

Putting the Village Back into the Urban Village:  
Recovering a New Commons for Gui Yang, Chengguan Village, China  
through Adaptive Re-use and Landscape Recovery

by

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A Thesis submitted in partial fulfillment  
of the requirements for the degree of  
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## Abstract

### Urban Village Lexicon

**城中村** Urban Village: refers to villages that are located in the city or around the city. Its emergence and spread is a unique phenomenon in Chinese cities, and it occurs in many areas and in different forms which is the result of land reform, rural land ownership systems, and rapid urbanization.

**菜市场** Wet Market: a market for fresh meat, fish, produce, live animals and other perishables.

**户口** Hukou: It refers to the legal document produced by the national administrative organ in charge of household administration, which is used to record and retain the basic information of household population. It is also the identification of each of our citizens.

The aim of this project is to discover and probe the challenges that exist in Chengguan Urban Village through interviews and mapping, after initial field work and site reconnaissance, I will apply architectural interventions, such as spatial and functional aspects to address thesis issues and challenges.

- Historical interpretive research is the method I used in the research process of this project. Through the study of the historical development of Chengguan Village I will attempt to understand the changes in the lives of the villagers. The Guizhou Aluminium Factory opened a branch in Chengguan Village in 1950, and Chengguan Village has since become a village dominated by both industry and agriculture. Until around 2000, the aluminum plant was abandoned and the villagers' agricultural land was completely expropriated by the government. With the development of more formal cities by the Chinese government, the gap between urban villages and city life is getting wider and wider. The living demands of the villagers have also changed, and more facilities and services should follow suit, such as recreational facilities, garbage sorting facilities, daycare, medical facilities, and agricultural production conditions.

- Precedent studies is a way to make investigations more in-depth. After the problem is found, the design strategy of other projects will serve as an effective reference and thinking. I will analyze the key projects designed by Urbanus and Turenscape, to inject new elements and meanings into my project, such as adding new materials to old buildings to create a different atmosphere, and how to transform old buildings to give them new functions. I will distill the lessons learned from these, and add these to my own design project.

- Field Work and Site Reconnaissance, I have both identified, as well as distill and analyze several challenges and needs which include the phenomenon of the wet market, garbage challenge and the demand for agricultural land. Wet market is built on the first floor of a residential building, which shares the indoor parking space and outdoor space with the residents. The main challenge of these wet markets is hygiene, with residents unable to tolerate the smell of vegetable leaves, chicken feathers, and fish scales which the vendors throw away every day. In addition to the inconvenience of living, poor sanitation poses some health risks to households, traders and villagers - it could even cause massive disease. The problem of waste in the village is also very serious. Although there are several trash bins in the village, the villagers still throw away their garbage at will. There is also a conscious lack of garbage classification and lack of facilities. For these problems, I propose to establish a multi-functional new commons for the establishment of new markets waste management, and even more service and entertainment space. This will form the new self-organized economy for the villagers, which is designed to improve the quality of life of villagers and make them financially self-sufficient.

Key words:  
Urban Village  
Transformation  
Wet market  
Informal  
Community  
China

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# Introduction

## introduction

The term “Urban Village” refer to villages that are located in or around the formal city. Its emergence and spread is a unique phenomenon in Chinese cities, occurring in many areas and in different forms, which is the result of land reform, rural land ownership systems, and rapid urbanization.<sup>1</sup> The land in the urban village is owned by the village collective so the government cannot build or administer this land without authorization.<sup>2</sup> Due to the pressure of urban development, the nation needs to buy land from villagers and then use the land to develop the city, but the compensation for residential land acquisition has relatively high in recent years. The inability of the government to pay the huge compensation resulted in the existence of urban villages in the city center. Moreover, because the state has no right to intervene in the construction of urban villages, the public facilities and services in urban villages are backward and seriously disconnected from the surrounding urban lifes.<sup>3</sup>

Urban villages are regarded by city builders as a cancer of the city because they are not only dirty but also full of numerous illegal buildings.<sup>4</sup> It hinders the modernization of the city and the landscape. The reconstruction of urban villages is always a difficult point for the Chinese government and there is no standard answer.<sup>5</sup> Since 20 years ago, the government has mainly demolished all urban villages to make way for new residential or commercial buildings.<sup>6</sup> This is undoubtedly a way to maximize the economic benefits for the government and real estate developers, but such a simple and crude way also brings many social problems. For example, the housing problem of villagers in urban villages, the livelihood problem of villagers, the problem of cheap rent. If we look at the village in the city from another angle, we will find that it is not worthless, but also provides a transitional zone for new migrant workers. If the government demolishes an urban village, its residents will lose their jobs and even their houses. These discusses other possibilities of urban villages, and investigates problems in urban villages through interviews and mapping, and tries to improve the life of urban villages through architectural intervention.

The city is human-centered, including nature and humanity. Nature is the natural material element of the city, while humanity is the soul element of the vitality of the city. Humanistic thought runs through the whole process of

urban rise and fall. The essence of humanity is to respect people's values and pay attention to their spiritual life. Since the Industrial Revolution, the development of human society has been driven more by economic and technological forces and paid too much attention to the purpose of profit, while human needs have been ignored to varying degrees. The large-scale development and construction of modern cities, emphasizing the intensification and efficiency of space and its appearance and aesthetic, has caused drastic changes in the urban environment, economy, and social relations, weakening the concept of serving people. The old village has fixed residents and unique cultural characteristics, maintaining the core feelings and values of the city, and continuing the urban context. Therefore, the development of cities should no longer focus on pure economic growth as the core goal, but pay more attention to the realization of people's self-value and the continuation of urban culture.<sup>7</sup>

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3. Shuang Chen, 2011, The harmonious change of the spatial form of villages in central and western big cities, p5

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7. Xinyi Ding, Inner city regeneration: public participation and rebuild urban humanism, 2020

What is an urban village?

**System**

Affordable Housing

Environment

Government Attitude

Hukou System

**The system**

Urban villages or chengzhongcun (城中村) refer to villages which are located in the city or around the city. Its emergence and spread is a unique phenomenon in Chinese cities, and it occurs in many areas and in different forms which is the result of land reform, rural land ownership systems, and rapid urbanization.<sup>8</sup>

China's urban-rural dual system of land which means that urban land in China is state-owned, and all rural land belongs to the village collective.<sup>9</sup> Therefore, an urban village refers to a rural area surrounded by rapidly expanding cities. In this process, developers and local governments need to pay compensation fees for land acquisition to the village collective. Agricultural land has always been the main target of land acquisition because the cost of residential land is much higher.<sup>10</sup> So far, China's remaining urban villages are made up of farmers who have lost their agricultural land. Although they lost their agricultural land, their residential land was not expropriated, so they still lived in the city center, surrounded by modern construction, but they don't fit in.<sup>11</sup>

**Affordable Housing**

After the land acquisition, these landless farmers lose their means of production, and traditionally choose to work in cities. Fortunately, rapid urbanization has led to a severe shortage of affordable rental housing, prompting them to use their homestead for housing rental and other related commercial activities to make a living.<sup>12</sup> The biggest problem, however, is that formal urban planning is carried out only on land owned and managed by the government, which means that rural land is under the control of the village collective and outside the formal urban planning system. This has led to poor public services in urban villages.

Meanwhile, urban villages lack the legal status of urban land and the public services that should be provided by the government, so it costs a lot less than other lands in the city.<sup>13</sup> For the migrant population, it is a space with low cost. If the space provided by the formal government land is too expensive, people will move to the informal land space such as urban villages. The low cost here is not only reflected in the land price but also includes the cost of goods, public

8. Xiaoli Chen, 2018, Study on government Management and Villager Autonomy in urban Village Governance, p10

9. Feng Xue, Urban village reconstruction strategy and planning and design method, 2017, P3

10. Jingxiang Zhang, Wei Zhao, Analysis on the development of urban villages and its significance, 2007

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13. Bruno de Meulder, Yanliu Lin, Kelly Shannon, Village in the City, 2014, P 14

services, and housing supply. The low cost fully adapts to the characteristics of new migrants in cities, especially the low income of migrant workers. Therefore, there will be a large number of people living in urban villages, so that the proportion of the migrant and local population can reach 10:1.<sup>14</sup>

Chengguan Village is one of the many urban villages in Guiyang, and is the main research object of this project, in the process of field visits also found that many houses added floors on top of the original floors to maximize the rental space. (Figure1-4) The additional floors stand out because of the different materials used. The degree of citizens living in who have illegally additional floors to the existing structure is in direct proportion to the speed of urban development. A large number of migrant workers flood into the rapidly developing cities, and the increasing demand for low-rent housing makes the villagers in the cities add floors to their own houses in order to earn more rent. In Shenzhen, most of the houses in urban villages have been built to more than ten stories, which is called “handshake houses”, where can reach out from one building and shake hands with your neighbor.<sup>15</sup>



Fig.1-4 Villagers Added Floors to Maximize the Rental Space, photo by author

What is an urban village?

- System
- Affordable Housing
- Environment
- Government Attitude
- Hukou System

## The Environment (环境)

The cost of urban villages is very low due to the lack of government regulations, but it is precisely for this reason that the construction of urban villages is far behind cities. In addition to the noisy environment and chaotic security, the entire village is densely packed with buildings. Due to the lagging planning of urban villages, the illegal construction is quite concentrated. Alleyways are narrow and crowded, with serious fire safety hazards. The gap between buildings is very small, some even less than 1 meter. (Figure5-12)



Fig.5-12 Illegal Construction And Space in the Urban Village, photo by author

14. Xiaoli Chen, 2018, Study on government Management and Villager Autonomy in urban Village Governance, p17

15. Ai, Stefan. Villages in the City: A Guide to South China's Informal Settlements (p. 17). Hong Kong University Press. Kindle

What is an urban village?

System

Affordable Housing

Environment

Government Attitude

Hukou System

## Government Attitude (政府态)

There are thousands of urban villages in China. According to the statistics of the Ministry of Housing and Urban-rural Development in 2006, there are more than 1,000 urban villages in Shenzhen, 304 in Guangzhou, and more than 200 in Beijing.<sup>16</sup> The government has taken the urban villages as a key reconstruction area of urban renewal. The main renovation strategy has been to demolish the urban villages, and this is being led by the government. Although there have been many cases of urban villages being rebuilt into residential districts or commercial areas through demolition in China, the demolition of the village in the city has brought negative effects and problems to the city, such as the survival of villagers after demolition and the affordable rental housing problem.

The compensation for demolition can only benefit landlords in urban villages, and cannot ultimately benefit its vast number of tenants. Moreover, the demolition and reconstruction deprive the villagers right to live.<sup>17</sup> These villages are not only places to live; they are also a basic workplace for the inhabitants. Residents could use their living place to start small businesses. If the government demolishes the village, then the above simple living condition will disappear. As compared with the current modernization practices of the Chinese government, and as evidenced in the development with next to the village, these villages represent a remarkable vitality in both physical and spatial configuration.<sup>18</sup>

## Hukou System (户口)

If the dual system of land is the foundation of the formation of urban villages, then the household registration system (Hukou) further deepens and complicates the problem of urban villages. Under the current hukou system, all the rights of local city-dwellers are closed to the vast majority of non-local migrants, such as the right to buy a house legally, access to obtaining a mortgage, social housing, and housing provident fund. Therefore, it is in the urban villages that the informal nature caused by vague policies and market economy transformation provides the living and livelihood space for these urban marginal groups.<sup>19</sup>

16. Jingxiang Zhang, Wei Zhao, 2007, Analysis on the development of urban villages and its significance

17. Al, Stefan. Villages in the City: A Guide to South China's Urban Villages (p. 20). Hong Kong University Press, 2007.

18. Urbanus, <http://www.urbanus.com.cn/uprd/main-research-topics/urban-villages/?lang=en>

19. Manjiang Yu, <https://www.zhihu.com/question/27496468/answer/74235394>

part 2

## Urban Context

### Guiyang City (贵阳)

#### Guiyang City

#### Chengguan Village

#### Site Deconstruction & Analysis

#### Field Work and Site Reconnaissance

Chengguan village (程官村) located in Guiyang city in Guizhou Province, in southern China.(Figure13,14) Guiyang is the capital of Guizhou Province, and the total area is 8034 square kilometers, and the built-up area is 360 square kilometers. The permanent population is 4.97 million, the urban population is 3.78 million, and the urbanization rate is 76.13%. the number of the urban villages is more than 40. (Figure15) There are more than 30 ethnic minorities in the territory and 32 tourist attractions such as mountains, rivers, canyons, lakes, karst, caves, waterfalls, primeval forests, culture, and ancient city pavilions. In China, Guiyang is a third-tier city with a GDP of 403.9 billion yuan in 2019. The pace of development is no match for first-tier cities such as Shenzhen and Guangzhou, but there is still a big difference between the modernization of Guiyang city and the situations of the urban villages. (Figure16-19) Since 1978, when China began its Economic Reform and opening up the development of the city, Guiyang has also expanding. As a result, many urban villages surrounded by cities have emerged, and Chengguan village is one of them. (Figure 20)

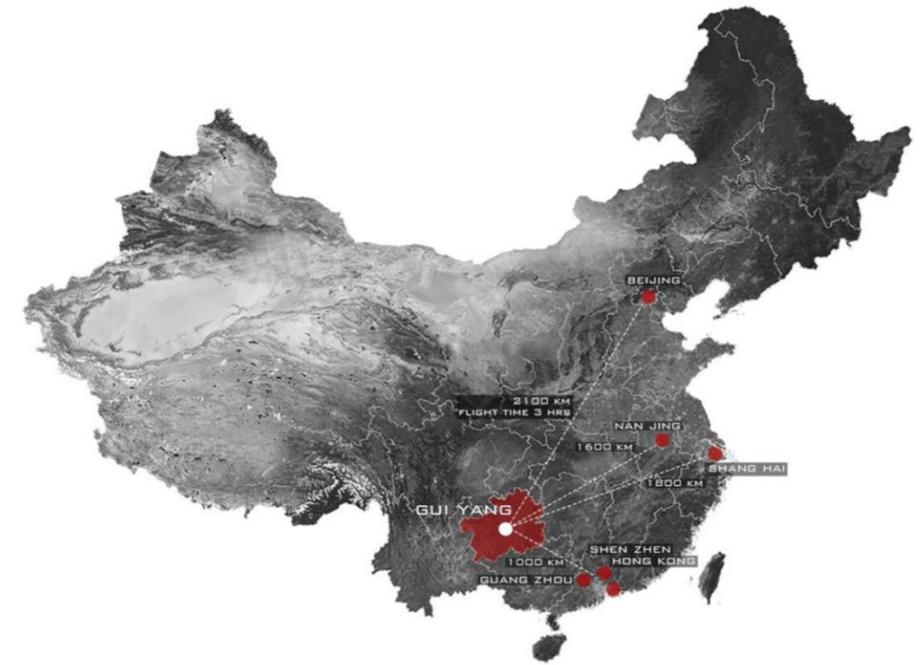


Fig.14 The Map of China, photo by author

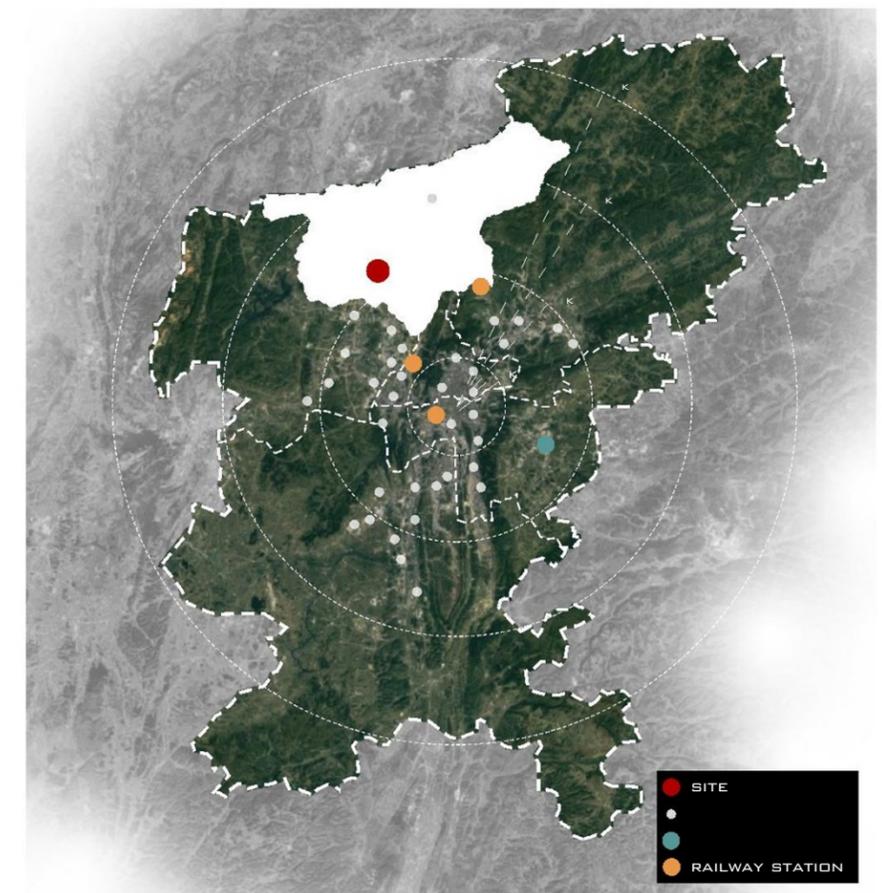
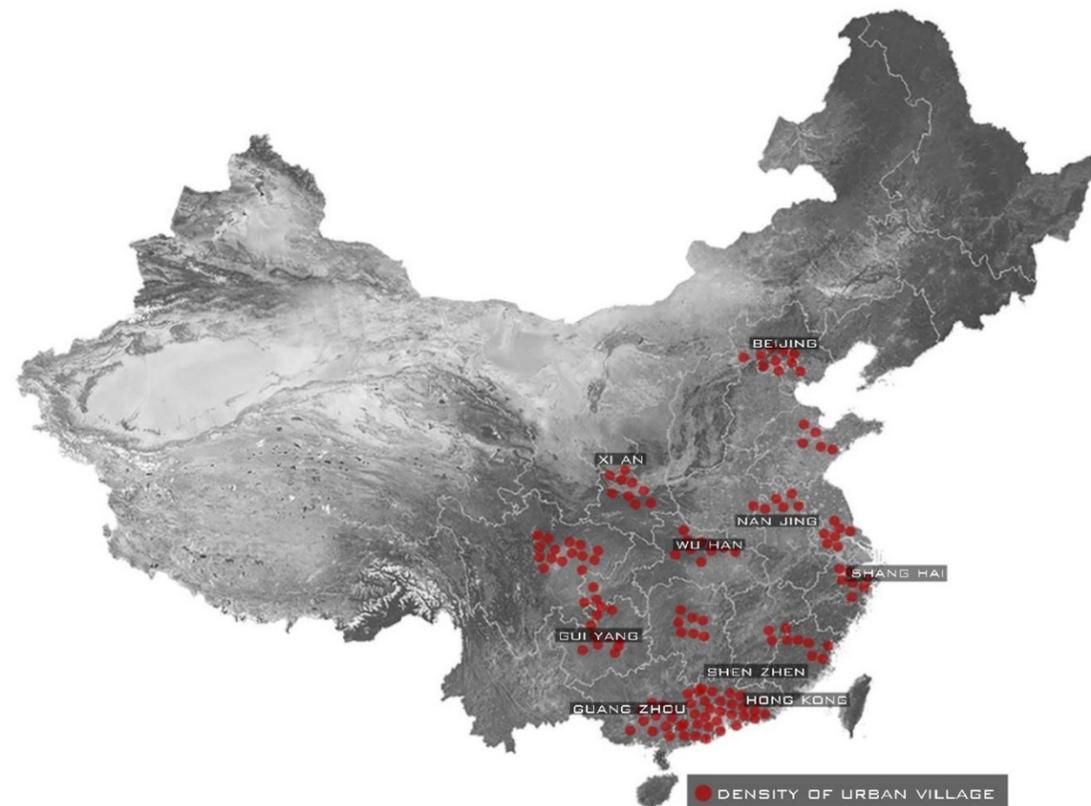


Fig.15 The Map of Guiyang City, photo by author



Fig.16 Guiyang City Perspective View, photo by Yi Zhang



Fig.17 Urban Village in Guiyang City, <https://image.baidu.com/search/detail?ct=503316480&z=undefined&tn=baiduimage&ipn=d&word>



Fig.18 Meikuang Village in Guiyang City, [https://www.sohu.com/a/326564838\\_100165091](https://www.sohu.com/a/326564838_100165091)



Fig.19 Chengguan Village in Guiyang City, photo by author

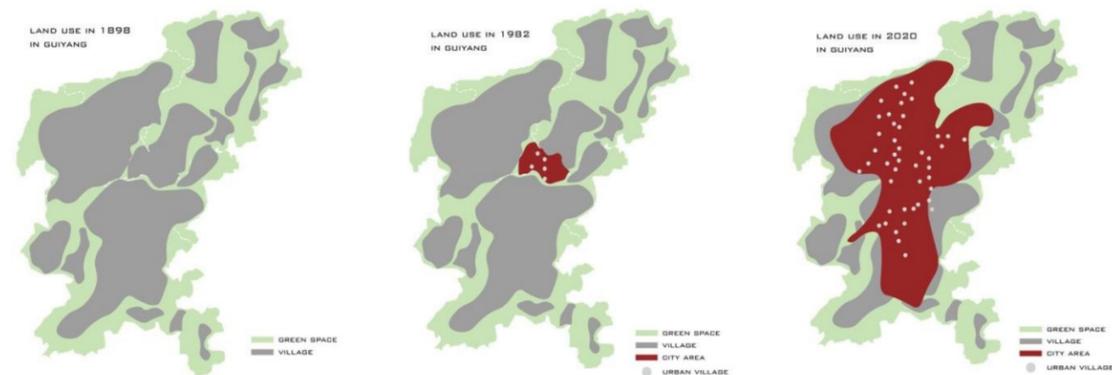


Fig.20 Land Use Map in Guiyang Since 1898 to 2020, photo by author

## Urban Context

Guiyang City

**Chengguan Village**

Site Deconstruction & Analysis

Field Work and Site Reconnaissance

## Chengguan Village (程官村)

The total area of the village was 0.15 square kilometers, with a total resident population of 476 households and 1,599 people in 2005.

Chengguan village was only a small residential area in the Republic of China. Guiyang was declared to be a city in 1941 and Baiyun District was planned to be part of Guiyang in 1958. These changes have brought more industry to Baiyun District and Chengguan village. In the same year, the Guizhou aluminum factory was established. The headquarters is only 3 kilometers away from Chengguan village. Subsequently, in 1967, Guizhou Aluminum Factory set up its raw material processing factory in Chengguan Village. More job opportunities attracted more immigrants to the village, this is increase the size of Chengguan village. In 1978, Economic reform and opening up of China, China gradually liberalized the original control of population flow, and a large number of migrant workers flowed to the cities, thus accelerating the process of urbanization.

In 1998, rapid the expansion of the aluminum factory led to the abandonment of Chengguan's raw material processing factory, the village became a residential community. The current residents were partly factory workers and partly migrant workers, who came to cities to work as a result of urbanization. Around 2001, the villagers of Chengguan village lost almost all their farmland, and modernization of the land surrounding Village began,with the construction of the formal city, through the Tower in a Park model.

In 2007 and 2016, Southwest Furniture mall and Quanhu Park were opened, More than 400 jobs were provided to the villagers. At present, most of the residents in the village go out to work, leaving the old and some young people to open shops in the village to earn a living.

Throughout this entire, China's urbanization rate has risen from 10% in 1949 to 60% in 2019.

## TIMELINE OF SITE AREA

THE REPUBLIC OF CHINA (1912~1949)	THE TERRITORY SET UP BAIYUN TOWN
1941	<b>GUIYANG WAS ESTABLISHED AS CITY</b> , BAIYUN TOWN WAS CHANGED TO BAIYUN DISTRICT
1949	THE PEOPLE'S REPUBLIC OF CHINA WAS FOUNDED, PROPORTION OF <b>URBAN POPULATION: 10.46%</b>
1958	BAIYUN DISTRICT BELONGS TO GUIYANG CITY <b>GUIZHOU ALUMINUM FACTORY</b> WAS ESTABLISHED
1967	GUIZHOU ALUMINUM FACTORY HAS <b>SET UP A RAW MATERIAL PROCESSING FACTORY IN CHENGGUAN VILLAGE</b> AND MAINLY ENGAGED IN RAW MATERIAL ORE PROCESSING. <b>JOB OPPORTUNITIES</b> HAVE ATTRACTED MORE PEOPLE TO SETTLE IN CHENGGUAN
1978	<b>ECONOMIC REFORM AND OPEN UP</b> , CHINA GRADUALLY LIBERALIZED THE ORIGINAL CONTROL OF POPULATION FLOW, AND A LARGE NUMBER OF <b>MIGRANT WORKERS</b> FLOWED TO THE CITIES, AND ACCELERATED THE PROCESS OF URBANIZATION. PROPORTION OF <b>URBAN POPULATION: 17%</b>
1998	THE EXPANSION OF GUIZHOU ALUMINUM FACTORY HAS LED TO THE ABANDONED OF THE FACTORY IN CHENGGUAN VILLAGE. THE CURRENT RESIDENTS WERE PARTLY <b>FACTORY WORKERS</b> AND PARTLY MIGRANT WORKERS WHO CAME TO CITIES TO WORK AS A RESULT OF URBANIZATION.
2001	DUE TO THE ACCELERATION OF URBANIZATION AND LAND ACQUISITION, THE VILLAGERS OF CHENGGUAN VILLAGE HAVE <b>LOST ALMOST ALL THEIR FARMLAND</b> , AND THE SURROUNDING MODERNIZATION HAS BEGUN. <b>PROPORTION OF URBAN POPULATION: 37%.</b>
2007	SOUTHWEST FURNITURE MALL WHICH IS 100 METERS AWAY FROM THE SITE GO INTO OPERATION, IT PROVIDES NEARLY 300 JOBS OPPORTUNITIES FOR VILLAGERS
2016	QUANHU PARK OPENED, PROVIDING MORE JOB OPPORTUNITIES FOR VILLAGERS
2019	CHINA'S URBANIZATION RATE HAS RISEN FROM <b>10% IN 1949 TO 60% IN 2019.</b> ACCORDING TO UN ESTIMATES, THE URBANIZATION RATE IN DEVELOPED COUNTRIES WILL REACH 86% BY 2050, AND CHINA'S URBANIZATION RATE WILL REACH 71.2% BY 2050.

## Urban Context

Guiyang City

Chengguan Village

Site Deconstruction & Analysis

Field Work and Site Reconnaissance

## Site Deconstruction & Analysis (场地分析)

At present, Chengguan village is mainly residential. A large number of migrant workers choose to live in urban villages because of the cheap rental housing. Villagers who had lost their agricultural land also turned to rent collection as a new source of income. This is a win-win social structure. However, due to the increasing demand for housing caused by the massive influx of rural population into cities due to China's policy, villagers are also building more houses for profit. The existing two-story house is added to four or even five stories, which makes the illegal buildings in the village become more and more, and the drawbacks in space and use function are also gradually revealed. The site from the aspects of space and urban fabric. As we can see from the figure-ground (Figure 22), Chengguan village is a space surrounded by dense urban fabric. The surrounding construction is orderly, open, and alienated, which forms a strong contrast with the compact, complex and irregular space form of Chengguan village. According to the land use map of the site and surrounding area. (Figure 23) It is surrounded by modern high-rise residential and commercial office.





Fig.22 Figure Ground of Chengguan Village, photo by author

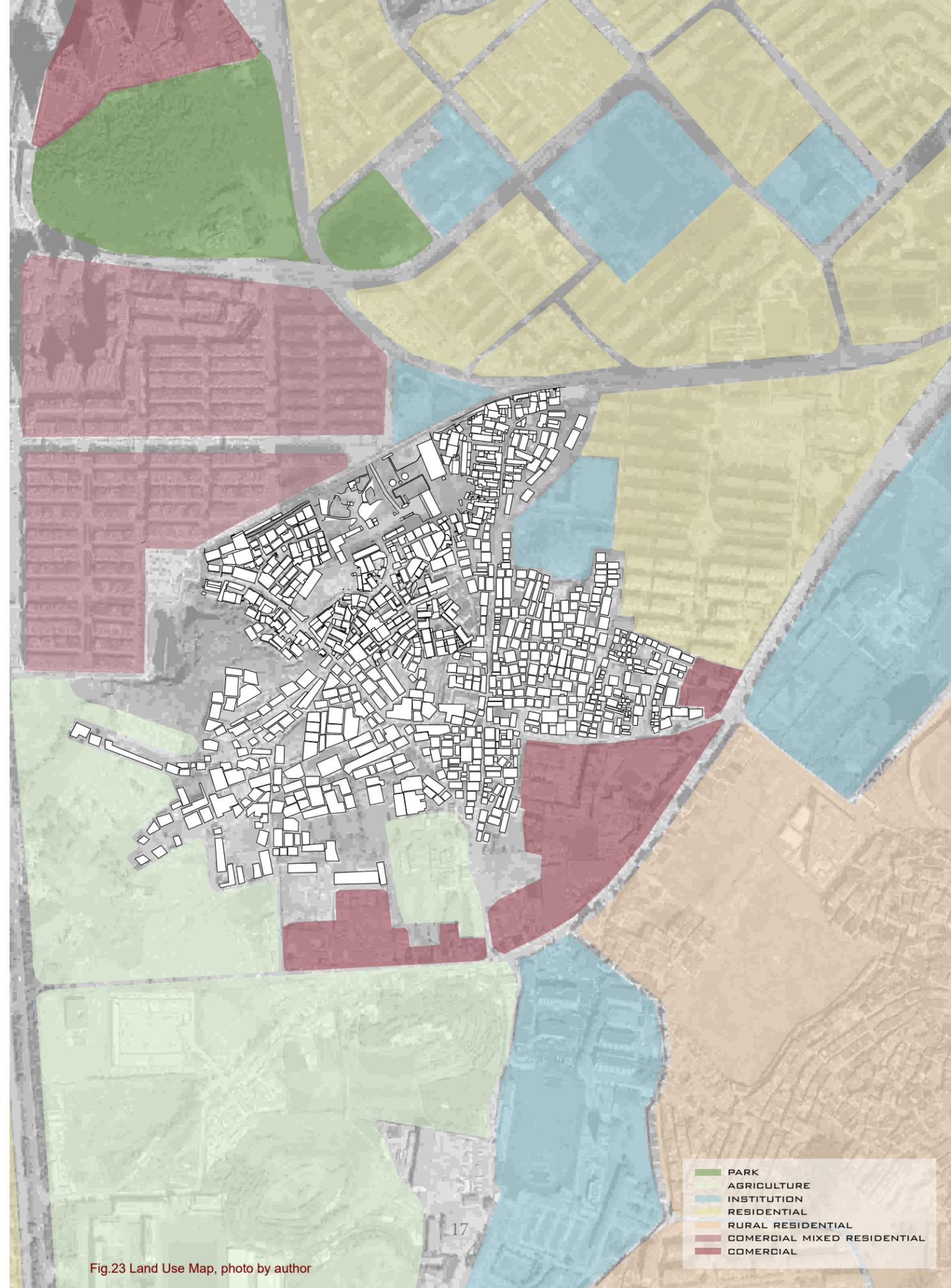


Fig.23 Land Use Map, photo by author

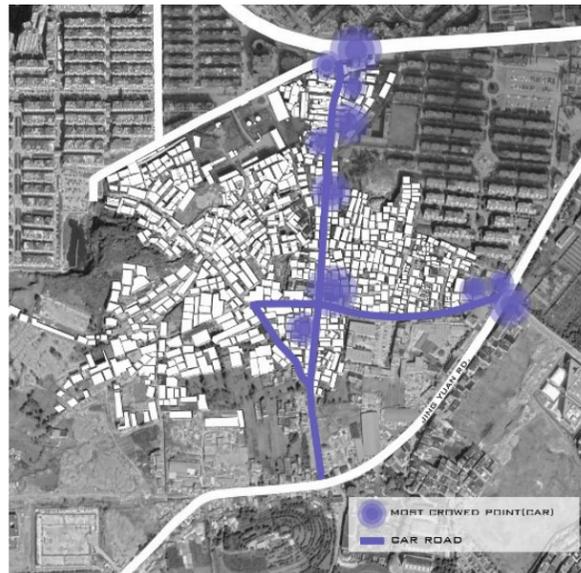


Fig.24 Car Flow Diagram, photo by author

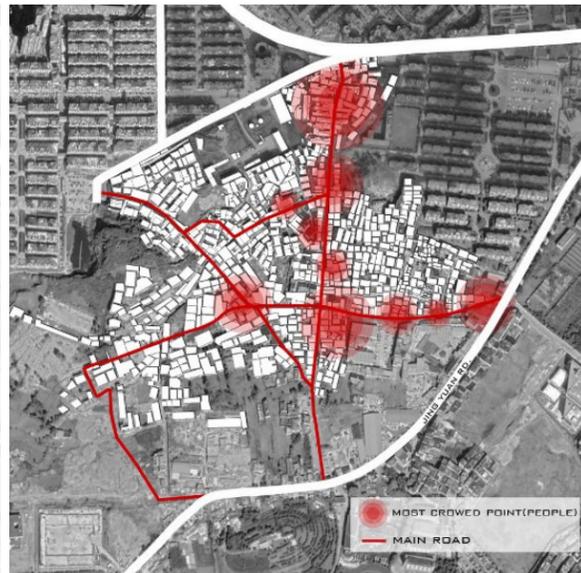


Fig.25 People Circulation Diagram, photo by author

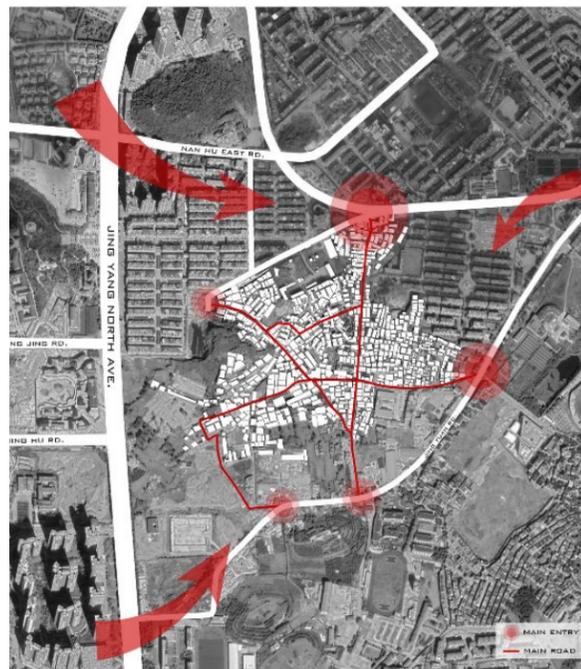


Fig.26 Main Entries Diagram, photo by author

This is the land use map of the village drawn according to the field investigation results. (Figure 27) The buildings in the village are mainly residential use, labeled in light yellow. Orange is a commercial mixed residential building. For this type, the second floor is the living space, and the first floor is the store. It is also one of the most common types of houses in the village.

Chengguan village has three main streets. The buildings facing the street are mainly commercial mixed residential buildings. As mentioned above, the first floor serves as shops for-profit and the second floor serves as bedrooms for living functions. (Figure 28) Through my interviews conducted with the shop owners, I have determined that most shops on the main street are not used by the householders, but rented to the migrants to do business.

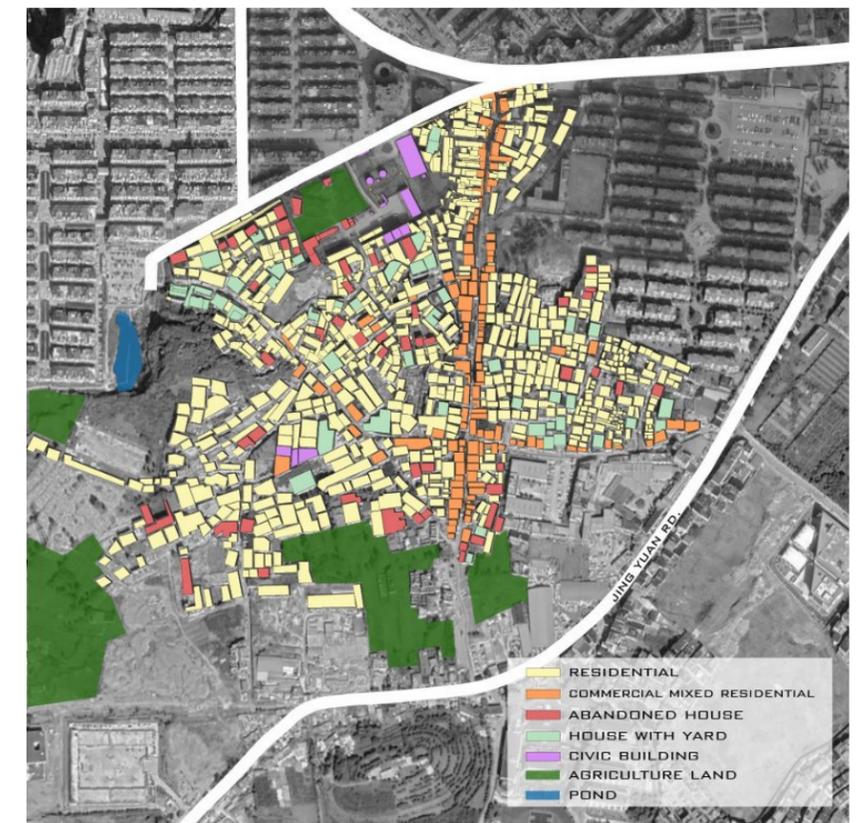


Fig.27 Land Use Map in Village, photo by author

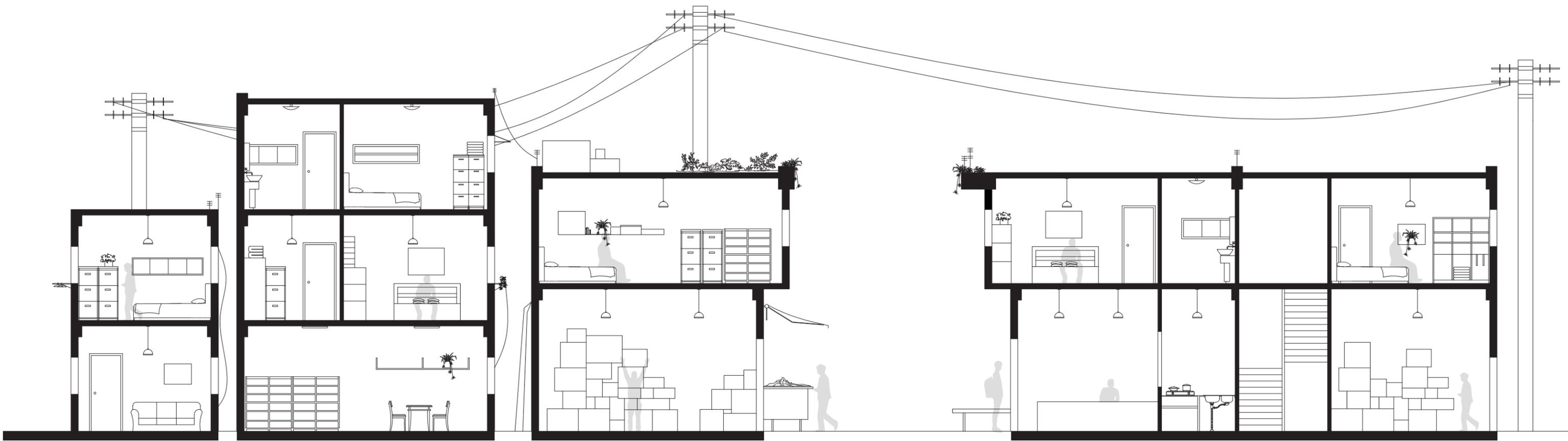


Fig.28 Section of how People Use Spacec, photo by author

## Urban Context

Guiyang City

Chengguan Village

Site Deconstruction & Analysis

Field Work and Site Reconnaissance

## Field Work and Site Reconnaissance (现场调研)

Mr. Hong, who is engaged in the pure grain liquor business in the village, was interviewed. Mr. Hong introduced himself as a native of Zhanjiang, Guangdong, who has been in Guiyang for 7 years, and has been engaged in the liquor business in Chengguan Village for 3 years. "Most of the guests are not from the village. They are workers working around the village, they would come to me for a drink during the lunch break. This year, due to Covid-19, my business is not as good as last year. Fortunately, the landlord understands that our business is not easy and reduces my rent."

The village where Mr. Hong had been doing business was demolished, so he came to Chengguan to reopen his shop after a long journey. When I asked Mr. Hong why he chose this urban village for business, he said, "Because the rents in urban villages cheaper than in cities, and the wines he makes are more popular in urban villages. Now there are many supermarkets in the city, but the wine they sell is mass-produced by the manufacturer, and buyers don't know the quality of the raw materials. The quality of our self-brewed wine is guaranteed, and customers can see it." It's part of a liquor culture in China, where mass-produced bottles sold in malls have been overpackaged and it has become an essential drink for guests. But when we look away from the city to the streets of the village, we find that the people still love this kind of liquor, and buy as much as they want. During the interview, two guests arrived, each of them bought a glass of wine, drank it off on the spot, and left. I think this is a reflection of village culture, without the glitz of big cities, and unlike over-packaged wine, everything is so simple and life-like.

Mr. Hong is talkative. When talking about the demolition of villages in the city, Mr. Hong said that he and many tenants hate this because they have to leave the familiar environment and start all over again after the demolition. But landlords like demolition, because they can get compensation for demolition, but tenants will be left with nothing and just evicted. Mr. Hong also said that his landlord did not leave the village after renting the shop to him. Instead, he lived in the building behind the shop and set up a stall next to Mr. Hong's shop every day to sell vegetables.

Mr. Hong, whose shop is on the village's main street, showed me another room at the end of the shop. He divided the room into two rooms, one for storage and the other for a makeshift bedroom so he could store some of the corn other for a makeshift bedroom so he could store some of the corn kernels he used to make wine. (Figure 29)



Fig.29 Plan of the Mr. Hong's Shop, photo by author

Mr. Yang has been selling handmade noodles in Chengguan Village for 10 years. (Figure 30) During this period, he has changed shops several times due to the landlord and the expiration of the lease, but he has always been in the village. "I used to come here to have a small business, making handmade noodles. Residents from nearby also come here to buy noodles, because there are no handmade noodles in the supermarket. Those noodles made by machines are not as delicious as handmade noodles. At last, I settled down here, and my wife and children came here with me, and I rented an apartment, and now we live together." Mr. Yang also introduced me to the layout of the shop. In addition to the room where the noodles were made and sold, there was a small room in the back which was a warehouse full of flour and some materials which were stored in stock. At the end of the interview, I also bought some noodles from Mr. Yang and went home. Indeed, I haven't eaten handmade noodles for a long time.



Fig.30 Mr. Yang's Handmade Noodle Shop, photo by author

part 3

## Informal Urbanism

### Hawker

Wet Market

Waste Challenge

Agricultural Land

Precedent

The relationship between urban space and lifestyle is complementary. Urban space guides the lifestyle of residents, and even limits their lifestyle to some extent, but at the same time, a deep-rooted lifestyle will break the limitations caused by space.

### Hawker (小贩)

The businesses of Chengguan village main street is mainly food, and mainly targeted at the people living in the village, as well as the workers on the surrounding construction sites. On these main streets, the number of people doing business far outnumber the number of shops, and sellers without space chose to set up stalls on the roadside. Some of them put food on carts and sell it along the street, some build a platform with stones at random to store fruits and other goods, and some sell the goods directly on the ground. (Figure 31-34) Hawkers in urban villages are informal<sup>20</sup>, causing traffic problems and unnecessary accidents, while it is very unhygienic for them put food on the ground for sale.



20. Margaret Crawford, John Chase, Kaliski John, Everyday Urbanism, 2008

Fig.31 Key Plan of Where Hawkers around, photo by author



## Informal Urbanism

Hawker

Wet Market

Garbage Challenge

Agricultural Land

Precedent



Fig.34 Collage of Street with Hawkers, photo by author

## Wet Market (菜市场)

In addition to the three main streets, located at the main entrance of the village, is an existing wet market. (Figure 35,36) The wet Market is a traditional Chinese food market, which is very different from the formal supermarket. It works so well that almost all the villagers buy food here, even many city dwellers come to buy food because it is fresh, but there's some problem with it after deep research, such as the relation with surrounding residents, informal stalls and hygienic problem, the sanitary condition at wet Market increases the potential for disease.

The existing market is built on the first floor of the Jin Sheng Residential building, which shares the indoor parking space with the residents. the market shops have surrounded the residential building. Part of the market is outdoor, the part is indoor. In the outdoor part, people put up big umbrellas to avoid direct sunlight and rain. The interior part is in the underground parking lot of another residential building, where hawkers occupy the parking area to set up stalls and sell vegetables and share space and driveways with passing vehicles.



Fig.35 Key Plan of Existing Wet Market, photo by author



DIFFERENT TYPES OF SELLER

- FRUITS (KIWI,APPLE,PEAR,ORANGE)
- SPICES(SICHUAN PEPPER,PEPPER,PEPPER SAUCE)
- VEGETABLE (CABBAGE, CELERY, CARROT, CORIANDER, ONION, GARLIC, GINGER, TOMATO)
- MEAT (LIVE CHICKEN,LIVE DUCK,LIVE FISH,PORK,BEEF)
- COOKED FOOD (POT-STEWED FOOD,CHINESE BACON,PICKLED CHINESE CABBAGE)

Fig.36 Diagram of Existing Wet Market, photo by author

Hawkers arrive here every morning starting at six o'clock to set up stalls selling vegetables. They set up their stalls with rudimentary facilities and, like street vendors on the main street, use a stone platform to sell vegetables or place them on the ground in plastic bags and sell food directly on it. (Figure 37-40) The use of the single-use plastic bags is a common phenomenon in the urban village as well. (Figure 45) In the supermarket of the city, people would use cloth bags instead, but the urban village is still not aware of this environmental issue.

Those who sell fish in the market sell live fish. After the customer has selected the fish, the vendor will kill them on the spot, to make sure they are fresh. Fish scales and blood can be seen everywhere on the ground and walls, which have been blackened over time.(Figure 41,42) Also, sellers raise live chickens on the first floor of residential buildings and kill them on the spot, in order to make sure that they are fresh.(Figure 43,44) This is reasonable behavior in the Chinese market, but it has caused a lot of complaints because the market is downstairs in residential buildings.



Fig.37,38 People Sell Food on the Ground in the Wet Market, photo by author



Fig.39,40 People Sell Food on the Ground in the Wet Market, photo by author



Fig.41,42 Fish Stall, photo by author



Fig.43,44 Live Chicken in the Wet Market, photo by author



Fig.45 Use of Single-use Plastic Bags in the Wet Market, photo by author

## Field Work (现场调研)

The existing market is built on the first floor of the Jin Sheng Residential building, which shares the indoor parking space with the residents. Moreover, the market shops have surrounded the residential building, and the mixed flow of people may bring some troubles to the residents. With this speculation, I found Mr. Liu, the person in charge of the property management of the community. According to Liu, representatives of the residents' committee have communicated and reconciled with the market and sellers several times, but the problem still remains unresolved. The conflicts between them are mainly manifested in noise, space use, and garbage. The vendors, who typically start selling vegetables just after 6 a.m., use tricycles to pull goods, and the noise that occurs during unloading and setting up stalls is a nuisance to residents. In terms of space use, vendors occupy a lot of residents' resources, such as outdoor space and parking Spaces. The main problem is hygiene, with residents unable to tolerate the smell of vegetable leaves, poultry offal and chicken feathers, and fish scales that vendors throw away every day. There are also people selling live chickens downstairs. They keep chickens downstairs. Every day they pass by, there is a smell, and sometimes the smell wafts up to the residents' houses. "This is a big problem, no one wants to live in this kind of environment, but our property management can't solve this problem either. We have communicated with the vendors several times, but they do business here legally, and we have the right to do anything. "

## Informal Urbanism

Hawker

Wet Market

Garbage Challenge

Agricultural Land

Precedent

## Garbage Challenge (垃圾处理)

During the visit, it is not difficult to observe that Chengguan village has the same serious problem of improper sanitation management as other urban villages, and the villagers' awareness of environmental protection is weak. Although several large trash bins have been set up in the village for the villagers to dump their domestic garbage, but garbage is still everywhere. (Figure 48) Some villagers even throw shared bikes into the garbage, because they don't know how to use them. (Figure 47) There is also garbage on the main street and around trash bins that have not been cleared away, including food waste, food packaging bags, plastic bags, packaging boxes, wires, shoes, paper towels, paper cups, and so on. (Figure 46) Due to the awareness of environmental protection, the phenomenon of littering is still widespread among villagers. Also, the government's negligence in the management of rural waste leads to the increasingly serious phenomenon of dirty and disorderly conditions in the village. In China, garbage classification is a hot topic, and a difficult problem. Even many big cities have not done garbage classification well, even many big cities have not done a good job of garbage classification. In the book "Architecture of Waste Design for a Circular Economy", Caroline O Donnell and Dillon Pranger state that with the global material crisis looming, shortly, recycling will no longer be an option for those who care about the environment, but a necessity for all.<sup>21</sup> Garbage classification is the first step towards recycling.

21. Caroline O Donnell, Dillon Pranger, The Architecture of Waste Design for a Circular Economy, 2020



Fig.46 Trash Bins, photo by author



Fig.47 People Throw Share Bikes into the Trash, photo by author



Fig.48 Trash Bins around the Village, photo by author

Informal

Hawker

Wet Market

Garbage Challenge

Agricultural Land

Precedent

## Agricultural Land (农耕地)

China has been slowly becoming a business-driven country since the 1980s, people have lost a lot of arable land because of the construction of the city. As a large food producer and a large population, China's food security is also under the shadow of this crisis. Preliminary studies have found that with rising temperatures, reduced agricultural water use, and a decline in arable land that China's overall grain production will be reduced by 14-23% in 2050 compared with 2005 levels.<sup>22</sup> According to the FAO(Food and Agriculture Organization of the United Nations), global food stocks stood at just 405m tonnes in 2008, and their lowest level since 1980, with just 8 to 12 weeks of food for the world's population.<sup>23</sup> In China, which has only 10 percent of the world's arable land, but 22 percent of the world's population, food for more than a billion people has always been a top priority. Besides, the decline of the total grain production level also led to the rise of part of the grain price. From January to February 2008, the domestic price of early rice and rice rose 0.6%, and the average domestic price of red wheat rose 9.6%, flour in 36 large and medium-sized cities rose 8.3 percent year on year, and the average price of corn in China rose 28.6 percent over the same period in 2007.<sup>24</sup> The circulation of agricultural products in China is divided into five steps, from the farmer to the buyer, and there are at least three steps in the process, each of which will lead to a rise in the price of food. (Figure 50-52) The urban village is a relatively weak area in the city. The residents' salary level is lower than that of other urban residents, but they bear the same food price with them. In this context, self-sufficiency is not only the goal of a country, but also of a village or community.

I met Ms.Wang near the railway in the village. At that time, Ms. Wang was harvesting cabbages in this farming field beside the railway track. (Figure 49) I interviewed her because I knew there was not much farmland in the Chengguan village now. Ms. Wang is not from this village. She lives in a nearby district called 317. Since she was laid off in 1998, and she has never had a formal job, she came to Chengguan village to sell vegetables in the morning as a way of life and recreation, as well as to earn some living

abandoned, it has been left unattended, and the site has not been treated, so Wang took advantage of the space to grow vegetables and set up a stall next to the vegetable field to sell them.

Since most of the agricultural land has been expropriated by the government for new housing and commercial development, farming is no longer the villagers' source of revenue. Chengguan village is the same, plus the expansion of villages, the existing vacant land has been almost filled with buildings, making the limited land resources even more stretched. However, it is not difficult to find that the villagers are still trying to find space to cultivate vegetables and fruits as much as possible as if they were keeping their living habits when they used to be farmers. This is easier for villagers who have courtyards, they cultivated part of the courtyard for their food. Villagers without courtyards also have other ways of enclosure farming, some fertilizing the flower beds in front of their homes, others randomly choosing open fields in the village, some of them even use boxes of soil to grow green onions. (Figure 53-57) But the limited space still cannot meet the needs of all the villagers.



Fig.49 Ms.Wang with Agriculture Land, photo by author

22. Guo Qiang, China's food security  
Influence factor analysis and strategy selection, 2009  
23. Baidu, <https://baike.baidu.com/item/%E7%B2%AE%E9%A3%9F%E5%AE%89%E5%B5%A8/10971808?fr=aladdin>, 2020  
24. Guo Qiang, China's food security  
Influence factor analysis and strategy selection, 2009



Fig. 50 Circulation of Agricultural Products in China, photo by author

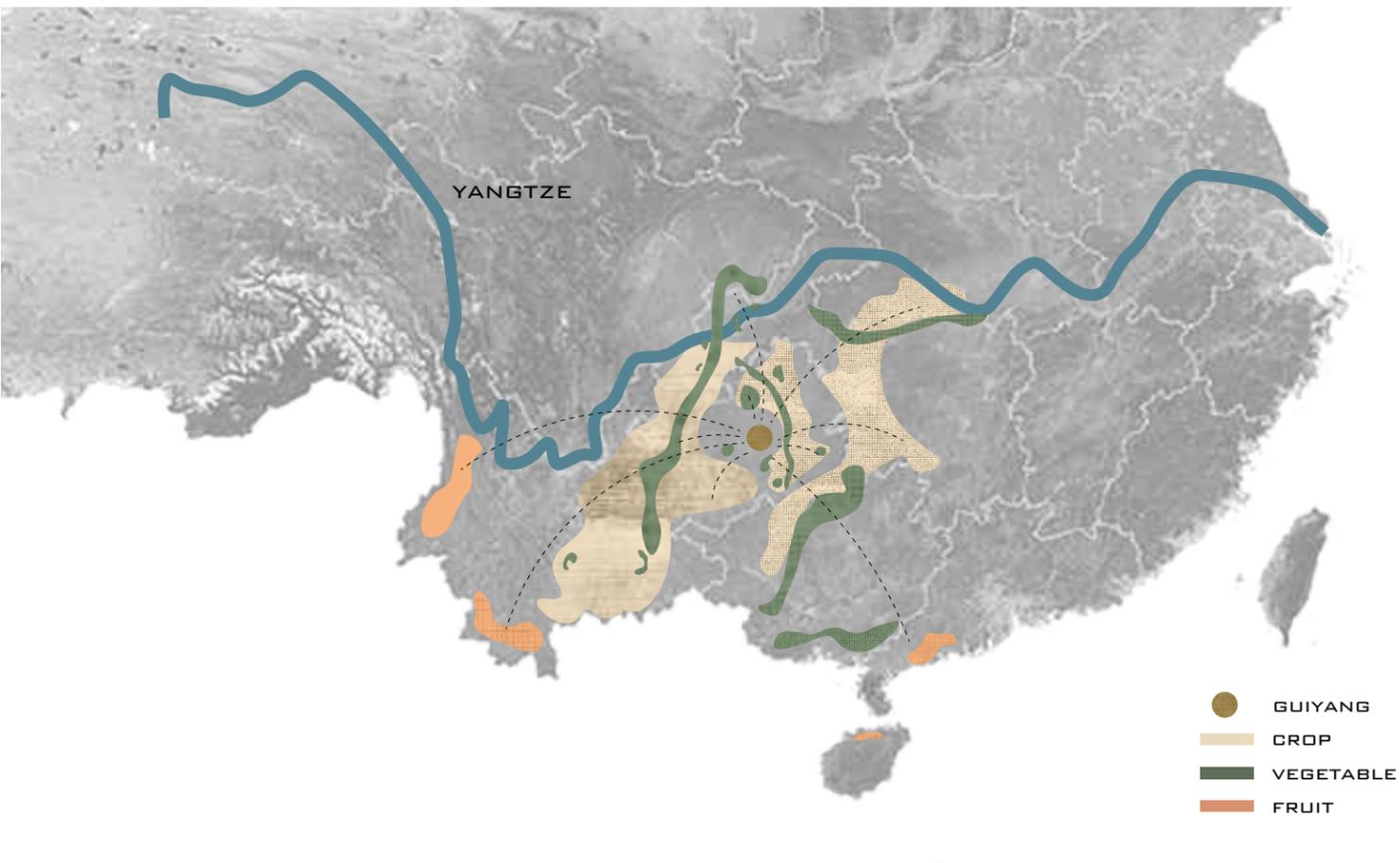


Fig. 51 Food Coming from Outside Guiyang, photo by author

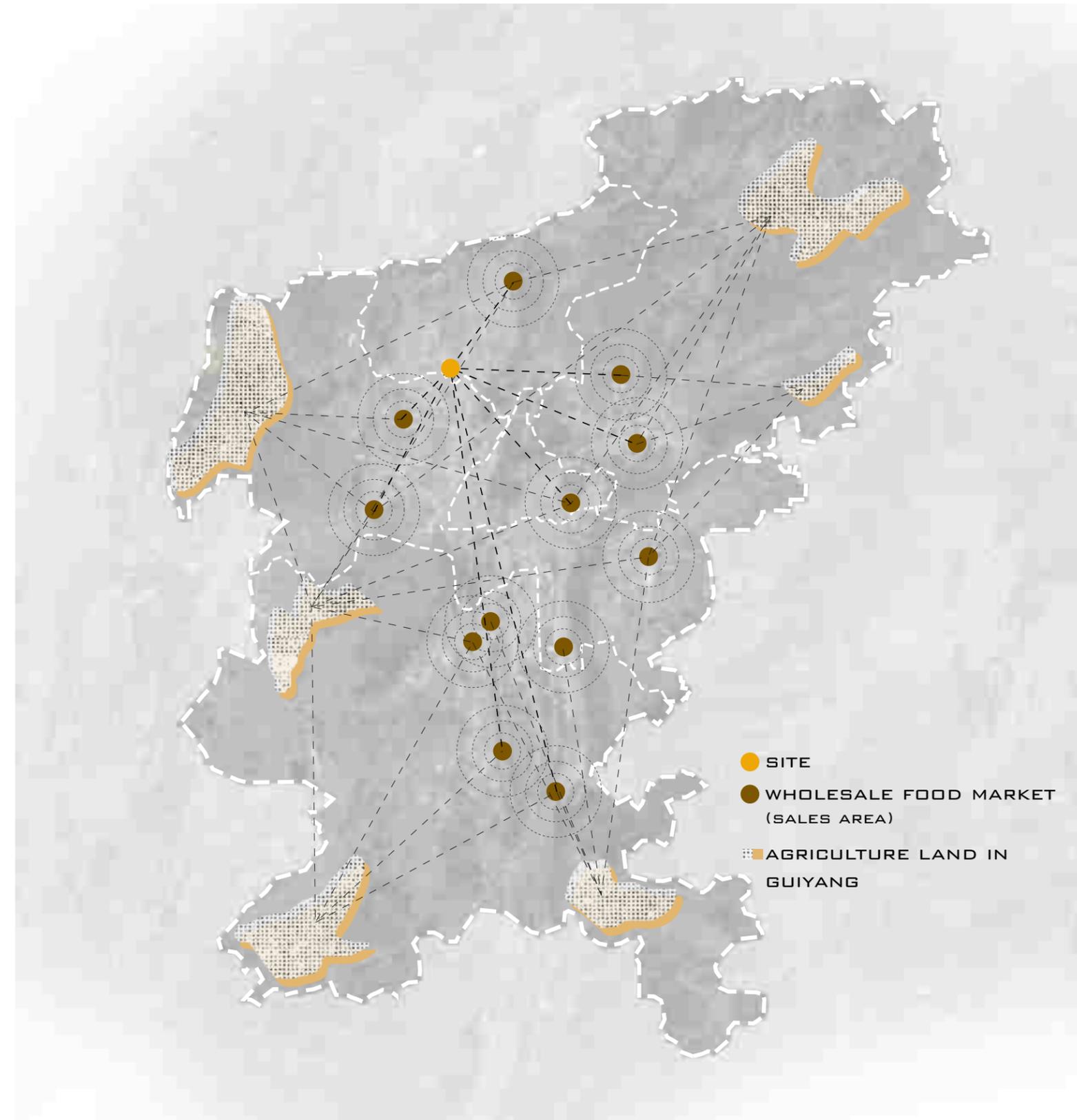


Fig. 52 Wholesale Food Market around the Site, photo by author



Fig.53-56 People Try to Find Space to Farm, photo by author



Fig.57 Agriculture Space in the Village , photo by author



Fig.58 Where do Villagers Usually Buy Food , photo by author 42

Fig.59 Who Come to the Wet Market, photo by author 42

## Informal

Hawker

Wet Market

Garbage Problem

Agriculture Land

Precedent

## Precedent (案例)

Dafen Village, located in Buji Town, Longgang District, Shenzhen, is a famous oil painting industry village in Shenzhen, where oil painting reproduction and creation workshops are all over the village. Yet Dafen village has long been seen as a curious mixture of folk art, philistinism, and commercial operation, and the Dafen Museum has emerged as one of the most unlikely places for an art gallery. A traditional art museum may not be suitable at all under the special cultural background of "Dafen Village".

The core of the question is whether it, as an act of the government, can facilitate the intervention of contemporary art on another level. And through this public facility, the surrounding urban fabric is adjusted, so that daily life, artistic activities, and commercial facilities are mixed into a kind of new cultural industry base. Their strategy is to blend the different functions of an art gallery, oil painting gallery, commercial, and rented studio into a whole, and at the same time to use several footpaths across the whole building to bring people together from different surrounding areas and provide maximum communication opportunities.<sup>25</sup>

The gallery is sandwiched vertically between commercial and various public functions and allows for visual and spatial penetration between different types of usage. The result is that exhibitions, transactions, paintings, residences, and other activities can take place in different parts of the building at the same time, and a variety of different ways of use can be induced through constant infiltration and overlapping to create new ways of use, thus weaving a completely different new form of urban settlement.

Urbanus, after integrating the strengths and weaknesses of Dafen Village, proposed to build an art gallery to combine the Village with contemporary art and to activate the community. This is similar to my goal which is to meet people's needs.



25. Urbanus, <http://www.urbanus.com.cn/uprd/main-research-topics/urban-villages/?lang=en>, 2020  
Fig.60 Dafen Museum, Urbanus,  
<http://www.urbanus.com.cn/uprd/main-research-topics/urban-villages/?lang=en>

## New Materials (新材料)

This case study is a project of Urbanus in a Beijing Hutong in 2017. Adding new elements into old buildings, such as wood and bamboo in order to bring a new look and experience to the site. In terms of materials, bamboo and wood give people a relaxed, natural, and casual feeling, which is in contrast to the harsh image brought to people by the brick and tile of the hutong. (Figure 61)



Fig.61 Hulu Yuan -- No. 37, Luanqing Hutong, photo by Urbanus

This is also a project by Urbanus, which is a renovation of an art center in Shenzhen. Instead of changing much of the old building, Urbanus used new translucent building material for the new facade. It wraps around the original building, which visually lightens the sense of volume and is more novel. (Figure 62)



Fig.62 OCT Art Center, photo by Urbanus

### Hanging Garden (空中花园)

Houtan Park, a riverfront park designed by Turenscape in Shanghai, stripped the walls and roof of the original building, leaving only the structural parts. The element of the hanging garden is added to these structures. Numerous platforms and enclosed 'containers' are designed as the nodes on the pedestrian network, including the 'hanging garden' transformed from a factory structure and the landscaped dock.<sup>26</sup> Based on the needs of the community and the villagers' love for green plants and vegetable planting, a hanging garden is also a very useful design element for my project. Besides, the technique of stripping the exterior wall and roof of the building is very worth learning and applying in this project. There is also a lot of steel truss in the existing factory building. If we discard the exterior wall and roof of the building first, we can think about the building again in another way. It used to be a workshop, but when all things are thrown away, it may become something else, it may discover the building from a different angle and find a way to transform it more suitable for the villagers. (Figure 63, 64)



Fig.63 Houtan Park, Photo by Turenscape

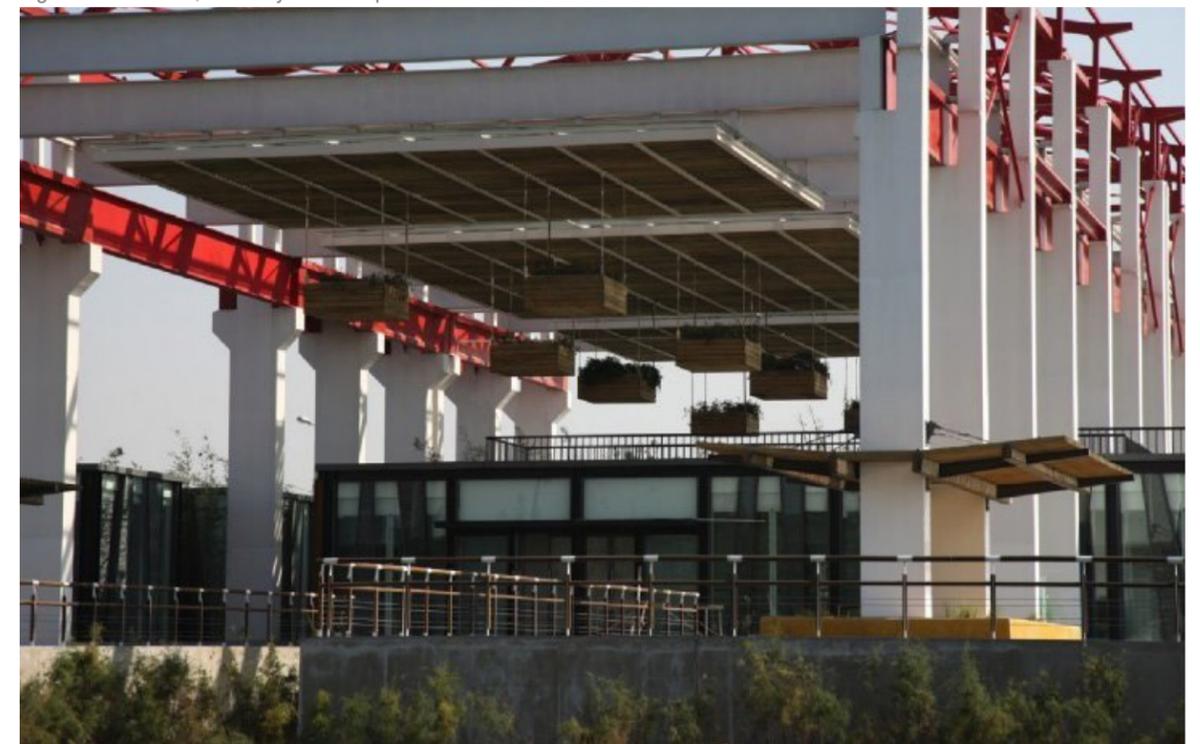


Fig.64 Houtan Park, Photo by Turenscape

26. Turenscape, <https://www.archdaily.cn/600270/qun-li-shi-di-gong-yuan-slash-tu-ren-jing-guan>. 2010, Archdaily

## Adaptive Reuse (适应性再利用)

The Evergreen Brick Works is in a former quarry and industrial site located in the Don River Valley in Toronto, Ontario, Canada. Since the closure of the original factory, the quarry has been converted into a city park, which includes a series of naturalized ponds, while the buildings have been restored and opened as an environmentally focused community and cultural center by Evergreen, a national charity dedicated to restoring nature in urban environments. This is an adaptive reuse project comprised of a complex of old industrial buildings, old industrial building imbued with new programs, such as environmental education programming, kitchen, a garden center, as well as programming for children.<sup>27</sup> (Figure 65,66)

The adaptive re-use of the building, and its transformation, serves as a useful precedent and case study. The designer transformed the industrial factory into a city park, which means that the designer first needs to consider what part of the factory is worth transforming and what part needs to be removed. Although it is an adaptive reuse project, not all of it is worth preserving, but what is needed to serve our adaptive reuse goals. The next step is to investigate what functions are needed as a city park and what new functions can be provided.

27.Evergreen Works, <https://www.evergreen.ca/evergreen-brick-works/>



Fig.65, Evergreen Brick Works, Photo by Work Cities Culture Forum



Fig.66 , Evergreen Brick Works, Photo by Work Cities Culture Forum

## Agriculture (农业)

PF1 is a project of WORKAC in Queens, New York. The key of this project is the provision of a sustainable infrastructure, innovative building materials, as well as the visionary agriculture. The project is a half-acre farm that is completely off-grid, biodegradable, and recyclable. Made from cardboard tubes, it provides shade, seating, and activities. It is powered by solar energy and irrigated by a rooftop rainwater harvesting system. Agriculture is also an important part of my project.<sup>28</sup> PF1 is an inspiring project, which simultaneously achieves sustainable development, biodegradable and self-produced agricultural project, which gives me a lot of possibilities and ideas for the project design.(Figure 67,68) This informs my the design's upraised bed plantings along the rail right of the way next to the factory in the Village.



28.Workac, <https://work.ac/work/pf1,2010>

Fig.67 PF1, Photo by Workac



Fig.68 PF1, Photo by Workac

### Circulation (流线)

Beijing 77 Cultural and Creative Park is a renovation project of an old offset printing plant by Origin Architect. The renovation incorporates elements of dramatic arts, most notably the renovation of the space and circulation. The original idle plant was scattered and disorderly divided into rental, disorderly construction of the whole plant congestion and congestion. After the transformation, the offset printing factory has a unique space passing system, which breaks through the constraints of the original structure and guides the free three-dimensional flow and growth of the traditional courtyard and street clues. At other times, a decisive cut into the interior or underground, bringing light, air, and fresh nature into the interior space. There is no longer a dull and single only road, and the traffic line evolves into a free and free three-dimensional garden path, driving the interaction of scenery, indoor and outdoor space. The unreachable, passive, and isolated roofs in the factory are fully awakened by the veranda and become floating gardens with scattered heights in the air. Each garden is different in height, landscape experience, and way of arrival, and is a floating landscape in three-dimensional streets and alleys. The ubiquitous hanging gardens make up for the lack of space on the ground floor, providing each internal unit with an opportunity to get close to nature, and creating a communication field for relaxing encounters.<sup>29</sup> (Figure 69,70)

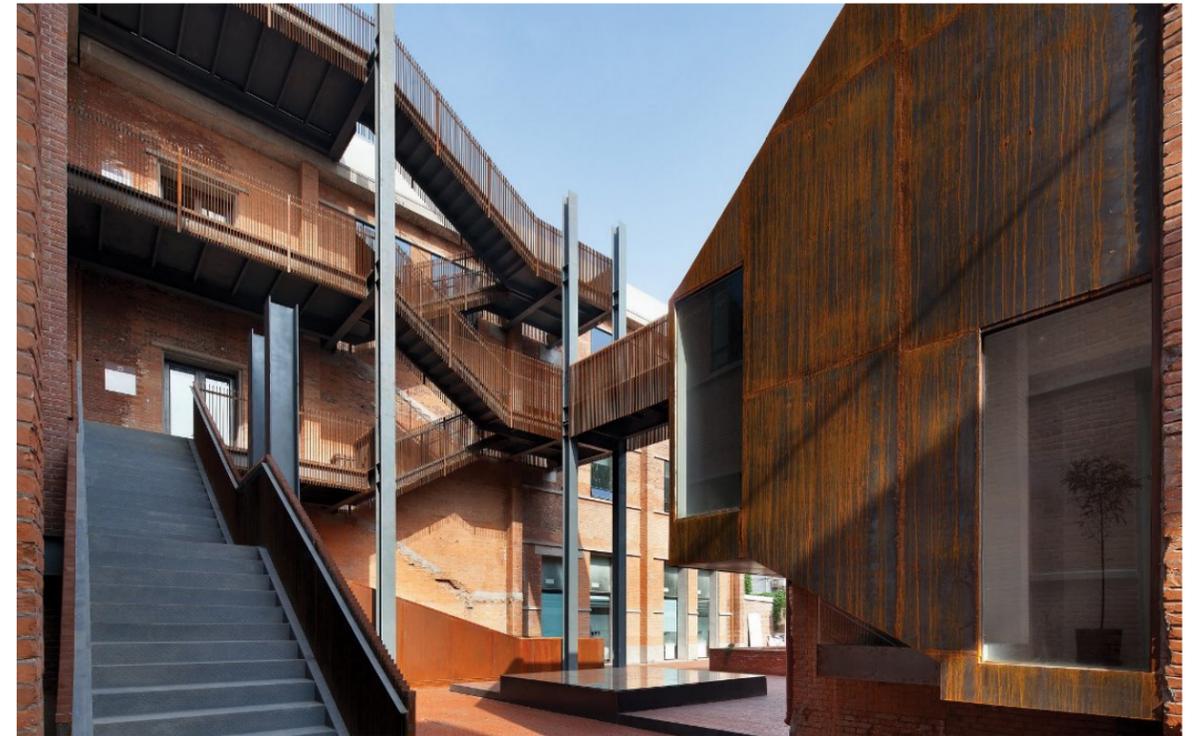


Fig.69, Beijing 77 Cultural and Creative Park, Photo by Origin Architect



Fig.70, Beijing 77 Cultural and Creative Park, Photo by Origin Architect

29. Origin Architect, <http://www.origin-architect.com/html/sj/2650.html>, 2016

## Factory Renovation (工厂改造)

Before the Beijing Olympics, Shougang (Beijing Capital Steel Works) gradually decommissioned and moved its production unit to Caofeidian in the Hebei province in 2005 for environmental reasons. This new urban development space, which was vacated by the relocation of Shougang, will be one of the competition areas for the Beijing 2022 Winter Olympics and Paralympics. The current office area of the Organizing Committee for the Winter Olympics is also located in the Park. The Shougang Industrial Relics Park is also planned and constructed on the original site.

The Shougang Hockey Stadium is located in the old industrial area of Beijing Shougang -- Shougang Winter Olympic Square and Winter Training Center Block. On its south side is the reserved building of the former Shougang Crefined Coal Workshop -- now transformed into the National Winter Olympic Training Center, including a training ground for figure skating, short track speed skating and curling. The west side is the newly built athletes' apartment; The east side is reserved for the original metalworking workshop and machine repair workshop. Whether an experienced heavy industry storage area is transformed into a modern office area for the Beijing 2022 Winter Olympics Organizing Committee, or old industrial plants are upgraded and transformed into a romantic cultural, artistic and creative industrial park, based on inheritance and protection, they reflect the spirit of continuous efforts and innovation in the new era.<sup>30</sup> (Figure 71, 72)

30. Shou Gang Group, <https://www.shougang.com.cn/sgweb/html/sgyc/>



Fig.71, Shou Gang Park, Photo by COCT

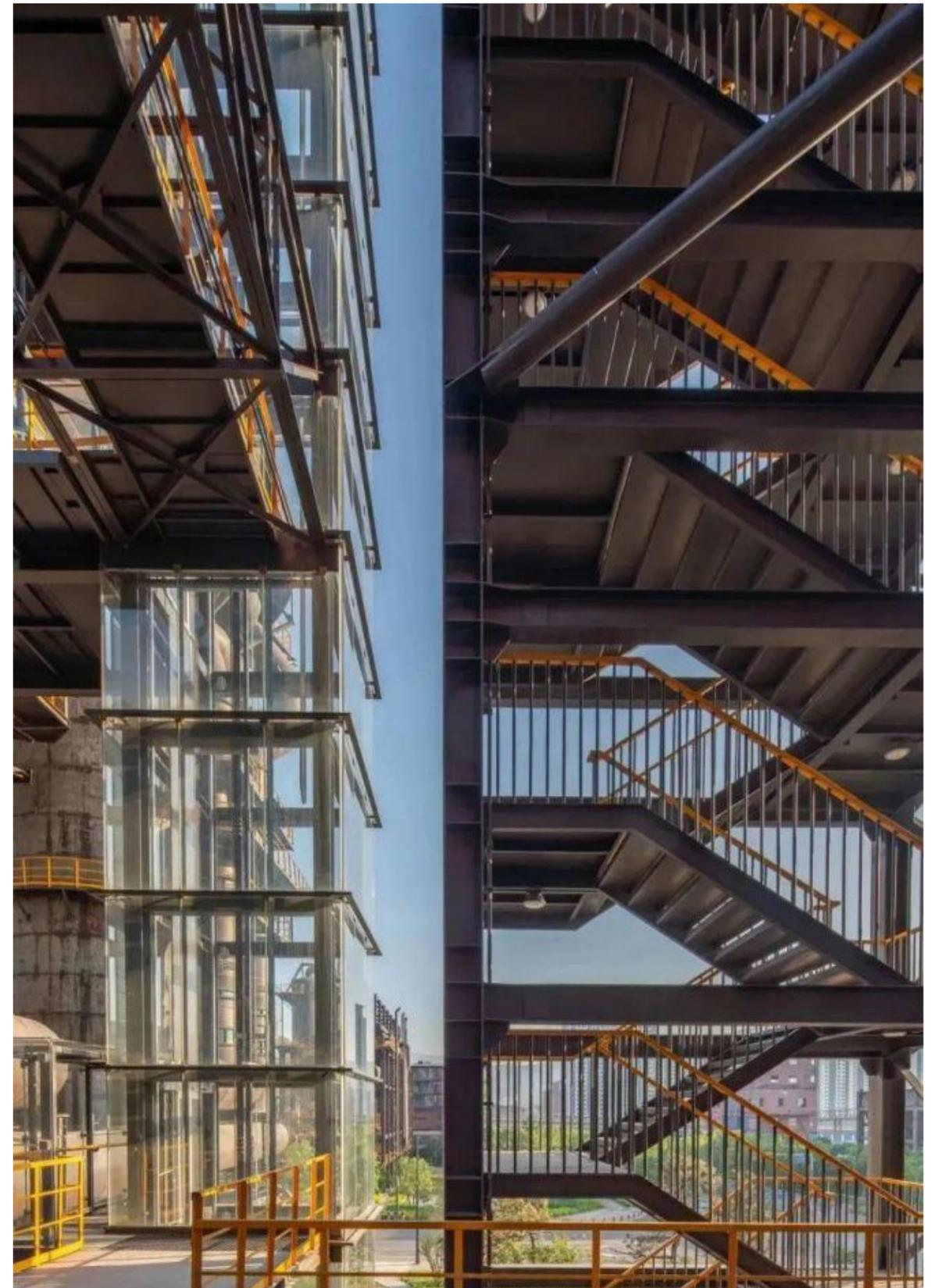


Fig.72, Shou Gang Park, Photo by COCT

## Shenyang Architectural University Campus

The project shows how the agricultural landscape becomes part of the urban environment. China's overwhelming urbanisation is encroaching on vast amounts of arable land. With a population of 1.3 billion and limited arable land, food production and sustainable land use are survival issues that landscape architects must address.

This is a case of using rice, crops and local weeds to create a campus environment in the most economical way. A large number of rice and crops are applied in the landscape, and through the reuse of old materials, we try to make a new understanding of crops, weeds and campus.



Fig.71, Shenyang Architectural University Campus, Photo by Turen



Fig.72, Shenyang Architectural University Campus, Photo by Turen

Site

Synthesis

Existing Building

## Synthesis (整合)

The reconstruction of urban villages is not one-sided demolition and reconstruction or one-sided protection of cultural relics. Instead, it should adopt small-scale gradual organic renewal. On the one hand, we recognize the "village in the city" model as a realistic way to solve the urban low-rise existence, and refuse to simply demolish it. On the other hand, it is necessary to seek ways in order to appropriately excavate the local characteristics of the industry in the urban village, by embedding positive public space and public functions, then, we can improve the living conditions of urban villages and create a benign culture that is beneficial to the whole society.

While these villages in the city are right next to the city, they do not benefit from the same social services as do city dwellers, such as garbage recycling, health clinic, clean market. Therefore, it is necessary to upgrade the public system of urban villages from the perspective of public services and facilities. From the perspective of space and function, the limitations of village life are mainly reflected in the lack of public space and function. Also, based on the current health status of urban villages and the importance of garbage classification for future construction, the ultimate goal of this study is to create a better and more reasonable, and multi-functional arable public space that could upgrade the market, leave space for farming, and space for garbage classification. (Figure 73)



Fig.73 Program Diagram of New Market, photo by author

## Site

### Synthesis

#### Existing Building

## Existing Building (现状)

There has always been vacant and interstitial in the village since 2000, afforded by, the abandoned factory of the Guizhou Aluminium Factory. The total area of this land is 29,000 square meters. Three sides of the site are surrounded by residential buildings of the urban village, and the north side of the site is adjacent to an abandoned railroad track used to transport aluminum powder. The construction of Chengguan Village is very compact, and this piece of open space is very rare, so it is a good choice to activate and serve the villagers by transforming this place into a public space. Additionally, there are some buildings and items leftover from the old factory that can be used for adaptive reused and saving resources.

The three existing factories on this site are all used for the production of aluminum powder.(Figure 74,75)

Factory 1 and 3 are both one-story high building with a total height of 6 meters each, and a length of 40 meters, and a width of 12 meters. The building's double-pitched roof is made of grayish-black tiles and the walls are made of red and yellow bricks. (Figure 76-79) The building looks from a distance like an ancient Chinese double-pitched roof, structurally, however, this is not the case. The columns of the building except the brick walls are made of steel, and the truss that supports the roof is also made of steel. The builders also added bamboo to the steel truss to support the roof, thus reinforcing the roof support and saving on manufacturing costs.(Figure 82) In the vigorous development of steel and manufacturing 60, 70 years, such a practise should be more typical.

Factory 2 is a three-story brick building 40 meters long and 15 meters wide. (Figure 80) The roof of the building is also sloped, and between the sloping part and the wall, there is a triangular space with a height of about three meters and ventilation. This workshop as the main processing site of the whole factory at that time. In addition to its largest volume, it can be seen from this section that its location is also the core location. Factory 1 was a large storage and raw material rough processing area, and then the workers will transport the rough material to Factory 2 for more detailed processing. After that, the aluminum powder will be transported to the loading area through the conveyor belt and then finally

shipped to the main factory by train.(Figure 81,83,84) Apart from the three existing buildings and the conveyor belts are leftover from the factory, what remains are empty spaces with soil and concrete cylinders.

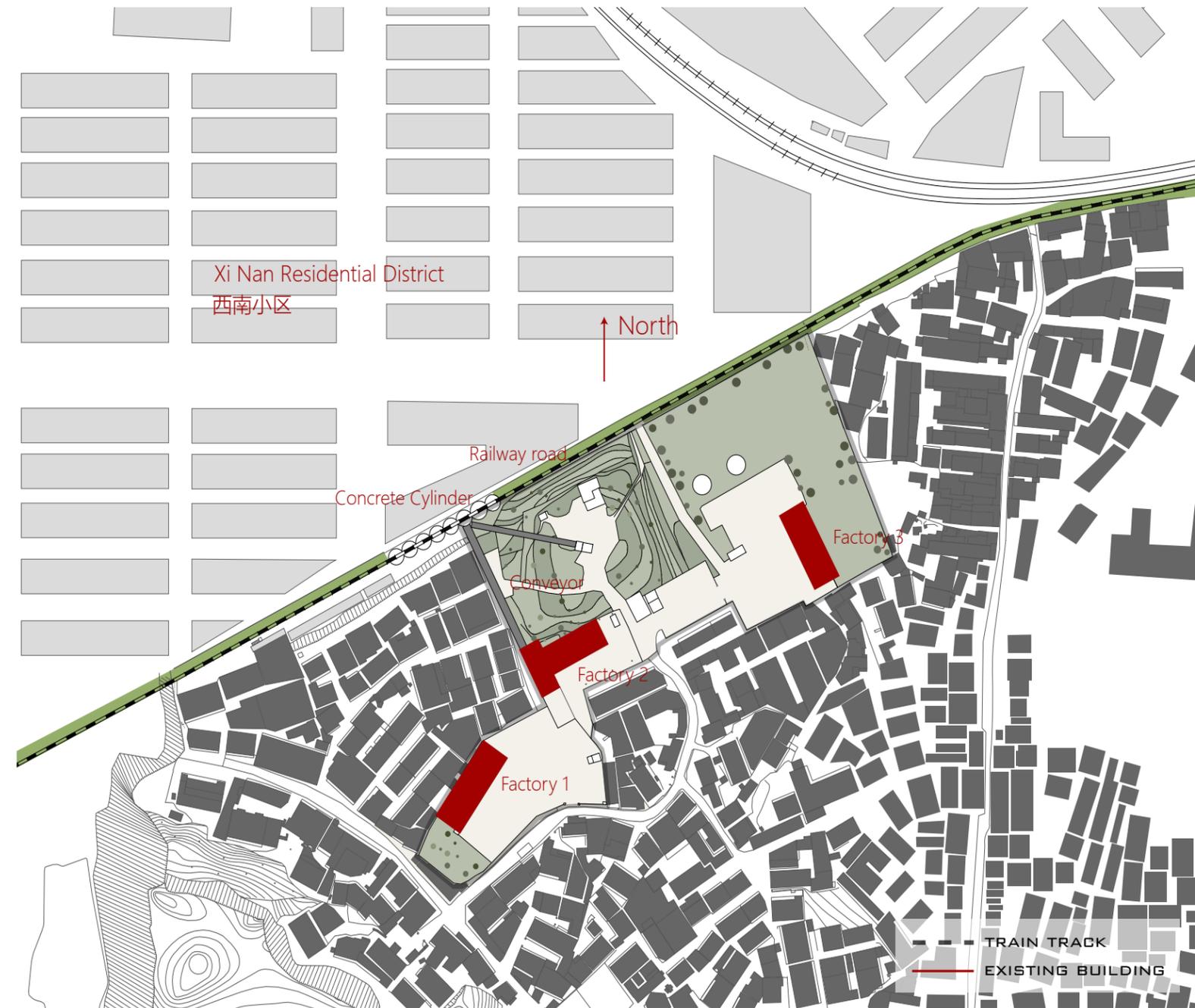


Fig.74 Master Plan of Abandoned Factory, photo by author

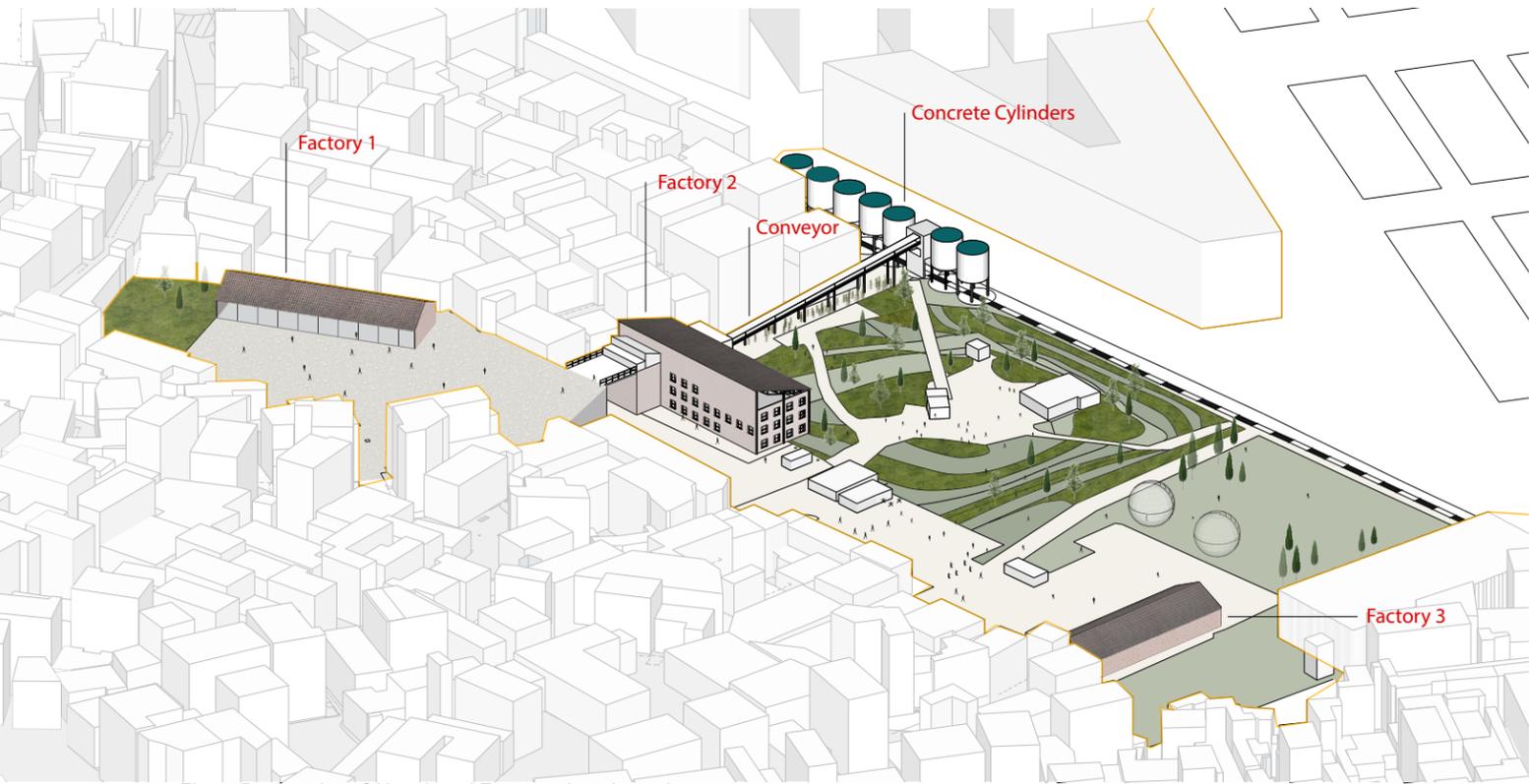


Fig.75 Perspective of Abandoned Factory, photo by author



Fig.77 Outside of Factory 1, photo by author



Fig.76 Existing Factory 1, photo by author



Fig.78,79 Structure of Factory 1, photo by author



Fig.80 Factory 2, photo by author



Fig.81 View Under the Conveyor, photo by author

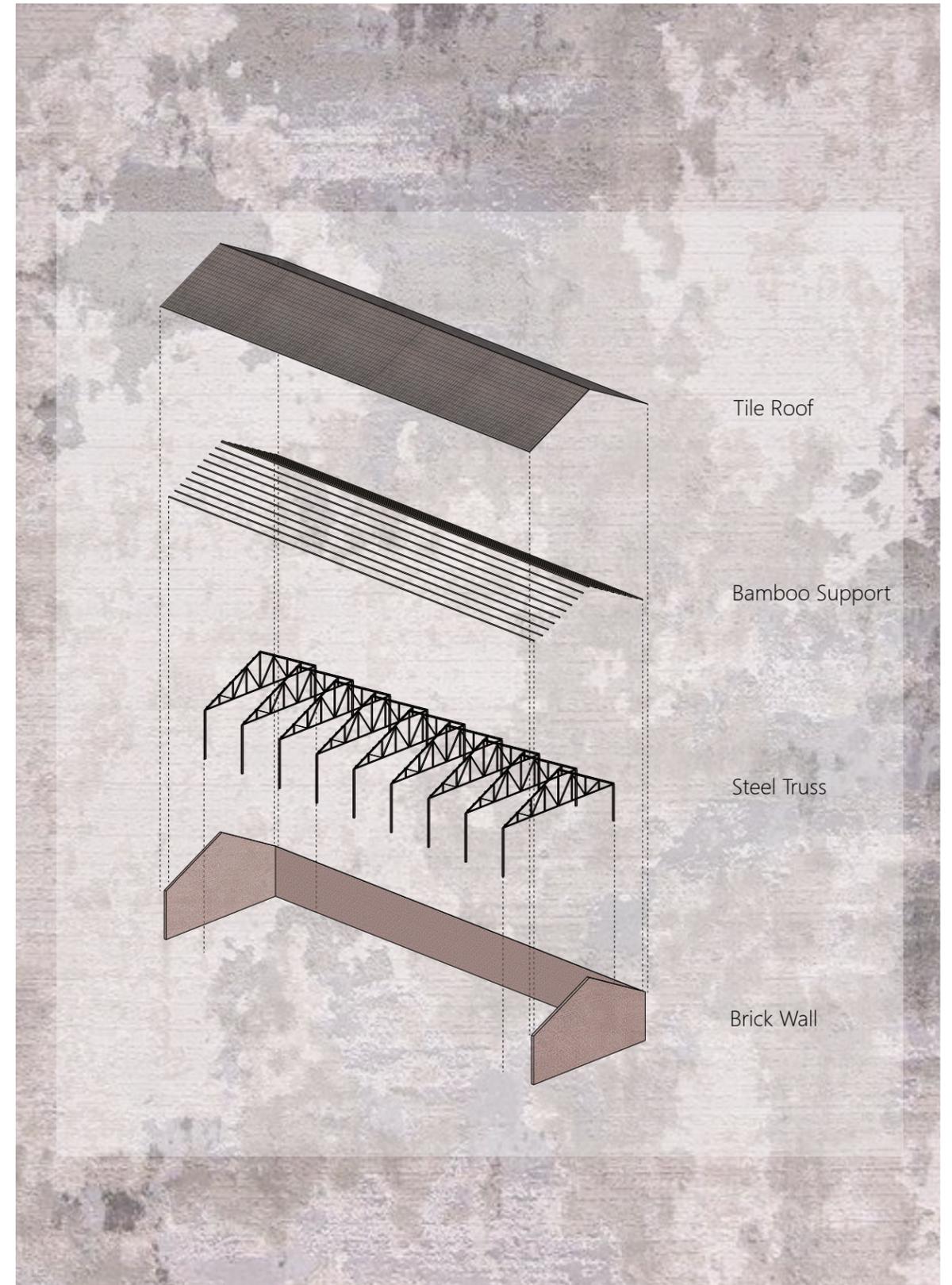


Fig.82 Structure of Factory 1, photo by author

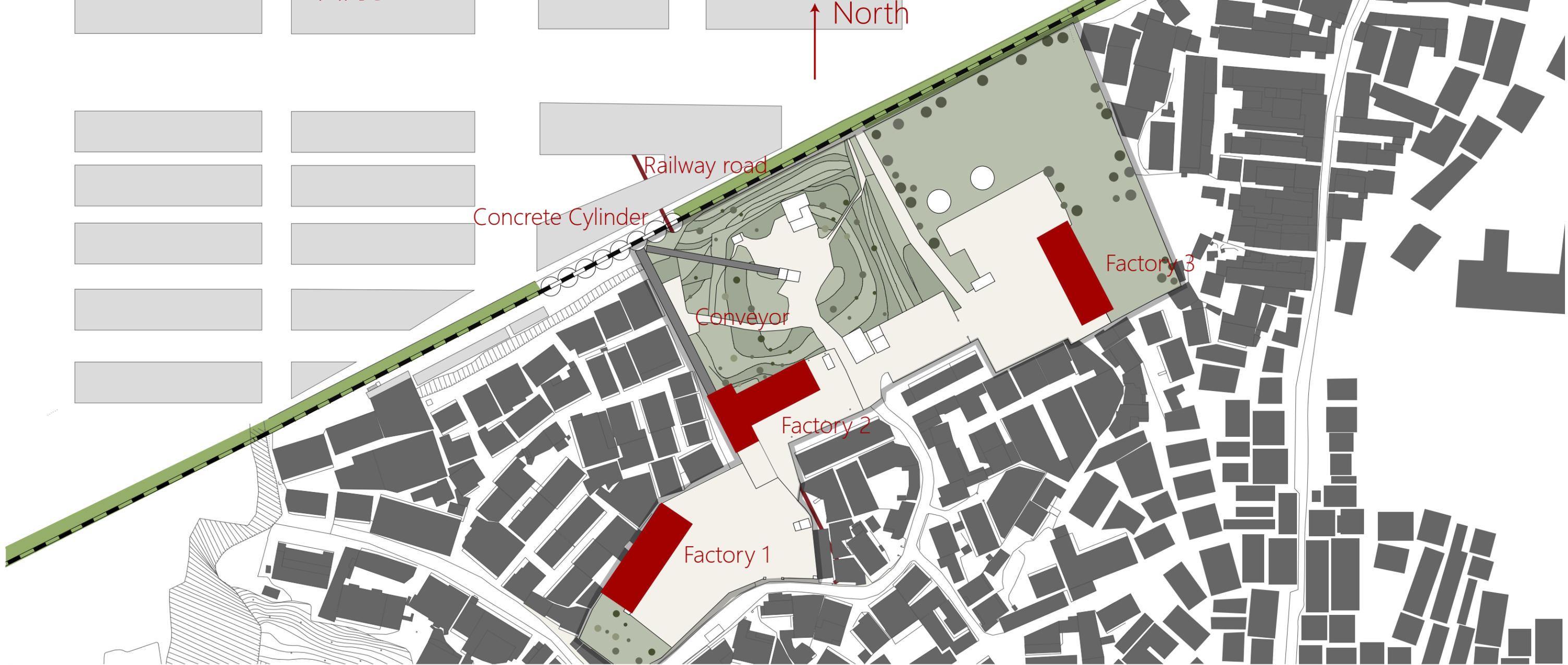


Fig.83 Key Plan, photo by author

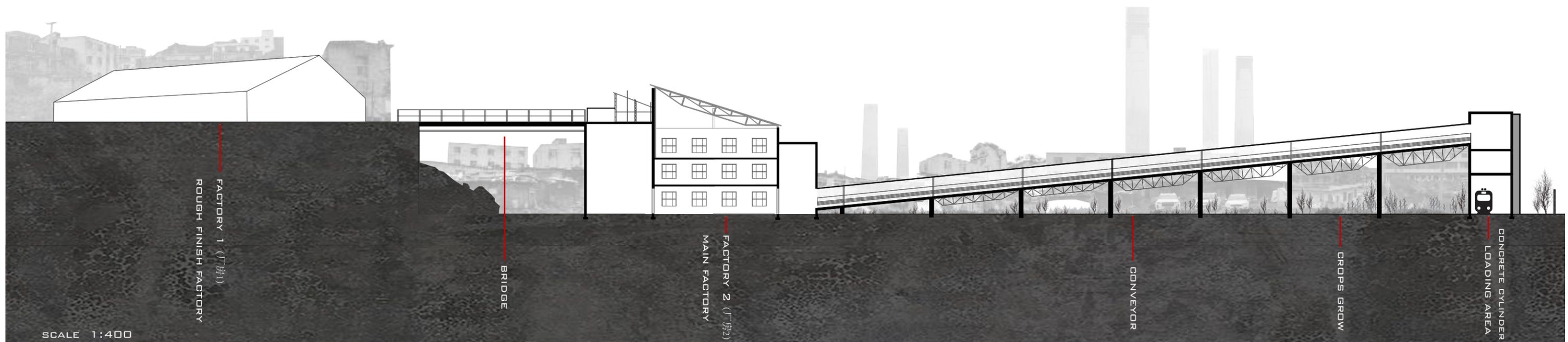


Fig.84 Section of the Existing Factory, photo by author

SCALE 1:400

## Design Proposal

### - Proposal

- Demolition & Proposed Adaptive Re-use
- Proposed Adaptive Re-use of Existing Factory Complex and Campus
- Proposed Floor Plans
- Raised Bed for Urban Village Agriculture
- Water Collection System
- Proposed Section & Elevation
- Conclusion

## Proposal (设计提案)

As an adaptive reuse project, the goal of this project is to utilize these existing resources and present a new community structure in the form of New Commons and also adapt the concept of the factory for living. The project integrates the needs of the villagers and divides the functions into four parts: market, community service, recycling upcycling, and outdoor space. (Figure 85-87)



Fig.85 Site Master Plan, Photo by author

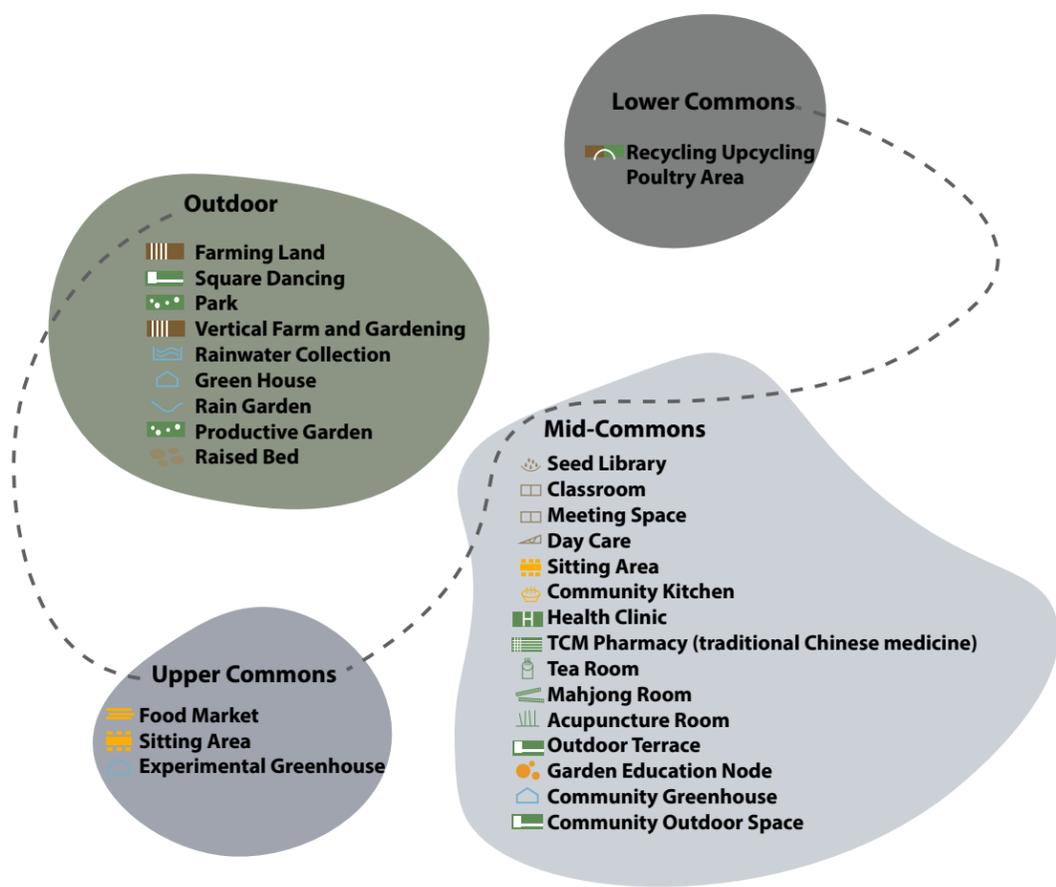


Fig.86 Bubble Diagram of Program, Photo by author

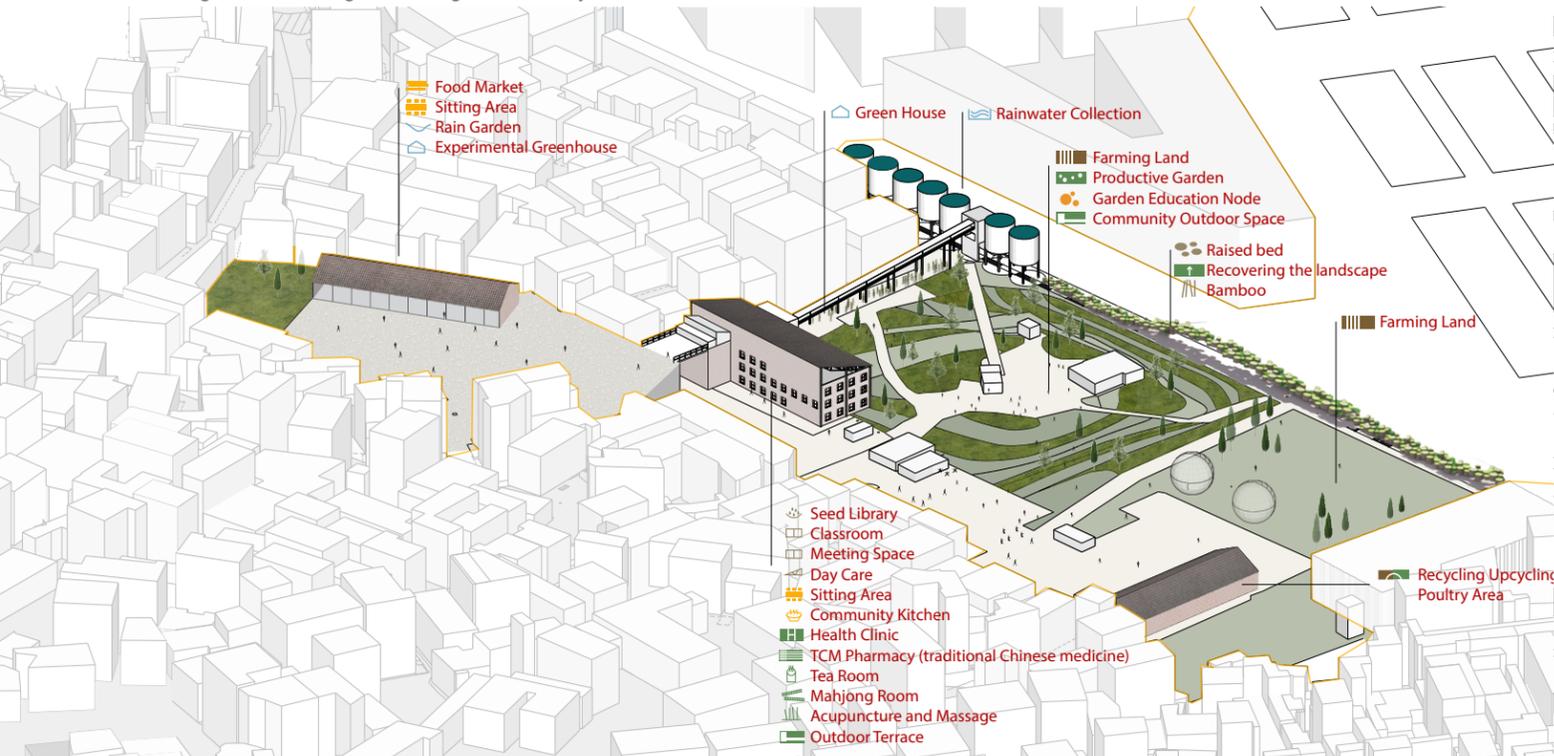


Fig.87 Perspective Veiw with Proposed Programs, photo by author

### Design Proposal

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### Demolition & Proposed Adative Re-use (拆除以及利用)

### Landscape Reorganization



Fig.88 Landscape Reorganization, Photo by author

Roof Renovation



Two attached concrete rooms are removed and replaced by metal frame and glass wall.

The black tile Roofs of three factories are removed.

Fig.89 Roof Renovation , Photo by author

Functional Reorganization



A metal frame with trusses and glass are added to the factory 1 as a experimental greenhouse.

Bamboo Doors are added to the factory 1, and there is more windows on the side.

Concrete room with no window is replaced by metal frame as a stair case.

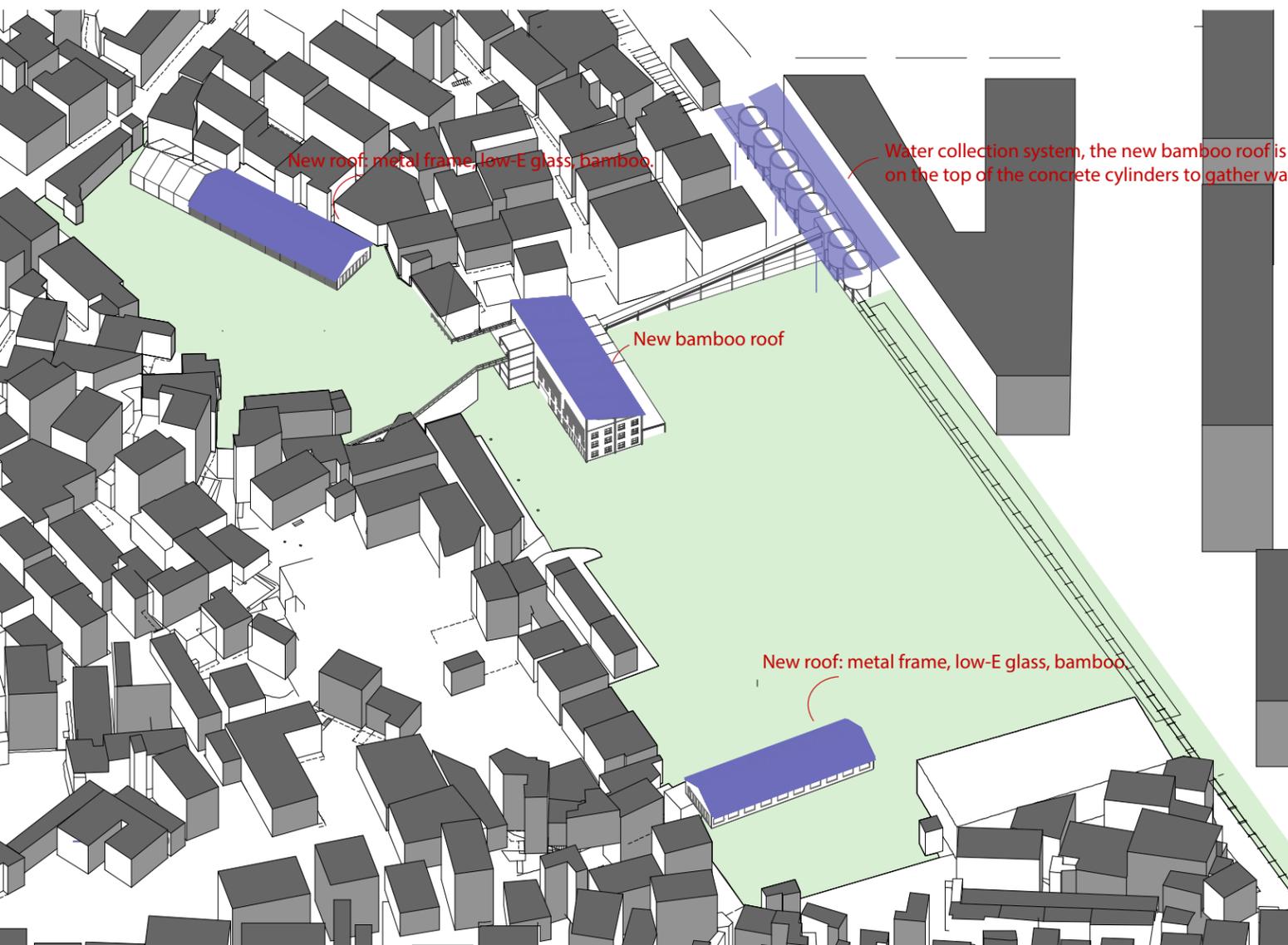
Trusses are added outside on the first floor as a outdoor terrace and community greenhouse.

Structures are added for each floor to separate the space.

Main entrance and windows are added.

Fig.90 Functional Reorganization, Photo by author

Roof Renovation

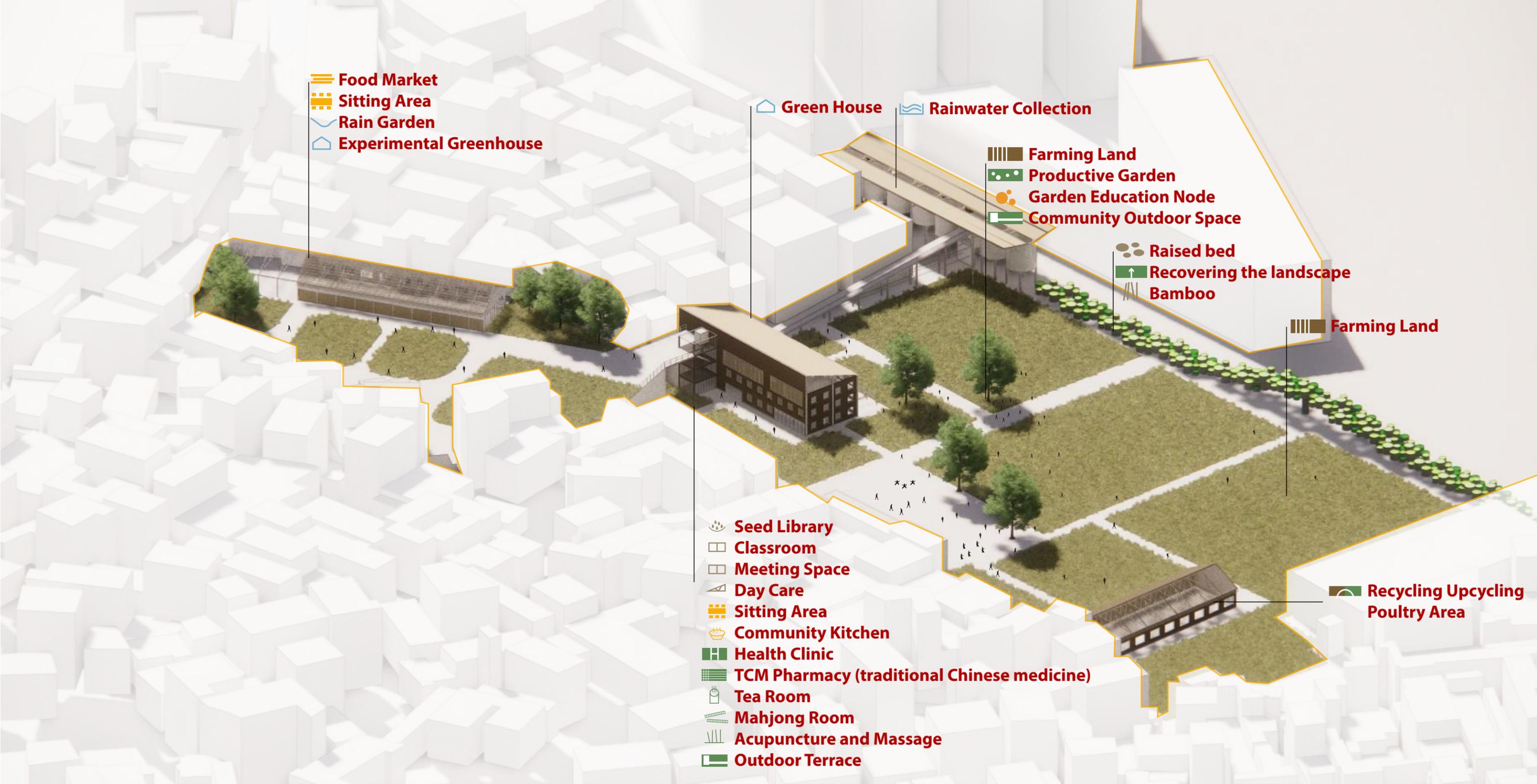


Landscape Recovery



Fig.91 Roof Renovation, Photo by author

Fig.92 Landscape Recovery, Photo by author



-  **Food Market**
-  **Sitting Area**
-  **Rain Garden**
-  **Experimental Greenhouse**

-  **Green House**
-  **Rainwater Collection**

-  **Farming Land**
-  **Productive Garden**
-  **Garden Education Node**
-  **Community Outdoor Space**

-  **Raised bed**
-  **Recovering the landscape**
-  **Bamboo**

-  **Farming Land**

-  **Seed Library**
-  **Classroom**
-  **Meeting Space**
-  **Day Care**
-  **Sitting Area**
-  **Community Kitchen**
-  **Health Clinic**
-  **TCM Pharmacy (traditional Chinese medicine)**
-  **Tea Room**
-  **Mahjong Room**
-  **Acupuncture and Massage**
-  **Outdoor Terrace**

-  **Recycling Upcycling Poultry Area**

Fig.93 Proposed Axon , Photo by author

## Design Proposal

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## Site Plan (总平面)

It can be seen from the site plan that agriculture takes a large proportion in this project. In addition to the reconstruction of three existing buildings, a water collection system and greenhouses, the rest of the space is used for the reorganization of ecological structure and the development of agricultural land, it mainly includes rain gardens, productive gardens and crops. The aim of this is to create as much cultivated land as possible within the limited land resources, which helps Chengguan village to achieve a basic level of food self-sufficiency, and also to provide adaptive reuse, sustainable, recyclable, and eco-friendly New Commons for villagers. (Figure 94,95)

- 1 Rain Garden
- 2 Productive Garden
- 3 Crops Field
- 4 Outdoor Terrace
- 5 Corn Field
- 6 Rice Field (Oryza sativa)
- 7 Community Greenhouse
- 8 Open Field
- 9 Garden Education Node
- 10 Bamboo Field
- 11 Rain Collection
- 12 Market
- 13 Community Service Building
- 14 Recycling and Upcycling
- 15 Raised Beds
- 16 Community Outdoor Space
- 17 Experimental Greenhouse

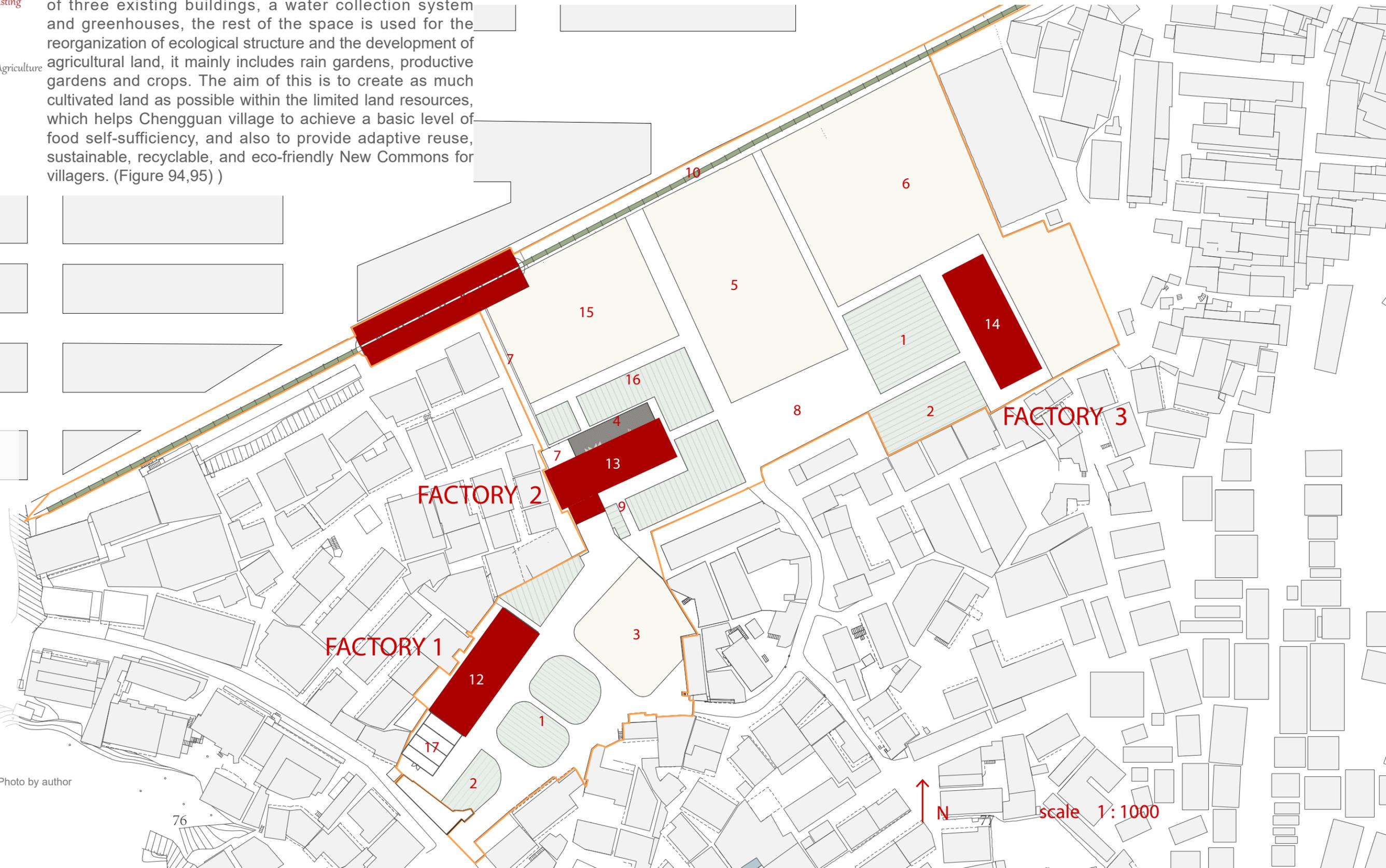


Fig.94 Proposed Site Plan, Photo by author

- 1 Rain Garden
- 2 Productive Garden
- 3 Crops Field
- 4 Outdoor Terrace
- 5 Corn Field
- 6 Rice Field (*Oryza sativa*)
- 7 Community Greenhouse
- 8 Open Field
- 9 Garden Education Node
- 10 Bamboo Field
- 11 Rain Collection
- 12 Market
- 13 Eating Area
- 14 Community Kitchen
- 15 Multipurpose Space
- 16 Mahjong Room
- 17 Tea Room
- 18 Restroom
- 19 Elevator
- 20 Live Poultry Space
- 21 Preparation and Clean Area
- 22 Waiting Area
- 23 Recycling and Upcycling
- 24 Raised Beds
- 25 Community Outdoor Space
- 26 Experimental Greenhouse

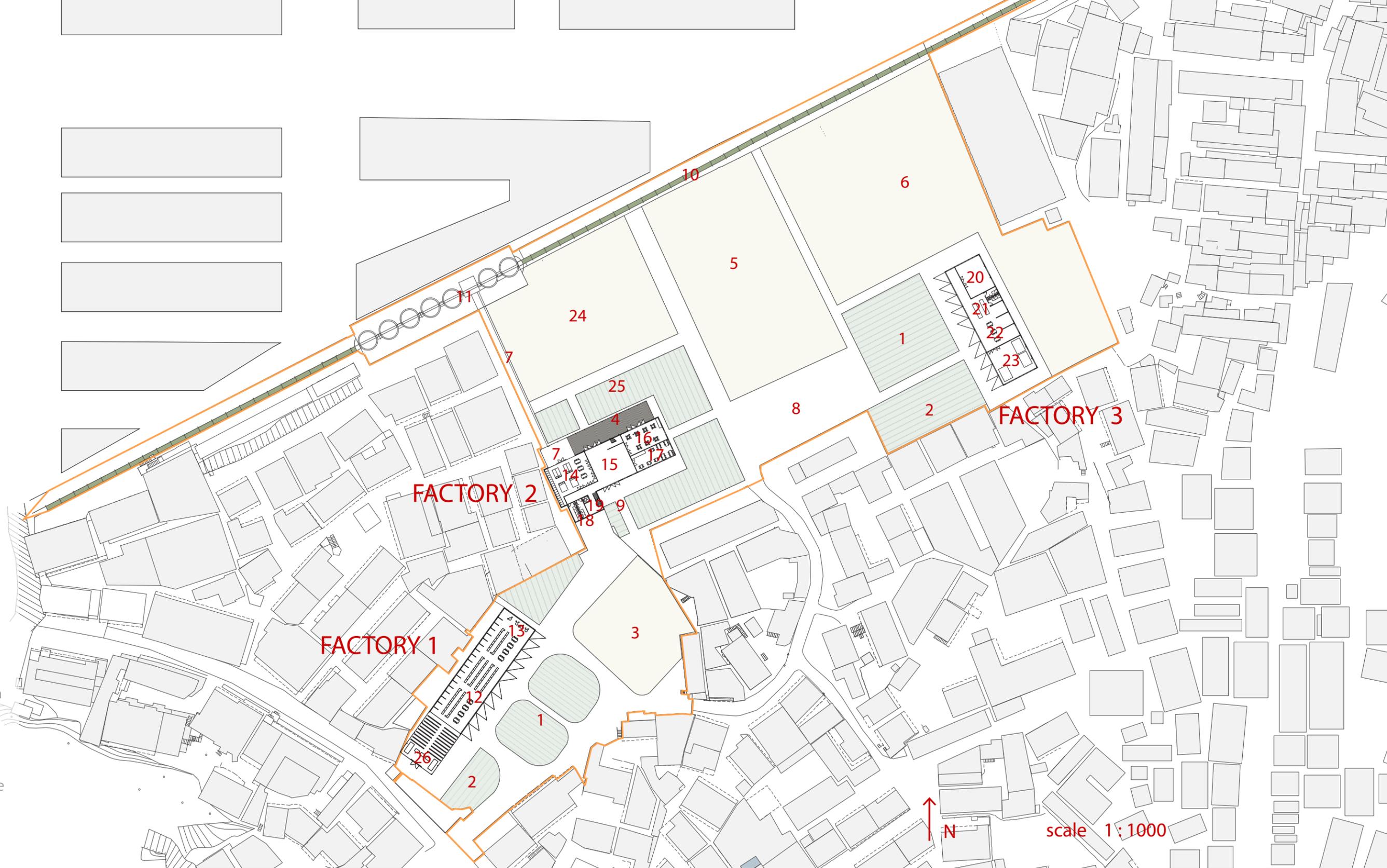


Fig.95 Proposed Floor Plan, Photo by author

## Design Proposal

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## Proposed Floor Plan (平面图)

### Factory 1

The market has always been the core part of the village in the city, and also an important place for daily communication among villagers. Factory 1 has converted into a market and a new structure is added attached to it as an experimental greenhouse. In the project, the site is called Upper Commons, which is a 90 m by 40 m space that can be developed into an outdoor space with rain gardens and crops fields. As for the reconstruction part, I took the Houtan Park Project and Urbanus Project as references for the reconstruction strategy. I stripping the exterior wall and roof of the building and then tried to reorganize it with new techniques and materials.(Figure 96)

During the field investigation, it is obvious that the interior of this building is rather dark and there is not enough natural light. Therefore, the new material will be selected as Low - emission glass and metal frames to introduce more natural light and bamboo is added as a sunshade. In the south-facing direction of the roof, solar panels were considered to provide lighting for the interior. For a large number of truss structures in the house, a hanging garden is also the main consideration for planting vegetables and green plants. (Figure 97-101)

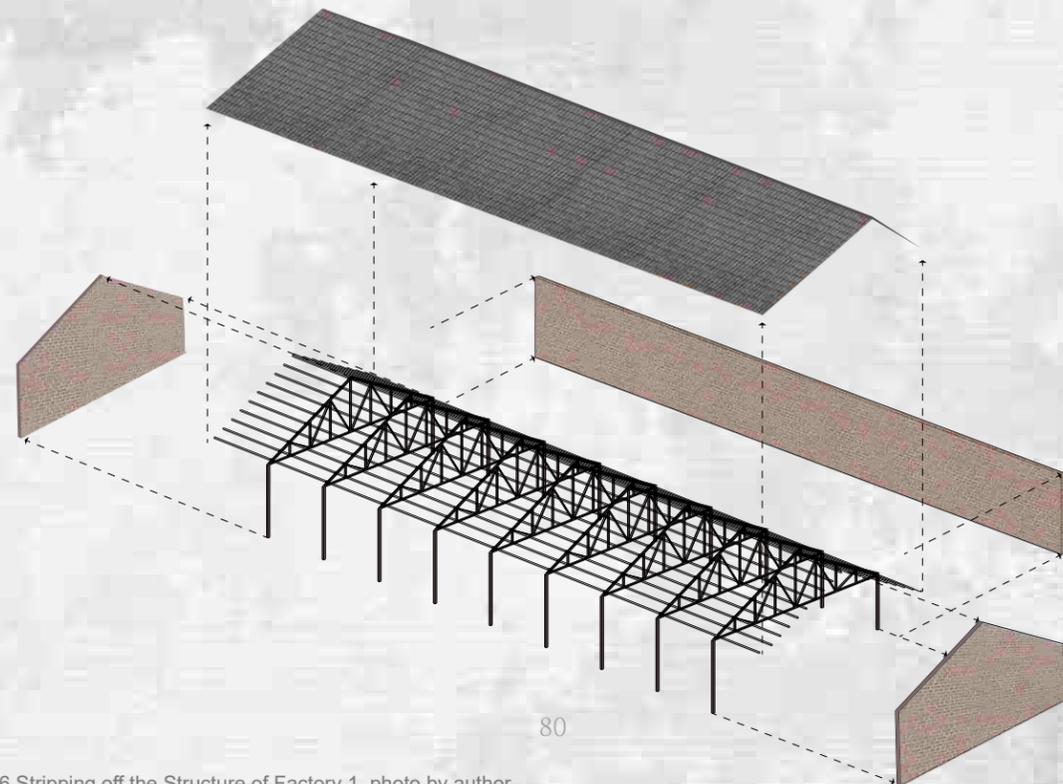


Fig.96 Stripping off the Structure of Factory 1, photo by author

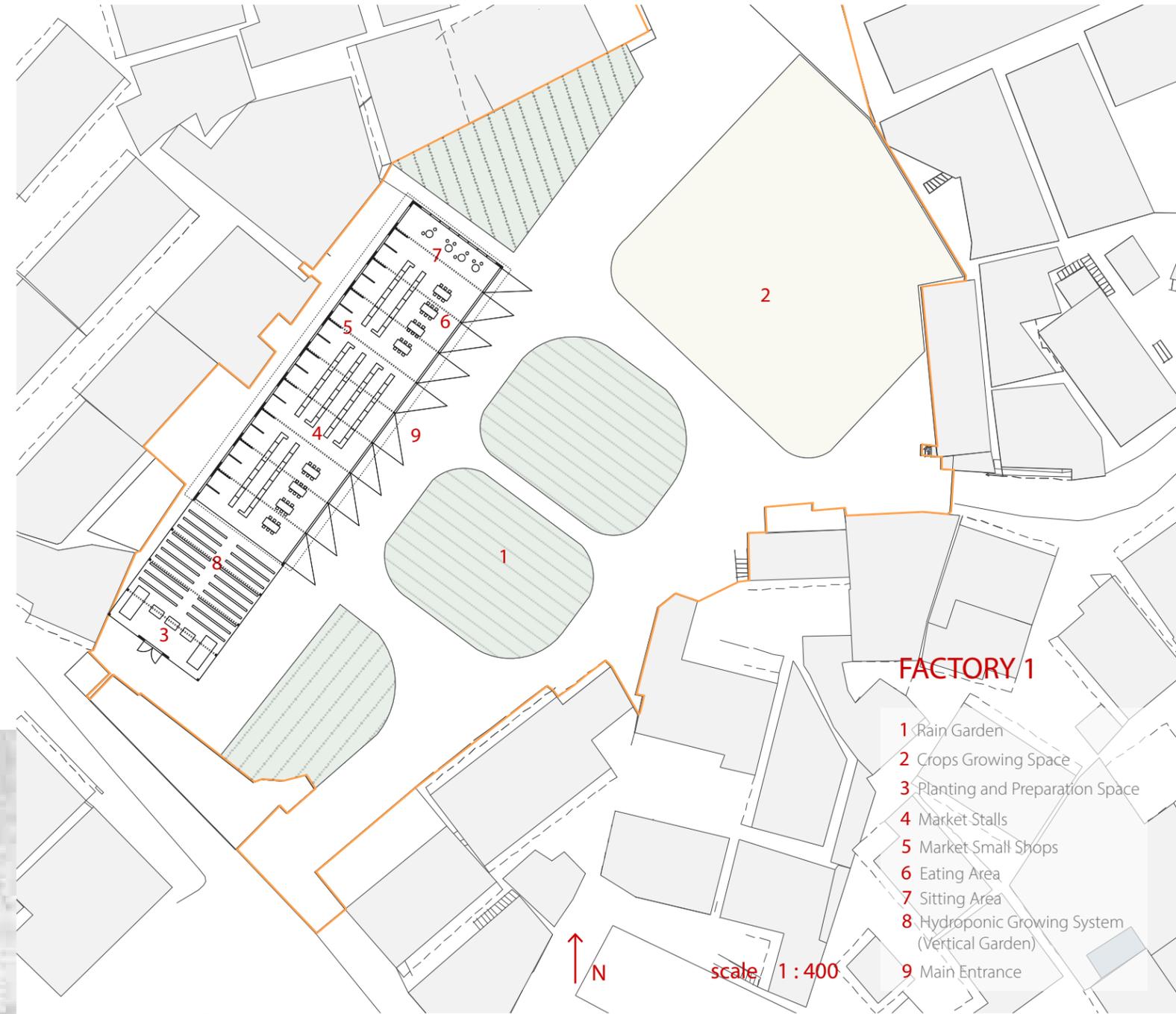


Fig.97 Proposed Floor Plan of Factory 1, photo by author

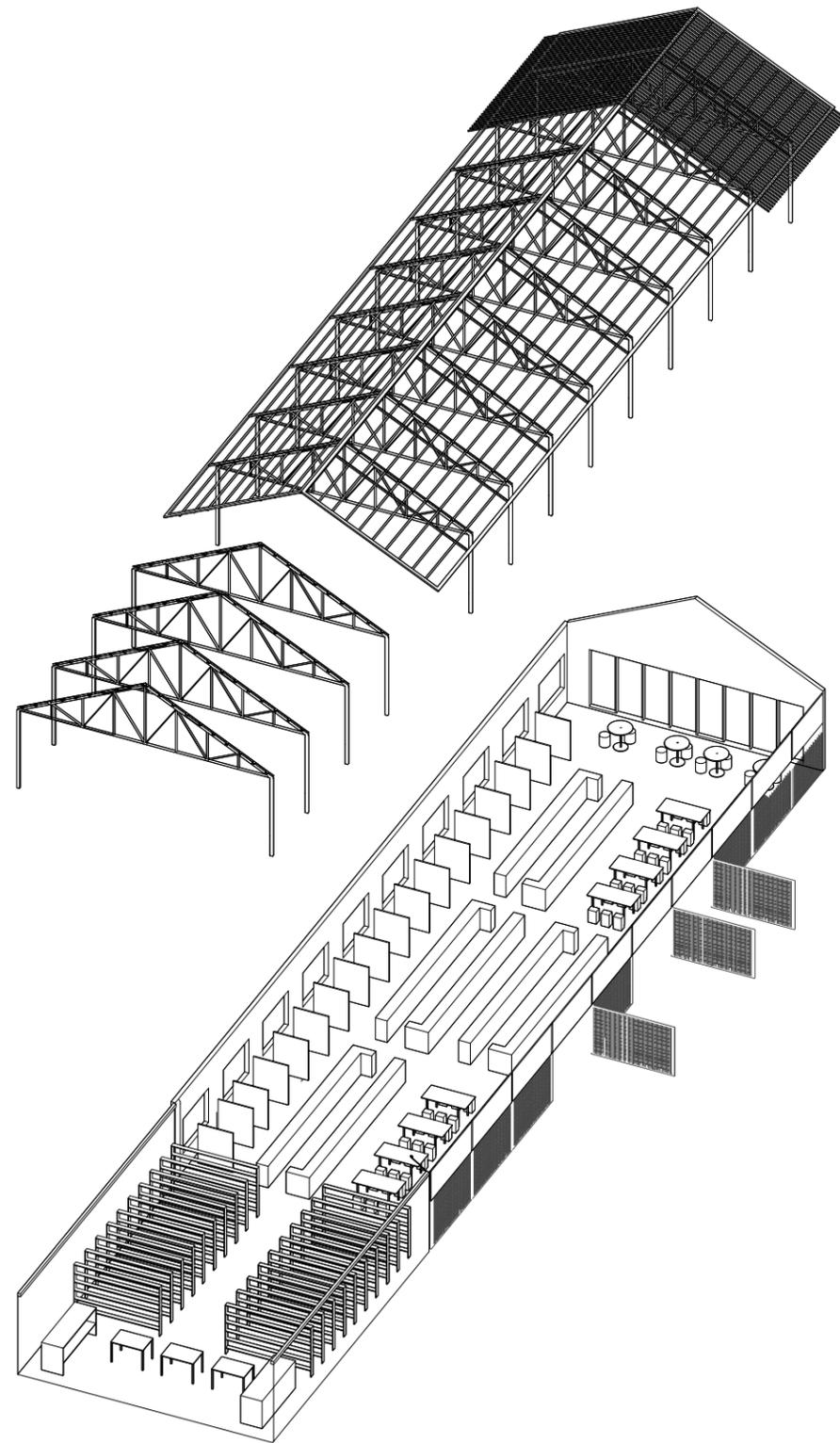


Fig.98 Proposed Axon of Factory 1, photo by author

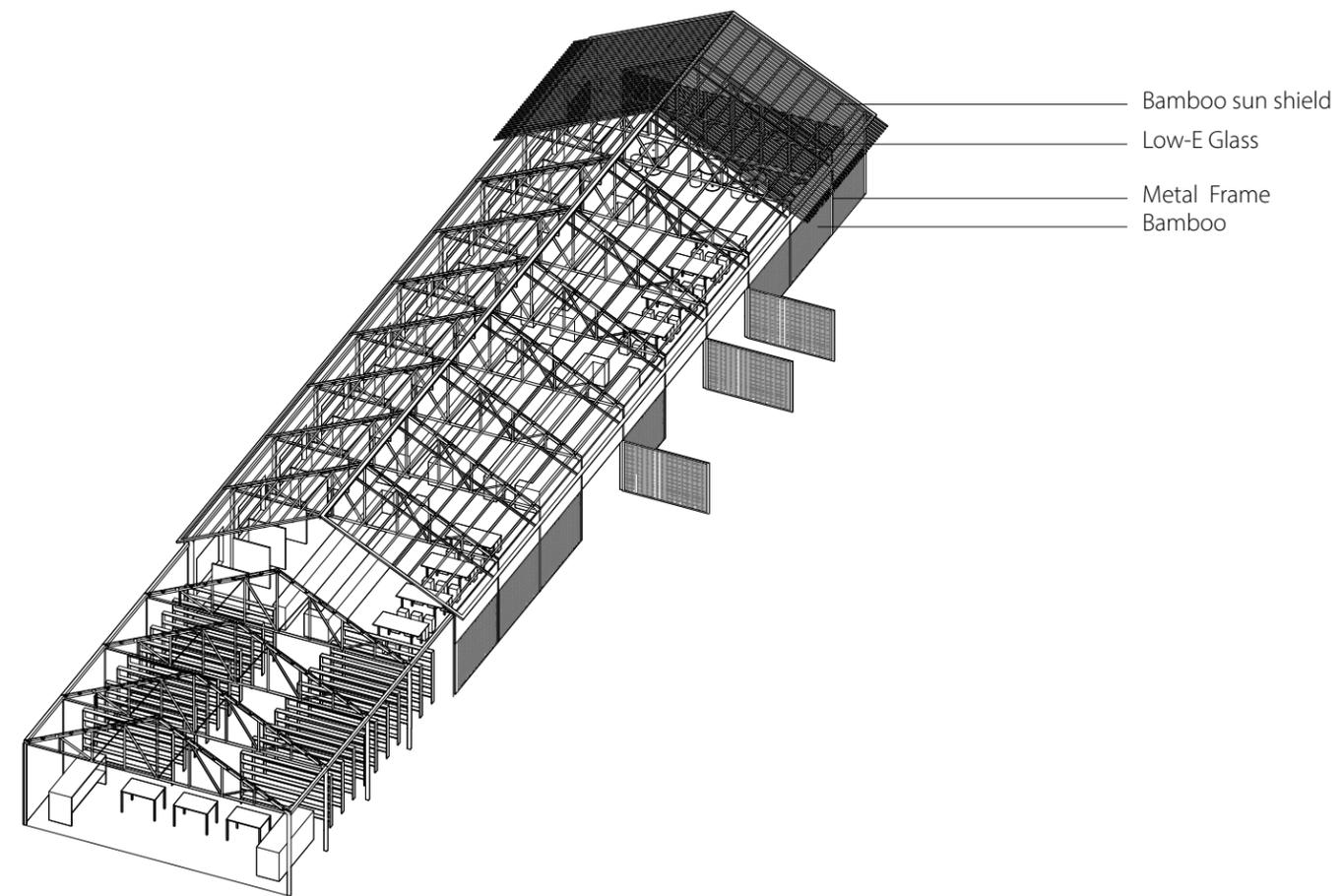


Fig.99 Proposed Axon of Factory 1, photo by author



Fig.100 Proposed Market Outdoor Space, photo by author



Fig.101 Proposed Market, photo by author

## Factory 2

Factory 2 is designed as a service center and entertainment space for villagers. The main functions are the community kitchen, mahjong room, tea room, a community greenhouse, outdoor terrace. On the second floor, there are a clinic, pharmacy, Chinese acupuncture room, and seed library. The third floor is mainly about the classroom, meeting space, and daycare.(Figure 103-106)

As a factory, this building does not have a very detailed functional partition. It used to be functional zoning according to floors. The first floor was used for stacking materials, and the second and third floors were used for stacking machines for processing. During the renovation, the building's form, structure, walls and materials were preserved, but the walls are added to each floor to separate the space to make them individual rooms and make the whole building more functional. The concrete windowless space on both sides of the building was transformed into a stairwell, restroom and greenhouse. To better extend the villagers' outdoor experience, an outdoor terrace has been added as well. (Figure 102)

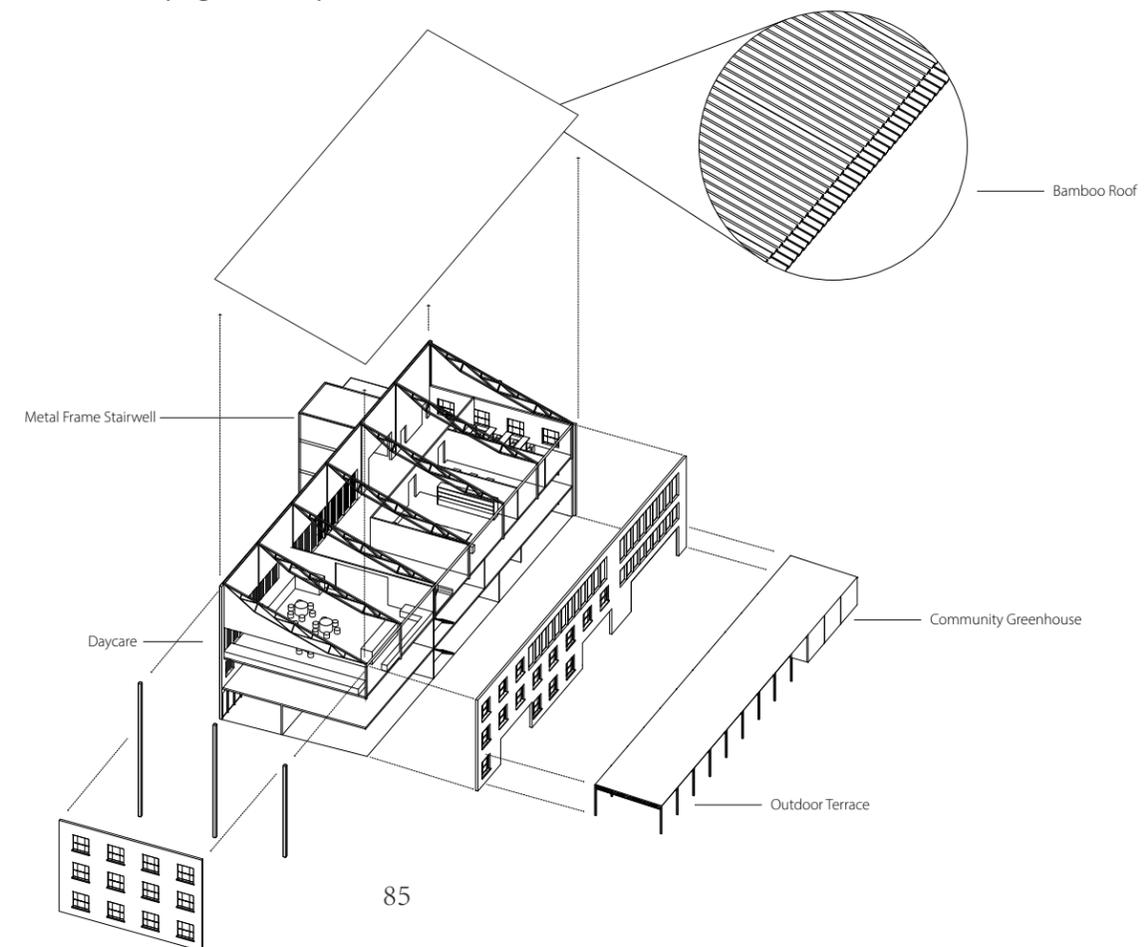


Fig.102 Proposed Axon of Factory 2, photo by author

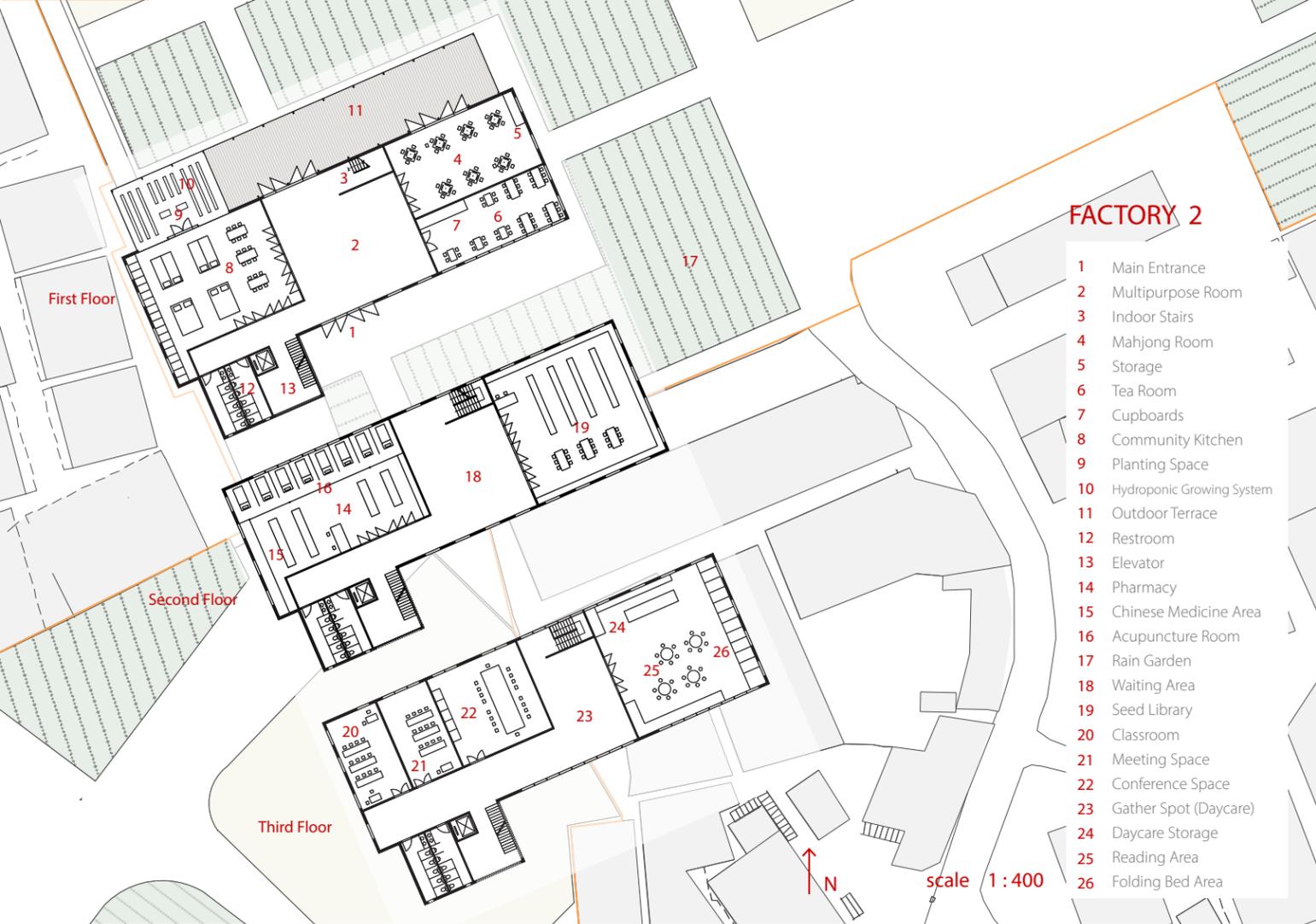


Fig.103 Proposed Floor Plan of Factory 2, photo by author



Fig.105 Proposed Daycare, photo by author



Fig.104 Proposed Community Kitchen, photo by author



Fig.106 Proposed Landscape, photo by author

## Factory 3

Factory 3 is a space relatively far away from factories 1 and 2, and also away from the crowd, which is suitable for arranging poultry and recycling upcycling. Villagers who need to buy poultry can choose poultry or other live animals here, this will replace the original fish stall and poultry selling spot at the wet market. It also provides areas for raising, cleaning and processing poultry. This building is independent, so the impact of the garbage and smell generated by the poultry breeding and processing on the surrounding villagers and the market will be much less than that of the original wet market. Also, recycling and upcycling are located next to these functions, which not only facilitate the disposal of the waste generated in this building but also serve as the waste disposal center for the whole New Commons, mainly for the temporary storage of the waste generated in the market and provide a place to carry out waste sorting.(Figure 107)

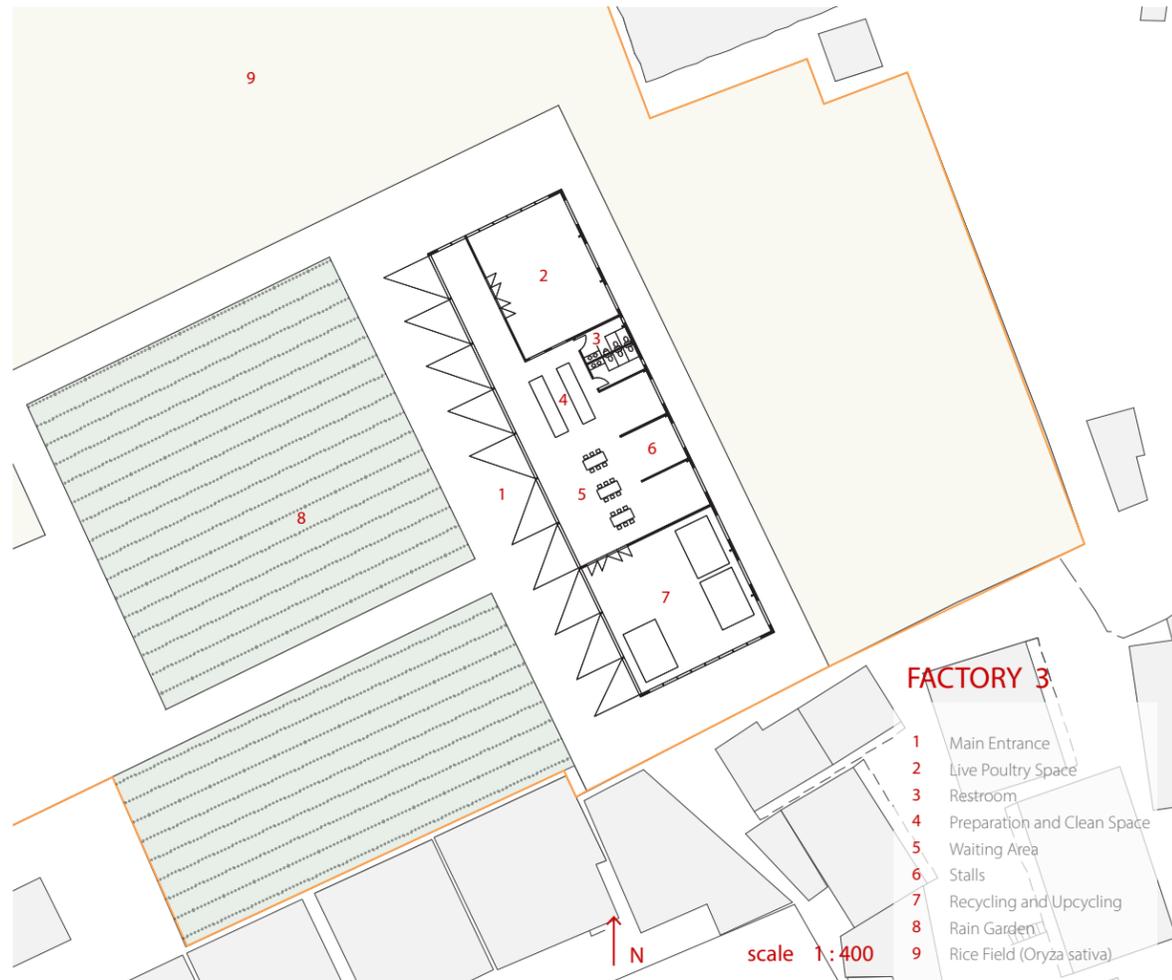


Fig.107 Proposed Floor Plan of Factory 3, photo by author

## Design Proposal

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## Cardboard Tube Raised Beds (纸质耕作)

As for the raised beds, I first studied the planting situation around the site. Many villagers planted different kinds of vegetables and fruits in their yards, for example, Houttuynia cordata(折耳根), cabbages, spring Onions, Chinese cabbages, celery, and green peppers. These varieties will also become the main planting varieties of the project to meet the preferences of the villagers. The project will utilize the train track space to set a raised bed bridge made from a cardboard tube to grow vegetation and recover the landscape. This project can follow the example of WORKAC's PF1 project, recycling cardboard tubes in villages to make cylindrical containers for upraised planting beds. While addressing the problem that the soil around the factory may not be suitable for planting, and recovering the landscape at the same time. It could look like a bridge to separate the village and the urban area, and also create a scene for both sides. (Figure 108,109)

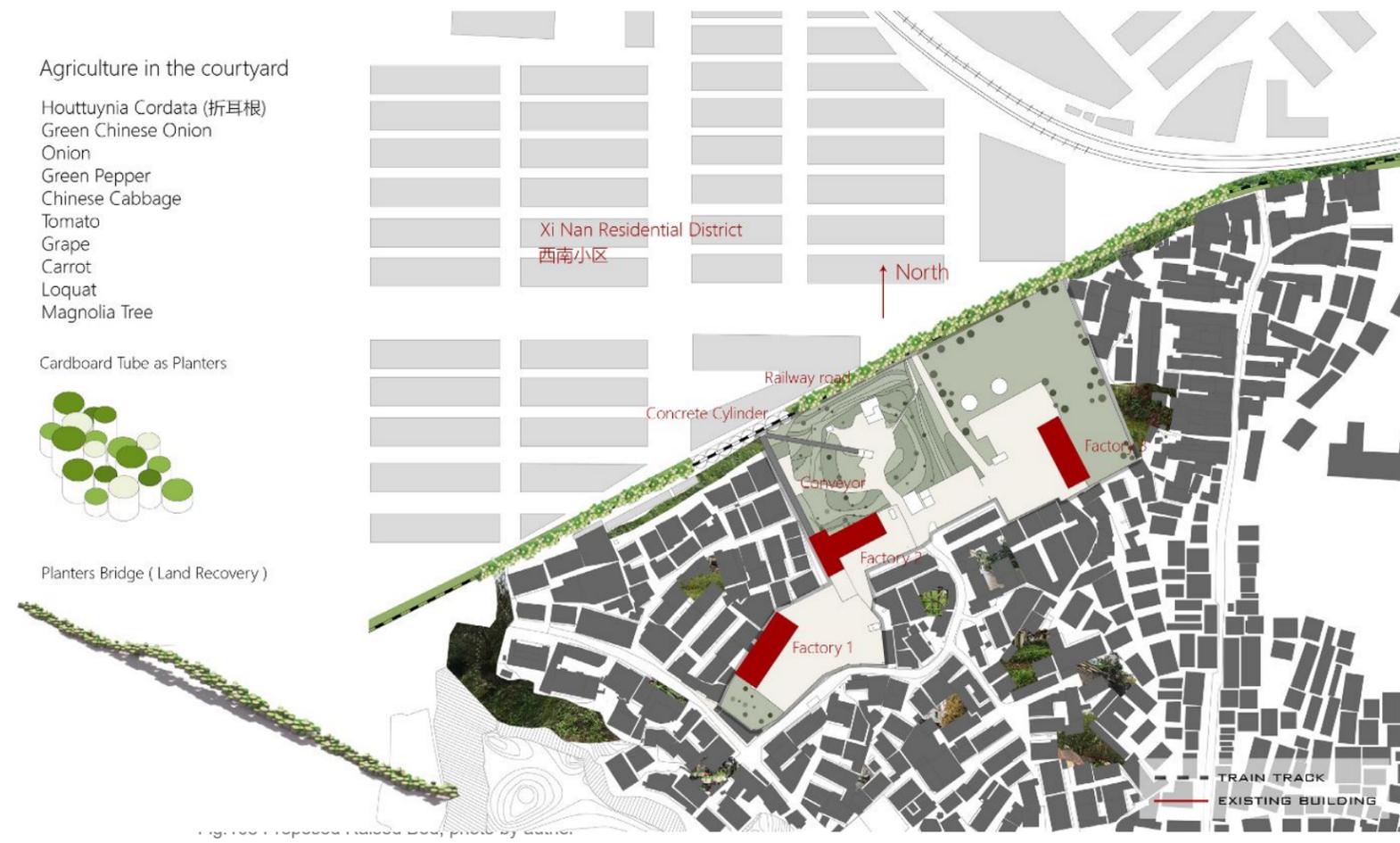


Fig.108 Proposed Raised Bed, photo by author

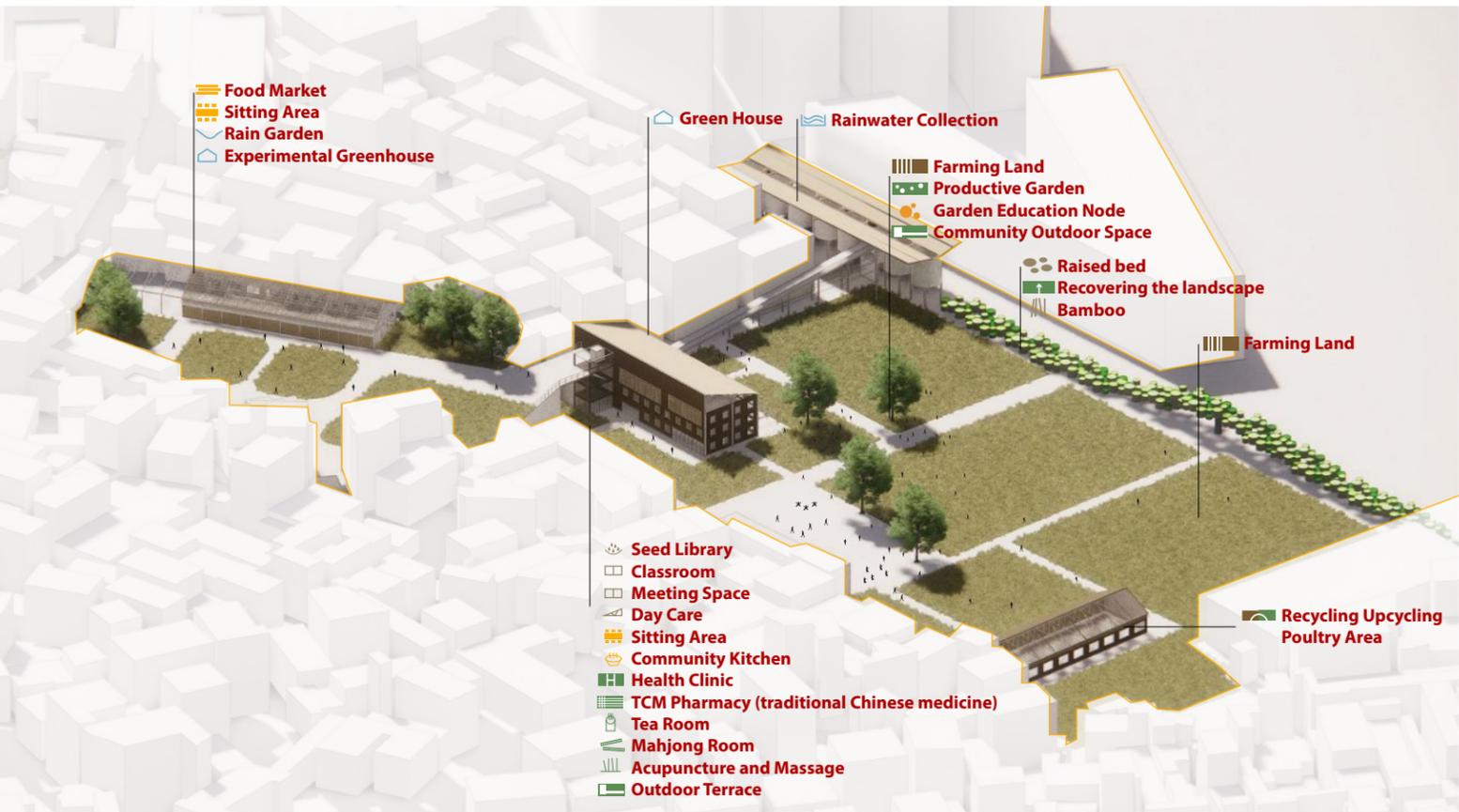


Fig.109 Proposed Raised Bed Axon, Photo by author

## Design Proposal

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## Water Collection System(Adaptive Reuse) (蓄水系统)

With an altitude of about 1100 meters, Guiyang City is located in the Feider Circulation Circle and is controlled by westerlies all the year-round. It belongs to the humid and mild climate of the subtropical zone. The annual rainfall of Guiyang reaches 1200mm, and the precipitation per capita reaches 6000 m<sup>3</sup> per year.<sup>31</sup> The importance of water resources to a community is self-evident. It is a good choice to collect rainwater as the domestic water for New Commons and the irrigation water for farmland. This process, not only saves the cost of Chengguan village water but also saves water resources. The project uses an existing concrete cylinder on the site as a rainwater storage tank, with a bamboo-made roof for on the top of the cylinders to work as a pipe to bring more rainwater into the cylindrical tanks. Traditionally, bamboo is cut in half and spliced together to drain water, while the other half is covered at the joints of the

31. Baidu, <https://baike.baidu.com/item/%E8%B4%B5%E9%98%B3/438289?fr=aladdin>, 2020

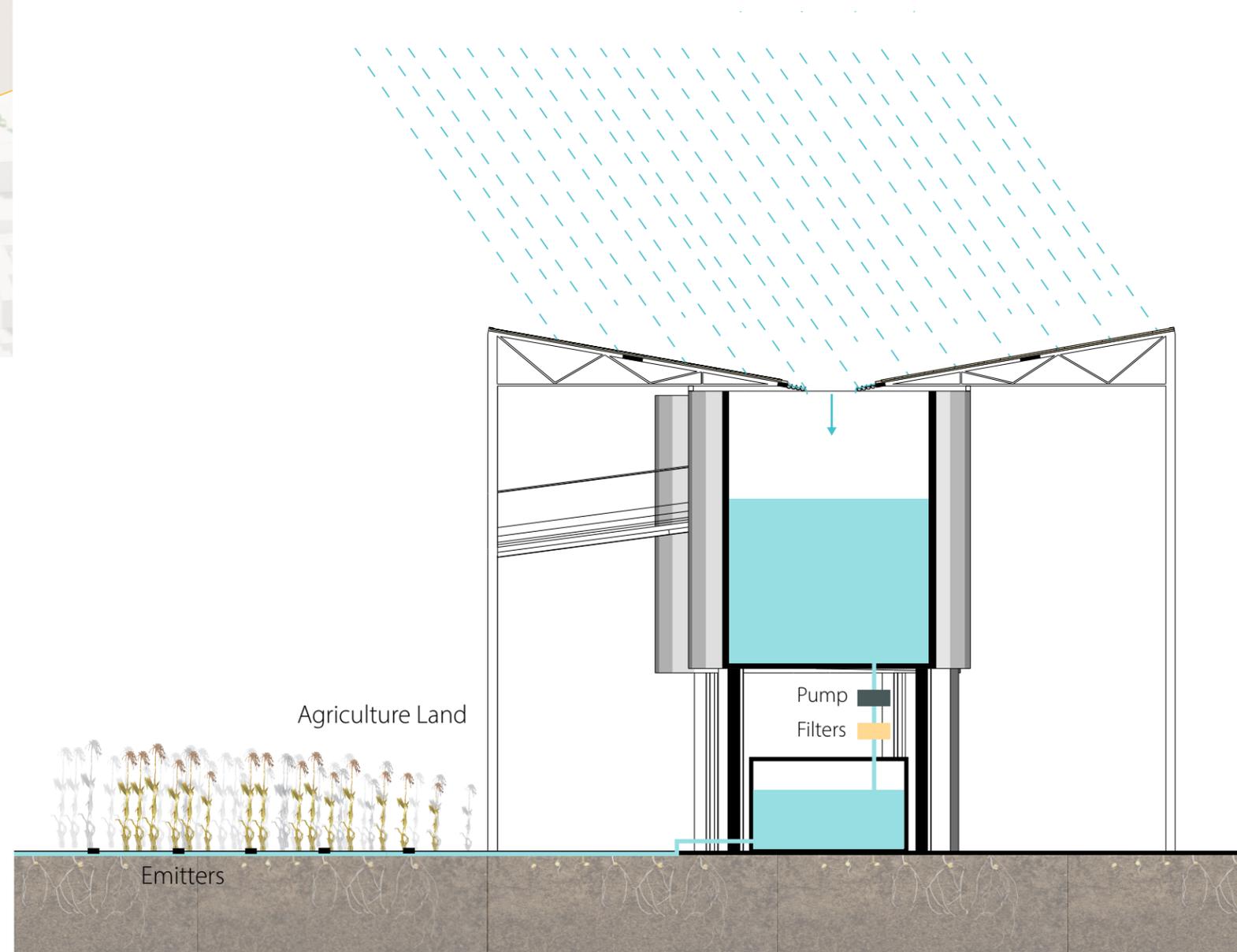


Fig.110 Water Collection Diagram, photo by author

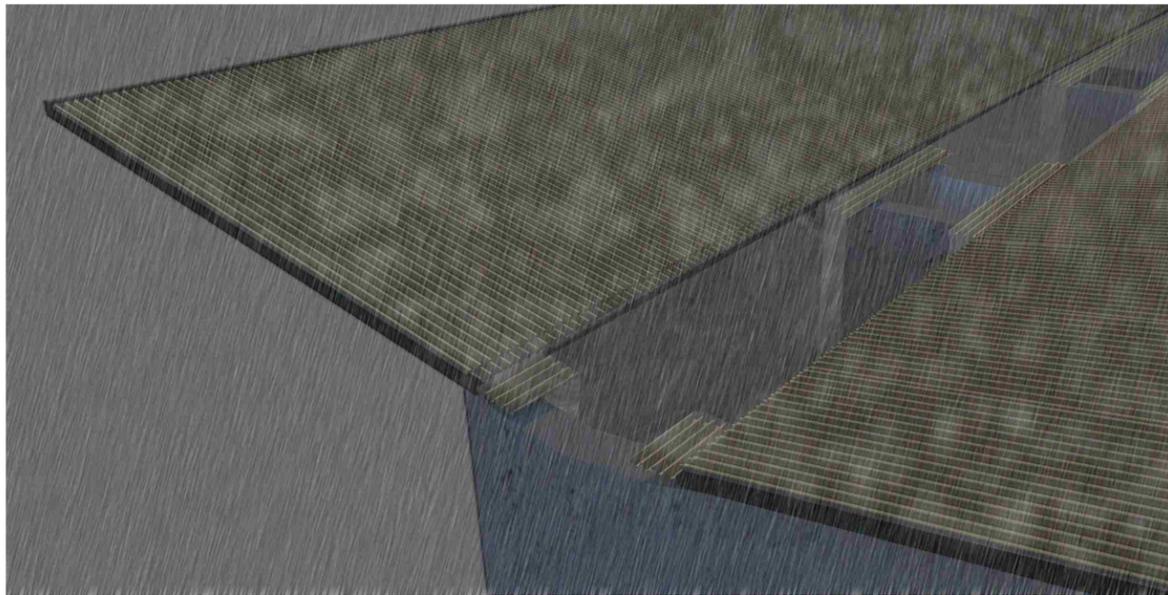


Fig.111 Raining Scene, photo by author

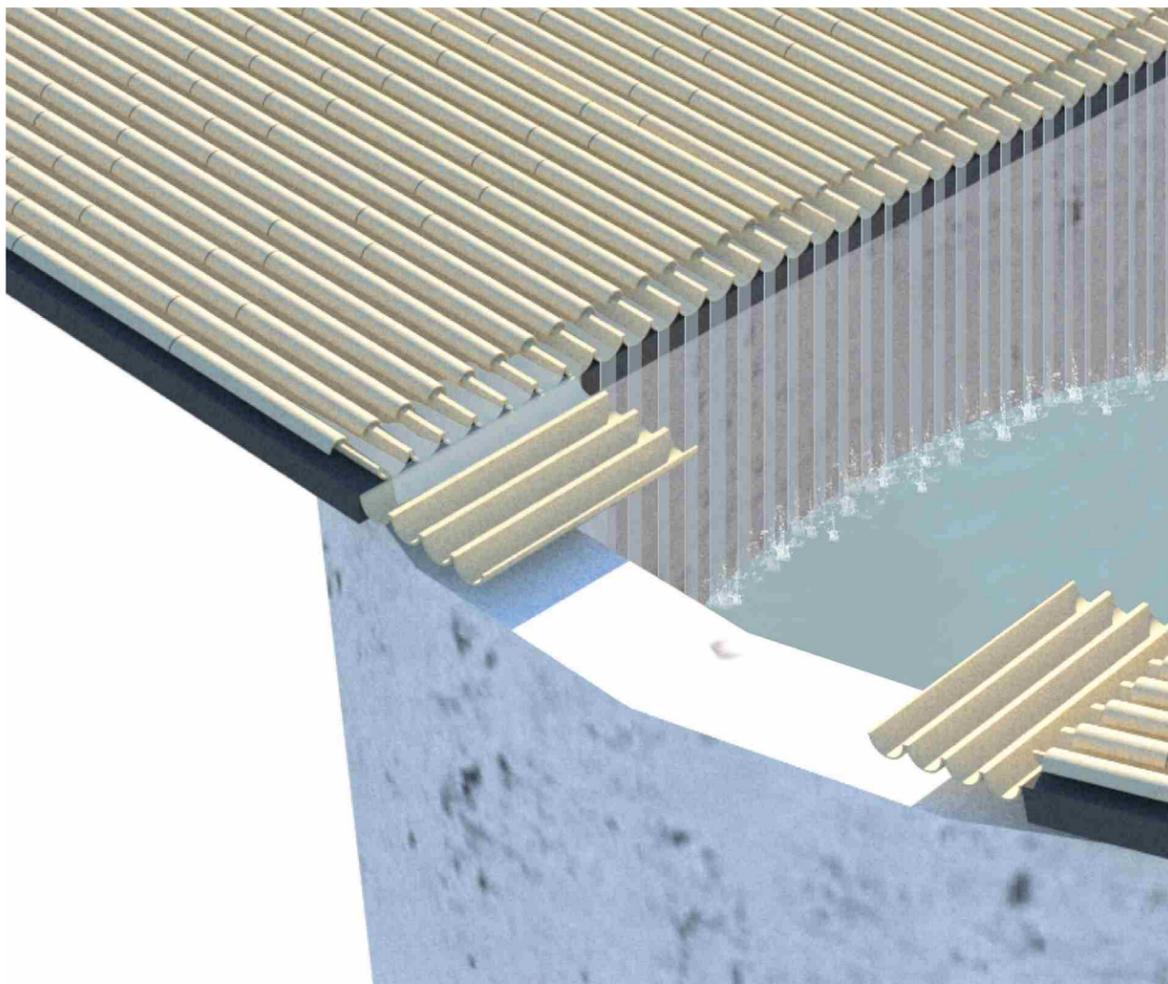


Fig.112 How Bamboo Bring Water into Cylinders, photo by author

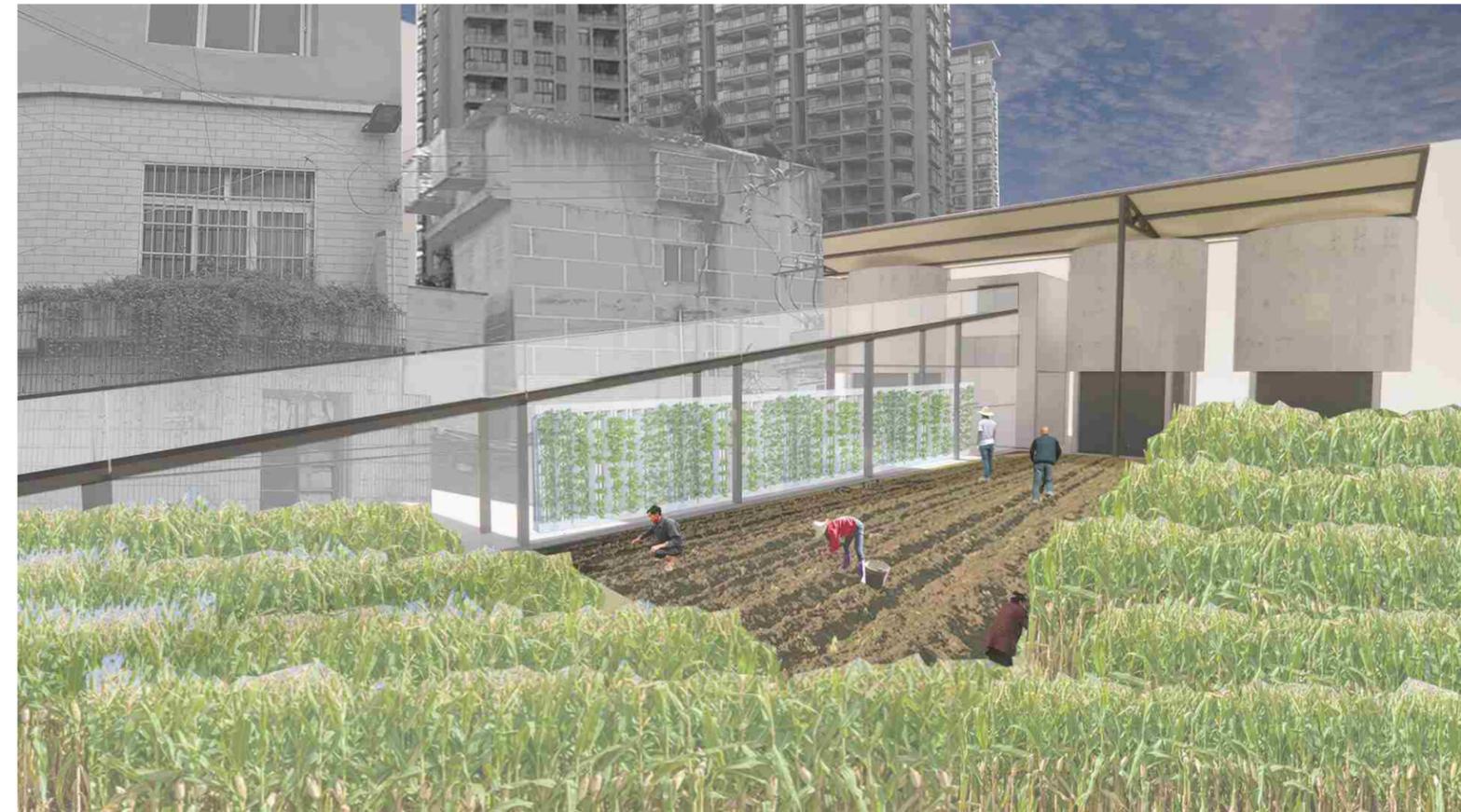


Fig.113 Proposed Landscape with Greenhouse under the Conveyor, photo by author



Fig.114 Proposed Landscape, photo by author



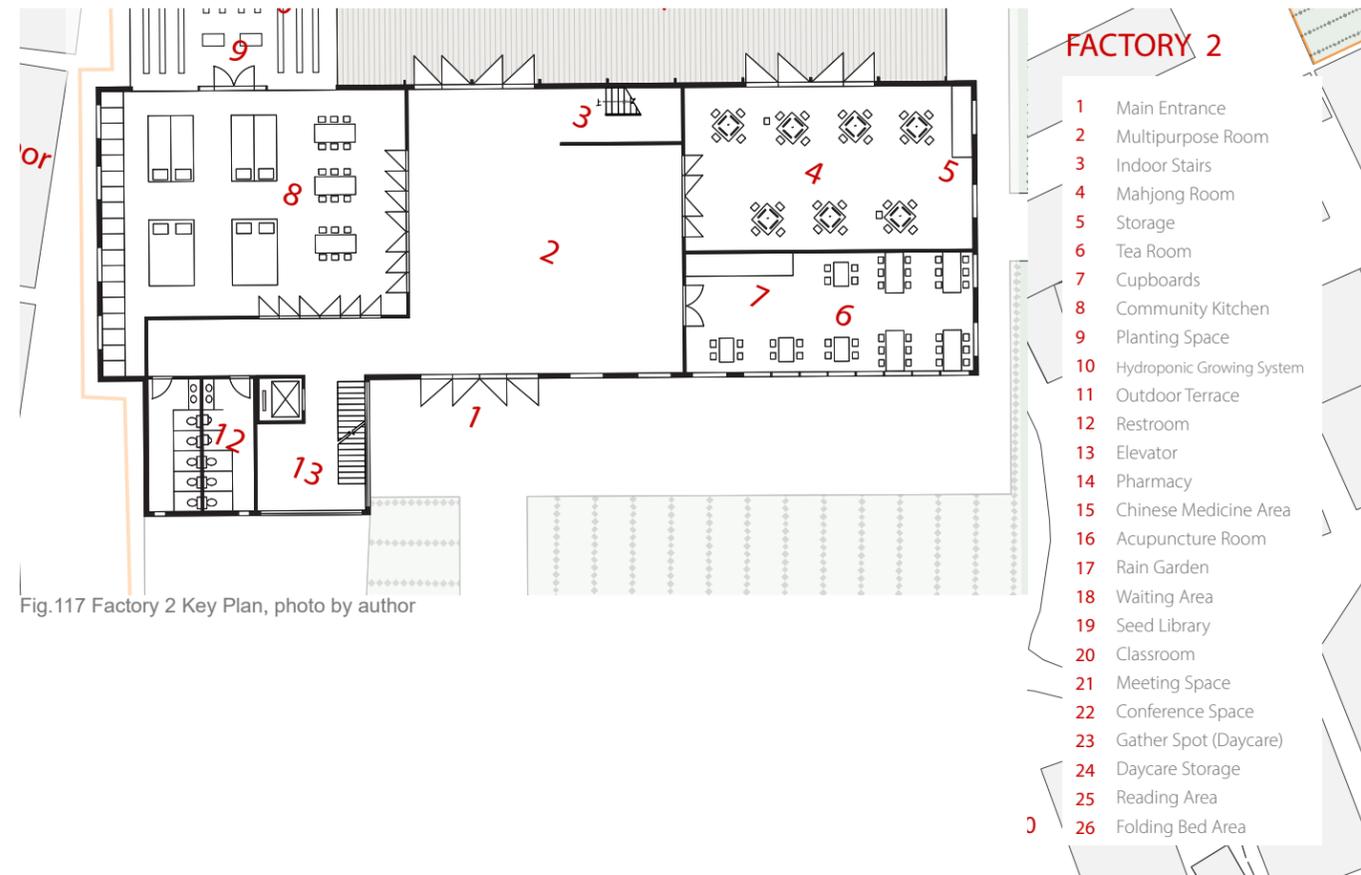


Fig.117 Factory 2 Key Plan, photo by author

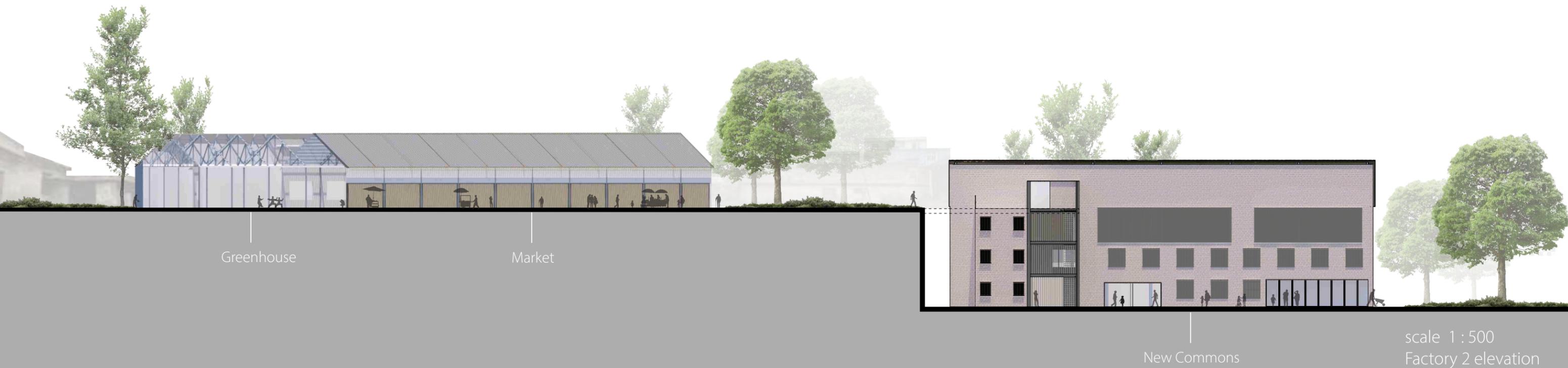


Fig.118 Factory 1, 2 Elevation, photo by author

This section shows the changes I made on factories 1, 2 and even the concrete cylinders during the renovation. While adding functions, it also enhances the people circulation of the building and even the whole site. Factory 1 is better connected after the addition of the stairwell for Factory 2. After crossing the bridge, people can enter Factory 2, which allows them to enter other Spaces. Before, people could only make a circle to reach the lowlands. (Figure 119,120)

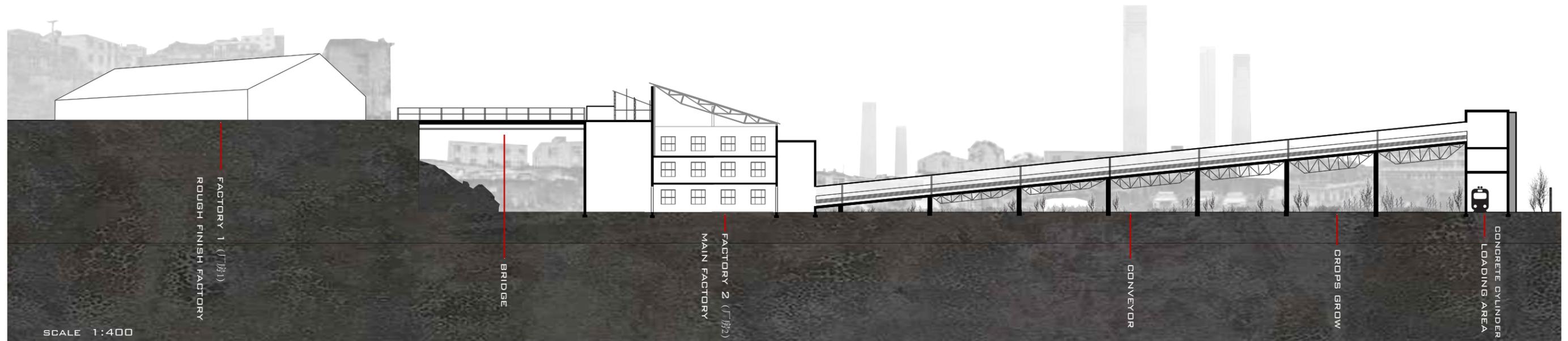


Fig.119 Existing Section, photo by author

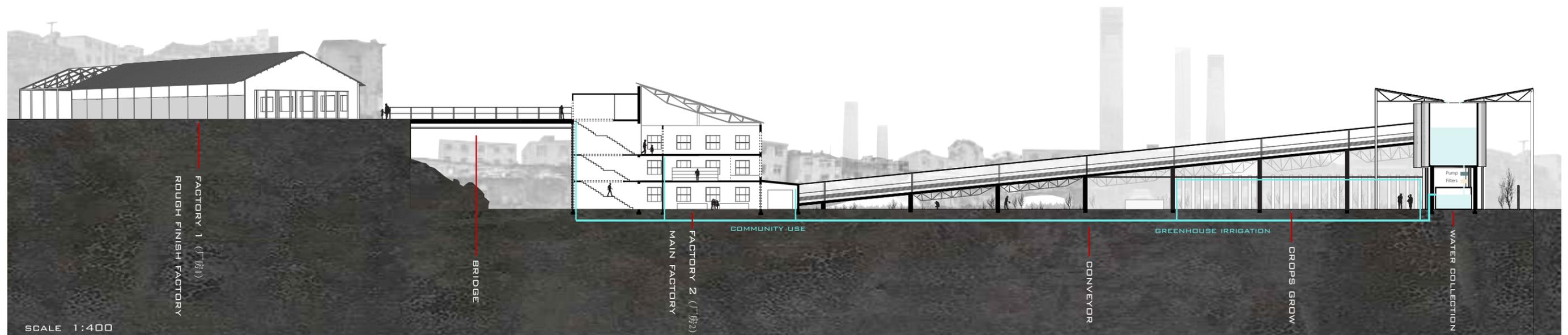


Fig.120 Proposed Section, photo by author

## Design Proposal

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## Conclusion

Village revitalization strategic planning is a major development task for China from 2018 to 2022, the goals and requirements of the new socialist countryside: production, development, comfortable life, rural customs, civilization, tidy appearance, tidy management and democracy. From the perspective of social civilization construction, the development of production and comfortable life is material and belongs to the standard domain of material civilization construction. The former is the necessary material basis for the construction of a new village, while the latter is the material embodiment of the construction of new countryside. Rural civilization and cleanliness of village appearance are spiritual aspects and belong to the category of spiritual civilization construction. We will make solid and steady progress in building a new countryside in the light of local conditions, respect the wishes of villagers.<sup>32</sup>

At present, China's rural construction is faced with many problems, such as the slow growth of villagers' income and the lag of social undertakings in rural areas, such as the lack of medical care, educational conditions and cultural activities. Village governments are the direct leaders, organizers and participants in the construction of new villages.<sup>33</sup> It is a common fund-raising method in China to use the appeal of village governments as a trademark to attract investment and organize projects. Also, the construction of new villages is a task of China's vigorous development, and the central government will also allocate funds for its construction.

Leading property economy is the main feature of the urban village economy. Many urban village collectives use land expropriation compensation and other funds and village reserved land to build pavements, markets, factories and other forms by themselves or in cooperation with developers to obtain the main source of income.<sup>34</sup> In the future, the development of collective economy in urban villages should be combined with regional economy and national economic development and should be subordinated to the realization of the ultimate goal of urbanization of urban villages, to narrow the economic gap between urban villages and cities. This also means that the urban villages will be open to the surrounding areas and the city, which mainly includes the circulation of goods, the sharing of resources, and the mutual

32. Yun Wang, On the role of government in the construction of new countryside, 2019  
33. Xiaohua Zhang, Problems and countermeasures of economic development in urban villages, 2019, 1007-5739  
34. urban culture observation, The five major strategies that promote economic development of village in city, 2019, <https://baijiahao.baidu.com/s?id=1626130654533520876&wfr=spider&for=pc>

influence of education. The project focuses on opening free markets, building community infrastructure and increasing arable land. Combined with China's new countryside construction strategy, the project aims to provide better conditions for villagers and thus strengthen the material foundation and spiritual civilization construction.

The establishment of the new market not only serves the villagers of the village but also radiates the economic effect of the market to the surrounding neighbourhood. Less than 50 meters to the north of the site, there is a high-rise residential area that accommodates nearly 3,000 people. Through fieldwork, we have also interviewed many people living in high-rise residential areas who would buy some handmade food that cannot be found in supermarkets in urban villages. Food in urban villages is popular, but the previous market structure resulted in scattered shops that could not have a greater impact on residents in the surrounding areas and lost their competitiveness. The opening of the new market should improve the situation to some extent, stimulate the external demand and also drive the domestic demand, and make Chengguan village's economy to a higher level to increase the villagers' income. Environmentally speaking, as urbanization increases and wildlife spaces shrink around the world, human interaction with the environment has increased, making it easier for animals to transmit viruses to humans. The speed and scale of China's urbanization deserve special scrutiny. The shared space between the existing wet market and residential buildings undoubtedly increases the chance of contact between people and animals, and also increases the chance of virus transmission. In the new and improved market, poultry and other living animals will be isolated and there will be special garbage dumps, which will reduce the density of people and the possibility of the virus spreading.

The establishment of the service center is based on promoting the construction of rural spiritual civilization and improving the lack of various forms of cultural activities and sports activities in urban villages. The larger goal of the project is to improve the quality of science and technology and culture of the masses of villagers, based on improving the quality of life of them, to occupy the ideological and cultural position of rural areas with advanced culture, to change the appearance of rural areas, and to enhance the degree of social civilization in rural areas. Promote the

modernization of villagers' way of life, way of thinking and values. These include self-sufficiency in crops, a place for education, and the inclusion of environmentally friendly concepts such as Water Collection System, Rain Gardens, and the use of bamboo as an environmentally friendly building material.

In general, this project has found many problems in the three sections of Chengguan Village, namely wet market, sanitation and agricultural land, through fieldwork and mapping. In combination with China's current national conditions of being committed to new rural reconstruction, we designed a New Commons for Chengguan Village, which was transformed from an old factory and integrated with the market, service center and agriculture, realizing the concept of Factory for Living. Besides, it is hoped that New Commons can improve the living standard and income of villagers from the aspects of material basis and spiritual civilization construction, to meet the requirements of the construction of New Rural in China.

## Appendix - Artifact Object

### Bamboo Vertical Farming

My design is a vertical farming system that uses metal as structural support, bamboo as chairs, roofs, decorations and planters.(Figure 121-124) China began to use metal as the main material for columns and truss in construction more than 70 years ago, it is very stable and durable, and the main structure of Chengguancun's abandoned factory is also metal, therefore, I chose metal as the support to express the importance and representativeness of this material to Chinese architecture and times. Meanwhile, this is a basic level of power self-sufficient farming system. The irrigation water is from the newly built water collection system. Electricity comes from solar panels placed on the roof, which is consistent with the thesis's eco-friendly and self-sufficient concepts.

I choose bamboo as the planters of Vertical Farming for the following two reasons. Firstly, Chinese people have always had a feeling for bamboo since ancient times. Bamboo has an important influence on traditional Chinese culture and also plays an important role in ancient Chinese residential design. The earliest Chinese preference for bamboo dates back to the Wei and Jin dynasties, then bamboo evolved from a cultural significance to a folk image, for example, "Bamboo Bao Ping An" is often used to bless peace and good luck. The literati of all ages held bamboo in high esteem: "people could eat without meat, but they can not live without bamboo"<sup>35</sup> Bamboo scenery is indispensable in the landscape making of Chinese classical gardens, and put it in themselves residence as an expression of personal ambition. The great poet Bai Juyi of the Tang Dynasty once analyzed and said: Bamboo has strong roots, so it can resist wind and rain, this is a symbol of Integrity and Fairness. Bamboo is hollow, which symbolizes the state of "Tao", which means to live modestly in the world.<sup>36</sup>

The second reason is the function of bamboo as a building material. As a building material, bamboo has an ancient and noble identity, the high strength bamboo fiber of bamboo and in accordance with the mechanical law of the cylinder structure has already turned into the benefit of the folk

35. Shu Shi, Yu Qian Seng Lvjun Xuan, Song Dynasty  
36. Bai Juyi, Yong Zhu, Tang Dynasty

wisdom. The Late Neolithic “Cao Xie Shan” Site in Wuxian County, Jiangsu Province, is the earliest site in China where bamboo is used as a building material. The Ganquan Temple in the Western Han Dynasty and the Huanggang Bamboo House in the Song Dynasty have long been famous.<sup>37</sup> In the Han and Tang Dynasties, there was a kind of "bamboo woven clay wall", which was a kind of thin wall filled between the wooden frame, and it is about two inches thick. In the gap of the wooden frame, the wall is usually woven with bamboo strips first, then it was covered with mud, similar in principle to today's steel reinforced cement. Bamboo acts as a tensile component, such as rebar, that adds to the overall strength of a mud wall. In addition, bamboo, which is abundant in Yunnan, is also an important building material in the dwellings of ethnic minorities. The bamboo houses of the local ethnic minorities in Yunnan are not only supported by bamboo, but also made of bamboo for walls, floors, doors and Windows, stairs and guardrail. The floor made of bamboo is made of cross round bamboo as the beam frame to support the floor, and bamboo slices as the floor. The floors and walls made of bamboo have natural gaps to facilitate natural ventilation and lighting, which are especially suitable for the hot and humid southern areas.<sup>38</sup> In addition, bamboo's renewable nature makes it an eco-friendly building material.

The development of vertical agriculture makes full use of resources and space in the face of population pressure and resource shortage. This type of farming works well in China for maximizing yield per unit area. There are tens of thousands of urban villages in China that have lost their arable land due to urban development. After the social structure of urban villages changes, the villagers also change their life style and survival style to meet all these conditions, but it still won't change their situation. If the concept and technology of vertical agriculture are used as a means of the transformation of Urban Villages, a self-sufficient village will relieve a lot of burden for the city with a large population, and it is also a more economical, environmentally friendly and sustainable way of life for the villagers in the urban village.

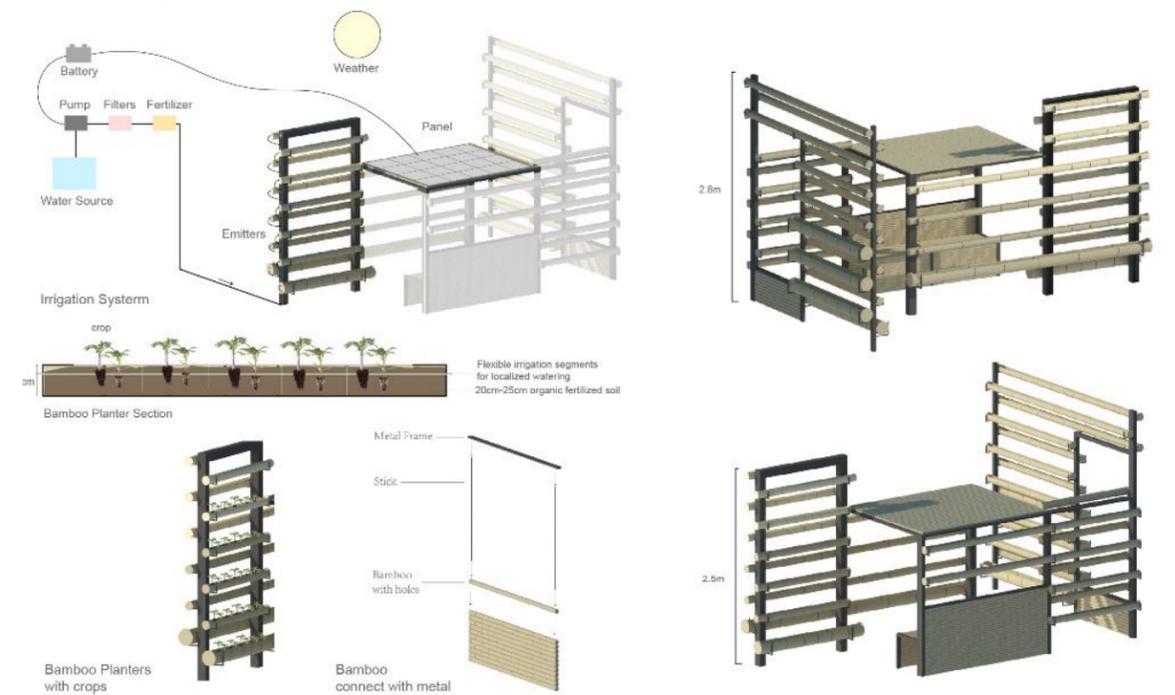


Fig.121 Bamboo Vertical Farming, photo by author



Fig.122 Bamboo Planters, photo by author

37. Bamboo and the History of China, [http://www.360doc.com/content/15/04/19/11/19218921\\_464318487.shtml](http://www.360doc.com/content/15/04/19/11/19218921_464318487.shtml), 2015  
 38. Li Shai Jiu Ying, <https://baijiahao.baidu.com/s?id=1661132732264638255&wfr=spider&for=pc>, 2020



Fig.123 Vertical Farming Perspective View, photo by author



Fig.124 Vertical Farming Perspective View, photo by author

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