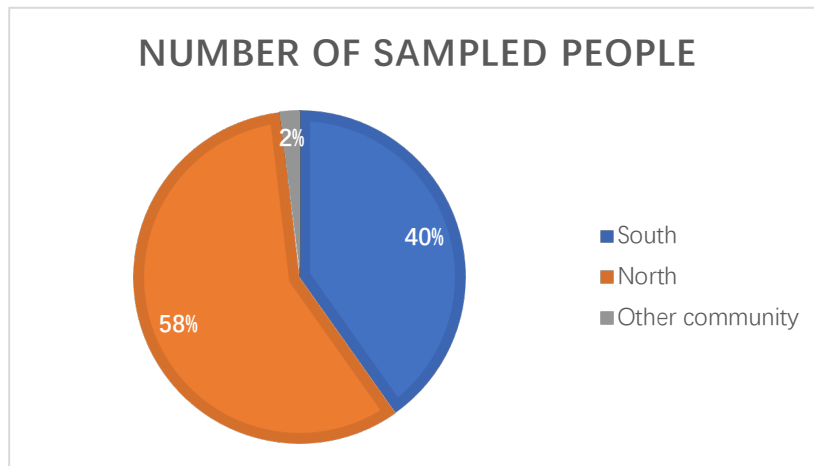


Figure 3: Number of sampled people

Table 2: The frequency of sampled people to Guixi Park

How often do you usually go to Guixi Park?							
frenquency to the Park	Scale	Home location					
		South	Ratio	North	Ratio	other community	Ratio
I don't know this Park	1	2	5%	6	10%	0	0%
I know this Park but I've never been there	2	5	12%	12	19%	0	0%
Once a year or longer	3	4	10%	5	8%	1	50%
Probably Half Year	4	5	12%	7	11%	1	50%
I go there 1-3 Month once	5	13	32%	17	27%	0	0%
I go every month	6	10	24%	10	16%	0	0%
I go every week	7	4	9%	5	8%	0	0%

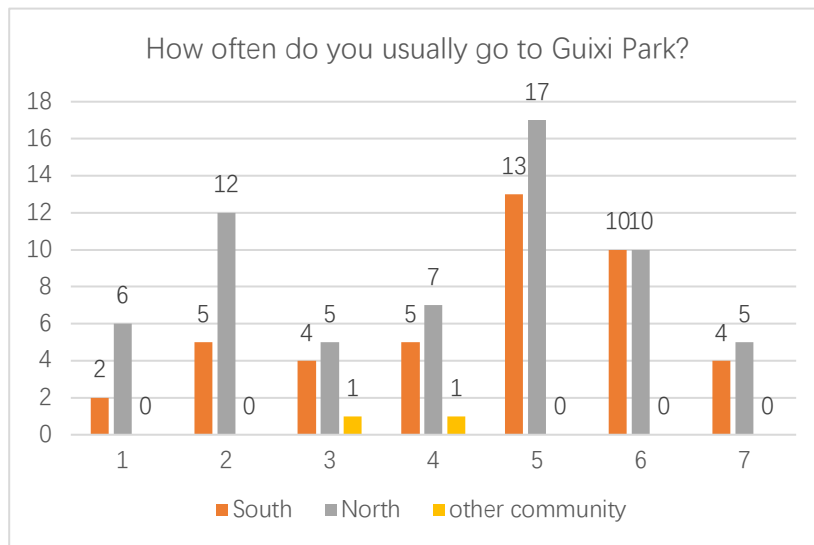


Figure 4: The frequency of sampled people to Guixi Park

Table 3: The Satisfaction of sampled people to Guixi Park's function

If you have visited any of the community parks, do you think visiting them has improved your physical and mental health?							
	Scale	Home location					
		South	Ratio	North	Ratio	other community	Ratio
Super Convenient	1	5	12%	4	6%	0	0%
Convenient	2	9	21%	11	18%	0	0%
Moderate	4	14	33%	15	24%	1	50%
Not really good	5	8	19%	17	27%	1	50%
Inconvenient	6	7	16%	11	18%	0	0%

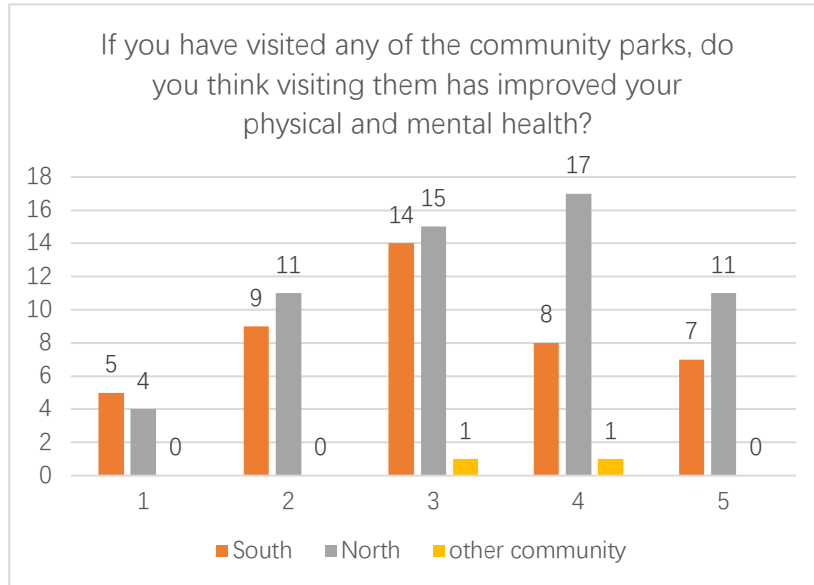


Figure 5: The Satisfaction of sampled people to Guixi Park's function

Table 4: The Satisfaction of sampled people to the inside Road Design of Guixi Park

If you have been to Guixi Park, what do you think of the road design inside the park?							
		Home location					
	Scale	South	Ratio	North	Ratio	other community	Ratio
Excellent	1	1	2%	5	8%	0	0%
Good	2	8	19%	10	16%	1	50%
Moderate	4	15	35%	16	26%	1	50%
Fair	5	11	26%	17	27%	0	0%
Bad	6	8	19%	10	16%	0	0%

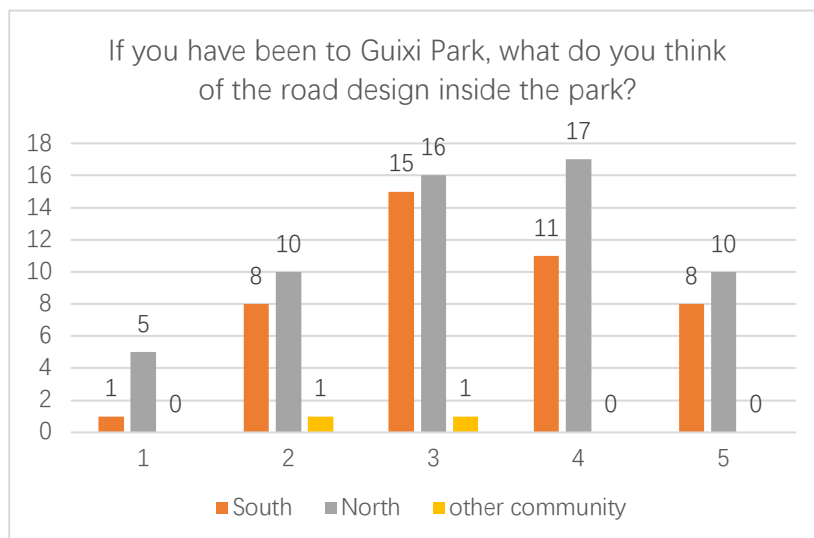


Figure 6: The Satisfaction of sampled people to the inside Road Design of Guixi Park

Table 5: The ideal park of sampled people

What is the ideal urban park in your mind and what functions does it need to have?							
		Home location					
	choice	South	Ratio	North	Ratio	other community	Ratio
A small ecosystem with ecological functions	0	22	51%	28	45%	1	50%
A community center with social functions	1	34	79%	35	56%	0	0%
A family activity place with social functions	2	39	91%	38	61%	2	100%
A fitness center with sports functions	4	42	98%	47	76%	2	100%
A place to relax with recreational functions	5	43	100%	50	81%	2	100%

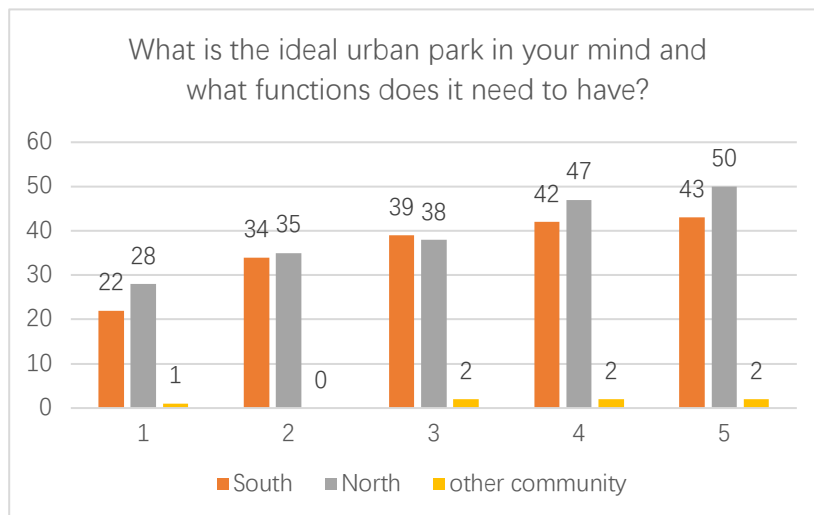


Figure 7: The ideal park of sampled people

Table 6: Community Events Precipitation of sampled people

Have you ever participated in community events in a park?							
		Home location					
	Scale	South	Ratio	North	Ratio	other community	Ratio
Yes, I participated the community events every month.	0	3	7%	4	6%	0	0%
Yes, I have participated the community events once or more, and I find they are attractive.	1	5	12%	6	10%	0	0%
Yes, I have participated the community events once or more, but don't really like it.	2	8	19%	12	19%	0	0%
No, I haven't participated the community events. But I'm interested in it.	4	16	37%	14	23%	0	0%

No, I haven't participated the community events, and I am not interested in it.	5	11	26%	22	35%	2	100%
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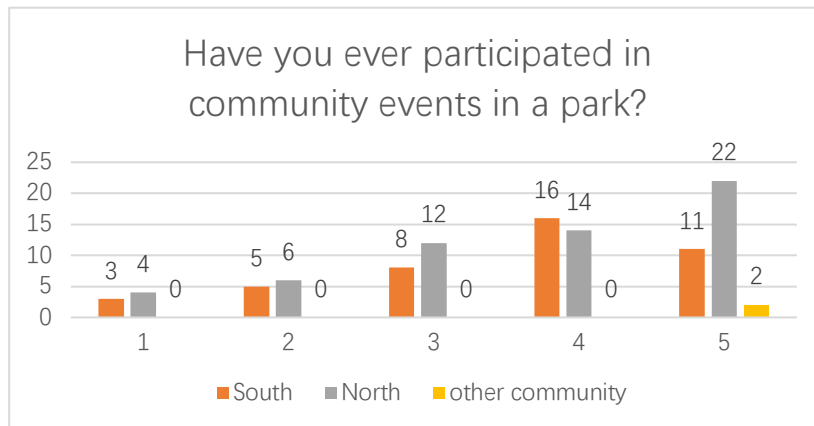


Figure 8: Community Events Participation of sampled people

As can be seen from Table 1, the total sample size of this survey was 105 people, of which 62 people were from the northern community, 41 people were from the southern community, and there were two remaining people from other communities. According to Table 2, the willingness of residents from both the southern and northern communities to visit Guixi Park is relatively polarized in the results of this survey. Both communities have a small percentage of people who are excited about visiting the park and visit the community park more frequently, while a larger percentage of people are not interested in Guixi Park and hardly visit it. Although the difference in sample size collected from the North and South communities caused more residents to use the park more frequently in the North community (Scale 6-7 in Table 2) than in the South community, it was a smaller percentage of the North community sample (only 24%). Although it is shown by Table 3 that residents in both the northern and southern communities feel that community parks have a small positive impact on their physical and mental health, they do not meet

the desired goal of community parks. And the sample data shows that access to parks is significantly more difficult for residents of northern communities. This also resulted in residents in the northern communities identifying less with the functions of Guixi Park compared to the southern communities (Table 4). Residents in both the northern and southern communities in this survey sample had roughly the same functional expectations of an ideal community park, with social and recreational functions being the most important concerns of residents (Table 5). However, even so, only a small percentage of community residents had participated in or expressed interest in community activities organized by the community park. This was particularly evident in the northern communities, where more than half of the community residents (54%) indicated that they were not interested in community events in the park. In the two open-ended questions at the end of the survey, 52% of residents indicated that busy work schedules were the biggest deterrent to visiting the park, and 36% cited the complex road conditions around the park as making access difficult. Nearly half of the residents in the northern community (43%) would like to see an additional roadway to the north of the park that would allow access to the park over the highway.

Based on the above survey data, the following findings can be drawn:

1. The majority of visitors to Guixi Park are residents of the Guixi community.
2. As a community park, Guixi Park does not currently provide community services to the satisfaction of its residents.

3. The planning deficiencies of the internal roads in the park are an important factor that hinders the exchange of visitors in the park.
4. Residents in the southern neighborhoods visit the park more often and rate it more highly than residents in the northern neighborhoods.
5. The highway located to the north of the park is one of the major impediments preventing residents of the northern communities from accessing Guixi Park.

2. Secondary data

Chengdu Ecological Ring is a barrier constructed by Chengdu to provide green ecological isolation space for the downtown area (Figure 9). The project involves 133.11 square kilometers of ecological land, which is currently the largest livelihood project in Chengdu. According to the Chengdu Urban Plan (2016-2035), it is proposed that the planning and construction of the City Ecological Ring should incorporate information on the surrounding ecological corridors, and roads, rivers, and parks and green spaces within the city (Government of Chengdu). The government plans to prevent the development of town circles in a sticky manner through the construction of the City Ecological Ring (Chengdu Forestry and Landscape Management Bureau). It is based on ecology, and it will gather population and active economy while greening the city. It also maintains, enhances, and restores ecological flows, species movements and dynamic processes in a fragmented urban environment. After years of development a large scale and high-

quality ecological space has been initially formed to maximize the ecological value to serve the city.



Figure 9: Chengdu Ecological Ring

According to the ecological section of Chengdu's 14th Five-Year Plan, Guixi Park is located directly south of Chengdu, and is an important part of the construction of Chengdu's Ecological Zone around the city (Government of Chengdu). Habitats and species are better able to survive and adapt when they form part of a large, interconnected network that maintains and protects nature by engaging people. And protecting the landscape connections between favorable habitats is a widely used strategy for sustaining populations in an increasingly fragmented world. To ensure that the Rim Ecoregion functions as an ecological corridor providing habitat for small animals, Guixi Park's needs to increase its green space connectivity. Building

ecological bridges is currently an effective way to significantly increase park connectivity without disrupting the original urban traffic design. The Vancouver Land Bridge project is an excellent example of an ecological bridge that reconnects Fort Vancouver to the Columbia waterfront, which has been disconnected by roads (Confluence). The bridge provides pedestrian access while restoring the natural landscape continuum from the Highland Prairie Reserve to the river. Pedestrian Bridges can also be used to connect sections that are divided by highways. Separating pedestrian and vehicular traffic allows visitors to cross the highway to the park more safely. Even though costly, some pedestrian bridges have played an important role in helping to transform local urban green space plans and have subsequently become landmarks (e.g., the Freedom Bridge in Greenville, South Carolina).

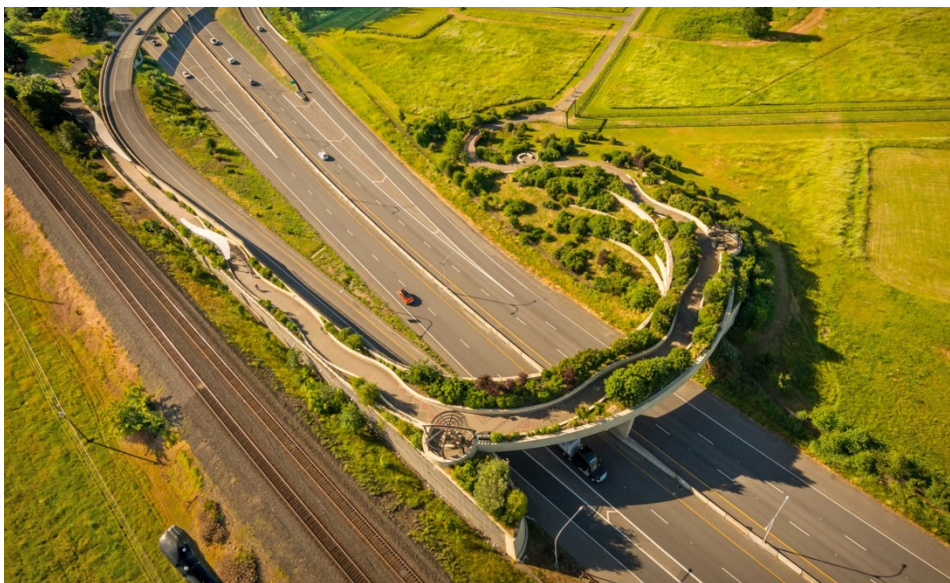


Figure 10: Vancouver Land Bridge.

Based on the above information it can be concluded that

1. Guixi Park is an important part of Chengdu's ecosphere construction, and its internal connectivity is critical and needs to be enhanced.
2. Ecobridges are currently widely used to increase connectivity within the park.
3. Pedestrian Bridges separate pedestrian from vehicular traffic and allow for safe, uninterrupted pedestrian traffic flow.

Conclusion

1. Overall Interpretations of Findings

Although a small percentage of residents are loyal patrons of the community park, the current plan for Guixi Park does not meet the expectations of the majority of Guixi residents for a community park. On the one hand, the park is cut by multiple highway segments, resulting in poor internal road connectivity; on the other hand, residents of the northern community have more difficulty accessing the park than residents of the southern community due to the highway blockage. As a result, the functionality of the community park is more difficult to be realized among the residents of the northern communities. Guixi Park, however, is an important part of the ecological planning of Chengdu, and strengthening its connectivity is crucial to the construction of the ecosphere. The ecological bridge can effectively enhance the integrity of Guixi Park, improve its functionality as a small ecological corridor, and facilitate the interaction of residents in the community park.

2. Recommendation for Proposed Solution

Based on the above information, this report suggests that an eco-bridge could be built within the park to enhance connectivity between the east and west portions of the park (as shown in Figure 11). At the same time, a Pedestrian Bridges should be added to the northwest and northeast corners of the park to improve the accessibility of the park to the northern part of the Guixi community and to promote the motivation of the residents to visit the park.

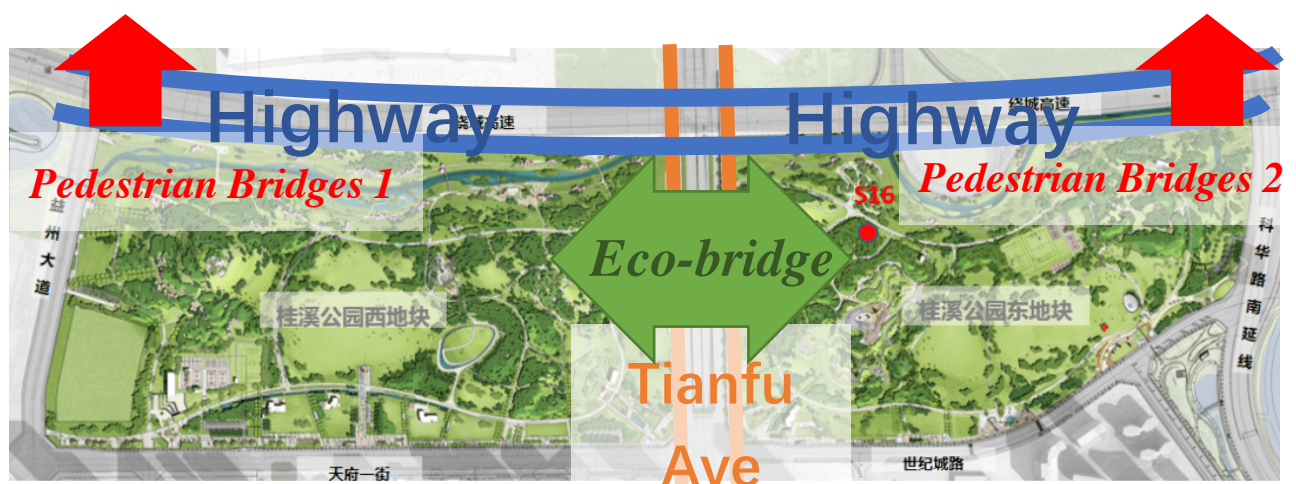


Figure 11: Road plan Recommendation (Red arrows represented the Pedestrian Bridges, Green Arrow represent the Eco-bridge)

3. Summary

It is evident that poor road planning affects residents' motivation to participate in community activities and visit the park; therefore, there is a need to improve the road planning of Guixi Park based on residents' suggestions. This report recommends adding a Pedestrian Bridge at each of the northwest and northeast corners of the park to enhance the interaction between the park and residents of the northern community. Also, an Ecobridge is created to enhance the connectivity of Guixi Park on both sides of Tianfu Avenue. A simple road improvement plan would

not only increase park use, but also strengthen community unity, thus indirectly improving the physical and mental health of residents.

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Appendix:

Questionnaire on perception of experience in Guixi Park

Hello! I am an undergraduate student at UBC working on a technical writing project.

The purpose of this investigation is to provide recommendations for planning improvements to Guixi Park. The final formal report will be submitted to the Urban Park Project Manager of the Chengdu Urban Planning Institute.

The data and findings collected in this survey will be used along with our urban park case study to provide viable park plans that are more responsive to the needs of residents and visitors.

The survey consists of 10 questions and takes approximately 10 minutes to complete. Your responses are completely voluntary and anonymous (you may skip any questions you do not want to answer).

Thank you, and thank you for your generous participation in my survey.

1. Where do you live?

- Norther Guixi Community
- Souther Guixi Community
- Other Communities

2. How often do you usually go to Guixi Park?

- I go every week
 - I go every month
 - I go there 1-3 Month once
 - Probably Half Year
 - Once a year or longer
 - I don't know this Park
 - I know this Park but I've never been there
-

3. If you have visited any of the community parks, do you think visiting them has improved your physical and mental health?

- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
-

4. Are you satisfied with the current Guixi Park?

- Very satisfied
 - Satisfied
 - Neither satisfied nor dissatisfied
 - Dissatisfied
 - Very dissatisfied
-

5. If you have visited any of the community parks, do you think visiting them has

improved your physical and mental health?

- Super Convenient
 - Convenient
 - Moderate
 - Not really good
 - Inconvenient
-

6. If you have been to Guixi Park, what do you think of the road design inside the park?

- Excellent
 - Good
 - Moderate
 - Fair
 - Bad
-

7. What is the ideal urban park in your mind and what functions does it need to have?

- A small ecosystem with ecological functions
 - A community center with social functions
 - A family activity place with social functions
 - A fitness center with sports functions
 - A place to relax with recreational functions
-

8. Have you ever participated in community events in a park?

- Yes, I participated the community events every month.

- Yes, I have participated the community events once or more, and I find they are attractive.
- Yes, I have participated the community events once or more, but don't really like it.
- No, I haven't participated the community events. But I'm interested in it.
- No, I haven't participated the community events, and I am not interested in it.

9. What do you think is the biggest obstacle stopping you from going to the park?

10. Do you have any suggestions for the planning of the park? and Why?
