

LIVING WITH WATER

- an explorative urban design that urbanization can be guided by cultural landscape in Dongchong town



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Master Thesis Landscape Architecture
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PREFACE

Urbanization is an inevitable trend. The more and more diverse cultural landscape is transforming to urban land use. In China, standardized urban planning makes cities similar, while before they all have their unique characteristics. When I went to large cities, like Guangzhou, Shanghai or even I went back to my hometown which is a small city, I found that the government is chasing for building a modern city to show their economic and political achievements. They ignore the importance of the identity and cultural landscape for the city and citizens. I feel it is pity that we are gradually losing our original cultural identity left by our ancestors. Thus, it motivates me to do the attempt that if I can explore an alternative urban planning approach starting from the cultural landscape which is close related to local identity. I have been in Guangzhou for 4 years because of college. Through studying the history of Guangzhou, I knew it used to be a commercial city and famous for its urban water system. However, since the reform and opening up, contemporary urban construction has completely replaced the original appearance of the old town. Moreover, Guangzhou is continuing to expand urban surface. Now, more and more architects are invoking to protect traditional architecture and adapt them to contemporary functions to conserve our cultural identity instead of replacing

them. Unfortunately, there is little attention on cultural landscape or landscape architecture perspective. So, as a landscape architect and strong emotion with Guangzhou, I felt it is necessary and worthwhile to do something for it.

During the special COVID-19 period, there were a lot of challenges and difficulties both physically and mentally. But with the support of my tutors, friends, and family members, I successfully finished my thesis writing. The process is tough but unforgettable. I would like to thank my supervisor Adriaan Geuze for his inspiring advice, patient and enthusiastic guidance. Moreover, I would like to thank my reviewer Yuting Tai for feedback during the thesis process and gave different insights and suggestions in thesis writing. I would like to give special thanks to my friends Yiyang Zhu and Yanran Luo, for their ongoing and enthusiastic support both in physical and mental aspects which gave me the energy and confidence to complete my project. Last but not least, I am very grateful to my family for their understanding and support during the entire master period, encouraging me to complete my studies successfully.

ABSTRACT

This thesis takes a position on the debate about the homogeneity of urban images and the weakening of place identity resulted by current urban planning and design in China. In the context of globalization and urbanization, increasing urban dwellers and urban expansion are inevitable trends. Since the reform and opening up, rapid economic growth has accelerated the process of urbanization, and more and more cultural landscapes have been unreservedly replaced by urban surfaces because of the pursuit of economic and political achievements. Moreover, under the dominance of standardized urban planning and design, the Chinese cities all gradually are constructed in similar urban images, resulting in losing their own cultural characteristics and identity. This thesis addresses the phenomenon from a landscape architecture perspective, and choose a case study in Guangzhou with the following design question: How can urbanization be guided by the cultural landscape of water village in Dongchong town, in order to strengthen its place identity?

Cultural landscape is the result of interaction between people and nature, embodying local culture and spirits, which has a decisive influence on shaping local place identity. The main purpose of this thesis is to explore an alternative urban planning and design approach that urbanization is guided by cultural landscape while strengthening its place identity in Dongchong town. The local cultural landscape characteristics and future urban development demands are explored by literature and political documents review and site study, while design principles are generated by integrating them. The design concept of "Shanshui City" is proposed to promote an ideal of harmonious coexistence relationship between man and nature, urban and nature. Three models are tested to find the best spatial relationship between buildings and cultural landscape. The outcome of the study shows that adapting urban construction into local cultural landscape framework and making use of local cultural symbols in urban design not only meets the desire of urban development but also is conducive to strengthen local identity and cultural continuity.

Key words: urbanization, cultural landscape, place identity

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1. INTRODUCTION

A high-angle, black and white aerial photograph of a city. The scene is dominated by a dense concentration of buildings, primarily high-rise residential complexes and office buildings, creating a complex pattern of light and dark rectangles. In the foreground, a more organized residential area is visible, featuring numerous apartment buildings arranged in a grid-like fashion, with streets and green spaces interspersed between them. The overall image conveys a sense of urban sprawl and architectural uniformity.

1.1 Background

Urbanization and globalization are the two major phenomena that lead to a rapid change in the economy, society, culture as well as our physical living environment. The environmental sustainability proposed in this process has been a global concern for several years. In the past years, previous research on sustainability is mainly focused on ecology, water, and air while the factor of place identity received attention rarely (Kaymaz, 2013). However, the weakening of place identity and homogeneity of urban landscape in the broad context of urbanization and globalization is gradually attracting more attention in recent years. Therefore, the sustainability of place identity has been a new topic for urban planning and design.

Urbanization is an inevitable trend worldwide. According to United Nation's (UN) 2018 Revision of World Urbanization Prospects, a proportion of world's population living in urban areas is expected to increase from 55% (2018) to 68% by 2050 (United Nations, 2018) (Figure 1.1). It can be inferred that urban surfaces will continue to expand to accommodate the growing number of urban dwellers. Consequently, both natural and cultural landscape will continue to be threatened by urban settlements (Kaymaz, 2013). As mentioned in the aforementioned Revision

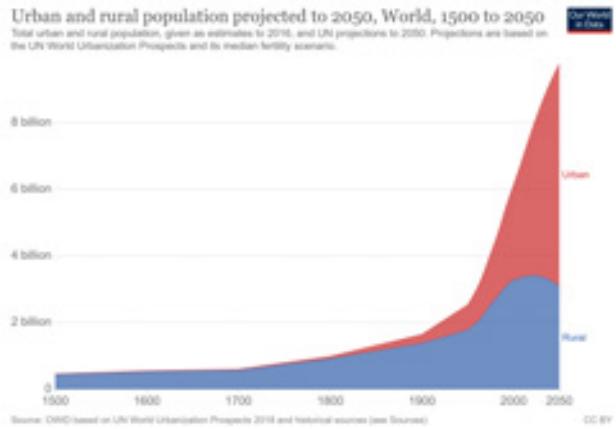


Figure 1.1 World population projection in 2050 (Ritchie & Roser, 2018)

by the UN, close 90% of urban population increase will take place in Asia and Africa, and it is expected to be highly concentrated in just a few countries, in which China is one of them. Since the reform and opening up, China is undergoing the rapid urbanization process in which the unique history and distinctive characteristics of traditional Chinese cities are being dramatically diminished (Wang, 2017) resulting in weakening place identity. In contrast, Athens, Paris, and London retain their own cultural and natural landscape characteristics well in the process of urbanization, showing their local identity to the world (Hu, 2020). In contemporary cities, the weakening of identity is facilitated by the uniform concepts of planning and development together with the commodification of place, which have led to the loss of local identity (Monhamad, 1998) . On the one hand, in the context of

globalization, Chinese urban construction mainly takes urban planning and design principles of western countries as a reference, which generates standardized and inauthentic urban landscapes, destroying the original local characteristics (Figure 1.2). On the other hand, due to commodification of place, the current Chinese urban planning system is mainly based on social and economic factors (Long et al., 2014), the standardized and function-oriented urban planning leads to the homogenization of urban images (Figure 1.3) as historic site-specific cultural landscape structure is gradually



Shanghai City (Access MBA, 2020)



New York City (Hanlon, 2019)

Figure1.2 Comparison between Shanghai and New York



Urban image in China (Tiezzi, 2015)



Urban image in China (Huang)

Figure1.3 Chinese urban images by standardized urban plan

being replaced by uniform urban landscape (Xie, Rustschmann, 2015). Moreover, this trend is expected to continue in the large cities in the coming decades (Cui, Li, Wang & Xue, 2018).

As the third-largest Chinese city, Guangzhou is located in the center of the Pearl River Delta, which was in the first Chinese Special Economic Zone established in 1979. As figure 1.4 illustrated, the total urban surface of Guangzhou has dramatically increased by 22 times within the past 4 decades (1978 – 2015) from 70 km² to 1558.53 km², in parallel of

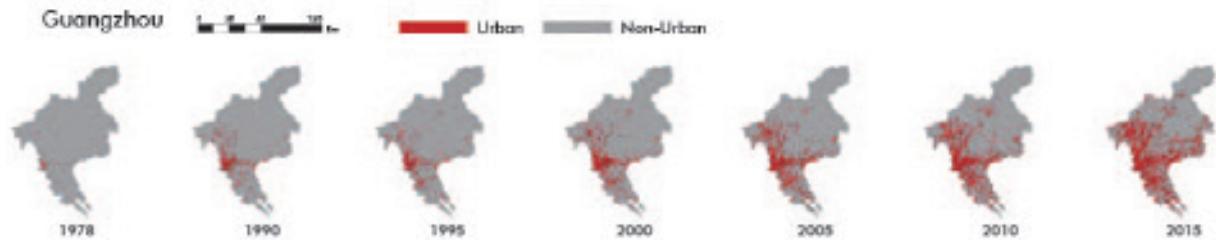


Figure 1.4 Guangzhou urban expansion from 1978 to 2015 (Fei & Zhao, 2019)



Figure 1.5 Six canals map in Qing dynasty (Feng, Xie & Huang, 2019)

rapid economic and social development (Fei & Zhao, 2019). Simultaneously, Guangzhou acquired a brand new but featureless urban image since the historical-cultural landscape is replaced by contemporary commercial and residential districts. Originally, Guangzhou as a historical city is famous for its water system and unique water identity in the past, in the meanwhile people's daily life and living environment are closely related to water. As figure 1.5 illustrated, the six canals system is an example that embodied the wisdom of ancient people interacting with the natural environment. It was built in the Song Dynasty

but in the Ming dynasty, the canal system was adjusted according to the needs of urban construction, while it guided the formation of urban pattern in turn and it was still used in the Qing Dynasty (Liu, 2015). On the one hand, canals as carriers of transportation connected the inner city with the ocean which brought huge opportunities for commercial activities. On the other hand, it played an important role in preventing waterlogging and flooding disasters, and it also was an important component of the urban drainage system. However, with the dramatic and uniform contemporary urban construction and expansion, old canals are replaced by concrete roads, as well as other cultural landscape embodied historical identity is replaced by residential areas or urban functional spaces. In the past years, Guangzhou has made great economic achievements, but the brand-new look of Guangzhou has made itself gradually lose its own distinctiveness and is no different from other cities. Guangzhou, Shanghai, Chengdu with unique geographical characteristics initially had their own distinctive cultural landscape, but under the dominance of



Chengdu City (Source: <https://699pic.com/tupian-501619012.html>)



Shanghai City (Source: <https://699pic.com/tupian-500648800.html>)



Guangzhou City (Source: <https://699pic.com/tupian-501639762.html>)

uniform and function-oriented urban planning and design, these cities become the cloned products due to standardized urban landscape and aesthetics (Figure 1.6). Furthermore, Guangzhou's urban expansion is continuing, and the 15th spatial development strategy outlined that southward urban expansion is the future (Gong, Chen, Liu & Wang, 2014). Nansha district locating in the southern part of Guangzhou is the target of urban expansion. It has an excellent port location closing to the Hongkong – Zhuhai – Macao Economic Zone, which brings huge development opportunities. In the meanwhile, Nansha district reclaimed from the sea by ancients' knowledge, has its own unique landscape features and identity. Therefore, it is facing a similar challenge as the old town of Guangzhou has faced before or other cities are facing. To avoid the appearance of another cloned urban image, it is worthwhile to explore how to maintain place identity in the context of urbanization, from the perspective of landscape architecture.

Figure 1.6 Comparison of Chengdu, Shanghai, Guangzhou

1.2 Case location

Dongchong town now is under the pressure of urban expansion and it is facing the challenge of how to strengthen its place characteristics and identity in the process of urbanization to avoid cloned urban image. Therefore, it will be a good choice to take Dongchong town as the testing area for this research because the challenge it faces is consistent with the research topic.



Figure 1.7 Dongchong town location (made by author)

Dongchong town covers 92 square kilometers with about 200,000 population. It is located in the hinterland of the Pearl River Delta, the northern part of Nansha district which is in the south of the Panyu district (Figure 1.7). Moreover, it is 40 kilometers away from the downtown of Guangzhou in the north and 64 kilometers from Hongkong and Macau in the south. During the Song and Yuan dynasties, the Panyu southern alluvial delta gradually developed and formed (Zhang, 2019). However, until the Ming and Qing dynasties, with the technical development of dike-building and reclamation, the tidal flat was gradually reclaimed into cultivable fields mainly by tanka group who were forbidden to live ashore. At that time, the tanka group's boats drifting on the water network have become the most prominent landscape symbols which had lasted for hundreds of years. Therefore, Dongchong water village has its uniqueness compared with other Lingnan water villages. As Dongchong water village doesn't have a long history and most of the local residents

are decedents of oppressed and floating tanka group without a strong sense of clan, thus there are no magnificent ancestral temples and cultural relics. But, original tanka culture nesting in the landscape, linear villages along rivers, the old stilt houses above water, old trees, tanka boats, and local agricultural fields have shaped distinctive water village cultural landscape.

The reason why Dongchong town has been able to maintain its original cultural landscape characteristics is that it is far from the city center and was not in the development plan in the past. However, with the economic development and urban expansion, the Nansha district will be positioned as a high-level opening hub in the future. More population and real estate will settle in. Therefore, Dongchong town inevitably becomes the next target of urbanization development (Guangzhou Nansha District Municipality, 2018).

1.3 Theoretical framework

The theoretical framework provides the theoretical lens for this research. It explains the essential concepts of this thesis, to define the scope clearly and provide the reader with the required information to understand the results.

Cultural landscape

The concept of cultural landscape was developed by Carl O. Sauer describing that the cultural landscape is the consequence of the interaction between human activities and natural landscape over space and time. Further, Eric Hirsch proposed objective framework and subjective framework within the cultural landscape and the former excludes the view of the people who lived in the cultural landscape, while it is defined within the subjective framework as how individuals interact with, or "see" their cultural and physical environment (Hirsch, 1986). In this research, the cultural landscape is recognized as living landscape including series of layers, each layer can tell the human stories and relationships between people and natural processes (Taylor, 2008). It combines tangible and intangible values. The tangible forms, features and characteristics of the cultural landscape express spirits of place and the intangible values that are embedded in places (O' Donnell, 2008).

Comparing "historical landscape", a static understanding of the landscape, the term of "cultural landscape" is not as an object with the static locus of some internal values, but as a process (Gibson, 2016). Moreover, the cultural landscape is not only simply as reflective of identities but also as both reflective and productive of identities.

Place identity

The concept of place is both physical and psychological (Ujang & Zakariya, 2015). The place is constructed by physical form, activity and meaning (Montgomery, 1998). It is a geographical space that has acquired meaning due to the interaction between people and space (Speller, 2000) and social processes. People and place are as a unit that place could not be separate from people who make places and invest meanings in them.

Aspects of identity linked to place can be described as "place identity". The term has been in use since the late 1970s (Proshansky, 1978). In the context of environmental psychology, Proshansky et al. (1983) have defined place identity as a component of self-identity, consisting of cognitions about the physical world (Kavaratzis & Hatch, 2013) and

they clarify that these cognitions are evolved through a person's selective engagement with the environment at both conscious and unconscious levels (Proshansky, Fabian, & Kaminoff, 1983). Nevertheless, the term of "place identity" is a relatively new concept recognized in spatial planning and design. In spatial planning and design, place identity is usually related to the place itself, referring to the uniqueness of the place which is a consequence of the interaction between its physical characteristics and its users (Kaymaz, 2013). Identity of place is constructed by three interrelated components, each irreducible to the other – physical features or appearance, observable activities and functions, and meaning or symbols (Taylor, 2008) (Figure 1.8). Place identity is not only determined by physical components but also the meaning and association between people and place (Ujang, 2012). Therefore, we can see that both tangible and intangible identities related to the distinctiveness of our living world and

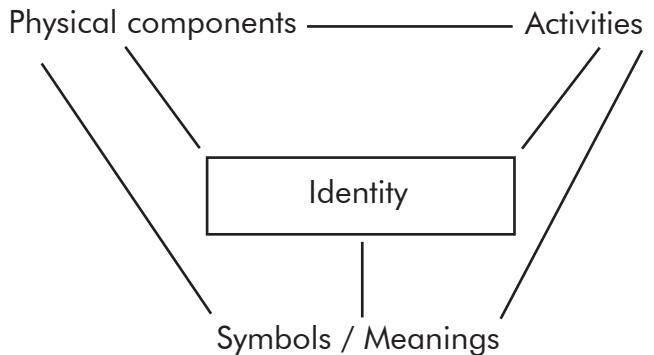


Figure 1.8 Identity and its components (Relph, 1976)

human experience are inseparable from the place meanings associated with places/landscape (Taylor, 2008).

Moreover, place identity is a dynamic product resulting from the interaction between the developing physical world and modifying individual's cognitions. It is never a stable construct and on the contrary, it is an evolving process (Kaymaz, 2013). The social framework of place identity is formed by an accommodation-assimilation formation, absorption of new elements, and adjustments in the existing identity shape (Qazimi, 2014).

Conclusion

Through descriptions of the two theories above, the author finds that cultural landscape has a close relationship with place identity. Both of them are related to the interaction between people and physical environment. On the one hand, the cultural landscape represents as well as shapes place identity; on the other

hand, place identity reflects cultural landscape characteristics. The cultural landscape imbued people way of life and devoted cultural phenomenon are essential to building a place identity (Lai, 2013). Therefore, the cultural landscape could be a direction for strengthening place identity in the process of urbanization. Both theories will provide theoretical support and insights for further research and design phases.

1.4 Knowledge gap & Objective

1.4.1 Knowledge gap

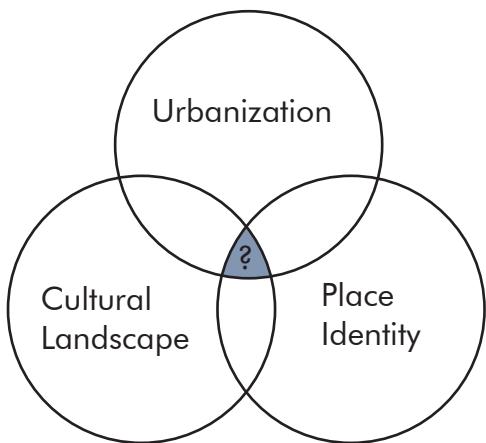


Figure 1.9 Knowledge gap (made by author)

Urbanization and globalization processes together have caused dramatic changes in landscape and land use. In China, the phenomenon of homogeneous urban images is increasingly serious due to standardized urban plan and aesthetics. The distinctive cultural landscape is gradually replaced by uniform contemporary urban pattern and landscape, leading to a loss of identity. Thus, the concept of identity is scheduled on the agenda of planners and designers in the last few years

and sustainable urban development is received new insight. However, the current studies of sustainability of the urban environment mainly focus on factors like water, air, energy and transport while place identity receiving attention rarely (Kaymaz, 2013). In addition, there is fewer research about the interaction of urban sprawl and cultural landscape to enhance place identity, from the perspective of landscape architecture. In China, the developed urban planning and design strategies have not yet integrated the urban sprawl, cultural landscape and place identity into consideration. Therefore, there is still a knowledge gap about how to do the spatial design of urban landscape spaces reflecting its own characteristics and identity, based on the local cultural landscape. As figure 1. 9 illustrated, this research is an attempt to bridge the knowledge gap that urbanization could be guided by cultural landscape to strengthen place identity, from the perspective of landscape architecture.

1.4.2 Objective

The objective of this thesis is to explore an alternative urban planning and design approach, that is, starting from cultural landscape to guide urban sprawl in Dongchong town while strengthening its place identity.

Design research focuses on understanding the characteristics of cultural landscape which play role in representing and building place identity and how to accommodate them with spatial demands of contemporary urban development. The design outcome is not intended to help to restore the historical place identity or shape

brand new urban identity, but to illustrate that place identity is an evolving process, reflecting past, present and even future possibilities. Through an in-depth case study of Dongchong town in Guangzhou, design principles and plan of integrating local cultural landscape characteristics and spatial demands of urban development while evolving its place identity will be generated.

Ultimately, this thesis aims to arise attention to the role of cultural landscape and place identity in urban planning and design. In the process of urbanization, more cities can retain their own identity by protecting the cultural landscape to distinguish others. In the process of globalization, Chinese cities should keep their own distinctiveness to distinguish from the urban landscape of western countries.

1.5 Research question

In order to achieve the purpose of the research, the author raises the following questions. The main design question is to use a specific site as a case study to answer the addressed above problems and issues.

Main design question:

How can urbanization be guided by the cultural landscape of water village in Dongchong town, in order to strengthen its place identity?

The other three research questions are formulated to provide sufficient information in different aspects to help answer the design question.

Research question 1:

What are characteristics of cultural landscape related to place identity in Dongchong town?

Research question 2:

What are spatial demands for the urban development of Dongchong town issued by municipalities?

Research question 3:

What are design principles for that cultural landscape accommodate the spatial demands of urban development of Dongchong town while strengthening its place identity?

1.6 Research methodology

1.6.1 Research framework

The whole design research is not a linear process but an iterative process, as figure 1.10 illustrated. There are two research methods of “research for design” (RFD) and “research through design” (RTD) included in the process and separately implemented in two different phases – research before the design phase and site design phase.

The RFD method is served for the phase before site design and is mainly used to help formulate and answer research questions. The first research question “What are the characteristics of cultural landscape related to the place identity in Dongchong town?” is expected to get a depth understanding of the cultural landscape in Dongchong town and summarize those characteristics which can be used to shape place identity. The methods of literature review, site analysis and mapping are all used to answer this question. The first step is literature review which mainly focuses on studying the theory and literature about cultural landscape and place identity. Trying to find the checklist of characteristics of cultural landscape related to place identity which could be as a theoretical base for the next step. The second step is the site analysis and mapping analysis of Dongchong town. With the help

of internet research, historical map analysis and reviewing literature related to the history of Dongchong town, the characteristics of the cultural landscape of Dongchong town can be summarized. Finally, comparing with the checklist obtained in the first step, it can be known that those cultural landscape characteristics of Dongchong town can be utilized to shape place identity. Then, in order to answer the second research question “What are spatial demands for the urban development of Dongchong town issued by municipalities?”, the author reviewed related political documents and literature about the plan and vision of the urban development in Dongchong town, from the Nansha district municipality and Guangzhou municipality. Spatial demands for the future urban development of Dongchong town can be formulated from the plans and visions provided by municipalities. The first two research questions provide basic information to the third research question “What are design principles for that cultural landscape accommodates the spatial demands for urban development of Dongchong town while strengthening its place identity?”. The third research question is related to the specific design site and could be seen as a connection or transition stage between the research before design phase and site design phase. Before answering the RQ3, the design site selection

and analysis have to be done. Integrating the previous research outcomes and information of design site, the main design principle and several spatial design principles are generated which is served for the further site design phase.

The method of “research through design” (RTD) is implemented in the site design phase, in which, the main design question “How can urbanization be guided by the cultural landscape of water village in Dongchong town, in order to strengthen its place identity?” need to be answered. With the results of previous research phase, four different design concept

models will be generated. According to the parameters summarized from the last research phase, the most suitable design concept model is chosen and it will be developed further in detail. This method regards design as a part of research and repeats it iteratively until a satisfactory result is obtained (Lenzholzer et al., 2017). This method facilitated the design intervention for specific site conditions in the case study and translate the theoretical knowledge and principles into practical and physical landscape design. The final design outcome and strategy will be discussed and evaluated to apply to other cities in China.

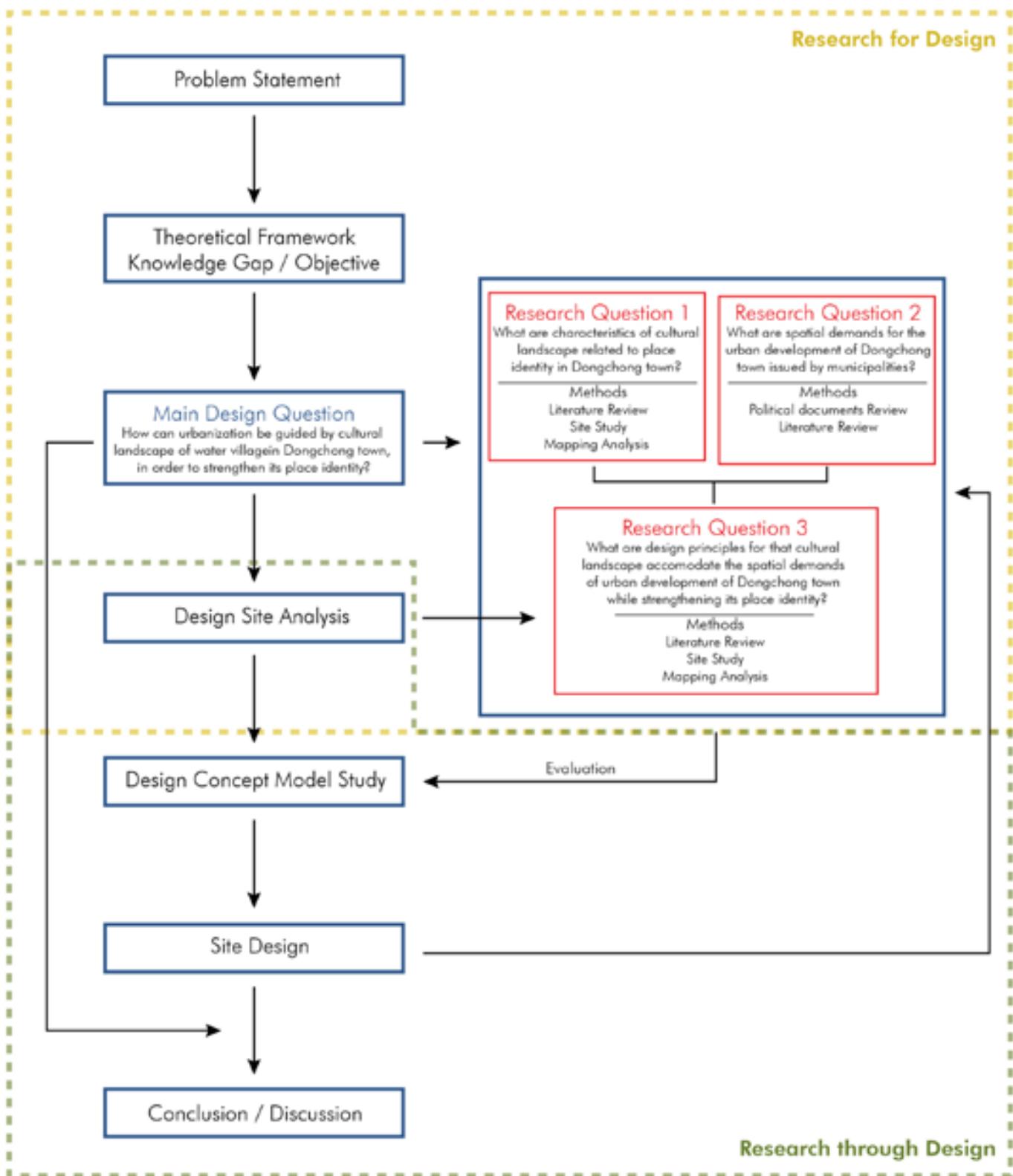


Figure 1.10 Research framework (made by author)

1.6.2 Methods and materials

Each research question uses different data collection and methods. In the process, methods of literature review, political documents study, site study and mapping analysis will be used for data collection. Due to the special COVID-19 period, the site visit, site observation and local interview are hard to be done. Therefore, virtual technology as an alternative will help to make up for this part to a certain extent. The methods of data collection, resources and expected results adopted for each research question will be described separately.

Research question 1:

What are the characteristics of cultural landscape related to the place identity in Dongchong town?

To answer research question 1, the method of literature review, site study and mapping are used to collect data. The first step is to look up the specific literature on the definition and interpretation of cultural landscape and place identity to gain a deeper understanding of these two concepts. Then, searching for literature on the interaction between cultural landscape and place identity, as well as relevant literature on their role in urban development is the next step. Through the analysis and summary

of different literature, a checklist could be formulated, showing which characteristics of cultural landscape both tangible and intangible have a positive effect on shaping place identity. Meanwhile, the interaction of these two concepts and their importance to urban development will be understood. After obtaining the basic theoretical knowledge, the site study and mapping is on the schedule. Reviewing literature or articles of the site history is essential which could help to know the change of the cultural landscape of the research site within the development process. Since the on-site investigation is not possible in the special period, virtual technology as an alternative will be used to further understand the current situation of the research site. Google maps, online travel blogs or vlogs, popular social media, for instance, Weibo and Douyin and other websites all are alternative sources to obtain the valuable information of old and present images, historical maps, local culture/traditions, living environment and history. With these materials, the author can have a more comprehensive understanding of the characteristics and development of the cultural landscape in Dongchong town. Finally, comparing with the previous checklist, the specific characteristics related to place identity in Dongchong town will be summarized.

Analysis Methods	Variables	Data sources
Literature study	Literature , articles and websites about cultural landscape and place identity	Online libraries
Site study and mapping	Literature , articles and websites about site history Historical and present site images, historical maps, online articles about local culture, traditions, daily life and history	Online libraries Google maps, online travel blogs and vlogs; social media (Weibo, Douyin); websites

Figure 1.11 Overview of research question 1 (made by author)

Research question 2:

What are spatial demands for the urban development of Dongchong town issued by municipalities?

The method of political documents study and literature review will be implemented in answering the research question 2. First of all, it is necessary to start from the perspective of the urban development of the entire city to understand the future development plan and outlook of Guangzhou. The information can be found in the published official documents on the portal websites of the relevant departments of Guangzhou municipality and other relevant articles uploaded on the website. With the

goals and visions mentioned in the documents and articles, the future urban spatial and landscape demands of Guangzhou can be concluded, especially the expectations for the Nansha district located in the southern part of Guangzhou. Secondly, in order to narrow down the research, the next step is to find the documents or articles related to Dongchong town about urban development plan and vision, from the internet or the portal website of Nansha district municipality. Combining with the outcomes of the first step, the spatial demands of urban development in Dongchong town can be summarized from these documents and articles.

Analysis Methods	Variables	Data sources
Political documents study	Political documents and articles about the plan or vision of urban development in Guangzhou/ Nansha district/ Dongchong town	Portal websites of the relevant department of Guangzhou municipality; portal websites of Nansha district
Literature study	Articles about the plan or vision of urban development in Guangzhou/ Nansha district/ Dongchong town	Websites

Figure 1.12 Overview of research question 2 (made by author)

Research question 3:

What are design principles for that cultural landscape accommodates the spatial demands for urban development of Dongchong town while strengthening its place identity?

The first two research questions help to answer the third research question, while RQ3 is as a transition step to connect research phase and design phase. In the process, the methods of literature study, design site analysis and mapping will be used to help develop design principles. The specific literature study of

place identity process will provide the main design principles for the whole design phase. As mentioned before, the virtual technology will replace the on-site investigation to help author to get to know the current situation of design site. The site images, geographic maps, historical water maps will be obtained through google maps, online travel blogs or vlogs, social medias and other websites. Combining the result of design site analysis and mapping with previous research outcomes of RQ1 and RQ2, the spatial design principles can be developed.

Analysis Methods	Variables	Data sources
Literature study	Specific literature on place identity process	Online libraries
Site analysis and mapping	Site imgaes, geographic maps, historical water maps	Google maps; online travel blogs and vlogs; social media (Weibo, Douyin); websites

Figure 1.13 Overview of research question 3 (made by author)

2. CULTURAL LANDSCAPE OF DONGCHONG TOWN



2.1 Tangible cultural landscape in Dongchong town

2.1.1 Geographic history – from the sea to the land

The area of the tidal flat of the Pearl River Delta has unique landscape features including geographic environment formed by the interaction of nature and human, and distinctive landscape elements, such as abundant rivers, dike system, boats, and villages, which are the important part of overall landscape pattern of Pearl River Delta. The so-called “tidal flat” refers to the soil formed by the accumulation of silt along the coastal rivers. It is often covered by the high tide, but exposed at low tide. Therefore, it is necessary to build dikes, plant vegetation and solidify the soil. Thus, the distinctive landscape characteristics of the tidal flat area are formed.

The scope of the tidal flat in Guangzhou is constantly changing due to natural factors, and its boundaries are gradually expanding as sediments continue to accumulate. The research site – Dongchong town is located in the hinterland of the Pearl River Delta, which was still a vast ocean before Tang Dynasty (Zhang, 2019) (Figure 2.1). Until the Song and Yuan Dynasties, the alluvial delta of southern Panyu had gradually developed. It may be related to the intensive land development and urban construction activities in Guangzhou since the Tang Dynasty. A large amount of sand



Figure 2.1 The scope of tidal flat field in Guangzhou

(Zhang, 2019)

has been transported to the Pearl River system leading to the accumulation and development of tidal flat fields. In addition, at the end of Tang Dynasty, wars were raging in the northern part of China, but in the southern part of China, the political situation was stable, which attracted a large number of migrants from the north. Because of the greatly increased population, the problem of shortage of land and food gradually became prominent and land expansion was urgent. By the Song Dynasty, the improved farm facilities, the introduction of rice seeds and the development of water conservancy all motivate the reclamation of the tidal flat. The economic value of tidal flat field was gradually discovered, and the tidal flat field in the Pearl River Delta immediately entered a period of rapid artificial expansion. During the Ming and Qing Dynasties, people

had a full understanding of the technology of embankment construction and reclamation which dominate the process of reclamation of tidal flat fields and landscape changes in the tidal flat fields were deeply artificially branded. In Qing Dynasty, the Panyu alluvial delta plain

was not only connected but also continuously expanding, which was the heyday of reclamation and development of the tidal flat field. During this period, the river network was densely covered.

2.1.2 Agricultural cultural landscape

At the end of Qing Dynasty, the government encouraged to reclaim wasteland and paid more attention on the planting of economic crops and alimentary crops. People developed their own distinctive economic agricultural system based on different natural geographic environment, which promoted the development of farming water conservancy construction. On the one hand, the continuing reclamation has alleviated the food shortages caused by the rapid population increasing and new rice production areas have been cultivated downstream. On the other hand, orchard planting is developing rapidly in the polder. In the Pearl River Delta, rice is planted in the tidal field area, while sugarcane, fruits and mulberry trees have been cultivated in the polder. In addition, fishpond farming has also developed with it. The low-lying land formed by the reclamation of tidal flats cannot be cultivated. People develop it into ponds according to the situation, which can not only reduce the flood risk but also can raise fish (Deng, 2011). From building ponds around rivers to constructing ponds

by digging farmlands, people's knowledge has gradually improved. They learned to expand the dike surface where they can grow economic plants to get more benefits. Therefore, the artificial ecological circular system of fruit-fishponds, mulberry-fishponds (Figure 2.2) and sugarcane-fishponds appeared in the Pearl River Delta and was quickly promoted, which was gradually evolved to be the basic spatial framework and unit of the agricultural cultural landscape in the Pearl River Delta and it became the distinctive landscape character as well (Sun, Nijhuis and Bracken, 2019).

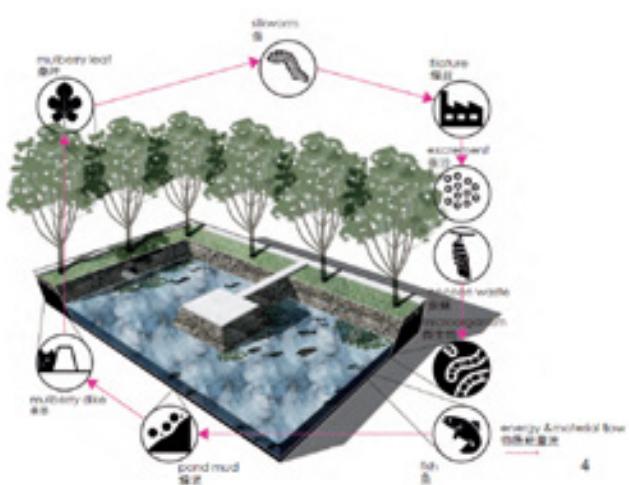


Figure 2.2 Circular system of mulberry-fishpond
(Sun, Nijhuis and Bracken, 2019)

2.1.3 Living cultural landscape

The ancestor of local inhabitants is the poor Tanka group who were originally drifting at sea, but after the regulation of "prohibition of landing" issued against the tanka group was abolished, they were gradually live onshore. Since the embankment is higher than the water level, reducing the flood risk and preventing moisture, and it is convenient to live by the water, so it is most reasonable to build houses on the embankment. They built simple houses attached with boats along rivers, helping escape in time under the threat of flooding, which is an approach of adapting the natural environment of tidal flat field (Figure 2.3). In addition, the

map in *<Panyu County Chronicles>* clearly illustrates the rudiments of settlements built along the waterways at that time and houses are linearly distributed along the banks of the river (Figure 2.4), which is consistent with current spatial distribution. During that period, the possible form of house was thatched stilt house which can be inferred that the villages in Dongchong town today were developed from primitive thatched stilt houses along rivers (Figure 2.5). Until the late 1960s, this architecture form was replaced by tiled houses and the Tanka group began to completely live ashore, while the spatial layout still maintained the linear structure of water villages, but the surface area was gradually expanded. However,

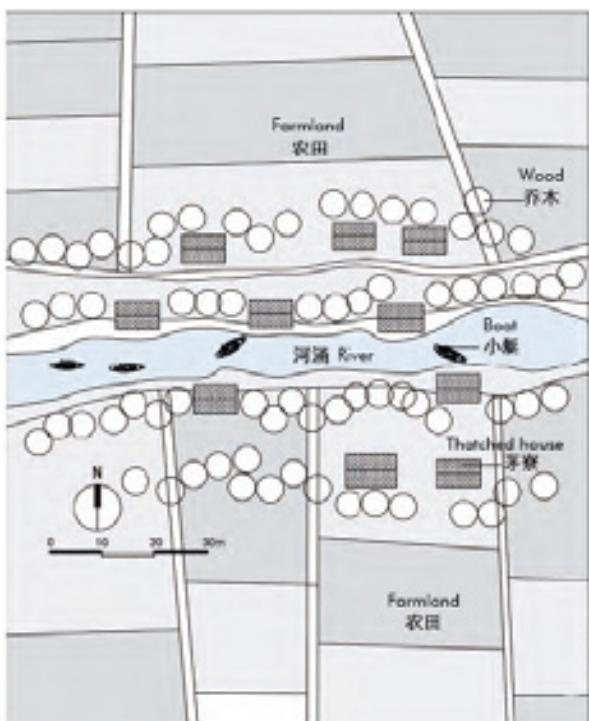


Figure 2.3 Plan of village in tidal flat field in Qing Dynasty
(Zhang, 2019)

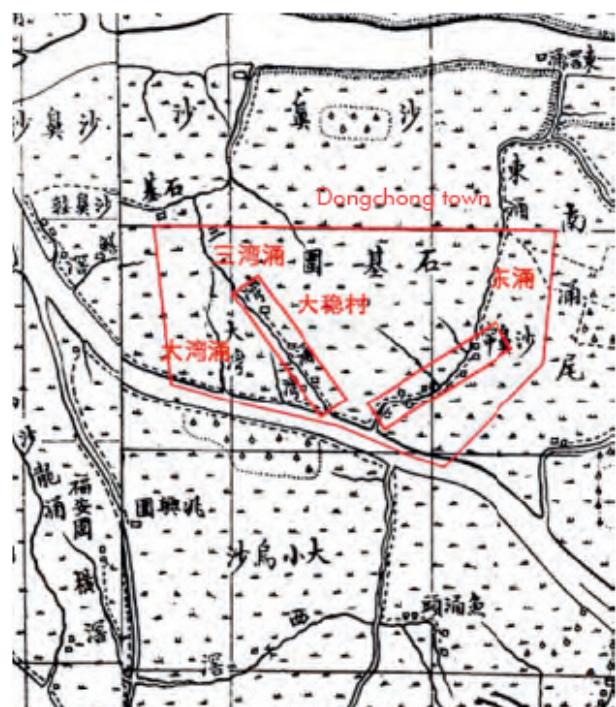


Figure 2.4 Original form of village in tidal flat field between late Qing Dynasty and early Republic of China (Zhang, 2019)

the older generation of Tanka group are still accustomed to living in the stilt house, so some of the old stilt houses beside the river have been preserved. Due to the dense water networks, the boat is the most important transportation. The waterways connect various places, docks were set along rivers, while some docks were developed into public leisure space. In addition, after living ashore, the Tanka group divided their territories by planting a banyan tree or ceiba tree as a demarcation point at the boundary of village, which became an important symbol of the cultural landscape of local water village. Later, the space under the banyan tree was gradually developed to be a public space for recreational and leisure activities of locals, recording their daily life (Figure 2.6). As most of locals in Dongchong town are the Tanka group drifting at sea in the past and their descendants, comparing with other people who have been living onshore, they do not have a strong sense of clan. Thus, there is no magnificent ancestral temple and architecture like other water villages, but the simple and primitive cultural landscape of water village makes Dongchong town to be more distinctive.



Figure 2.5 Rivers and stilt houses in the 1960s (Zhang, 2019)



Figure 2.6 Public space under the banyan tree

(Nansha Information, 2018)

2.2 Intangible cultural landscape in Dongchong town

2.2.1 Local inhabitants

Most of local inhabitants in Dongchong town are the descendants of the Tanka group who were the main labor force for the land reclamation and cultivation in the past (Figure 2.7). The past history was humiliating and painful for them because in the past they were only allowed to live on boats and suffered oppression and discrimination. Historical literature records that there were a lot of boats floating on the water network of tidal flat field, which most of poor people who have fled from wars and have been displaced lived on. The reason for this phenomenon is that the past laws prohibit Tanka group from going ashore. The poor migrating people were forced to live on boats and were discriminated against as "Tanka group" and lived a floating life to avoid paying

national taxes (Zhang, 2019). On the other hand, the tidal flat field tended to be stable and alimentary crops can be grown, which is a necessary condition for tanka people to settle here as well (Zhang, 2019). The boat is very important to the tanka group, a small boat provides them with space for production and living (Figure 2.8). Therefore, at that time, tanka boats floating on the water networks became the most prominent landscape symbol in the tidal flat field and it lasted for hundreds of years until the 1960s. In addition, in the 7th year of the emperor of Yongzheng in the Qing Dynasty (1729), the government abolished the regulation of "prohibition of landing" issued against tanka group and allowed them to live in villages near water. As a result, the landscape of the tidal flat field began to change.



Figure 2.7 Land reclamation of tidal flat field in Dongchong town (Zhang, 2019)

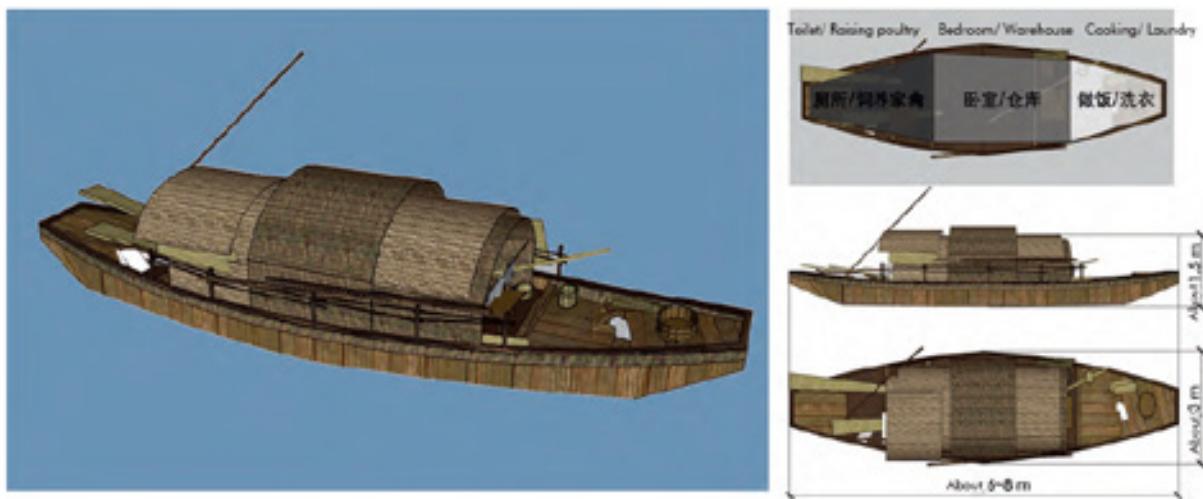


Figure 2.8 The boat house of Tanka group (Zhang, 2019)

2.2.2 Culture & Tradition

Because it is located in a low-lying area with dense river system and most of local inhabitants are descendants of Tanka group, many customs and festivals here are closely related to the water, which is the spiritual support of locals. The "water wedding" is a special traditional way of marriage in the cultural of Tanka group that the man need to take a boat to welcome his bride to the wedding (Wu and Feng, 2015) (Figure 2.9). In this process, as an important part of Tanka culture, "Xianshui opera" is indispensable and accompanies the entire wedding process. Therefore, the river is the carrier of local culture, but due to the disappearance of rivers and the impact of urbanization, the custom of water wedding is

gradually disappearing among young people. However, in recent years, in order to protect local cultural characteristics, the government has begun to call on everyone to pay more attention on traditional cultural characteristics and inherit them. Last year, Dongchong Town held a "water collective wedding" to promote this cultural tradition. Many brides and grooms traveled along the river on boats to share happiness and harvest blessings from the villagers. Dragon boating (Figure 2.10) is a sport loved by people in Dongchong town. They have a local dragon boat team and participate in the Guangzhou dragon boat competition every year while sometimes they even get good results. This is something the locals are very proud of. In addition, due to discrimination in the past, the Tanka group

have suffered unequal treatment, they do not want to mention that painful history. Therefore, most of Tanka elders in Dongchong town do not tell descendants their identity of Tanka group, because elders afraid that their descendants will be discriminated against. To some extent, it results in the disappearance of Tanka culture, which is not only the loss of cultural diversity, but also the loss of local cultural traditions. We can not avoid past pain, the best way to relieve the pain is not to hide it but to face it. In the contemporary society, we have the responsibility to let more people know about the Tanka group who reclaimed and cultivated the land and their painful history. It is worthwhile to promoting their unique culture and give them more respect. Moreover, it is valuable to carry forward and continue the local cultural characteristics of Dongchong Town.



Figure 2.9 Water wedding (Zeng, 2019)



Figure 2.10 Dragon boat

(Source: https://k.sina.cn/article_7175685682_1abb4463200100tmqq.html)

2.3 The relationship between tangible cultural landscape and intangible cultural landscape

The cultural landscape is the product of the interaction of natural landscape and human activities. That means besides physical living environment, cultural landscape includes the spiritual aspects for locals which let people have an attachment on the place. Tangible landscape and intangible landscape are interdependent

and influence each other. The tangible landscape provides physical living environment which records inhabitants' life and activities while the intangible landscape is nested (O'Donnell, 2008). Intangible landscape endows the tangible landscape with spiritual value and meaning, while the tangible landscape

is the carrier of the intangible landscape. On the one hand, people need to complete and realize some traditional customs or festivals through the physical cultural landscape. On the other hand, the intangible cultural landscape becomes a spiritual bond maintaining inhabitants and place and giving locals a sense of belonging and attachment, which is a part of place identity as well. Therefore, both tangible and intangible cultural landscape play significant roles in shaping place identity.

In Dongchong town, physical cultural landscape is the product of the interaction between ancestors and ocean in the past which generates distinctive landscape features. Whether agricultural or living landscapes, they illustrate their own reclamation history and characteristics of Dongchong town. Because of the physical environment, the water-related traditions and festivals are bred to become the spiritual sustenance of locals. All of these are shaping place identity of Dongchong town.

2.4 The characteristics of cultural landscape representing place identity in Dongchong town

Lynch (1981) proposed that place identity is the extent to which a person can recognize or remember places that are distinct from other places. The context of place identity is not only regarded as the characteristics of the physical environment but also memories and symbolic meanings associated with the physical word. Cultural landscapes are multi-sensory vessels used to identify place that combine tangible and intangible heritage values. The physical appearance of a local cultural landscape plays an important role in influencing the place identity because the tangible elements of the cultural landscape embody the spirits of place.

A comprehensive checklist of physical landscape character-defining characteristics serves as a topical guide for studying the tangible elements embracing place identity (O' Donnell, 2008):

- Natural system
- Land use, pattern, clusters
- Spatial organization
- Visual relationship
- Topography, surface drainage
- Vegetation
- Circular system
- Water features, natural and constructed

- Non-habitable landscape structure and buildings
- Spatial character, form and habitable structure
- Vocabulary of site furnishing and objects

These are the tangible forms, features and overall character of the cultural landscape that express identity of place alongside the intangible values that are nested within place. The intangible values and meanings of a cultural landscape also should be documented and understood. These landscape-rooted intangible values are expressed in places that are used for (O' Donnell, 2008):

- Festival
- Traditional music, dance, performance
- Pilgrimage
- Worship
- Rituals

- Commemoration of past events
- Traditional practice
- Gathering place for native plants
- Gathering place for craft materials
- Iconic shared community place of memory and present use

These categories indicate the existing intangible values embedded in the place where valuable events take place on daily or special occasions. On the one hand, cultural landscape as a carrier represents place identity, these physical appearance and intangible elements illustrate the distinctive place identity to be distinct from others. On the other hand, the place identity grows from the cultural landscape. Because of the interaction of specific cultural groups and specific natural environment, distinctive characteristics could be produced.

According to the aforementioned cultural landscape character-defining checklist, the specific cultural landscape of Dongchong town both tangible and intangible elements embodying the local identity of place could be summarized.

The tangible cultural landscape characteristics reflecting place identity in Dongchong town are :



- Linear living structure (Live along rivers)



- Water system and water infrastructure



- Dock (public gathering space)



- Agricultural landscape pattern



- Sugarcane field (waterfront production)



- Dike-fishpond aquaculture system



- Stilt living structure



- Banyan tree (symbol of water village)

The intangible cultural landscape characteristics reflecting place identity in Dongchong town are :



- Floating history of Tanka group



- Reclamation history



- Dragon-boat festival/competition



- Water wedding



- Xianshui opera

Obviously, those intangible cultural landscapes cannot be separated from the physical cultural landscape. For instance, water-related traditions or festivals need to happen on the water, therefore connected water infrastructure and water space are necessary to be protected and developed. According to the description of the cultural landscape of Dongchong town, it is easy to see that water and tanka cultural group is the main components while other elements relied on these two main components to form

and develop. Because of the combination and interaction of these two main components, Dongchong town has its unique landscape characteristics and distinctive place identity distinguishing from other towns. In order to maintain the distinctive place identity in the future urban development, the protection and adoption of cultural landscapes are essential in future urban planning and design of Dongchong town.

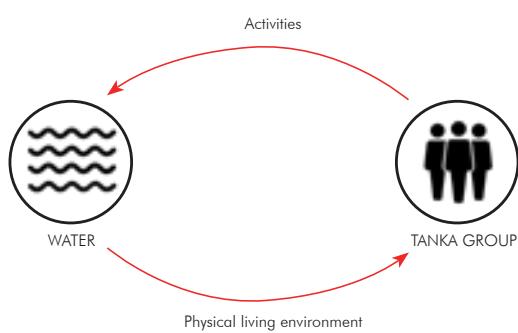


Figure 2.11 The core characteristics of cultural landscape in Dongchong town

A high-angle, black and white aerial photograph of a city. The foreground is filled with a dense cluster of buildings, mostly high-rise residential or office structures. In the middle ground, a wide river flows from the bottom right towards the top left. The background shows more buildings and what appears to be a hilly or mountainous terrain under a clear sky.

3. SPATIAL DEMANDS OF URBAN DEVELOPMENT IN DONGCHONG TOWN

3.1 The vision of urban development of Guangzhou city

According to the <Guangzhou Urban Development Conceptual Planning> and <Guangzhou City Urban planning>, the future urban spatial structure will be adjusted from the traditional natural landscape pattern of "Baiyun Mountain and Pearl River" to the distinctive spatial pattern of "Mountain, Water, City, Farmland and Sea" (Figure 3.1). It not only inherits the landscape pattern of "Shanshui" (means: Mountain and water) from the ancient city but also emphasizes the organic structural relationship between the city and mountain, water, farmland and sea in the spatial pattern of the future urban development in Guangzhou, which protects the urban characteristics of the interaction between natural elements and humanities, from a broader and more macro level. Since 2000, under the implementation and promotion of strategic planning, this spatial pattern has initially taken shape, but it is still facing great challenges in the context of urban development:

The first is the construction of an ecological and sustainable city. At present, the ecological corridor has been eroded, the water quality of urban rivers urgently needs to be improved, and the urban green spaces are in short supply. In the meanwhile, in order to reduce the heat island effect of Guangzhou (Figure 3.2), it is necessary to actively carry out urban climate

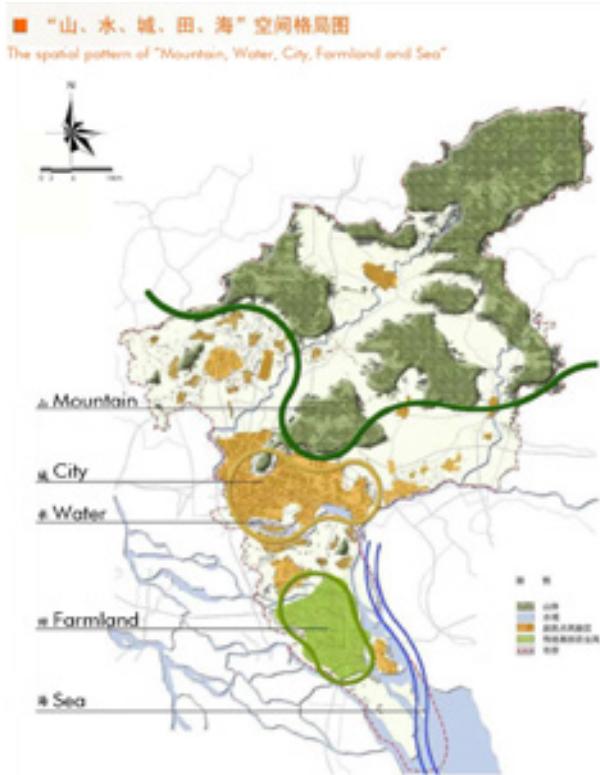


Figure 3.1 Spatial pattern of "Mountain, Water, City, Farmland, and Sea" (2020)

adaptation planning and control. Guangzhou is located in the subtropical climate zone and is affected by the southeast monsoon in the summer (Figure 3.3). Dealing with the relationship between urban climate and urban spatial layout is worth considering in future urban planning and design, such as sufficient open space, coverage of vegetation and water bodies, and building spatial layout that guide ventilation (Guangzhou Municipal Planning and Natural Resources Bureau, 2019).

The second is the construction of a livable city. Leisure and recreational spaces are the basic guarantees for the construction of a livable city, that constructing three-scale park service and network system of "rural park – urban

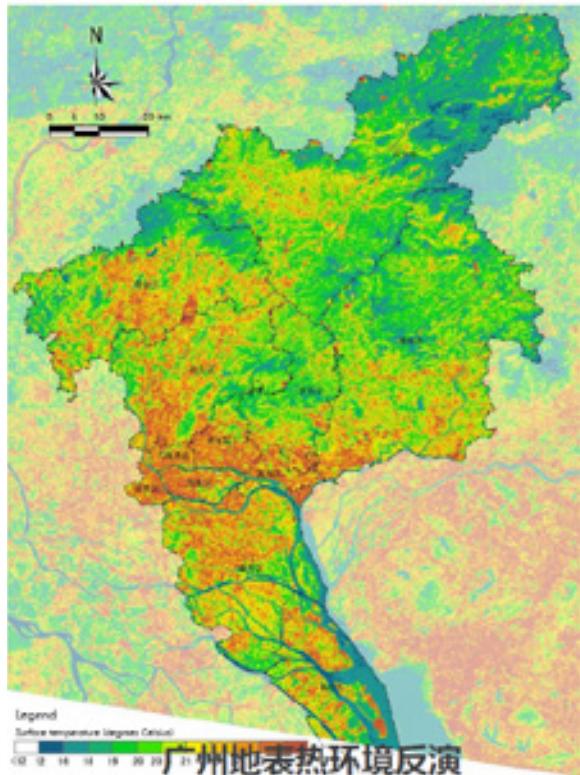


Figure 3.2 Surface thermal environment in Guangzhou (Guangzhou)

Municipal Planning and Natural Resources Bureau, 2019)

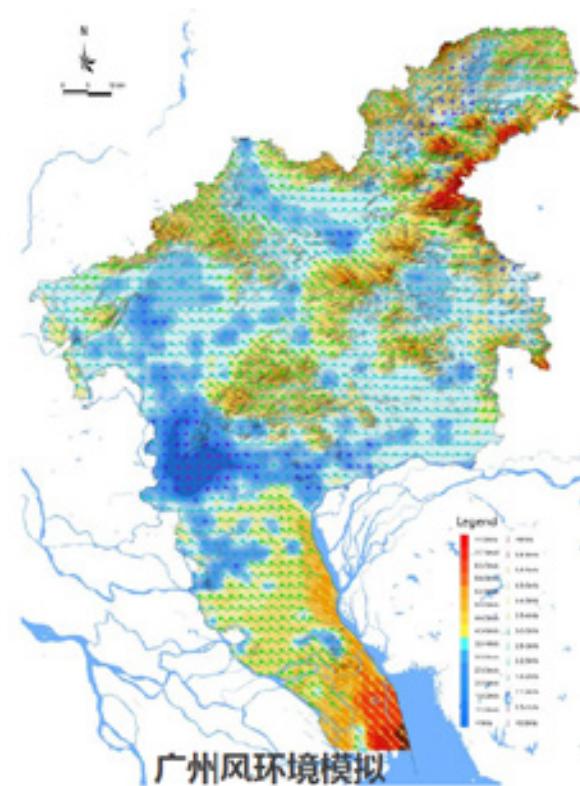


Figure 3.3 Guangzhou wind environment simulation (Guangzhou)

Municipal Planning and Natural Resources Bureau, 2019)

park – community park". In the city, the park should integrate with leisure and recreational functions of urban green spaces and meet the activity demands of residents. The construction of parks should be evenly distributed to achieve the goal of seeing a park every 500 meters. It is conducive to improving the urban ecological environment and urban microclimate, creating a landscape city with a blend of mountains and rivers and increasing the green visibility in the urban environment, and openness and accessibility of public spaces. At the same time, combined with the comprehensive improvement of the river system and strengthening the construction of landscape and green spaces to together create a continuous, shared and open waterfront environment.

The third is the construction of urban cultural characteristics in different districts. Each district should develop integrating with its own characteristics to form a unique contemporary urban image. Among them, the Panyu district is suggested to highlight the identity of Lingnan water village, while Nansha district is suggested to highlight the coastal and pastoral characteristics.

3.2 The vision of urban development of Nansha District

Nansha district, located in the southern part of Guangzhou, plays role in demonstrating the ecological characteristics of "farmland, sea" in the spatial pattern of "mountain, water,

city, farmland and sea" of Guangzhou. The northern part of Nansha district is one of the three major cultivation areas in Guangzhou and the southern part is the only sea-facing area of Guangzhou, thus, the Nansha district has natural advantages of farmlands and sea (Land resources and planning Bureau of Guangzhou Nansha Development Zone et al., 2016). In order to promote the construction of the urban spatial pattern, we should fully consider and utilize the natural environment, integrating with the landscape elements such as mountain, water, farmland, forest and sea, optimizing the urban structure. These are helpful to establish a scientific and reasonable new urban developing pattern and a healthy, ecological and livable urban environment.

Firstly, be a priority to ecology. In order to fully respect nature in urban construction with a low-impact development model, protecting the pattern of natural water village, organizing ecological units and urban areas based on water bodies, guiding urban development to conform to the natural ecological texture, and integrating into the natural ecological environment are our jobs. We should actively construct urban public green spaces and strengthen the degree of the spatial integration of the city and the ecology to create a pleasant and accessible public open space. At the same time, integrating the ecological and recreational function into urban green spaces and public spaces. Based on the standard of

seeing greenery every 100 meters and seeing park every 500 meters, various public spaces should be rationally distributed, using scattered open spaces, both sides of roads and banks of rivers to supplement street green spaces, which not only serve as ecological steppingstones but also provide citizens with various types of recreational and leisure facilities and places (Guangzhou Nansha District Municipality, 2017). In addition, the Nansha district is located in the Pearl River Delta with dense water networks. Therefore, the spatial layout of the water system and the improvement and protection of water quality are very important parts of urban construction. Based on the current water system, it is recommended that the water surface rate within the inner dike area should not be less than 10% while ensuring that the water system is connected as much as possible (Guangzhou Nansha District Municipality, 2017). Utilizing green space and wetlands to help purify rainwater initially and reduce water pollution. Implementing ecological restoration and river surge management to increase the self-purification capacity of water bodies within the water system.

Secondly, taking culture as the source, protecting, inheriting and carrying forward the local culture, while absorbing and tolerating diverse foreign cultures. On the basis of sorting out and protecting the traditional history and culture, and spatial features, we need to enrich the physical carrier of traditional

culture, integrating it with contemporary urban life and enhancing the value and vitality of traditional culture. Fully displaying the distinctive and representative urban landscape elements related to mountain, water, pastoral and historical elements to strengthen the urban characteristics and identity. Making full use of the water network, developing diverse water transportation as a supplement to land transportation and protecting the linear village pattern are benefits for manifesting urban characteristics.

3.3 The vision of urban development of Dongchong town

In Dongchong town, located in the southern part of Nansha district, by 2050, the population is projected to 300,000 (Guangzhou Nansha District Municipality, 2018) which is mainly reflected in the employment of the migrant population(Guangzhou Nansha District Municipality, 2017), which means urban expansion and development are inevitable. Dongchong town is committed to building an ecological and livable urban with a humanized spatial environment (Guangzhou Nansha District Municipality, 2018). It is suggested to make full use of the landscape advantages of farmlands and waterways, closely integrating the urban development with the natural pattern and constructing distinctive landscape coordinating with urban economic development. In the urban area, it should be a reasonable and balanced layout of urban green

spaces and an open green system. Dongchong town is located in one of three cultivation fields of Guangzhou with unique agricultural cultural landscape characteristics, reflecting local agricultural history and culture, which has a great natural advantage of "farmland" in shaping Guangzhou spatial planning pattern. Therefore, while building an ecological and livable new town, the municipality of Dongchong town plans to develop the tourism industry with local characteristics through making full use of local distinctive landscape and culture. Integrating recreational function and landscape experience into the original monofunctional agricultural landscape to meet the leisure demands of people in contemporary society, so that new immigrants and tourists can deeply experience the characteristics of the local agricultural landscape, while it also facilitates local economic development and urban construction.

3.4 Conclusion

For future urban development, Dongchong town actively responds to spatial demands and quality of local urban development from the Guangzhou city spatial planning and the urban planning and vision of Nansha district. According to the aforementioned description about future urban planning vision and construction, from the perspective of Guangzhou city, Nansha district and Dongchong town, we can summarize the urban spatial demands and requirements

Dongchong town in contemporary society (Figure 3.4). First of all, in the contemporary urban spatial layout, infrastructure connectivity is necessary and the relationship between the architectural spatial layout and urban ventilation should be fully considered as well to reduce the heat island effect. Secondly, we should evenly distribute green spaces and public spaces to achieve the goal of seeing green every 100 meters. On the one hand, it will increase the areas of urban green surface and improve urban ecological value, on the other hand, it will strengthen its recreational

and leisure values, providing sufficient activity spaces for citizens. Finally, Dongchong town has the landscape advantages of the abundant river system, so improving the water quality and adding more entertainment around rivers will help to shape Dongchong town with unique water identity. At the same time, developing the local agricultural landscape and transforming it into a multifunctional landscape with leisure and education values help facilitate the development of the local agricultural tourism industry.

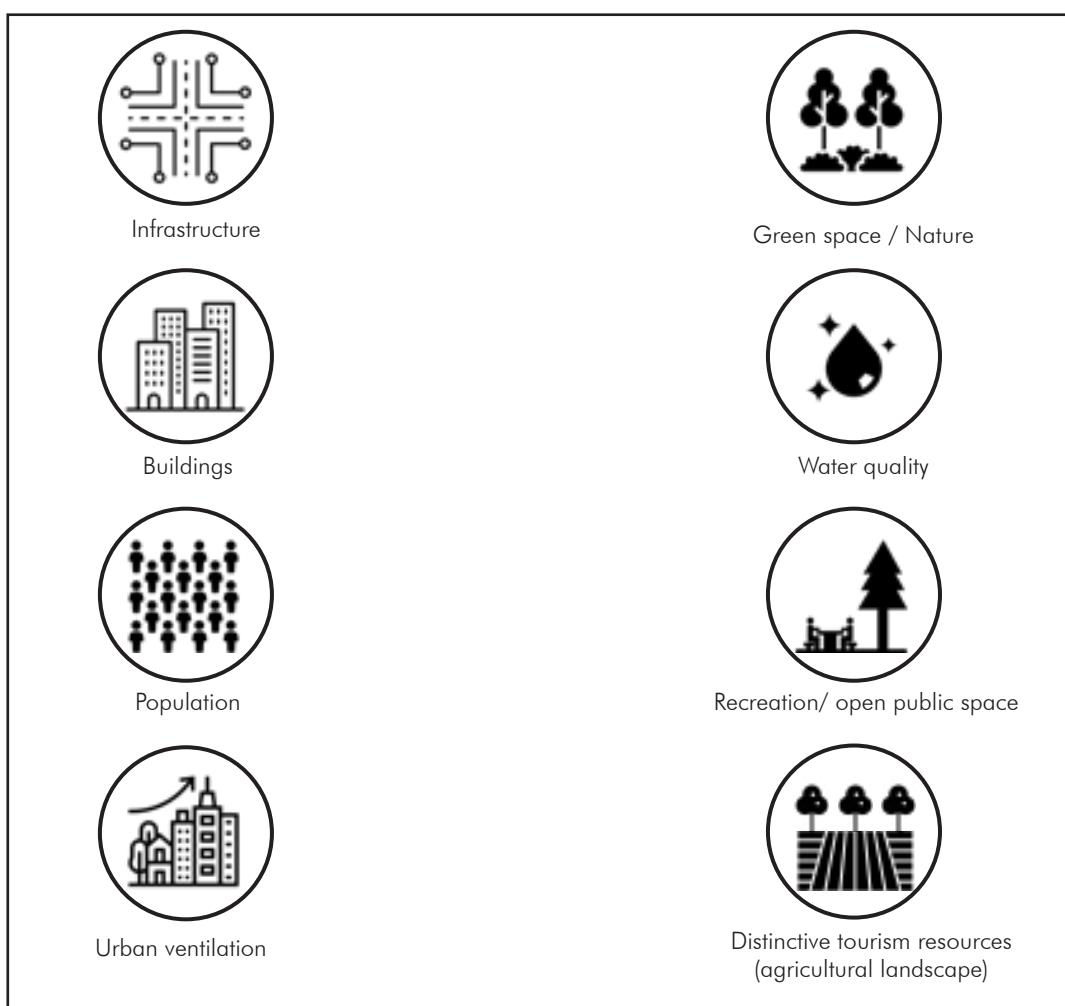


Figure 3.4 Urban spatial demands for future urban development

of Dongchong town (made by author)

4. DESIGN SITE



4.1 Design site location



Figure 4.1 The location of design site (made by author)

The design site is selected in the center of Dongchong town (Figure 4.1) where urban expansion is planned, and real estates are projected in the coming years (Guangzhou Nansha District Municipality, 2018). The design site is within and surrounded by local cultural landscape. There are traditional linear water villages on both sides and agricultural cultural landscape inside (Figure 4.2). On the other hand, the design site is next to

the urbanized area. Comparing with other areas in Dongchong town, the infrastructure here is relatively improved including local municipalities, schools, highway and park (Figure 4.3). Therefore, based on political and economic factors, this site is a priority for urban expansion. Thus, it is the best testing site for design because it is facing the conflict between traditional cultural landscape and contemporary urban expansion.



Figure 4.2 The cultural landscape of design site (made by author)



Figure 4.3 The existing urban infrastructure of design site (made by author)

4.2 Design site analysis

Through the research on landscape development of design site, it can be clearly to see that the cultural landscape is unscrupulously eroded by contemporary urbanization.

4.2.1 Water system

The Dongchong is reclaimed from the sea, the intertwined water network is a significant characteristic of local cultural landscape in the past and it is also a carrier of local identity. The daily life and production activities of locals are inseparable from water. The boats passing

on the rivers used to be the most beautiful scenery and feature in the site. However, due to the development of contemporary cities, road infrastructure construction has received great attention. Unfortunately, as shown in the Figure 4.4, the historical waterways are progressively replaced by concrete roads and the interaction between people and water is gradually reduced.



River system map in 2020



River system map in 1965 (Source: https://weibo.com/1080201461/JcETYp5WK?type=comment#_rnd1612917292473)

Figure 4.4 The comparison of the past river system and current river system in design site (made by author)

4.2.2 Living landscape

From the aforementioned research on the historical development of the site, it can be understood that the linear villages built along rivers is one of the most prominent symbols within local cultural landscape. It is the influential clue for the research and understanding on the local culture and history while its form and layout can help to study living condition and environment of locals in the past. At the same time, it is one of the important characteristics of local cultural landscape and an important component of local identity to

distinguish it from other places. However, it can be seen from the Figure 4.5 that in the last 35 years, linear water villages representing local landscape characteristics have gradually been swallowed by contemporary urban fabric due to templated urban planning and construction. The boundaries of linear water village are gradually blurred and included in the regular urban pattern. It is a disaster for the local cultural landscape and place identity, obliterating the distinctiveness of the local landscape, and hindering the in-depth study of local history and cultural in the future as well.

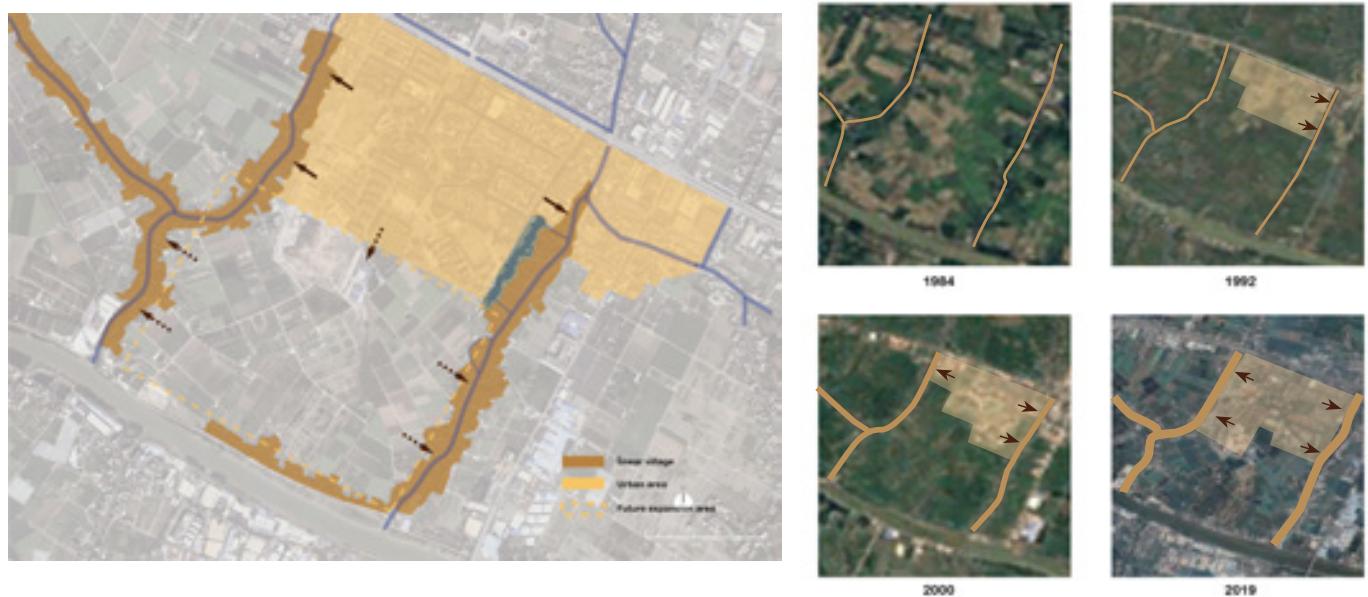


Figure 4.5 The process of linear water village eroded by urban expansion in design site (made by author)

4.2.3 Landscape pattern

The original landscape pattern is a testimony to the history of land reclamation and cultivation. It is the evidence showing the consequence of the interaction between humankind and nature, and it also has special historical and cultural significance and landscape values. For instance, the orientations of its landscape

pattern reflect the traces of the vanished historical water networks. Nevertheless, as shown in the Figure 4.6, the template-based urban planning and design ignores the value of the original landscape pattern and replaces it with regular and non-emotional urban fabric. As a result, a cloned urban image on the assembly line is produced again.

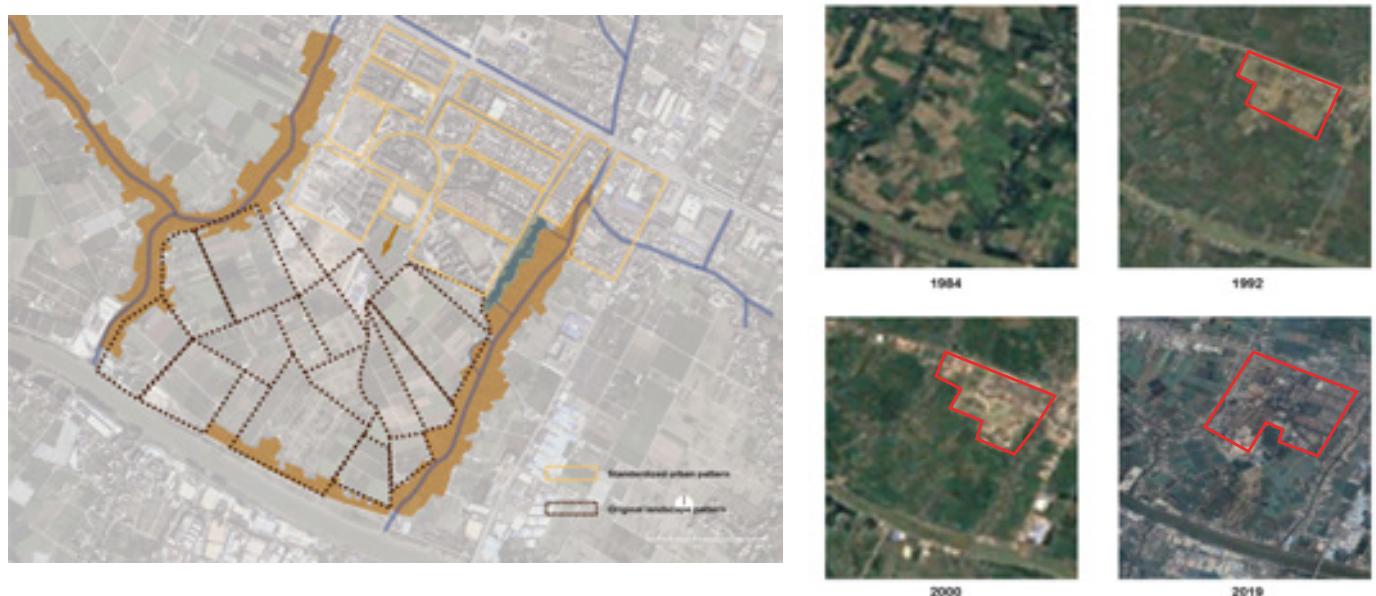


Figure 4.6 The process of cultural landscape pattern eroded by urban pattern in design site (made by author)

4.2.4 Intangible landscape

Most of the aborigines on the site are descendants of Tanka group, therefore their traditional customs remain here. In order to prevent the extinction of the tanka cultural under the pressure of urbanization, the local municipality has begun to encourage and promote the inheritance of local culture and customs in recent years to retain local identity.

It not only enhances the cultural identity of locals, but also attracts more population and investments. The water group weddings (Figure 4.7), Xianshui opera performance are promoted by local municipality as well as dragon boat competition. Unfortunately, because the local cultural landscape carrying these customs and festivals is being destroying by standardized urban construction, it is difficult for them to be fully displayed.



Figure 4.7 Water group weddings (Zeng, 2019)

4.2.5 Conclusion

Obviously, the design site is under the pressure of losing place identity caused by contemporary urban construction. Standardized urban planning does not adapt to the local condition and overlook the values of local cultural landscape, which results in cloned urban landscape and loss of distinctiveness. On the other hand, the cultural landscape could be a

breakthrough to resolve the conflict between urban construction and the loss of place identity. In other words, cultural landscape provides an alternative that contemporary urban construction should not be at the expense of cultural landscape but can attempt to let cultural landscape guide contemporary urban planning and design to produce unique urban landscape retaining its own place identity.

5. SPATIAL DESIGN PRINCIPLES



5.1 Main design principle

- **Conserve – Adapt – Grow**

Place identity is a dynamic product through time while cultural landscape is not in static status as well. The social framework of identity is formed by an accommodation-assimilation formation, absorption of new elements, and adjustments in the existing identity shape (Qazimi, 2014).

The main design principle of "Conserve – Adapt – Grow" was proposed according to the dynamic characteristics of place identity and cultural landscape, which guides the entire design process. It aims to build a harmonious coexistence relationship between cultural landscape and urban spaces to develop together, that is, absorbing the elements of the new era based on the original place characteristics, thereby evolving into updated local characteristics accommodating with demands of contemporary social development. To be more specific, "Conserve" means to protect or restore the cultural landscape representing the local identity and include it as part of the future urban landscape framework, so that the local culture, spirits and characteristics can be preserved. "Adapt" refers to adapting and

integrating the new urban spatial elements to the cultural landscape framework, rather than destroying or replacing cultural landscape during urban construction process. "Grow" is a reflection of the dynamic characteristic of the cultural landscape and local identity themselves. When the new urban spatial elements merge with the cultural landscape framework, over time their integration will become the updated local cultural landscape and local identity. But it is worth noting that this is an evolving process in which the culture, spirits and characteristics of Dongchong town will be inherited in a constantly updated physical appearance, distinguishing from other cities or regions. Both continuity and distinctiveness of culture and the potential of future development can be illustrated on the landscape. It is different from the current phenomenon of erasing original landscape features to create a brand-new urban landscape or restoring all historical images. The main design principle promotes that landscape and identity are the evolving processes carrying local culture and spirits.

5.2 Spatial design principle

5.2.1 Design principle 1

- **Restoring rivers and reintroducing water infrastructure to supplement vehicle infrastructure**

In the past, water is the main transportation and the main component of the local cultural landscape and identity. But now, the concrete roads take the place of waterways, which destroy the local culture and identity. Therefore, the design principle of infrastructure is to restore

rivers and reintroduce water transportation to supplement vehicle infrastructure. The cooperation of land and water transportation not only meets the spatial demands of infrastructure connectivity in urban construction but also illustrates local culture and characteristics. Moreover, it provides physical landscape conditions for intangible cultural landscape such as local festivals, custom, inheriting and spreading local traditional culture and spirits, which helps to strengthen local place identity.



Figure 5.1 Design principle 1 (made by author)

5.2.2 Design principle 2

- **Establishing green buffer to protect linear water village structure**

Linear water village structure is the important distinctive characteristic of the local cultural landscape, it witnesses the local history of land reclamation and the evolvement of the living condition of ancestors. The linear structure contributes to shaping local landscape identity and benefits for studying the evolving process of geographic environment caused by the interaction of nature and humankind. However, the current urban development plan is trying to break and erode this unique linear structure to

achieve the purpose of urban expansion without any respect for the original cultural landscape. In this process, the place identity is gradually disappearing. After realizing this issue, the design principle of protecting linear water village structure was put forward. In addition, the spatial demands of urban development need to be considered. Thus, establishing a green buffer zone is an approach that not only protects the linear living structure by conserving nearby farmland as a buffer zone to separate urban fabric but also includes the agricultural landscape into the urban environment to increase urban greenery and strengthen the local urban identity.

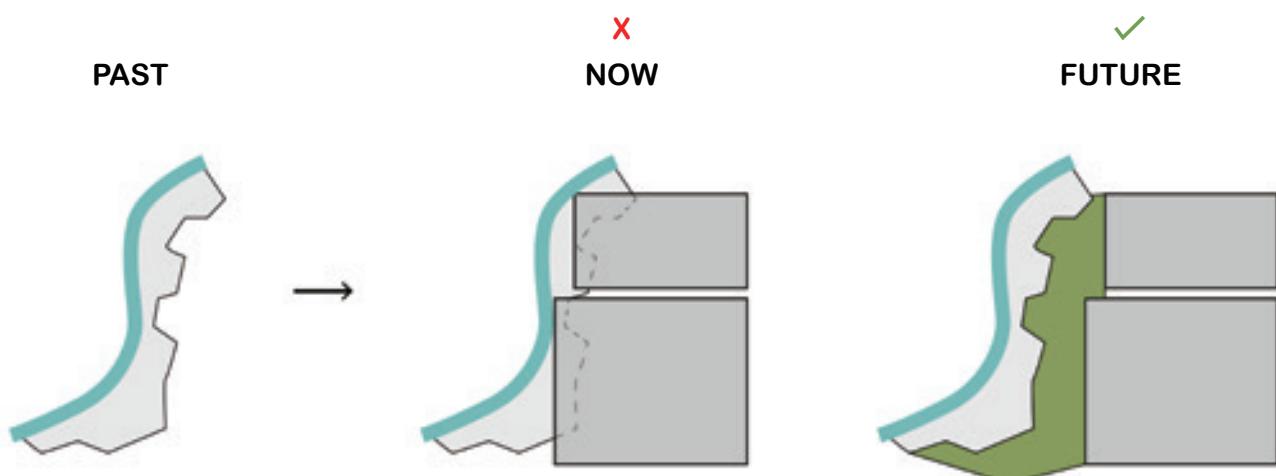


Figure 5.2 Design principle 2 (made by author)

5.2.3 Design principle 3 & 4

- **Respecting original landscape pattern**
- **Transforming the mono-functional landscape to multi-functional landscape**

The landscape pattern is the product of the interaction between locals and the natural environment through time. It is the evidence of the landscape evolution from the barren tidal flat field to the productive agricultural land. The pattern of place representing the stories of the place tells us the character of place which is the essential component of place identity. Due to the dominance of templated urban planning and design, the original landscape pattern was destroyed by a similar and regular urban pattern. However, the upcoming construction of buildings and urban spaces is inevitable. Thus, for the sustainability of place identity, the design principle of respecting original landscape pattern and adapting upcoming urban spatial

layout into the pattern is generated.

The traditional agricultural landscape is only served for food production. With the contemporary urban development and construction, mono-functional agricultural landscape is almost impossible to exist in urban context. But recently, the raising attention and popularity of urban agriculture and agricultural tourism provide opportunities to agricultural landscape existing in urban context. Dongchong town has its special agricultural landscape, such as dike-fishpond with a circular system which is part of identity of this region. Therefore, transforming mono-functional agricultural landscape into multi-functional agricultural landscape integrating recreational and educational functions will not only benefit the sustainability of cultural landscape and local identity but also meet the urban spatial demands of greenery and recreational public spaces for future urban development.



Figure 5.3 Design principle 3 & 4 (made by author)

5.2.4 Design principle 5

- Rationally distributing public spaces and integrating local cultural symbols into public spaces**

Public space is an element of local identity, which manifests the interactive relationship between social behavior and the physical environment (Frick, 2006). On the one hand, the public space can reflect the original place identity that locals attached on and provide immigrants with an opportunity to communicate and adapt to the place. On the other hand, public space provides a physical space where new social culture and spirits can be nested while new character and identity can be generated. In addition, public space is also one of the spatial demands of future urban development. It provides essential leisure and recreational space for increased population and at the same time, it benefits for the urban green visibility and achieving the goal of seeing greenery every 100 meters. Thus, public spaces should be rationally distributed in the urban

environment.

The physical setting and symbols are the carrier of local spirits and culture. They are the products and witnesses of landscape evolution. The place identity depends not only on the physical components but also on the meaning and association developed between people and the place (Ujang, 2012). The banyan tree is the typical symbol of local water village. In the beginning, it acted as boundary symbol between villages and later, the space under the banyan tree is developed to be public gathering place for locals, recording their daily life through time. Boats and stilt living structure plays important role in local landscape history as well as the cultural history of Tanka group. There is a strong intangible emotional connection between local people and these physical symbols. So, integrating these cultural symbols into public spaces will benefit the continuity of local cultural and place attachment and identity.



Banya tree - symbol of culture of water village



Boat - symbol of the culture of Tanka group



Stilt structure - symbol of the culture of Tanka group

Figure 5.4 Design principle 5 (made by author)

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邵工書

6. DESIGN DESCRIPTION



6.1 Design concept – "ShanShui City"

"ShanShui" means mountain and water literally and "ShanShui City" is one of the unique spatial planning concepts in China's history. The urban planning and architecture design dominated by capital and power only focused on functional demands, which resulted in serious opposition between human and nature, urban and nature, tradition and modernity. Besides, environmental issues, cultural disappearance, standardized urban images and loss of place identity have also emerged. All of problems motivated the generation of the concept of "ShanShui City". In 1990, the famous Chinese scientist Qian Xuesen proposed the concept of "ShanShui City" by integrating the ShanShui poems,

traditional Chinese gardens and landscape paintings, and he also suggested that the whole city could be regarded as a tremendous landscape garden (Fu and Dong, 2017). Both the "Shan" (means mountain) and the "Shui" (means water) have special cultural meanings in China, and people have been shaping local culture when creating the city together with the natural environment system (Chen, 2010). The main purpose of the concept of "ShanShui City" is to combine the traditional Chinese concept of harmony between human and nature and the development of contemporary urban to build a healthy and livable city with traditional and contemporary culture.



Figure 6.1 Chinese ShanShui landscape painting (source: https://www.sohu.com/a/240181711_167976)

The concept of "ShanShui City" represents an expectation for the future urban landscape planning and design with Chinese characteristics. From the perspective of landscape architecture, I believed that the architecture and landscape should not be separated and independent but communicate and cooperate to shape the whole city as a tremendous landscape community with a shared future, containing human spirits and cultural values. In this design, the reason why I adopted the concept of "ShanShui City" is because it perfectly conveys the future urban landscape and vision that I am trying to promote. In my concept of "ShanShui City", it does not simply refer to a city containing "mountain" and "water", but a harmonious coexistence relationship created by the emotional exchange between man and nature. The cultural landscape is the result of the continuous interaction and dialogue between human and nature over time, while in this process, people's emotions and spirits are placed in these landscapes. Taking local cultural landscape as the framework of urban spatial planning and design to guide future urbanization and then local culture and spirits can be conserved and continued in the form of landscape, which is conducive to creating a "ShanShui City" with local identity. It well

manifests the aforementioned main design principle of "Conserve – Adapt – Grow". The concept of "ShanShui City" guides the adaption of new coming architecture groups and other functional elements into the local cultural landscape, rather than replacing it, and then their integration will grow up together over time to shape the future urban form of "Shanshui" landscape community, strengthening its place identity.

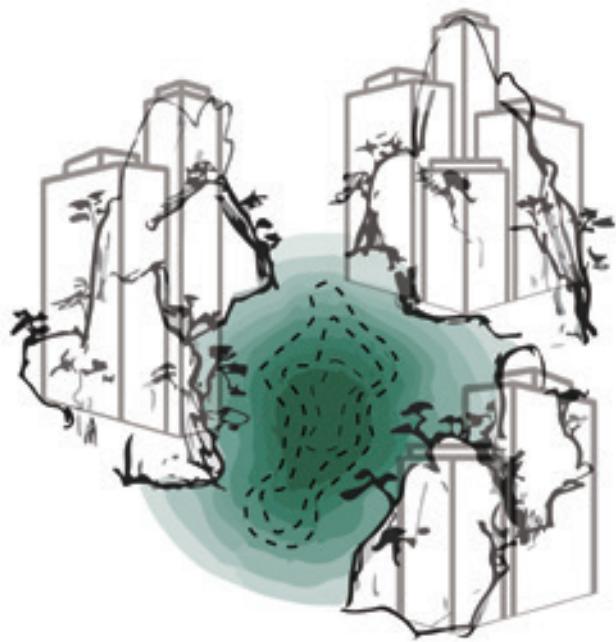


Figure 6.2 The concept of "ShanShui City" in Dongchong town
(made by author)

6.2 Modelling

The phase of model testing is used to select the best one that meets the future vision of the "Shanshui City" concept, that is, harmonious relationship between human and nature, cultural landscape and urban development (buildings). The criteria are mainly generated from the previous chapter of cultural landscape, spatial demands of future urban development. Because there are no specific standard parameters for each variable, the entire evaluation process is through comparing the three models with each other to obtain the score for each variable of each model. Therefore, the result will be affected by subjective factors to a certain extent.

After defining the models, each model is tested on the following criteria:

Continue river system:

Water is the main characteristic and identity of the site and physical river landscape carries local intangible cultural and traditions. So, continuing river system can not only provides a distinctive physical landscape for locals but also is beneficial for local culture continuity and shaping place identity.

Respect landscape pattern:

Original landscape pattern reflects human activities and interaction with nature and it also

represents local landscape culture and identity, while condensing the spirits of locals. Landscape pattern can help to distinguish from other places to keep their own landscape uniqueness.

Preserve agricultural landscape:

The agricultural landscape is also the part of characteristics of the local cultural landscape. At the same time, Dongchong town plans to develop local characteristic agricultural tourism. Therefore, preserving agricultural landscape as much as possible and adapting them into urban context is necessary for the future.

Recreational space near/above water:

Because in the past, people's daily life was close to the water and the culture and traditions are related to the water. In order to strengthen the local identity and distinctiveness, bringing people back to the water is necessary and develop water-related recreational space is conducive to water culture continuity.

Interaction between buildings and landscape:

It describes the vertical relationship between buildings and landscape. The different flows between building and building, buildings and landscape will be one of the characteristics of "Shanshui City" and local identity.

Open views:

Open view is an indicator of landscape quality. There should be spaces between buildings for the landscape so that residents can have a better experience. In addition, in the site, the outside rivers and opposite land should have communication with the inner town instead of being blocked by high rise buildings.

Urban ventilation:

Ventilation is important for the urban climate since the site is located in Guangzhou with warm summer. The site is influenced by the southeast wind, so it should be considered to let the wind enter the city, which will help to reduce the urban heat island effect and improve comfort.

Greenery:

Greenery is an important indicator of urban sustainability. Rationally distributing green spaces helps achieve the goal of seeing greenery every 100 meters. More greenery means more shadows which is essential for warm Guangzhou and helps reduce the urban heat land effect.

Water quality:

As water and rivers are the main characteristics

and identity of Dongchong town, keeping water clean is necessary. In the future, more population and estates will be added which means more pollution will be generated. For improving water quality, besides machines, the ecological landscape with purify function should be integrated, for instance, ecological riverbank, wetland.

Multifunctional/recreational public space:

On the one hand, public space is an important space showing local culture and identity because it records people's memories and activities. On the other hand, with the urban development, more immigrants will come to the site, they require recreational spaces for relaxing and leisure activities in the urban environment. So, enough accessible recreational and multifunctional public spaces are necessary for future development.

Infrastructure connection:

Infrastructure connection is essential for contemporary urban construction. Besides restoring historical waterways and reintroducing water transportation, the land infrastructure is also needed to develop to connect surroundings for accessibility.

6.2.1 Concept 1

In this model, buildings are placed on the east and west sides, while leaving the landscape in the middle. Therefore, the relationship between buildings and landscape is similar to the "valley" with north-south orientation. So, the inner town can have an open view and communication with outside river and opposite land which provide a good open landscape

experience. But because the high-rise buildings are placed on the east side, the southeast wind is not easy to enter the urban area which is not good for urban ventilation and reducing urban heat in warm summer. In addition, on the east side, there is no enough landscape space between high-rise building blocks, so that the interaction between building and landscape should be improved.

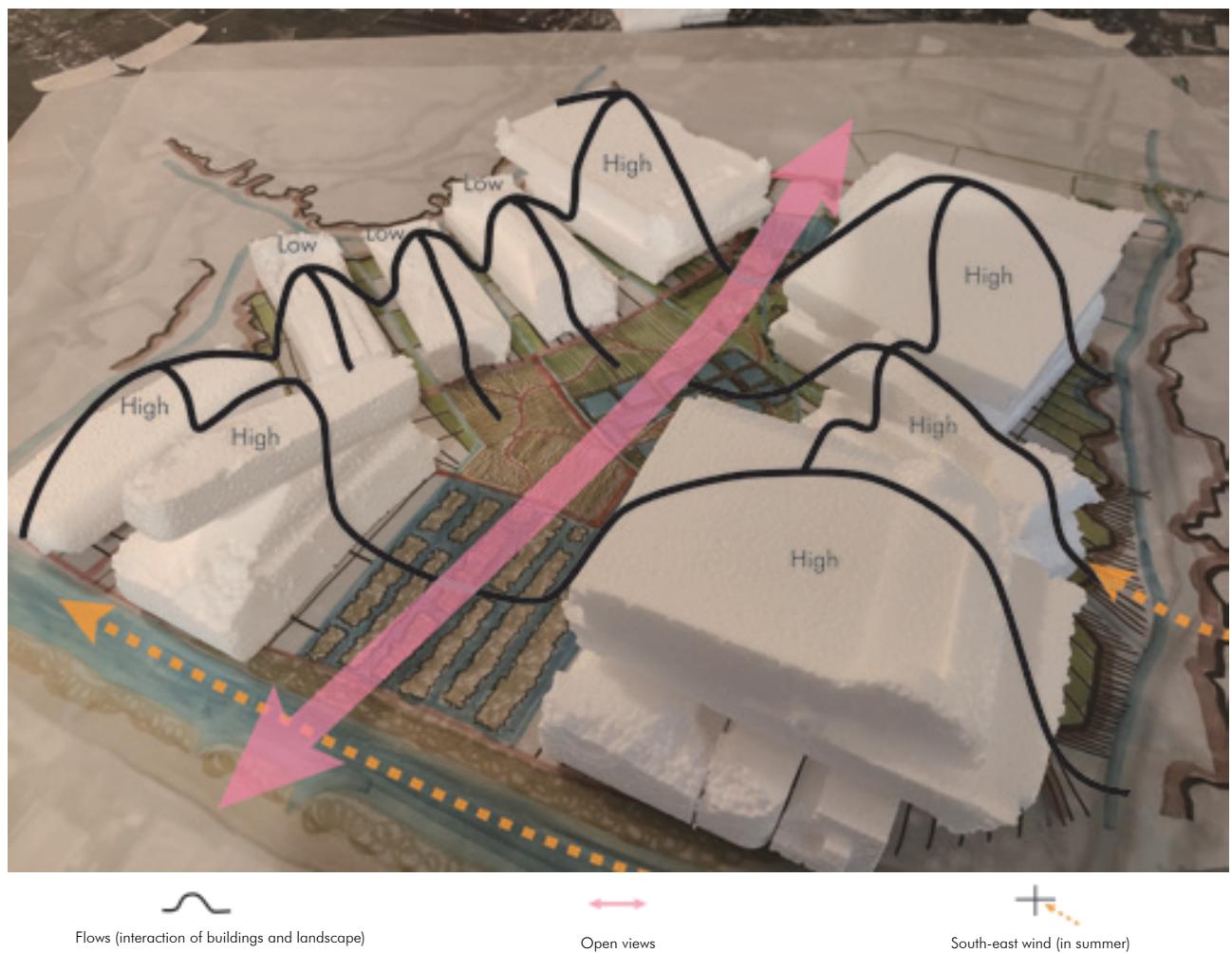


Figure 6.3 Design model 1 (made by author)

6.2.2 Concept 2

In this model, buildings are mainly placed on the south and north sides, while leaving the landscape zone with an east-west orientation. It is good for the southeast wind to enter the urban area and improving the urban comfort. However, the high-rise buildings on the south side look like high mountains that block the

sight and break the connection between the inner city and outside scenery. It will make people feel like facing a high wall in front, reducing the landscape quality and the comfort of the landscape experience. The high-rise building blocks on the south side are crowded that the flows and interactions between building and building, building and landscape are not comfortable.

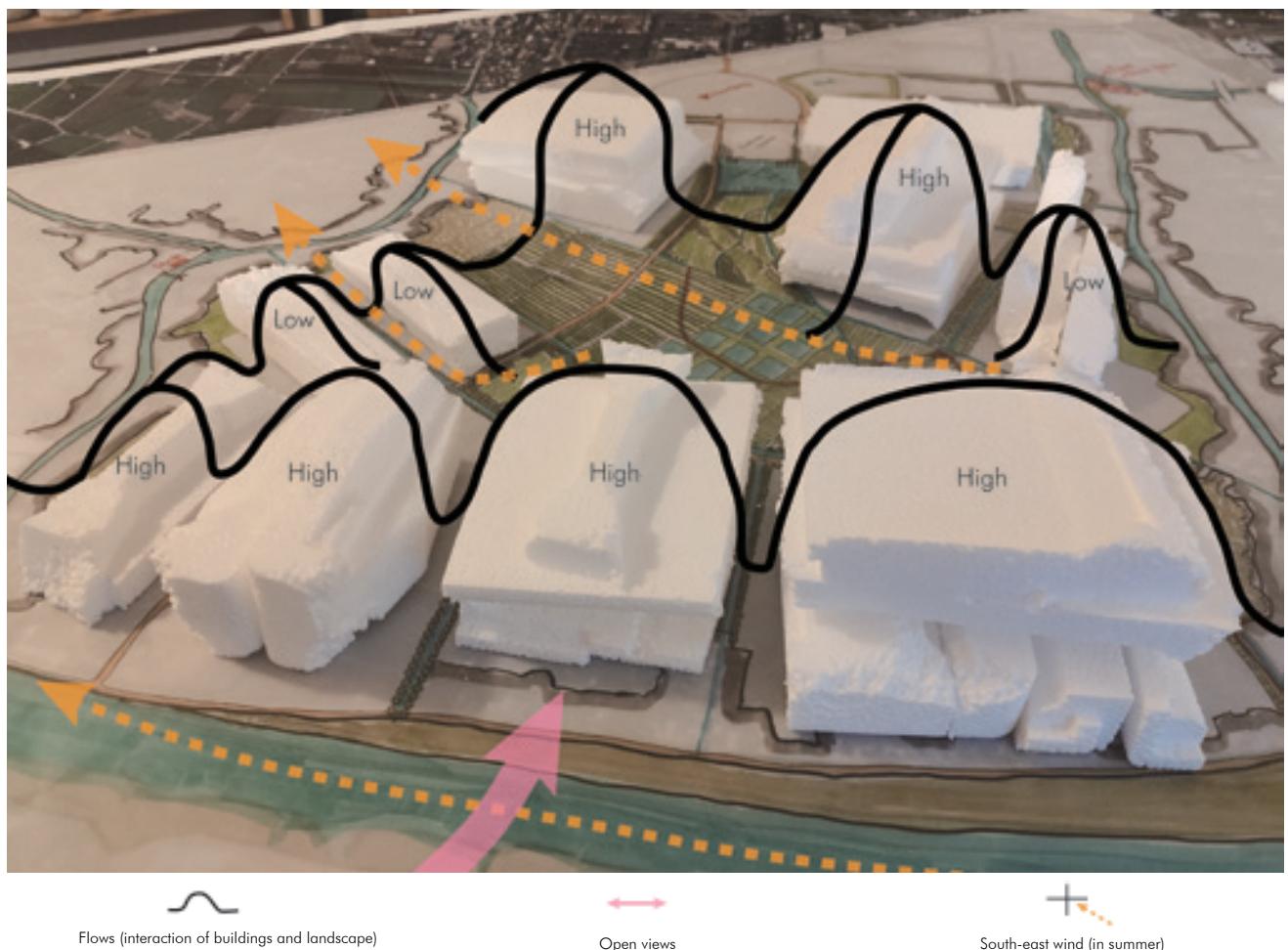


Figure 6.4 Design model 2 (made by author)

6.2.3 Concept 3

In this model, buildings are placed all around. Besides the middle landscape space, a landscape area is left between high-rise buildings on the south and east sides to connect with the middle part, thus forming a "T-shaped" landscape zone. On the one hand, the southeast wind can directly enter the urban area to reduce the urban heat effect and improve

comfort in summer. On the other hand, the open landscape connects the inner city with the outside river and opposite land that people can have a communication with outside instead of being blocked. In addition, enough landscape space between high-rise building blocks can improve the quality of landscape experience, it will be a good interaction between buildings and landscape.

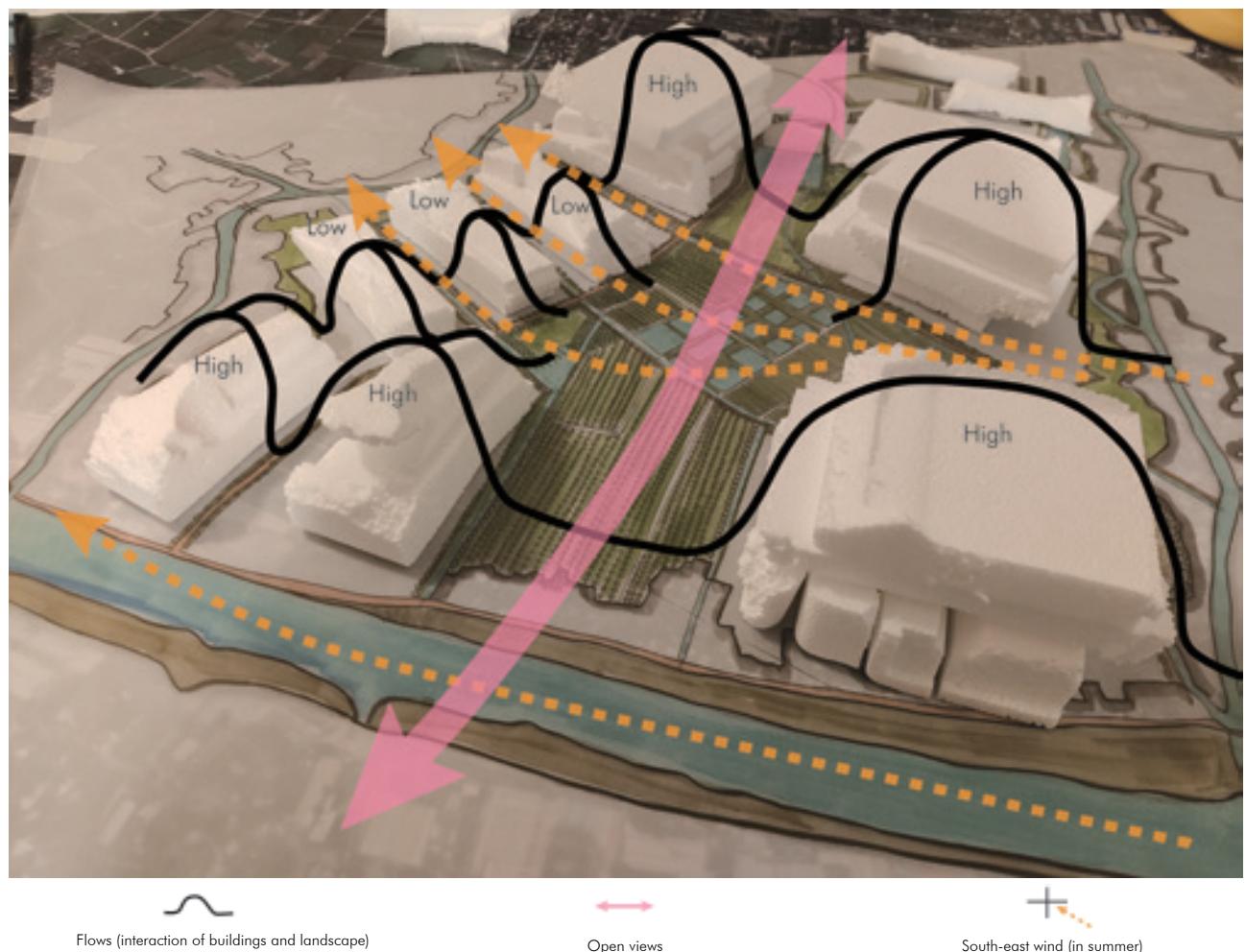


Figure 6.5 Design model 3 (made by author)

6.2.4 Evaluation

Through the evaluation, the third model best satisfies the vision of the "Shanshui City" concept. Three models all respect the structure and characteristics of the local cultural landscape and consider the future spatial demands to a certain extent. But the main difference is reflected in the degree of integration of cultural

landscape and upcoming building blocks, as well as the influences of the integration, which are mainly reflected in the three variables of "interaction between buildings and landscape", "open views" and "urban ventilation". The third model makes up the deficiencies of the other two models, so it is chosen for the further design phase.

	Concept 1	Concept 2	Concept 3
Continue river system	+	+	+
Respect landscape pattern	+	+	+
Preserve agricultural landscape	+	+	++
Recreational space near/above water	+	+	+
Interaction between buildings and landscape	+-	+-	+
Open views	+	-	++
Urban ventilation	-	+	++
Greenery	+	+	+
Water quality	+	+	+
Multifunctional/recreational space	+	+	+
Infrastructure connection	+	+	+
	8	8	14

Figure 6.6 Criteria (made by author)

6.3 Design details

6.3.1 Materplan



LEGEND

-  Boulevard
-  River
-  Fish pond - Sugarcane Field
-  Orchard
-  Wooden Bridge
-  Harbor
-  Future Building Block
-  Existing Linear Water Village



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6.3.2 Landscape framework

The landscape framework which is built by three layers will guide the future urban construction in Dongchong town. The three layers are the water network, boulevards and parks which are generated according to local

cultural landscape research and site analysis. Therefore, the framework will not only respect the cultural landscape but also consider the urban spatial demands. The three layers will play different roles in shaping local identity and urban development, while they also need to cooperate to achieve goals.



Figure 6.7 Landscape framework (made by author)

Landscape framework – Waterways

Water is the main characteristic and the soul of local identity of Dongchong town. Local history, culture and spirits are nested in the water and related cultural landscape. Therefore, it is essential to restore historical water network and reintroduce water transportation. It not

only provides a special alternative transportation method in the contemporary urban context but also supplies physical settings for the performance and continuity of local culture and tradition. It shapes the basic urban structure and highlights the main identity and characteristic of Dongchong town.

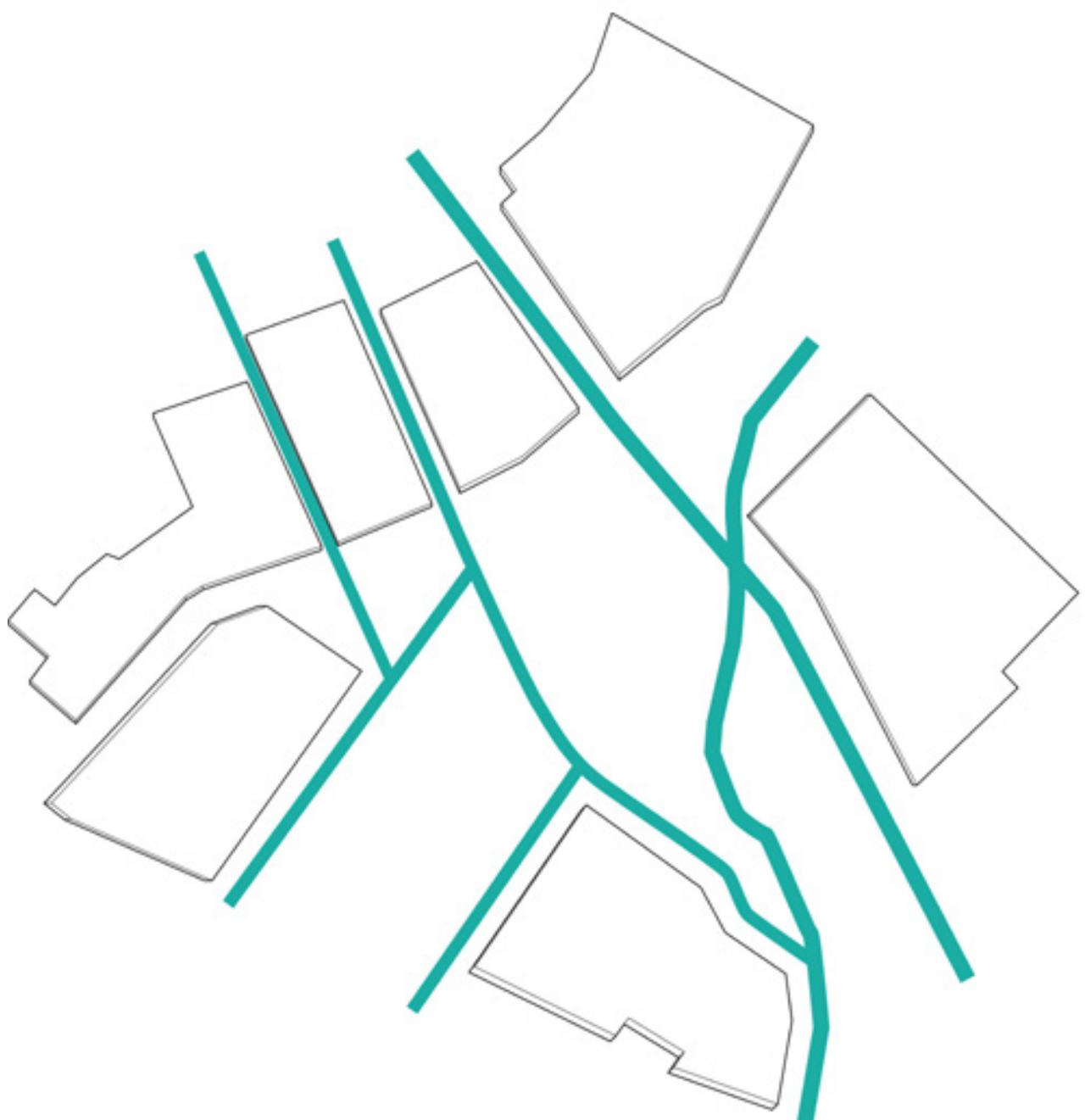


Figure 6.8 Landscape framework - waterways (made by author)

Landscape framework – Boulevards

Two boulevards are the main infrastructure lanes in the design site. The one is a south–north boulevard connecting the existing urban area and dike road which is next to the outer river, bringing people from the inner city to the riverbank. Another one is the east–west

boulevard connecting linear water villages on both sides. It will be convenient for people to experience landscape of both two villages. On the other hand, it unites the cultural landscape of linear water villages on both sides closer. Two boulevards meet the demands of cultural connection and contemporary transportation function.

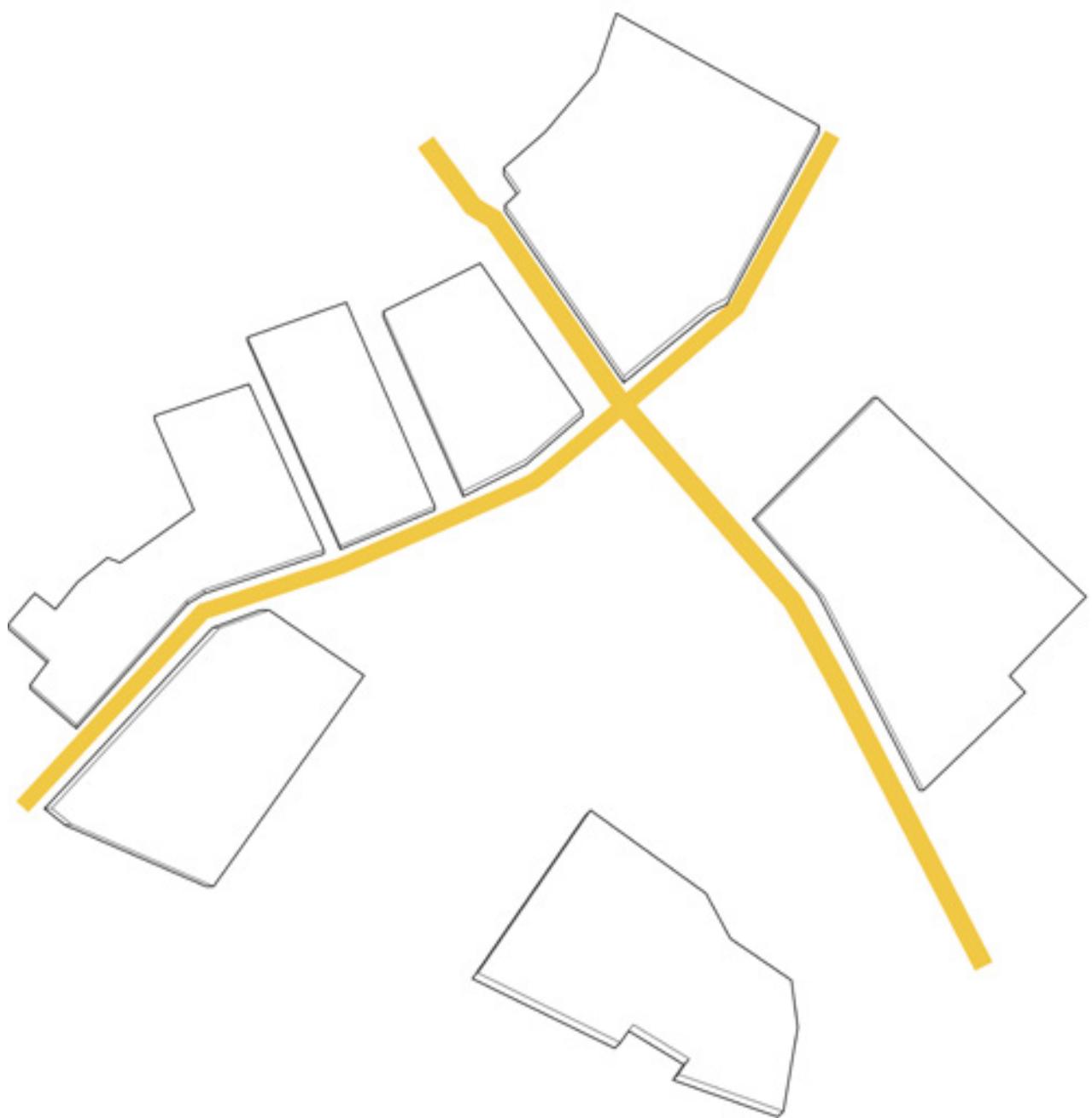


Figure 6.9 Landscape framework - boulevards (made by author)

Landscape framework – Three parks

The public space is an important place to illustrate the local characteristics and identity. Three parks with different themes and functions will represent different contents of the local identity of Dongchong town. They not only

show the traditional culture and spirits but also integrate new characteristics and identity from contemporary urban construction. In addition, three parks also provide recreational and natural spaces for dwellers in the urban area that people can easily and quickly get out of the urban phenomenon and close to nature.

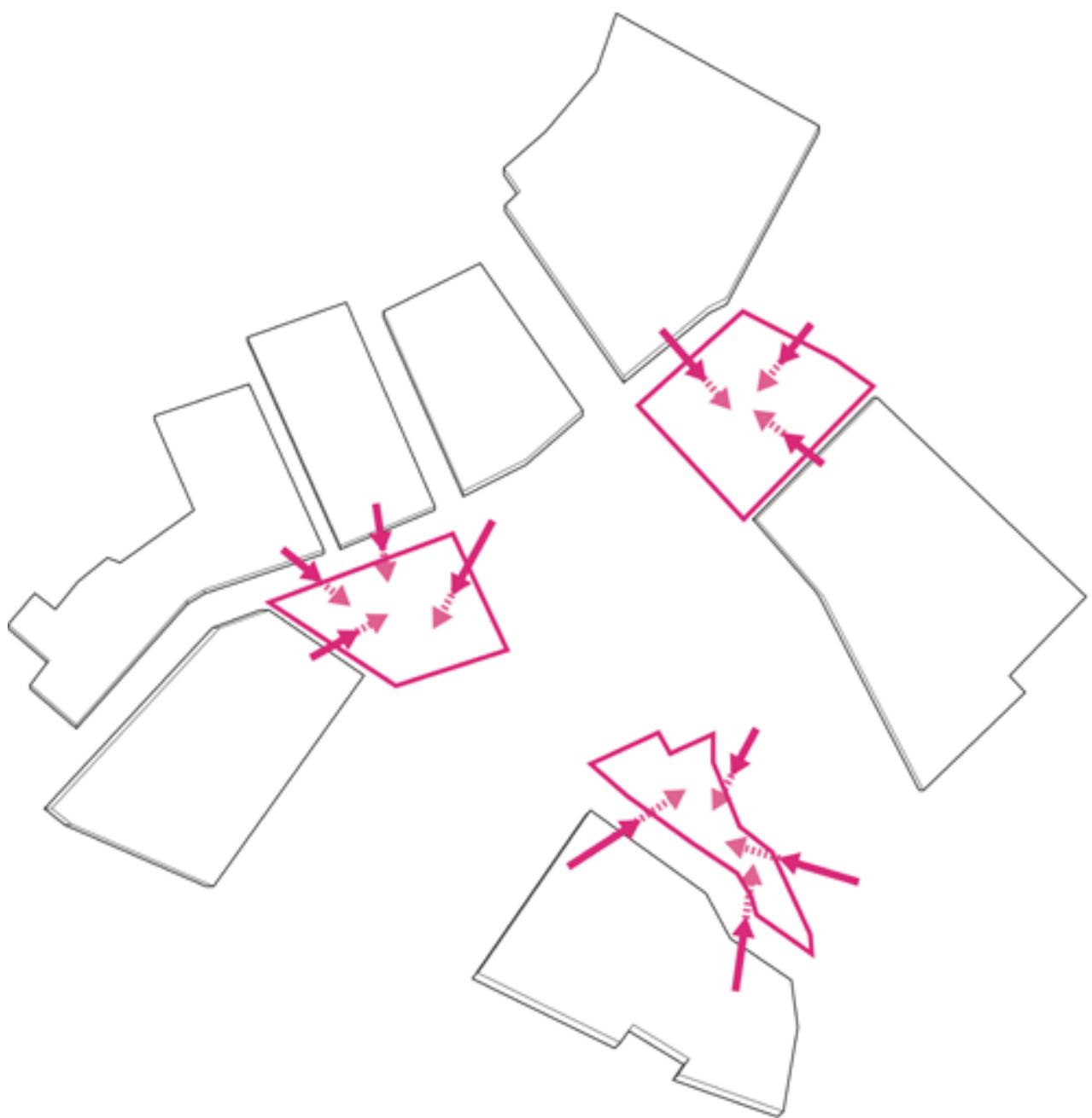
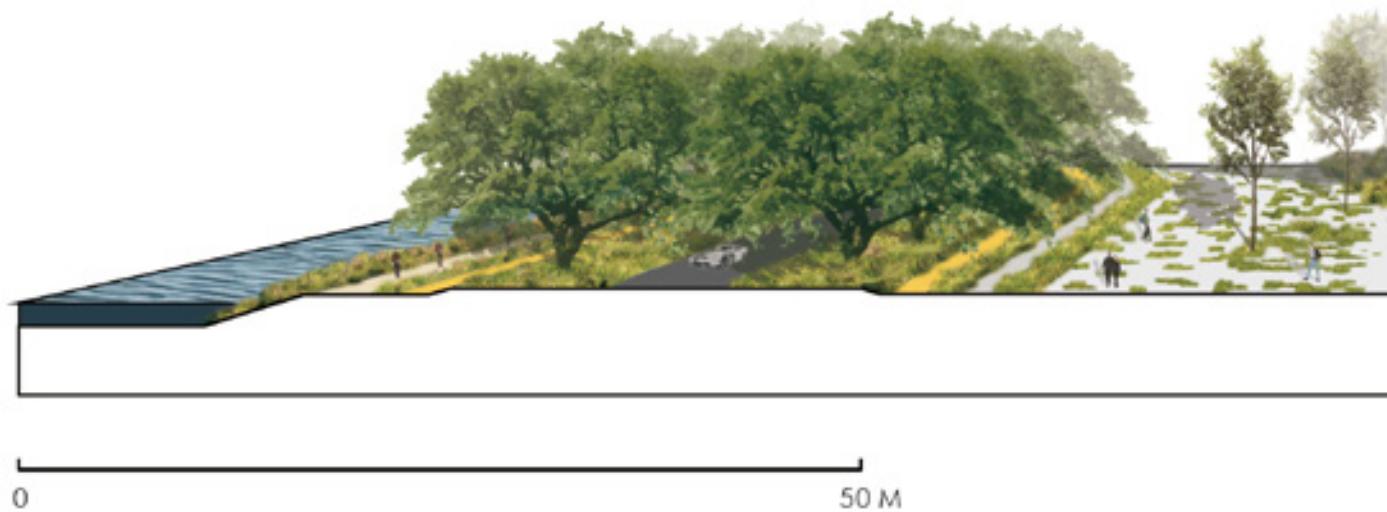


Figure 6.10 Landscape framework - three parks (made by author)

6.3.3 Banyan tree Boulevards

The boulevard connects the linear water village on both sides, which is an important east–west oriented lane. The banyan tree is the cultural symbol of local water village with strong emotion, providing leisure environment and recording people's daily life. So, planting banyan trees along boulevards represents the emotional and cultural continuity and connection between water villages. In addition, due to the large canopy of the banyan tree, it can bring more shadows to pedestrians

and vehicles, which is very necessary for the warm weather in Guangzhou. As a transitional zone, the boulevard has a good landscape experience, connecting the urban area and the natural area. People can not only choose to walk by the river and enjoy the landscape scenery of the opposite bank, but also enjoy the contemporary urban landscape on the other side of the boulevard. With its unique characteristic, the banyan boulevard will be the representative and popular site in Dongchong town.



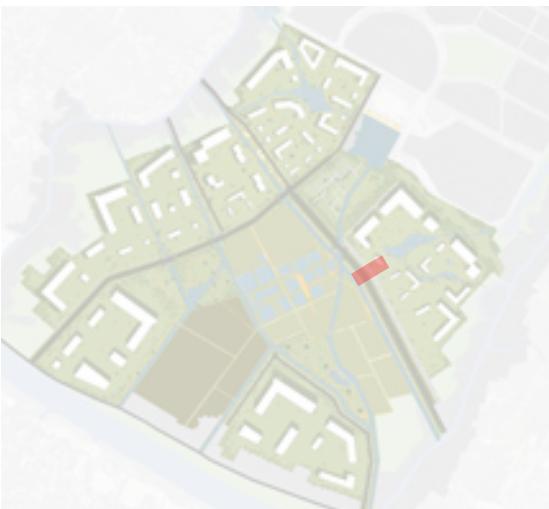


Figure 6.11 Section - Banyan boulevard (made by author)

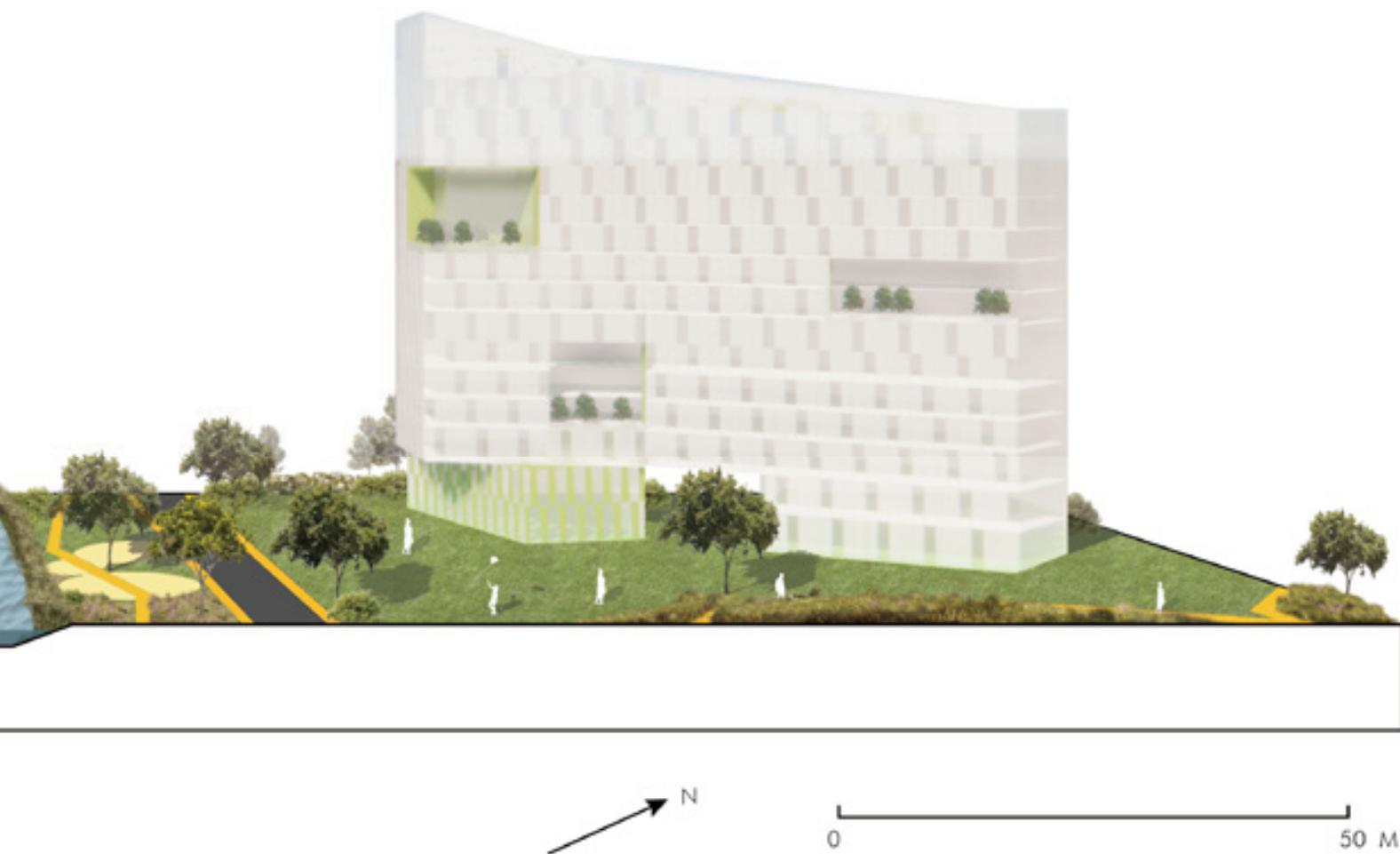


Figure 6.12 Section - Future water community (made by author)

6.3.4 Future water community

Water is the core characteristic of Dongchong town, the waterway is the carrier of local culture and spirits. People's daily life and traditions are related to the water. Therefore, restoring waterways and adapting the new buildings with water conditions are conducive to strengthening the water identity of Dongchong town and continuing the local culture and spirits in contemporary society. The water community reflects the concept of "Shanshui"

of the harmonious relationship between city and nature. On the one hand, there are spaces near water for people to get close and play with water, while the ecological riverbank benefits for water quality and sustainability. On the other hand, buildings are constructed along rivers, which not only reflects original living landscape characteristic but also provides opportunities to integrate new cultural elements from urbanization to develop into contemporary distinctive water community.



Waterways and water communities provide the physical environment and atmosphere that local festivals and traditions can take place, while people can enjoy and celebrate together on the bank, for instance, water wedding. It

will be a good way to conserve and inherit the intangible cultural landscape through respecting physical landscape and promote it to immigrants and visitors.



Figure 6.13 Water wedding (made by author)

6.3.5 Cultural memorial park

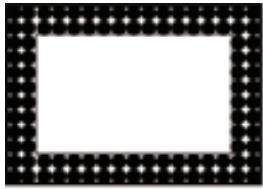
The cultural memory park is used to commemorate the history of the tanka group and promote their culture. In the meanwhile, this park embodied the spirits and memories of the local inhabitants of Dongchong town and it provides a space for mediation and reflection of the floating and discriminated life of the tanka group. The park is mainly designed by four layers with different meanings (Figure 6.15). The first layer is the enclosed edge by trees, creating a quiet space out of the noisy urban for meditation and reflection. The second and third layers incorporate to resemble the historical reclaimed landscape pattern and boats' routes (Figure 6.16). The fourth layer is an artifact of stacked boats which acts as a monument for tanka group as in the past the boat is their only settlement for all living and productive activities. The park is filled with elements excavated from the culture of the tanka group.

When you step into the park, the physical settings and symbols are telling the story of the reclamation history and floating life of the tanka group. It is the best opportunity to express our respect and apologize to local ancestors for their painful and tough reclamation experience. In addition, the park provides dwellers with a gathering space for communication and recreational activities, so that new social culture and spirits from immigrants can be nested in the place and over time, the new local characteristics and identity will be produced by the constant interaction.

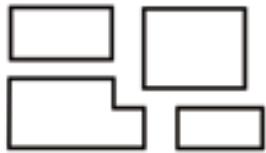




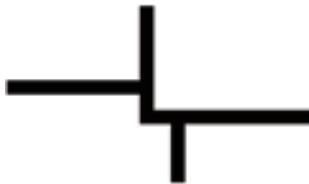
Figure 6.14 Plan - Cultural memory park (made by author)



Enclose space - a place of reflection and mediation where you can cut off from outer world



Layout - restoring previous landscape pattern to reflect the contribution of reclamation and cultivation by Tanka group



Path - resemble the routes of boats in the past

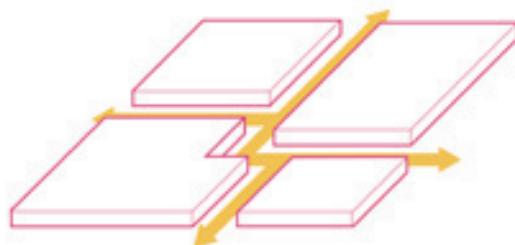


The artifact of stacked boat - a monument for tanka group to commemorate their tough floating life

Figure 6.15 Design elements - Cultural memory park (made by author)



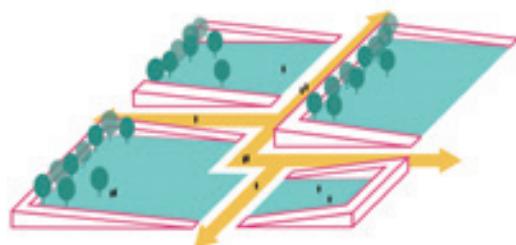
1. Reinintroduce previous landscape pattern and routes



2. Resemble the height of crops



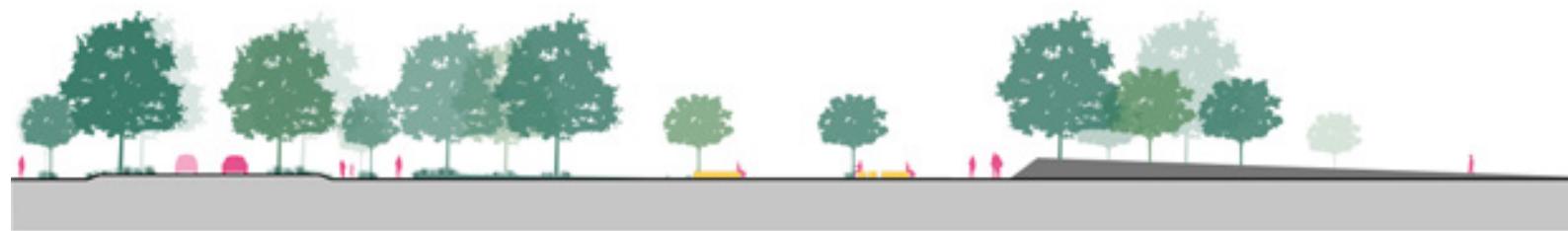
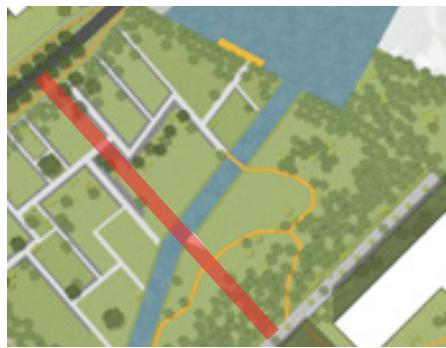
3. Create more open spaces



4. Recreational and educational public space



Figure 6.17 Artist illustrations - Cultural memory park (made by author)



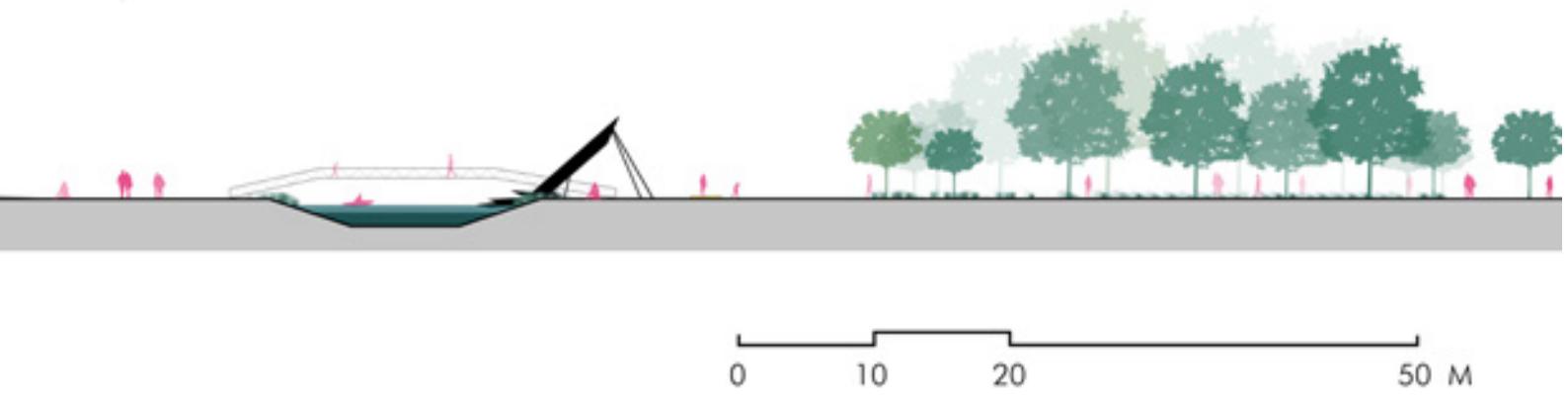


Figure 6.18 Section - Cultural memory park (made by author)

6.3.6 Wetland park

The wetland park located in the downstream of water network served for water purification and ecological value which benefits for shaping the future vision of ecological and livable Dongchong town. On the one hand, the wetland park plays an important role in purifying polluted water and fertilizers from surrounding agricultural fields and residential communities to enhance water quality. It is also a paradise for local aquatic plants and creatures that they can have a habitat in the urban context. It contributes to improving the ecological and environmental quality, working as the “green lung” in Dongchong town. On the other hand, the walking path runs through the entire wetland park and connects surrounding areas, which provides convenience for people to enter the park and close to nature at any time. It reflects the spirit of the concept of “ShanShui City” that there is a harmonious relationship between nature and human, nature and urban. In addition, the inner water area in the park supplies a recreational space for people to enjoy, swimming in the water or playing on the platform next to the water. It adapts the original water cultural condition to add the extra ecological and sustainable characteristics for future Dongchong town.

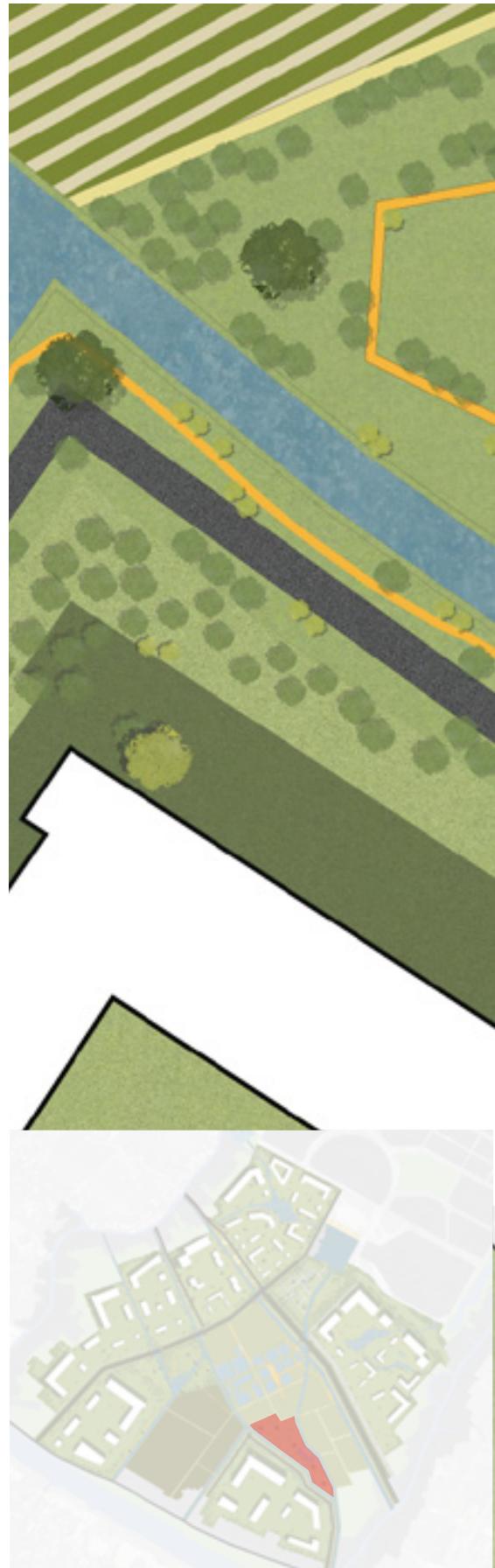
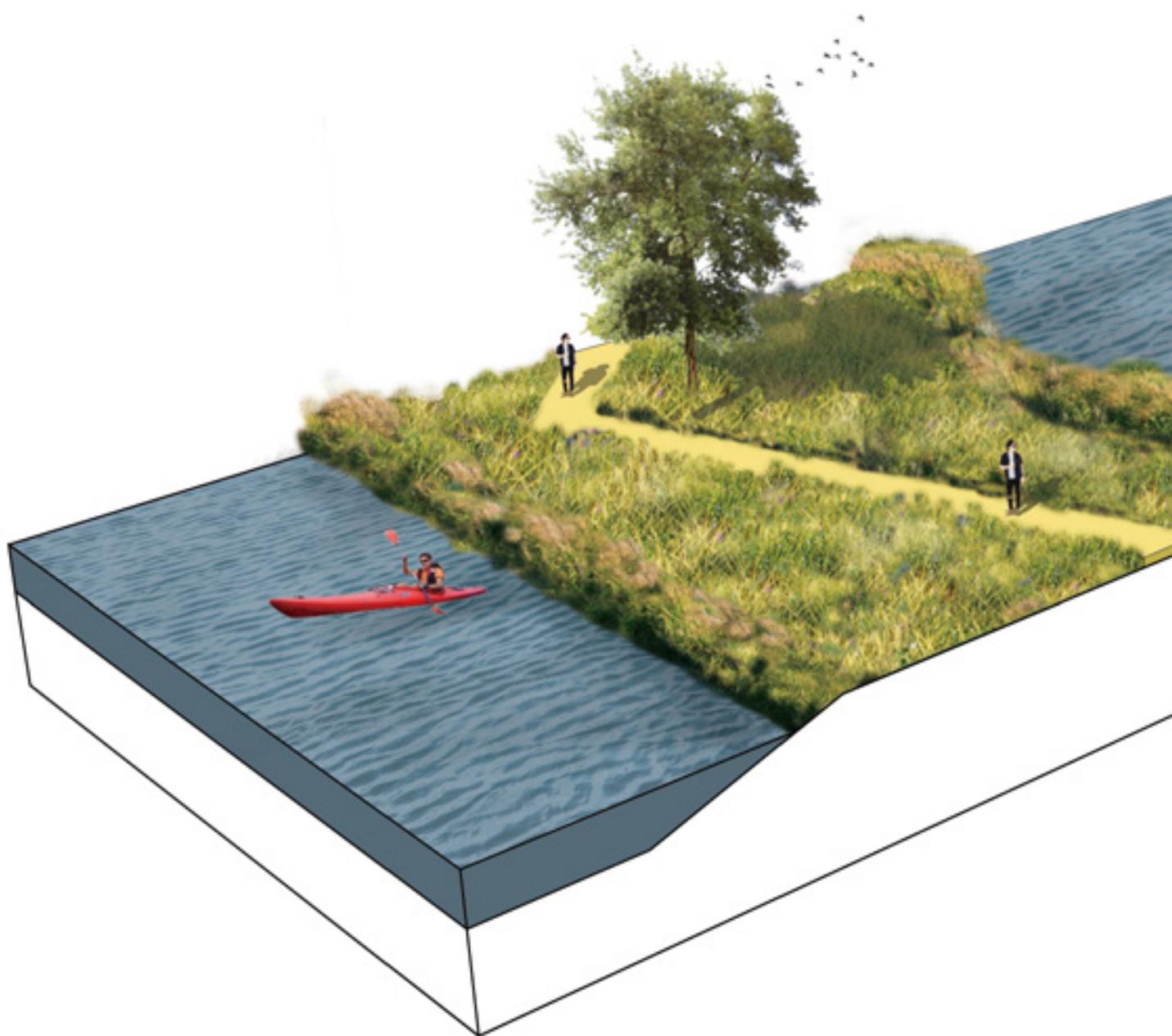




Figure 6.19 Plan - Wetland park (made by author)



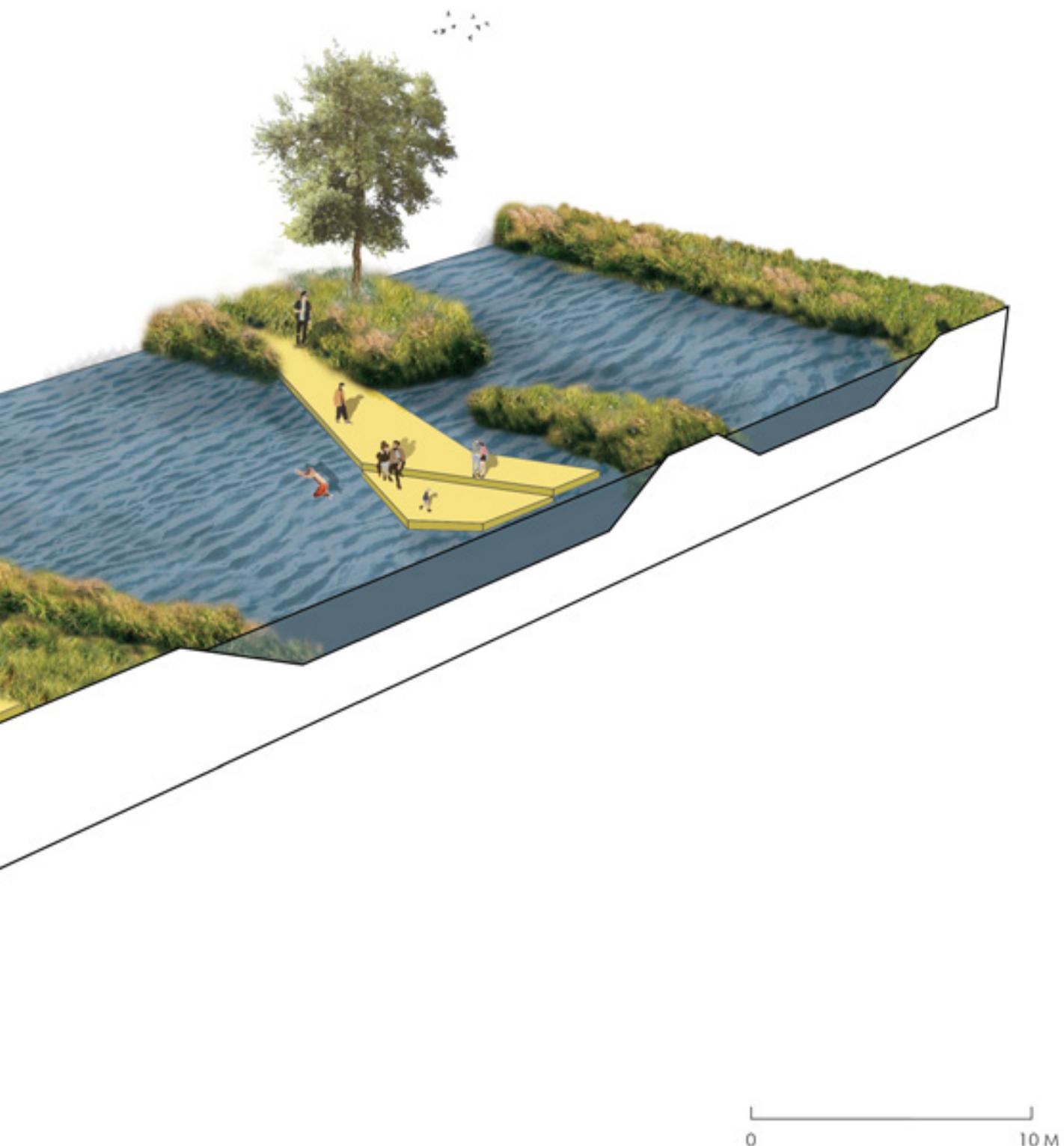


Figure 6.20 Section - Wetland park (made by author)

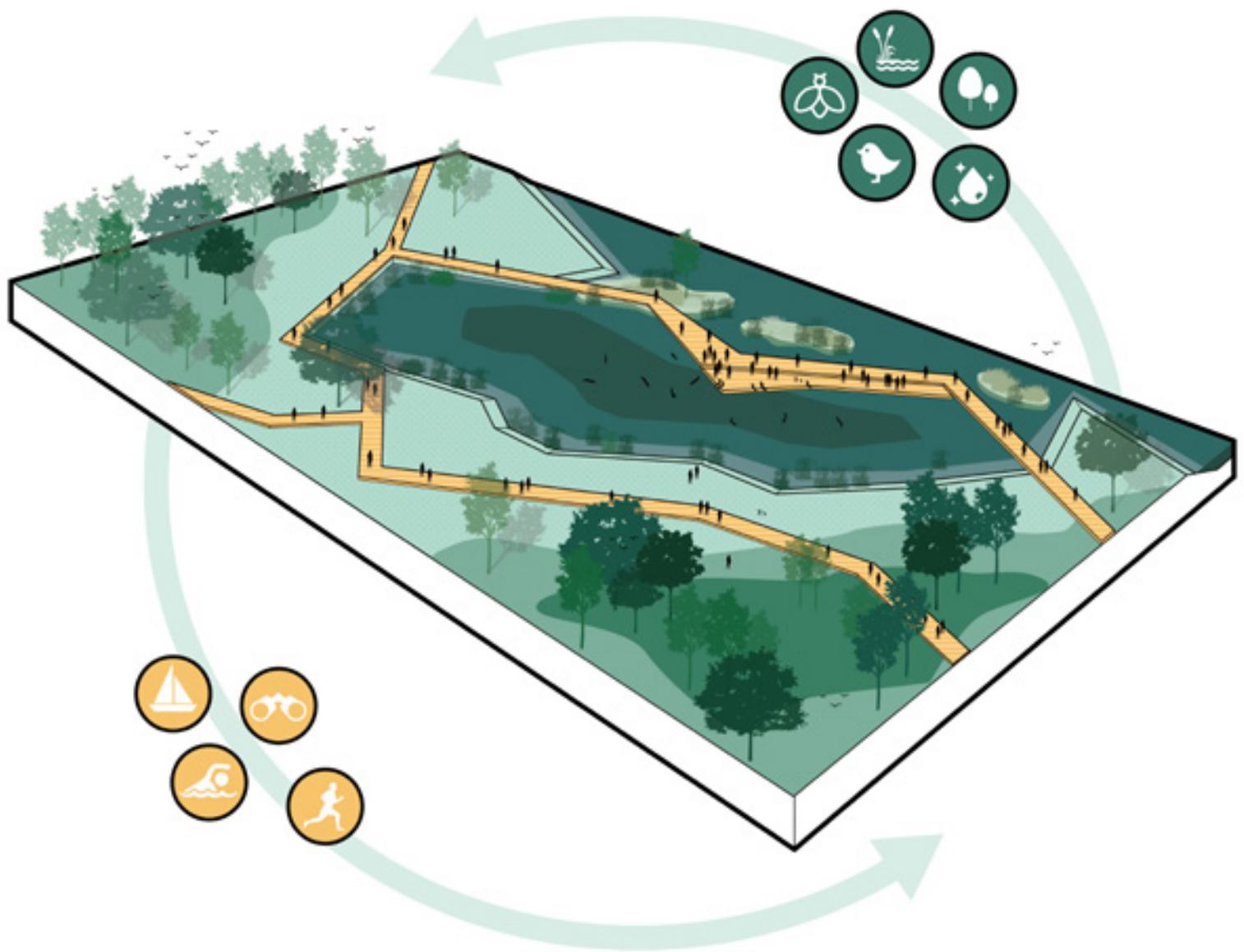


Figure 6.21 Illustration - Wetland park (made by author)

6.3.7 Harbor park

The existence of a harbor park is served for the infrastructure demands. Harbor park supplies a relaxing space in the intertwined water network that people can enjoy the environment and

environment and urban landscape after parking the boat. The stilt structure is used for an observation tower to have a dialogue with surroundings which evokes the memory of past water life. In addition, it provides an ecological condition for vegetation and bio-organism.



Figure 6.22 Plan - Harbor park (made by author)

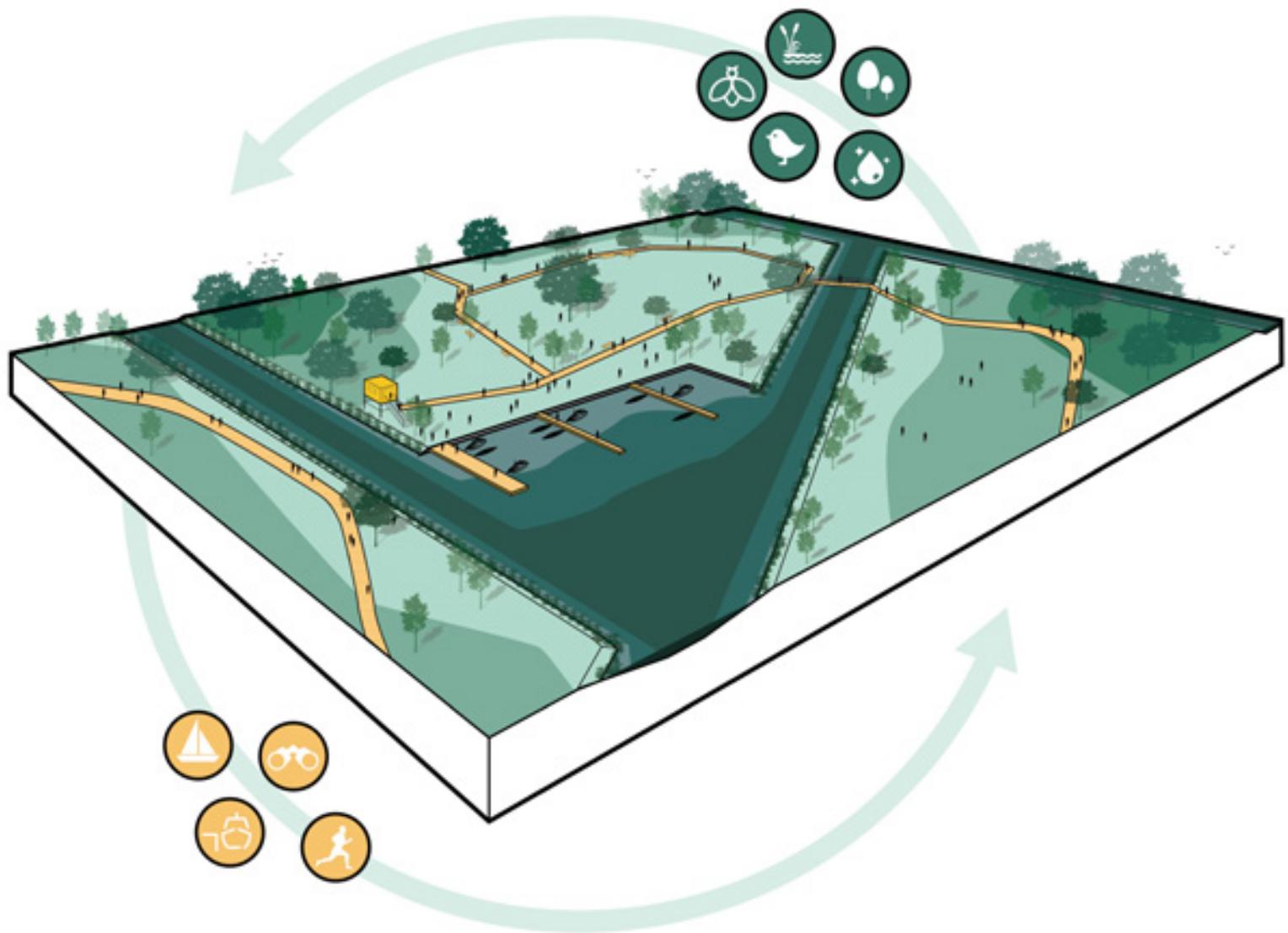
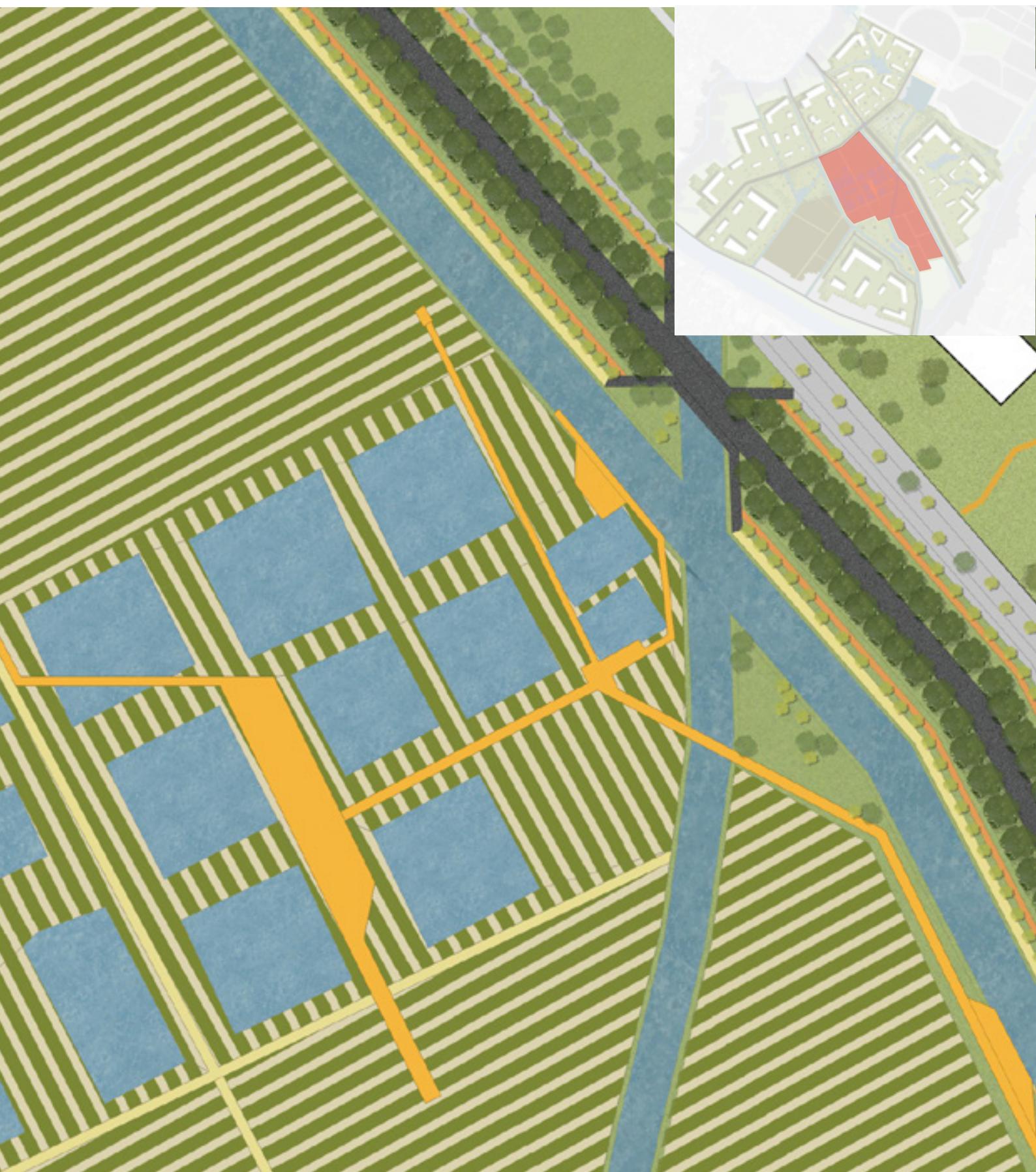


Figure 6.23 Illustration - Harbor park (made by author)

6.3.8 Urban agricultural field

The existing sugarcane-fishponds on the site is one of the representative agricultural cultural landscapes, as well as part of the local identity. In recent years, urban agriculture and agricultural tourism have become more and more popular, in the meanwhile, Dongchong town is projected to develop local agricultural tourism. Therefore, in the process of urban development, the existing agricultural landscape is valuable to be well utilized instead of demolished. Since the current farmland only serves for production, it is necessary to transform into a multi-functional agricultural landscape with leisure and sightseeing value in the urban context. On the basis of protecting the original landscape, a trestle bridge is implemented that people can have a panoramic view of the local agricultural landscape and get close to it. It not only protects the local agricultural landscape but also represents the local agricultural culture to future immigrants and tourists in a new way, which has high educational value and conducive to cultural continuity. In addition, developing local agriculture to urban agriculture not only has high landscape value but also shows the distinctiveness of local urban culture and identity.





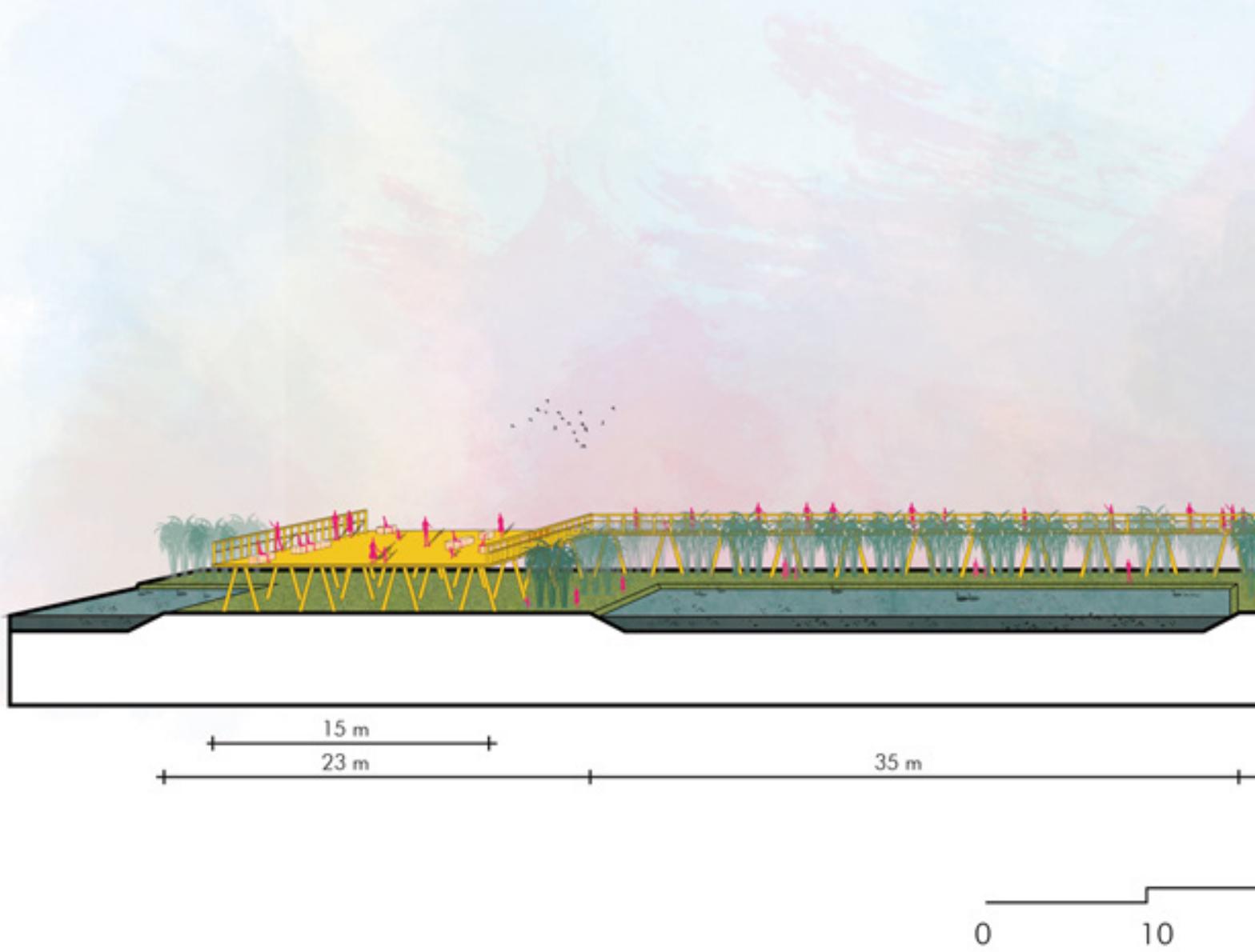
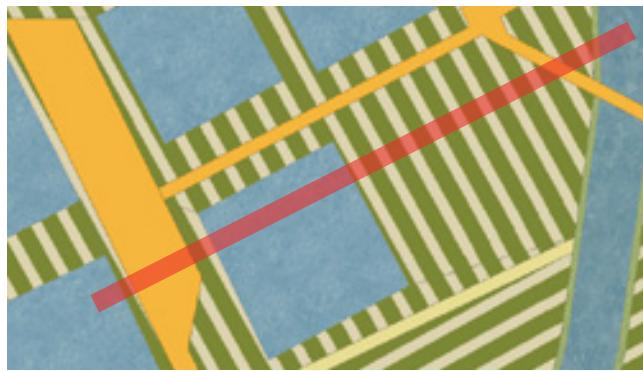
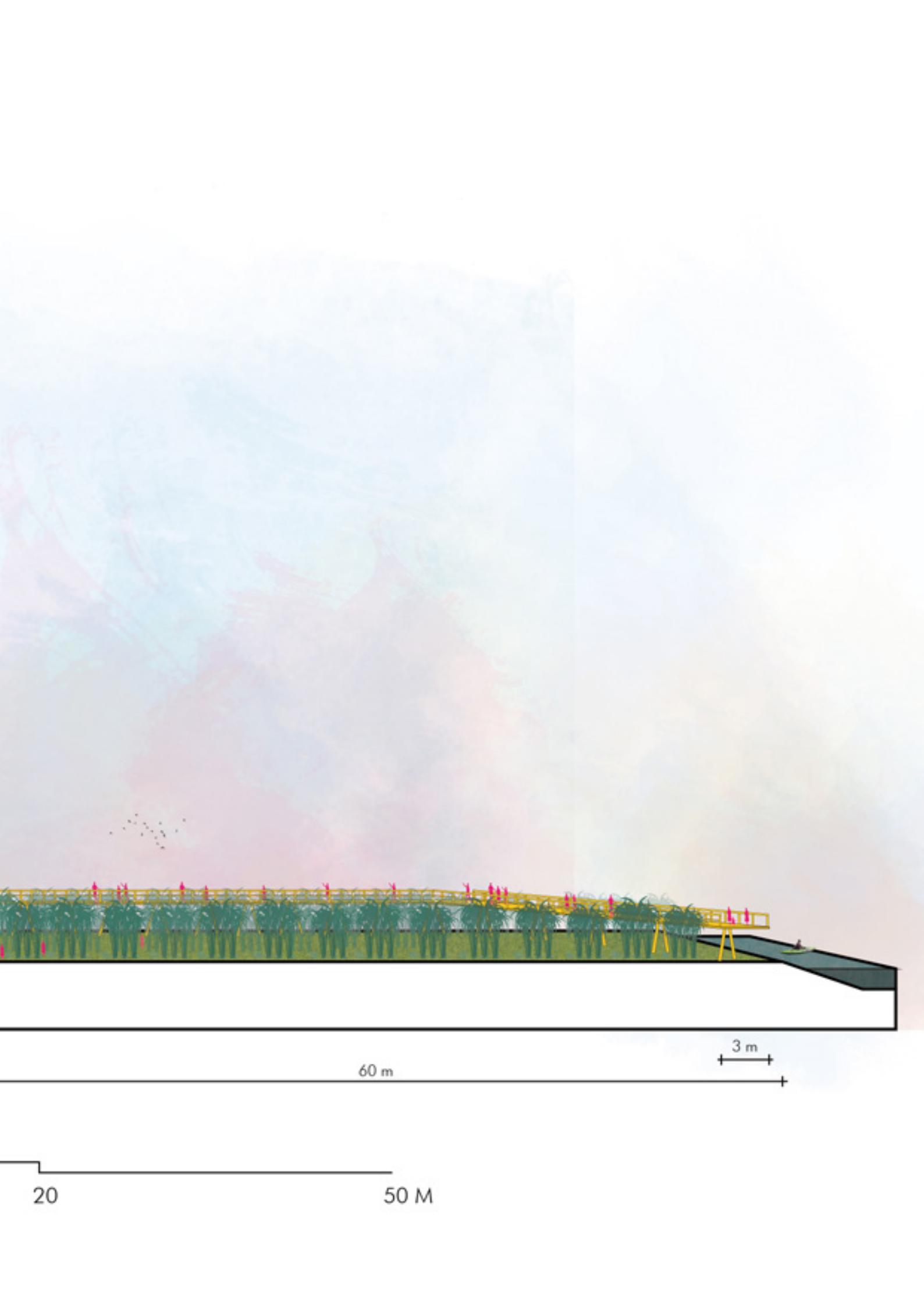


Figure 6.25 Section - Urban agricultural field (made by author)



60 m

3 m

20

50 M

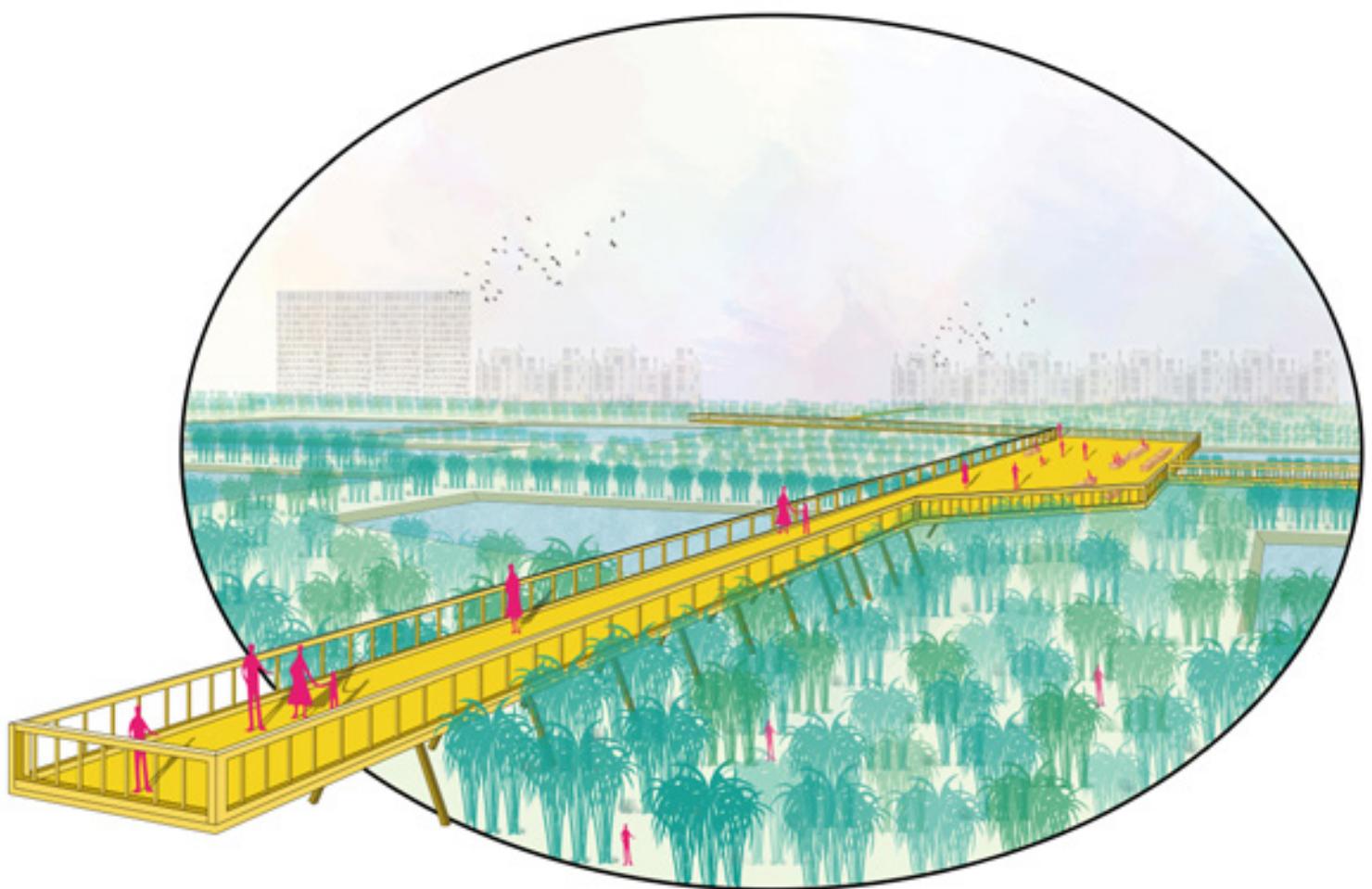


Figure 6.26 Illustration - Urban agricultural field (made by author)

7. CONCLUSION & DISCUSSION

In this chapter the main design question and research questions will be answered with a conclusion. The application and limitation of the research design result will be discussed.

Research question 1: What are the characteristics of cultural landscape related to place identity in Dongchong town?

The purpose of this research question is to know the valuable cultural landscape characteristics for shaping local identity of Dongchong town, which are needed to be conserved in the process of urbanization. First, we will have an in-depth and comprehensive understanding of the local cultural landscape of Dongchong Town. Then, through literature support related to cultural landscape and local identity, the cultural landscape characteristics reflecting place identity of Dongchong town can be summarized. The research result will serve the third research question and the subsequent design part.

The cultural landscape has closely relationship with the place identity, while cultural landscape has both tangible and intangible aspects. The intangible cultural landscape always nested into the tangible landscape. In Dongchong town, the main characteristics of cultural landscape are water (tangible characteristic) and tanka group (intangible characteristic), while other characteristics are developed around these two elements. The tangible cultural landscape

characteristics reflecting place identity are linear living structure, water system and water infrastructure, dock, agricultural landscape pattern, sugarcane field, dike-fishpond aquaculture system, stilt living structure and banyan tree. The intangible cultural landscape characteristics reflecting place identity are floating history of tanka group, reclamation history, dragon-boat festival, water wedding and Xianshui opera.

Research question 2: What are spatial demands for the urban development of Dongchong town issued by municipalities?

By understanding the spatial demands of the future urban development of Dongchong town, we can know what new spatial elements and qualities will need to be considered. These spatial demands are summarized according to the future urban development plan issued by relevant government departments. Through the top-down approach, first understand the overall future urban development plan and vision of Guangzhou, then narrow the scope to study the future urban development plan and goals of Nansha District, and finally narrow the research object to the urban development plan and vision of Dongchong town. The urban development direction of Dongchong town should be consistent with the urban development plan and goals of Guangzhou and Nansha District. On this basis, Dongchong town can adjust the planning according to its

own specific conditions to create a distinctive urban image. Therefore, the expected answer to this question is what new spatial types and spatial qualities are needed in future urban planning and design. Same as the first research question, it serves the third research question and subsequent design part.

Through the analysis of different types and scales of urban development planning and vision documents published by the relevant municipal departments, the spatial demands for the future urban development planning of Dongchong town are summarized. Constructing an ecological and livable Dongchong town is the future vision of urban development. In order to achieve this goal, the following spatial requirements needed to be met in future urban planning and design. Firstly, the infrastructure connectivity is necessary and the relationship between upcoming buildings and urban ventilation should be fully considered as well to reduce the heat island effect. Secondly, evenly distributing green public spaces to achieve the goal of seeing green every 100 meters, while integrating leisure and recreational functions. Thirdly, improving water quality with ecological riverbanks and adding more entertainment activities around rivers. Finally, transforming mono-functional agricultural landscape into multi-functional agricultural landscape with leisure and educational values to develop local agricultural tourism with its distinctive characteristics and identity.

Research question 3: What are design principles for that cultural landscape accommodate the spatial demands of urban development in Dongchong town while strengthening its place identity?

The generation of design principles mainly relies on the results of the first two research questions, considering how to integrate these two aspects to meet the demands of future urban development while maintaining its own characteristics and identity to distinguish from other districts or cities. This research question is the transition from research part to design phase in the entire thesis structure, transforming previous research results into available spatial principles to guide the subsequent design.

After understanding the cultural landscape characteristics reflecting local identity and the spatial demands of future urban development, a general design principle is derived, that is "conserve-adapt-grow". The purpose is to let the local cultural landscape and the future urban space in a harmonious coexistence relationship and develop together over time, instead of in a relationship of mutual destruction and replacement. Conserving the valuable cultural landscape representing local identity, adapting the future urban spatial demands into local cultural landscape condition and finally their integration will grow together to be the updated cultural landscape and identity over time.

Under the guidance of the general design principle, the following spatial design principles integrating local cultural landscape and future urban spatial demands are derived, which will be applied in the subsequent design process. The first spatial design principle is "restoring historical rivers and reintroducing water infrastructure to supplement vehicle infrastructure." Combining the significant water characteristic of local cultural landscape with contemporary infrastructure to continue the local water culture and identity. The second principle is "establishing green buffer to protect linear water village structure", which not only meet the demand of green space in the future urban environment, but also protect the living cultural landscape with local characteristics. The third principle is "respecting original landscape pattern". Integrating future urban spatial demands into existing landscape pattern, which not only achieves the goal of urban development but also protects local landscape characteristics, avoiding cloned urban image. The fourth principle is "transforming the mono-functional landscape to multi-functional landscape" which means integrating leisure and recreational functions with original landscape to improve its publicity, openness, and accessibility. Besides protecting original landscape characteristics, it also meets the leisure and recreational demands in contemporary society. The fifth principle is "integrating physical cultural symbols into public spaces". Banyan trees, boats and stilt structure

are the carrier of local culture and spirits, while integrating them into the public spaces could benefits for local cultural continuity.

Main design question:

How can urbanization be guided by cultural landscape of water village in Dongchong town, in order to strengthen its place identity?

The results of three research questions are served for answering the design question. The general design principle of "Conserve – Adapt – Grow" already shows the process and approach that how cultural landscape guide urbanization and strengthen its place identity. This question specifically carried out the practice and detailed development of design principles through a case study in Dongchong town. Under the guidance of the general design principle "Conserve – Adapt – Grow", the design concept of "Shanshui City" was proposed for the future urban development in Dongchong town. It puts forward the ideal of harmonious relationship between urban and nature, human and nature, that is, urban development should adapt to the local landscape condition, respecting indigenous culture and spirits. Through modelling test, a best model reflecting the concept of "Shanshui City" was selected to develop further.

According to previous research results and design site analysis, the landscape framework with three layers was built to guide the future

urban construction in Dongchong town. The first layer is the restored water network which presents local water identity and supplement to the vehicle infrastructure. The second layer is banyan tree boulevards. Planting banyan tree (local cultural symbol) along boulevard not only meets the demand of infrastructure connectivity and urban greenery, but also achieves the goal of inheriting local culture and spirits. The third layers are three parks with different function, presenting different contents of local identity. The cultural memory park tells the story about tanka group, the wetland park attempts to improve the ecological and sustainable value of Dongchong town and the harbor park mainly serves for docking, while three parks all have leisure and recreational functions. In addition, because of the conservation of physical cultural landscape, the intangible cultural landscape condensing local identity and spirits also could be inherited, such as water wedding.

The distinctive cultural landscape framework will guide the distribution of buildings and it will have a good interaction with landscape. Finally, the integration of building and landscape will grow together to be the updated local identity and characteristic including traditional and contemporary culture and spirit.

Discussion

The thesis attempts to stimulate the discussion

about the importance of cultural landscape and place identity in urban planning and design. Standardized urban planning and design dominated by political and economic factors have led to more and more cloned urban images, weakening place identity. Cultural landscape is an important source for shaping place identity because it is the witness of the evolvement of local history and landscape, while intangible culture and spirits are nested on the physical landscape. The thesis provides an alternative urban planning and design approach, that is, urbanization could be guided by cultural landscape to strengthen its place identity, taking Dongchong town as case study. The research design result indicates that in the process of urban planning and design, the local cultural landscape could be worked as the basic urban landscape framework, so that the upcoming urban spaces should adapt and integrate into the landscape framework, which not only achieve the goal of urban development, but also keep its distinctive characteristics and identity. This is a possible solution for creating diverse Chinese urban images with different characteristics in the process of urbanization and globalization. From the perspective of landscape architecture, it fills the knowledge gap of the integration of cultural landscape, place identity and urbanization, offering design principles and spatial plan to demonstrate the practice of research results. It proves the possible of cultural landscape guiding urban development to strengthen local identity. At

the same time, it also proves the importance of landscape architects in urban planning and design, designing with local cultural landscape conditions can not only strengthen local identity but also facilitate the sustainable urban development.

The design principles integrating cultural landscape and future urban spatial demands may be applicable to other water villages affected by upcoming standardized urban construction in Guangzhou. But each water village has different cultural landscape characteristics, so the design principles need to be applied according to local conditions. For example, some water villages have magnificent and historical temples or other cultural architecture while Dongchong town doesn't have, so you need to think additional design principle to protect them. The method of designing and the steps of generating design principles can be applied widely. In addition, the main design principle of "Conserve – Adapt – Grow" can be applied widely to more cities and regions. It can be used as a design guide to help avoid cloned urban images in the process of urbanization.

In addition, urban planning and design should be a multi-discipline cooperation work and it is not sustainable to be only dominated by economic and political factors. The cooperation of architects, landscape architects, urban planners and other disciplinary experts such

as soil, hydrology is important for building a livable, sustainable urban image with its own characteristics and identity. It will be a breakthrough if they can be included in Chinese urban planning and design system.

Limitation

In the process of answering the first research question: "What are characteristics of cultural landscape related to place identity in Dongchong town?", there is a methodology limitation for the research. Place identity is a sociological theory, it has a close relationship with human consciousness and it also is described as a branch of personal identity. Originally, in order to get the precise research result, having an interview with locals to know their perception of local identity is the necessary step. But due to special time of COVID-19, it is not easy to go to the site to do the interview, so the result is only based on the literature review and opinions from online tourism blogs. If there is a chance to continue this project in the future, the result of interviews with local people can be combined with existing research results to make it more scientific.

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