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Reactivation of a Post-Industrial Town through Adaptive Reuse

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Abstract

Reactivation of a Post-Industrial Town through Adaptive Reuse

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The thesis looks at a site in a small, post-industrial town in Fangzi, Weifang, Shandong, China, growing between the two World Wars, and is now facing a decrease in population. Along with the government movement and the closure of a colliery which is one of the main economies supported in the town, the old town district is trying to find a new way to develop. Some attempts have already started. The site is on the edge between the old district and the “new” developed area. The old district, which had several essential facility buildings were built by the German and the Japanese in the early twentieth century. Moreover, the new district is facing the construction booming the same as other cities in China.

In order to populate the neighborhood, this thesis proposes redevelopment near the old industrial site, to create a public realm for people. The proposal is to find a

balanced design between the modern needs and existing vernacular buildings, through historic conservation. The chosen site has an existing abandoned hospital on it, and it is on the edge of the old vernacular district. The project is a community center with a library, exercise center, and other gathering space for people to use.

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To my parents who always support me.

To my thesis committee, Kathryn Rogers Merlino and Rob J. Corser, who are guiding my research and design with wealthy knowledge.

To Zongyu. He is the light during my thesis time.

To the little old town where I was raised and educated. I Hope the town will be better and better in the future.

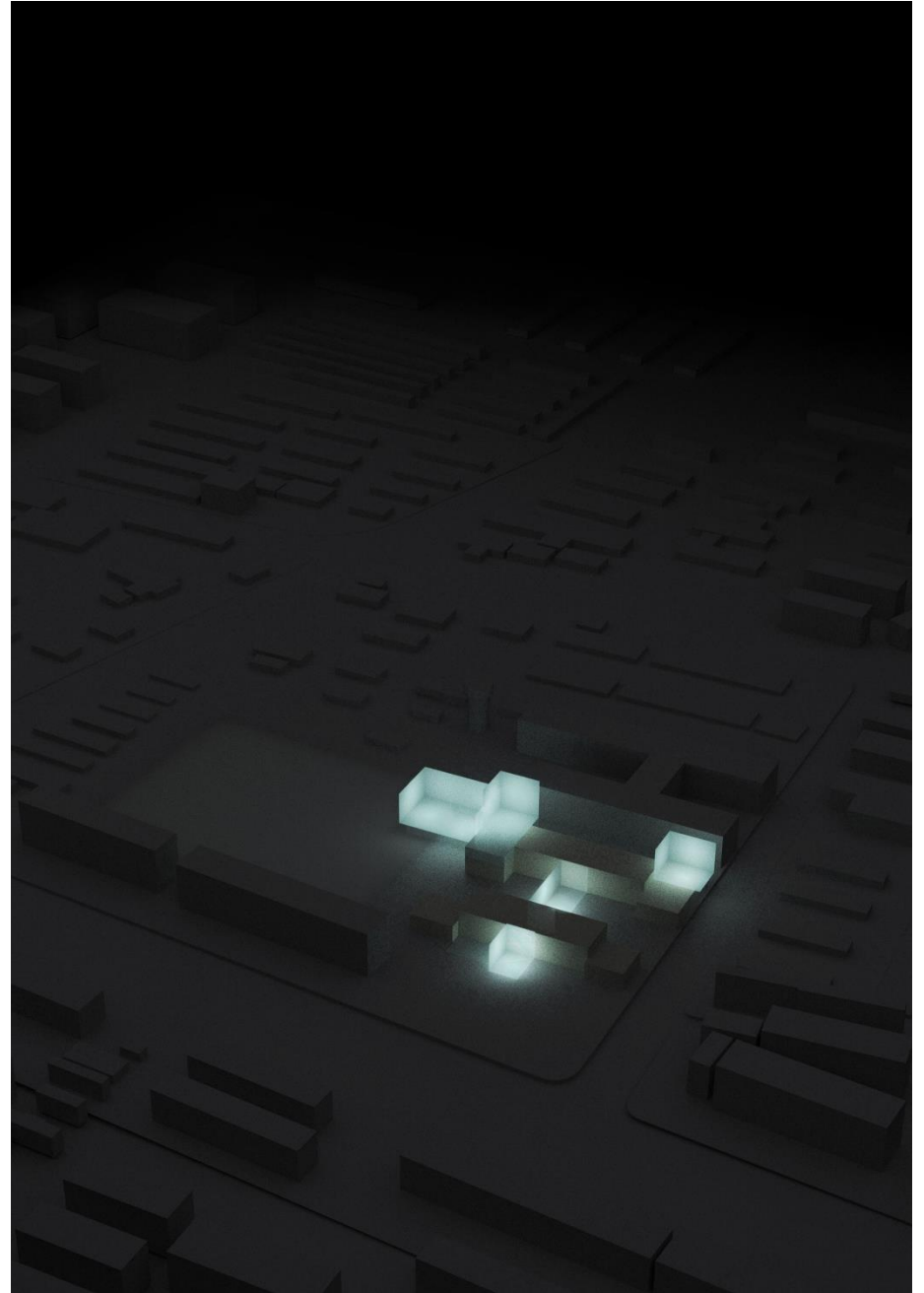


Figure 1: Schematic design

SITE BACKGROUND INFORMATION

GENERAL

The site is located in Fangzi, Weifang, Shandong, China. Fangzi is a small town located in the middle of the city, Weifang, and the latter belongs to a province, Shandong, on the east coast of China.

It could be dated back 5000 years to the very early beginning of the city in Neolithic times. One of the princes of Xia founded the first country there around 2000 BC. After Zhou conquered Shang, most lands of Shandong province was assigned to Ziya Jiang in 1122 BC. Weifang was the capital at that time, called Yingqiu. After that, the name of the land in Weifang changed several times. Nowadays, people can still tell some names of the county in the city are from old governors, like Qingzhou from the Han Dynasty and the Tang Dynasty, Gaomi from the Sui Dynasty.¹

In the 14th century, there was a large sum of people who emigrated to Shandong province from the middle area of China. Taking advantage of the peaceful environment, the economy started to develop, and the area was famous for handicrafts, like other developing cities in China at the same time. Two of the most popular categories were embroidery and iron casting. Although the peasant economy was the basic structure of the society, commerce started to take a portion in the economy and was supported by the government. During World War I, the Germans took Qingdao, which was a city next to Weifang, and set a town, Fangzi, in Weifang, as well as several towns in Shandong as transportation spots because of the coal supply. After World War I, Japan took charge of the German's construction until the end of World War II. The city was named Weifang in 1948, combining the name of the former of "Wei-xian" and the former of "Fang-zi." As a city, Weifang has several sub-cities in its territory, like Qingzhou and Gaomi. It also has some towns of which Fangzi is one.²

¹ <http://lib.sdsqw.cn/bin/mse.exe?seachword=&K=c7&A=1&rec=4&run=13>

² <http://mini.eastday.com/bdmip/171217113820463.html#>

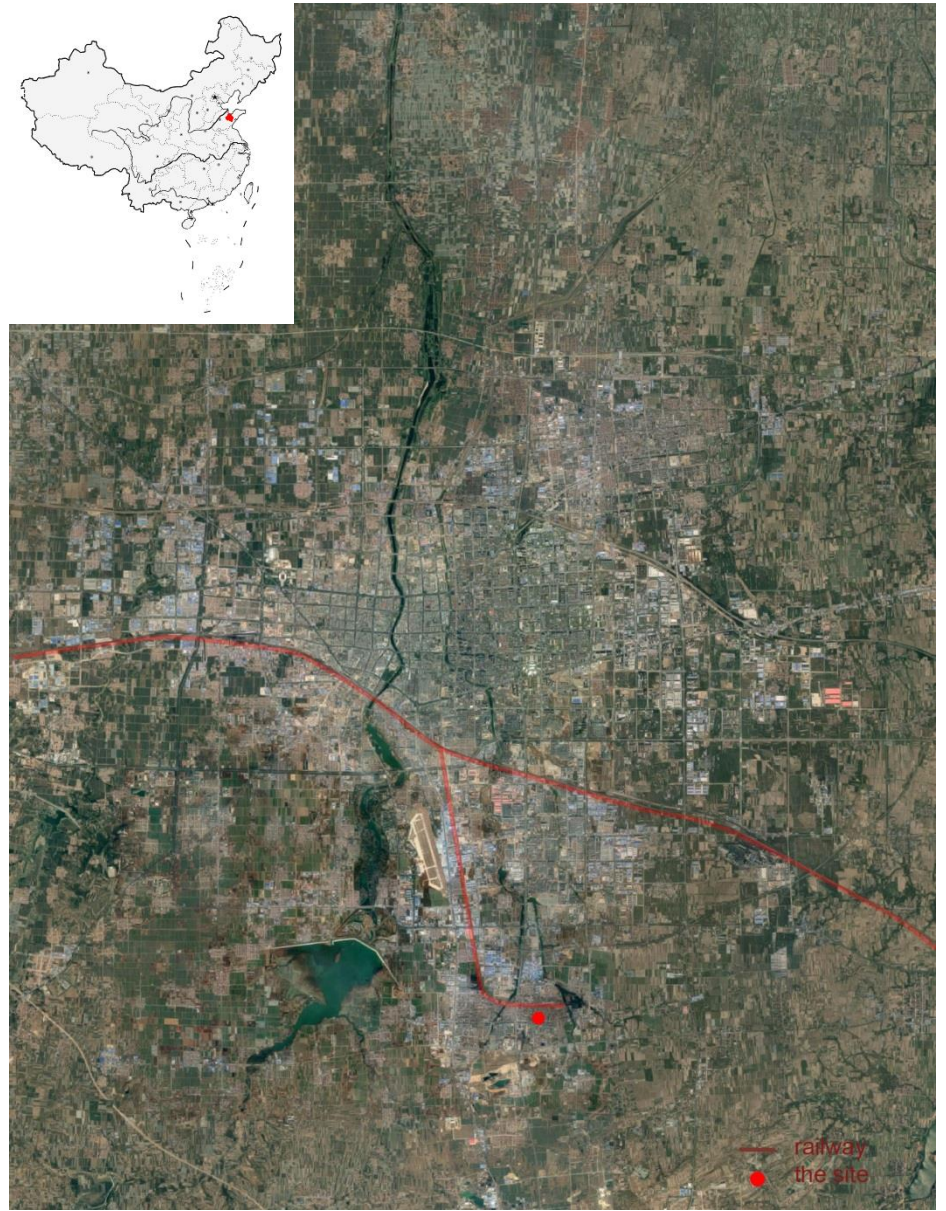


Figure 2: Map of China (up)

Figure 3: Satellite map of Weifang (down)

FANGZI

There was no exact place called “Fangzi” until the end of the 18th century. Before it was named, the area had only a few families living an ordinary life. However, since it was on the way of two big cities at that time, a person opened a hostel there for people traveling between the cities. With the development of the economy, more and more people traveled on this road, and the hostel also developed. The hostel was named for a big rock nearby which called “Fangzi,” and later, “Fangzi” became the name of this area.³

THE INDUSTRY TOWN AND COLONY HISTORY

In the 1840s, the coal was gradually found and mined through traditional ways. Most mines were owned by individuals, leading to some business and transportation development. Previously it was used as cooking fuel when people found abundant coal on the ground, and then there are people doing business based on that, and capitalism gradually appeared. At the end of the 19th century, a group of German people found the abundant coal resource in Shandong province, and after they took Jiaozhou Bay in Qingdao as a concession, most of the coal mines in Shandong province such as the one in Fangzi became the resource used by foreign people during the War. Based on the initial industry circumstance, German aimed to build Jiaozhou Bay as Hong Kong for the UK.⁴

³ <http://mini.eastday.com/bdmip/171217113820463.html#>

⁴ Klaus Muehlhahn, *Herrschaft und Widerstand in der “Musterkolonie” Kiautschou*, Interaktionen zwischen China und Deutschland, 1897 – 1914 R. Oldenbourg Verlag, Muenchen, 2000, 91

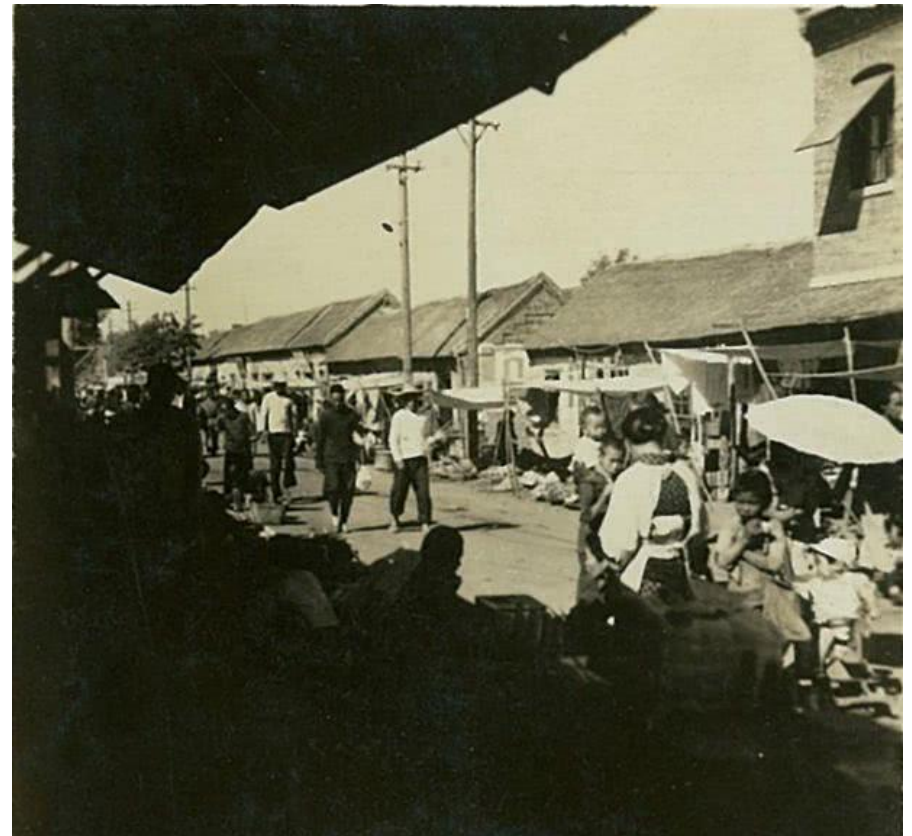


Figure 4: Photo of a morning market in Fangzi (1941.8)

(Source: <http://codh.rois.ac.jp/north-china-railway/photograph/3806-040630-0.html>) (Kyoto University, North China railway company)

Moreover, the coal resources were one of the vital support for that, as well as labor forces. The first modern coal well was built by German there in 1901. They also built a train station for the use of taking coal to other places. During that time, the colliery was so important that the railway was turned south to get the mine in Fangzi rather than go directly from east to west. Although the coal mine in Fangzi was not as abundant and good as other big mines like Zichuan in the adjacent city Zibo or Kailuan in Hebei province, the location still led to its development. The first road also built at the same time, which is called “Maolin Street,” then turned to “the First road.”⁵ Based on the increasing need, the coal industry was developed, as well as the small town. A set of first modern city facilities were all built, including a post office, hospital, school, church and theater. As one of the heavy industry areas boomed, the government officially settled the name of Fangzi in 1904. After World War I, Japan took charge of the colliery and the train station from the German, gradually developing the city more. There were eight roads at the end of the War.

Compared to other coal mines in the country, Fangzi coal mine was a tiny one even at the beginning of the industrialization. The output of the biggest mine located in northeast China was almost 30 times more than Fangzi’s.⁶ However, no matter how big it was, once a mine was developed, a whole set of modern facilities were put into the city and moved the city into the new world.

⁵ <http://m.tielu.cn/58/134472.html>

⁶ Elspeth Thomson, *The Chinese Coal Industry : an Economic History*, London; New York : Routledge. 2003

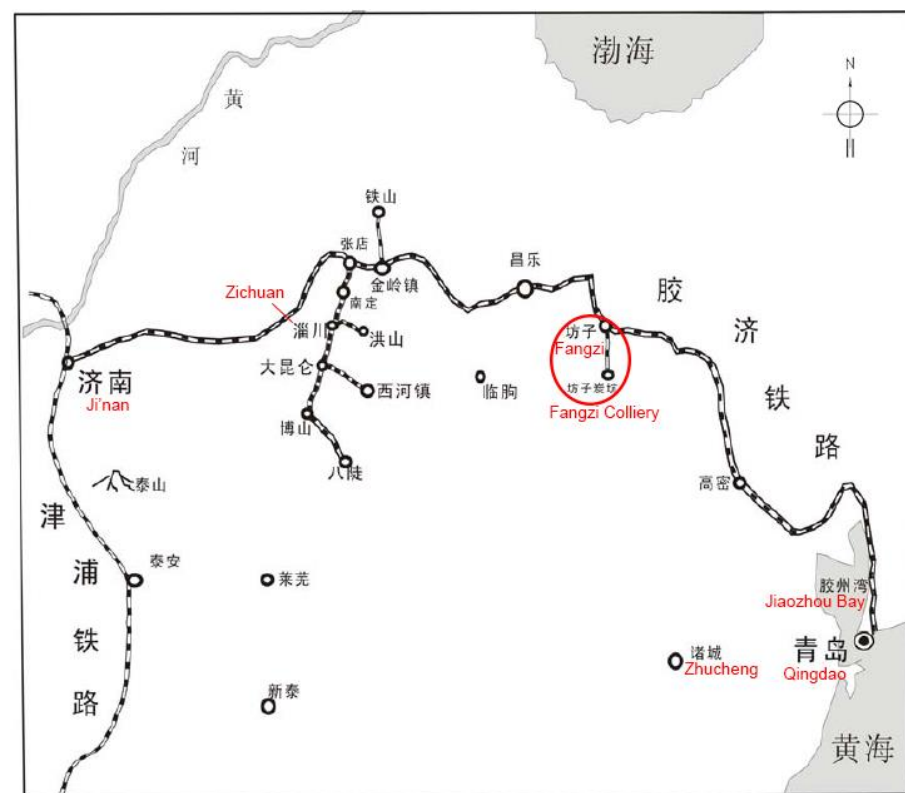


Figure 5: Map of Jiaoji Railway. The red circle shows the branch railway to Fanzi. The left branches are a series of collieries in Zichuan which are introduced in the case study.

(Source: Xuejian Zhang, *Jiaoji railway, the coal production and marketing along the line*. Xi'an, China, *Journal of Chinese Historical Geography*. 04, 2011)

LOCAL LIFE AND BUILDINGS TYPES

The first phase of the development of Fangzi was dependent on transportation like Detroit. Before World War I, the peasant economy and the rise of capitalism make Weixian and Fangzi as one of the economic centers of the province. In the province, there was a city named Boshan as the only one which described as an industry city by one of the German geologists Richthofen. Large families who owned the factory also owned the skills and properties. The beautiful construction type, which was built by stone, as illustrated by Richthofen as well, was even better than some countryside houses in East Europe.⁷ The second phase of the development was the out power by foreign countries. The modern facilities based on electricity dragged the whole economic system into a new level. Some local families were trying to build similar factories in order to take a portion of the trade. Besides coal mining, the tobacco and agriculture output also took a large portion of the economy.⁸ Some schools were established, especially women's school, to teach modern technology.⁹

⁷ Klaus Muehlhahn, *Herrschaft und Widerstand in der "Musterkolonie" Kiautschou, Interaktionen zwischen China und Deutschland, 1897 – 1914 R.* Oldenbourg Verlag, Muenchen, 2000, 63

⁸ Elspeth Thomson, *The Chinese Coal Industry : an Economic History*, London; New York : Routledge. 2003

⁹ Yufa Zhang, "Minguo Shandong tong zhi" bian ji wei yuan hui. "Minguo Shandong tong zhi" bian ji wei yuan hui, 2625



Figure 6-8: Photos of Fangtze Eurotown, the historical district (left 3)

Figure 9-11: Photos of single family houses built in the early 20th century (right 3).

(Photos by author, 2018.8-2019.4)

After the new Chinese government was established in 1949, Fangzi was assigned as a town of Weifang. The Fangzi coal mine was big enough to become a nationally owned company, which was the typical economy type in late 20th century China. The whole system remained as the German-built. With an affiliated hospital, baths, a school, a large heavy industry company fed the worker and their families based on the natural resource and money given by the country. In this “member” system, the price was low, and the wage was good enough. However, the new constructions at that time were simple with only based need, not only because there were not many design intentions, but also with the necessary practical idea. Also, with the peaceful environment, the population growth raised the condominium market.

With the development of many other industries growing in the 1970s, people were moving to other places to find new opportunities. When the government moved to the north area, which was about 15 minutes’ drive away from the old one, a new town was developed to support other light industries or companies with high technology. Many people moved out as well. Since the outcome of the colliery decreased year by year, the biggest and the only colliery company in the old town faced bankrupt in the early 21st century, like many national companies as well, with another large sum of people left. The population of the town dropped from 91,000 in 2010 to 71,000 in 2014. Until 2014, about 21,000 people were living in the old town area.¹⁰

¹⁰<https://web.archive.org/web/20180719084356/http://www.yearbookchina.com/navipage-n201303015200017.html>



Figure 12: Street view of the Sixth Road in the late 20 century

(Source: <http://m.jing111.com/a/2017/1231/37045.html>)

CURRENT SITUATION AND PROBLEMS

The colliery stopped in 2016. From the bankrupt to 2016, the company was seeking different ways for business transformation. A summer water amusement park opened next to the mine well because of people found hot spring during the mining. An interactive museum with an old mining trail opened to the public on the colliery site. Since the colliery was closed, the railway in the town phase lost its function and was abandoned from then. Thanks to the lack of focus in the 2000s, when many redevelopment and renovation were taking, most of the original colonial old buildings are survived. Some of them became the local residential houses, but a large portion of them are abandoned and are lack of preservation.

With the development of urban design, many cities, especially large ones like Beijing and Shanghai, are trying to build more and more skyscrapers or high-rise residential condos. The trend also influenced small towns like Fangzi. Although the town was not suitable for skyscraper based on the reason such as population and economy, the town was still involved in the booming of real estate in recent years. The developer could earn money no matter how the land was occupied, and the economy guided the real estate market in China at that moment has led to many condos quickly be built without people living in it. As said before, one of the problems of the town is the decreasing population, so how the town would be renovated at this specific time should be considered. What is more, there is a plan about inviting downtown people to inhabit here because of the low price. Therefore, how to encourage these people into the neighborhood is another question that the district should face.

CASE STUDIES

1. BUSINESS TRANSFORMATION OF ZICHUAN, SHANDONG, CHINA

Zichuan is a town located in Zibo which is next to Weifang. It is also abundant with coal. During the two World Wars in the 20th century, there was a station constructed by German and then occupied by the Japanese. The station, as well as the one in Fangzi, all belonged to Jiaoji Railway. Both of them took tons of coal as a resource for war.¹¹ No matter how big they were, there were 26 collieries at that time in Zibo city, except those mining with the traditional method. At that time, it had the most significant coal output in the province, and even the third around the country.¹² The output was about three times bigger than Fangzi colliery, and compared to Fangzi, which had the only Jiaoji railway extension, there were eight extensions in total in Zichuan for coal mining.¹³

All in all, Zichuan is going through a similar development method similar to Fangzi, and it also had a booming time in the beginning after the new China was established. It faced almost the same situation even when the new century began; the colliery firms were shut down or reduced output. Many firms were seeking new opportunities, or they had to adapt to the change or disappear.

¹¹ Klaus Muehlhahn, *Herrschaft und Widerstand in der "Musterkolonie" Kiautschou, Interaktionen zwischen China und Deutschland, 1897 – 1914* R. Oldenbourg Verlag, Muenchen, 2000, 173

¹² Elspeth Thomson, *The Chinese Coal Industry : an Economic History*, London; New York : Routledge. 2003, 75

¹³ Elspeth Thomson, *The Chinese Coal Industry : an Economic History*, London; New York : Routledge. 2003,76



Figure 13: Shrine built by Japanese on Zichuan site

(Source: http://cnews.chinadaily.com.cn/2015-11/03/content_22360369.htm)

One of the ways that colliery firms chose to transform is to build a museum collecting old things and stories for people to learn history. Furthermore, another way is to strengthen cultural identity as well as the building types. Zichuan is famous for a writer of myth who was famous in ancient times, and modern people are trying to use the myths to highlight the area as well as introduce new firms to make films there.¹⁴ Besides history functions such as exhibitions and conferences, what people are doing is to make several series of buildings into a tourism site. The most iconic buildings are almost built-in one courtyard, which is more compact than Fangzi's. On the other hand, the compact character makes the site buildings easy to organize. It is well-preserved, easy to maintain, and already used in many ways as Fangzi's after the new urban design plan went out by the same Design Institute. It is hard to know why they used blue in Zichuan and Red in Fangzi at that time, but the same construction type still places them into one category.

¹⁴ <http://www.chinawriter.com.cn/bk/2012-11-26/66025.html>



Figure 14: Houses built by German on Zichuan site

(Source: http://news.china.com.cn/zhuanti/sdx/2013-06/14/content_29123521.htm)

2. LANDSCHAFTSPARK DUISBURG-NORD, DUISBURG, GERMANY

The landscape public park is located in the north of Duisburg, Germany. As one of the famous parks in the Ruhr area, the park was designed by Peter Latz and his colleague. The idea was to understand and heal the site¹⁵, which was one of the iron factories abandoned in 1985 in this heavy industry area. The landscape designer did not demolish any of the buildings but used all the original structures and building materials as one of the tools to make an amusement park for both children and adults. In order to find a way to refurbish the large uncultivated land next to the hospital building on the site, this landscape park could be a case study during the research stage.

Before the iron factory, there was farmland. Because of the heavy pollution, the factory was closed in the 1980s. What makes the site successful is the idea of embracing the old part even though it might represent negative effects. Facing the need from the city that the adaptive reused park should show the relaxing green space as well as the former industry part, Latz used translation and re-identification methods to design the park. That is, the function of former buildings and pipes are not only what they were designed at the beginning. With the time going by, the old constructions, even the waste materials could be used as other materials to shape the view as well as the paths.

The Landschaftspark Duisburg-Nord is one of the several parks of Emscher park, which is located in the most massive polluted area in Nordrhein-Westfalen. The five objectives for the Emscher Landscape Park are:

- Preserving the remaining leftover landscape
- Linking up the isolated, separate areas in the agglomeration
- Re-zoning separate areas as parkland
- Reaching agreements both regionally and locally on individual projects with a long-term perspective and
- Maintaining and managing the new open spaces in a permanent regional park association.¹⁶

¹⁵ https://www.triposo.com/poi/N__1633303088

¹⁶ http://81.47.175.201/PE_Sta_Perpetua/attachments/article/75/Emscher.pdf

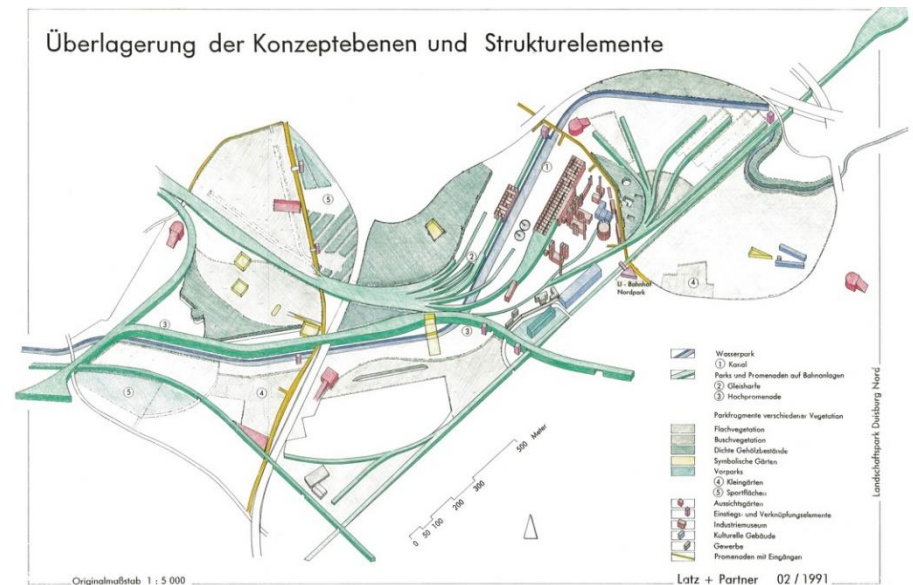


Figure 15: Overlay of the concept levels and structural elements

(Source:<https://www.latzundpartner.de/en/projekte/postindustrielle-landschaften/landschaftspark-duisburg-nord-de/>) (Latz + Partner)

According to the seven lines, a whole eco-system was developed along the river. The renovation started in 1991. Until now, the whole system has almost fully finished, and the last colliery was shut down in 2018. As one of the parks in the system, the Landschaftspark Duisburg-Nord was designed into four parts: the highest is the railway park connected with elevated paths as the spine of the whole park; the second is the water layer which is a filter system collecting rainwater and wastewater before they are discharged to Emscher River; the third layer is the bridges and paths established walking circulation; the fourth layer is the gardens that have various functions, which have individual views as well as crossing scenes that people could enjoy when walking through them.¹⁷

The whole experience design could be said as successful. Abandoned for years, the buildings are reused to save the material and energy, and the sufficiently carefully designed park is not desolate but very popular in that area.

¹⁷ <http://www.thupdi.com/topic/view?id=542>



Figure 16: Park view

(Source:<https://www.germany.travel/cn-mobile/towns-cities-culture/palaces-parks-gardens/galerie-duisburg-nord-industrial-landscape-park.html>) (copyright:Mark Wohlrab)

3. THE HIGH LINE, NEW YORK, US

The High Line is an elevated linear park in the west of Manhattan, New York, which was an elevated railway transporting meat and connecting Penn Station and Meat Packing District.¹⁸ At the end of the 1980s, the railway was abandoned, and after about twenty years, the FHL (Friends of the High Line) started to persuade the local government to keep and reuse the High Line instead of demolishing it.¹⁹ Under the cost and budget, people saved the High Line, and it was divided into three parts to renovate. The High Line's design is a collaboration between James Corner Field Operations (Project Lead), Diller Scofidio + Renfro, and Piet Oudolf.

The reconstruction and renovation started from the south to the north, and the third phase was just built by 2019 with the completion of Hudson Yards. For the design, the first section used concrete and kept some phases of the original railway. The randomly growing grass and flowers are trying to keep the natural feeling. Linear lights are glowing under the knee during the night. The second phase is the longest among the three, which is a half-mile (the total length of the High Line is one mile.), decorated with many "Chelsea thicket" bushes. The height makes the street view possible to be seen in the higher level, and the terrace and benches with the viewing spur also happened in this phase. The third phase is along with Hudson Yard and the Hudson River. With the establishment of one of the new landmarks of New York, the High Line will be part of the big view.

¹⁸ Dunlap, David W. (February 18, 2015). "New York City Rail Crossings Carry a Deadly Past". The New York Times. ISSN 0362-4331. Retrieved February 12, 2018.

¹⁹ "High Line History". Friends of the High Line. Archived from the original on September 22, 2014. Retrieved August 2, 2009.



Figure 17: Old Photo of the High Line railway under Bell Laboratories Building in 1936 (left)

(Source: <https://www.nytimes.com/2008/05/18/realestate/18scap.html>) (copyright: National Geographic magazine)

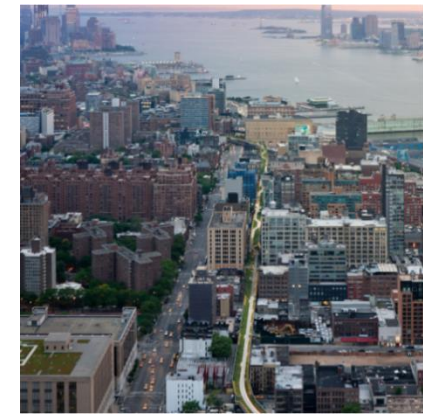


Figure 18: Bird view of the High Line (right)

(Source: <https://www.thehighline.org/photos-videos/at-a-glance/best-of/>) (Iwan Baan)

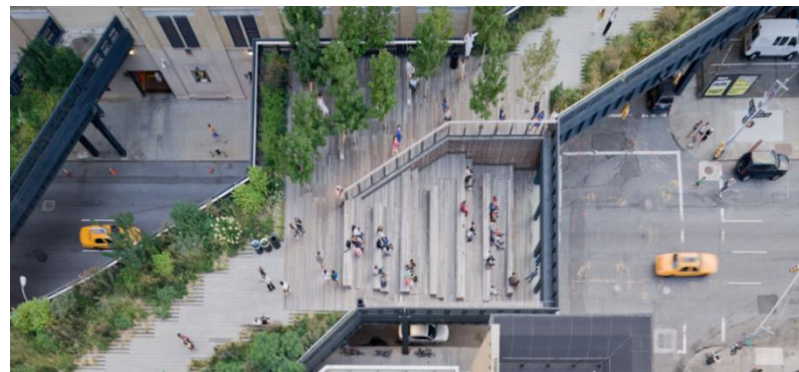


Figure 19: An aerial view of one of the High Line's most popular gathering spots: the 10th Avenue Square at 17th St. and 10th Ave.

(Source: https://www.thehighline.org/photos/at-a-glance/best-of/?gallery=3854&media_item=2014) (Iwan Baan)

Although the renovation started from the south, people are more often walk from the north to the south. Depending on the height of the path and the close distance to the buildings, the High Line makes a “walking in the air” experience.²⁰ People even have a feeling as if the doves are flying low. It is a trendy spot for both local people and travelers. Nevertheless, it is still a quiet and loose space even many people are walking on it. The Chelsea Market in between makes the High Line more lively and creative. Also, the Whitney Museum located next to it. It could be seen that the small companies, design studios, and the stores are integrated with the High Line, creating a more lively space in New York City.

²⁰ Comments from some people the author interviewed, not represent the actually data.

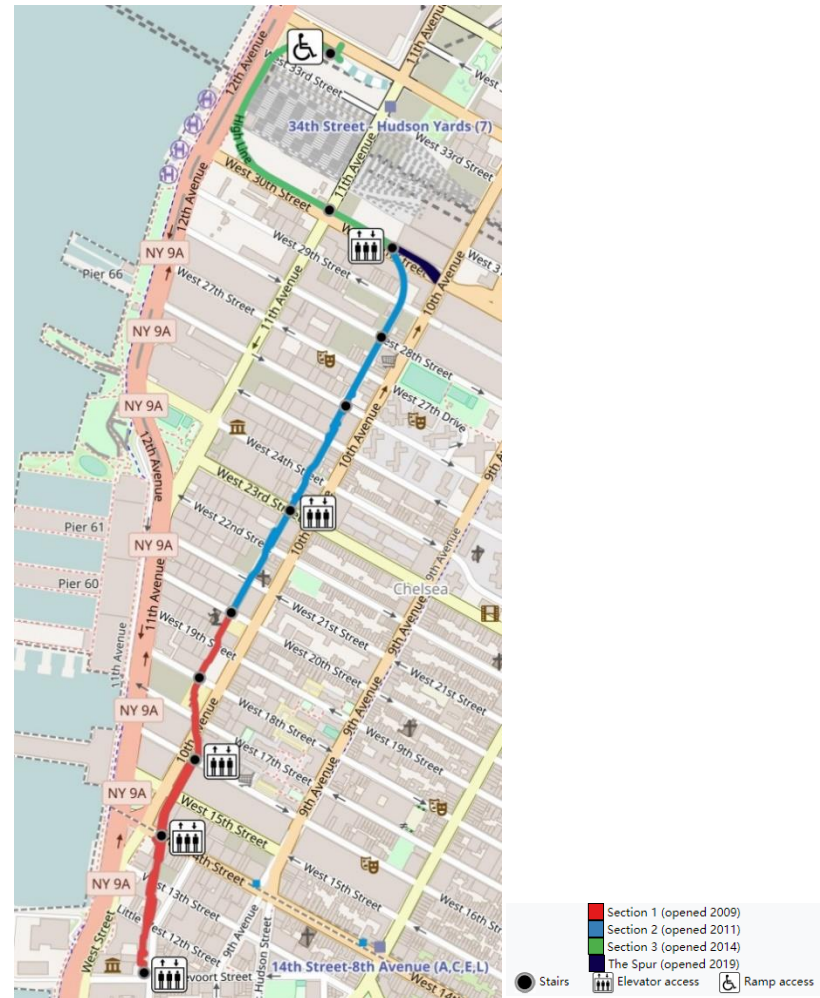


Figure 20: Diagram of the Highline

(Source: <https://commons.wikimedia.org/w/index.php?curid=61916228> (copyright MJ, Openstreetmap.org and contributors - Own work)

4. JUER HUTONG, BEIJING, CHINA

For the renovation of the typical Chinese courtyard, Siheyuan, the construction industry has been making continuous attempts to, and the most famous of which is the reconstruction project of Liangyong Wu's Juer Hutong. The historic Juer Hutong is a microcosm of Beijing Hutong culture, located on the northeast of the Forbidden City, but it was also once a neighborhood with more concentrated old houses. Liangyong Wu successfully carried out the transformation of this hutong with the theory of "organic renewal."²¹

As the capital with historical and cultural cities, Beijing, the model of the abandoned large-scale houses renovation has been modeled on various small and medium-sized historical and cultural sites. Liangyong Wu's "Organic Renewal" method advocates "obeying the inherent development law of the city, conforming to the texture of the city and exploring the renewal and development of the city based on sustainable development."²² This theory was successfully implemented in the transformation of Juer Hutong. It established a "new Chinese courtyard"²³ system with more than 200 residents in this 4860 ft² Juer Hutong. The "basic courtyard" consists of modular apartments with complete functions and facilities, named as "the new courtyard system."²⁴

²¹ Liangyong Wu, *The Study of "Juer Hutong" test – New Preface for Renovation of Old-city in Beijing Today: Investigation Research Exploration*. Urban Plan, Wuhan: Huazhong Architecture. 03, 2000

²² Liangyong Wu, *The Beijing Old Town and Ju'er Hutong*, Beijing: China Architecture and Building Press, 1994, 63-230

²³ Liangyong Wu, *Several Theoretical Questions about Ju'er Hutong test*. Beijing: Architectural Journal. 12, 1991, 4-9

²⁴ See note 23

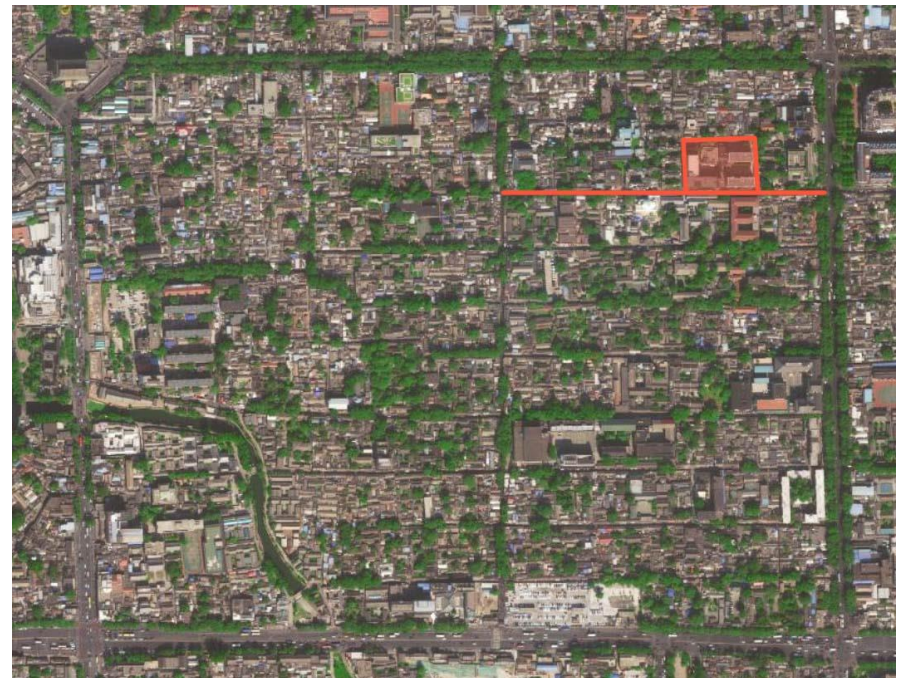


Figure 21: Map location of Juer Hutong (Copyright Baidu Map)

The original trees are kept as much as possible, combined with the newly added greenery, and the new courtyard constitutes a proper "public living room."²⁵ The newly rebuilt courtyards in Yuer Hutong was designed according to the "new Chinese courtyard" related model. The height is the Hutong-garden system, which maintains the original Hutong-garden model system. At the same time, it also combines the advantages of the unit building and the courtyard house. The indoor space of each household is arranged to protect the residents' needs for modern life, and a relatively independent neighborhood structure is formed through the courtyard, providing a public space for residents to communicate.

However, with these years of development, some problems are showing with the design. First is the safety problem. The public living space is suitable for communication but also increases the chance that people's belongings could be stolen from others who might not live here. Then every family had the safe-guard aluminum barrier added. Furthermore, when the height of the courtyard changed from one floor to two floors, the plan never changed. So the sunlight cannot get into the ground floor suitably as well as the courtyard. It created a dim feeling in the courtyard.²⁶

What is more, some people living there are complaining that although it was designed following the typical Chinese courtyard, it actually lost the spirit of it. The new courtyard is living the same as the old apartment's culture rather than the "courtyard culture." All in all, it does provide a new reconstructed building type at that time when people usually did nothing but demolished old buildings, but the idea could still be renewed when the new renovation happens.²⁷



Figure 22: Old Juer Hutong (left)

(Source: <http://www.chinanews.com/cul/2011/11-22/3477422.shtml>)

Figure 23: Aerial view of the new Juer Hutong

(Source: https://www.researchgate.net/figure/Aerial-view-of-the-Juer-Hutong-new-courtyard-housing-Source-Information-Center_fig2_305729808) (Information Center, previously Resources Center, School of Architecture, Tsinghua/ Qinghua University)

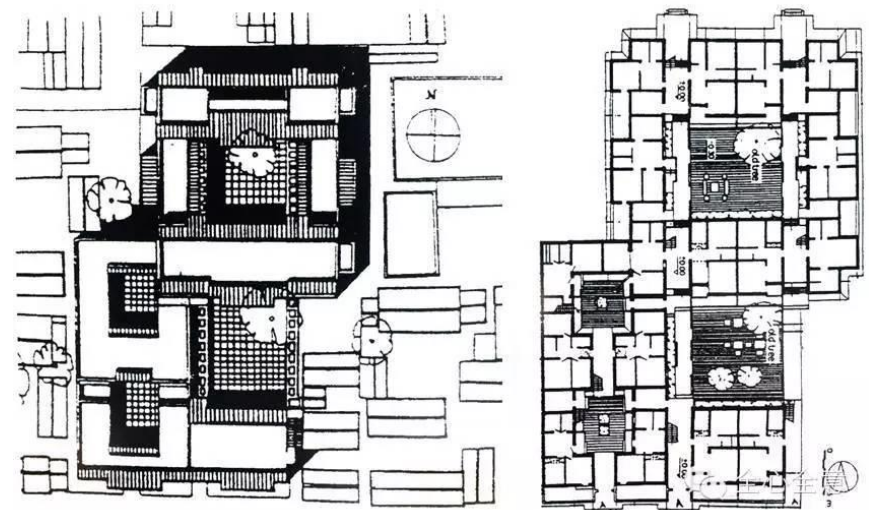


Figure 24: Plan of Juer Hutong

(Source: https://mp.weixin.qq.com/s?__biz=MzA4MzkxNjUxNw==&mid=400002467&idx=1&sn=974df4d0654abb6811e347748f33780f&scene=4#wechat_redirect)

²⁵ Liangyong Wu, From Asian Features to Urban Revival. Beijing: Architectural Journal. 09, 2006

²⁶ <https://www.zhihu.com/question/23861446/answer/25895449>

²⁷ Jian Sun, The Research on the Ju'er Hutong Residential Mode. HunanUniversity. June 2008, 66

SITE ANALYSIS

ABOUT THE TOWN

Fangzi is located in the south of Weifang (Figure 3), which is in a semi-island on the east coast of China. The figure ground could see on the map that the town has a tight relationship with the city. After several decades of development, Fangzi became a town with two parts showed on the map. The south part is the old town area, which is the area that first had development in the nineteenth century. The new town was developed in recent years, with the move of the town government from the south old town to the north new town. With the move, many facilities are moved as well. Mix-used commercial and residential buildings take a large portion of the town. Small businesses, retail stores, and condominiums are the main programs of the town center. Factories are concentrated in certain areas, the town outskirts or between the old town and the new town. The airport of the city is on the west of the new town. The high-speed railway was the Jiao-Ji railway operated from the 1900s.

The old town is facing both the loss of population and the lack of residential problems and economic development issues. After the Fangtze Eurotown and the colonial district were nominated as a historic preservation district, the tourism industry was added to the development method, providing a new aspect. However, it does not change too much of the living environment of the local people in the town.



Figure 25: Satellite map of Fangzi

BUILDING TYPES

Since the site is located on the edge of the historic preservation district, there is a lineage line of the different building types. On the south of the main street, the 6th Road, new constructions including middle school, high school, and markets are frequently used by people living nearby. On the north of the 6th Road, there are single-family residential houses mixed with year-long abandoned buildings. The primary school, which is a 6-year system with three classes in every grade, serves the families several blocks nearby. The city's social welfare institute replaced the church, which was built in the wartime and destroyed after that, and the institute was built as a large building in the north of the original site in recent years.

There are three main housing types in this area: 1. Single-family houses. Local people in the 1900s built these houses, and the houses were growing with different floor plans depending on how people developed them. Based on the financial background and different family needs, they may develop the land in different ways and maximize the building footprint. Most of the houses are built with bricks, thatch, and tiles. Some families changed theirs into a concrete or cement and brick structure. 2. Low-rise multi-family residential. After World War II, there were some multi-family condominiums built in this area. National companies owned most of them and assigned them to families at the beginning, and then the condominiums became self-owned because of different reasons. Brick and concrete were the primary structure materials, so they are only 4 or 5 floors high. There are storage rooms on the ground attached to every building for each family. 3. Newly constructed buildings. The town was fully developed in the 20th century, but at the beginning of the 21st century, due to the factories' going bankrupt and land use transformation, some old buildings were demolished, and the new construction appeared. The new condominiums are higher than the former buildings and are built with reinforced concrete. The underground storage space replaced the attached ground floor storage, and the distance between the two buildings is longer. Nowadays, there is more and more new housing under construction, according to the government housing plan.



Figure 26: Diagrams of building types

TRAFFIC

There are three bus lines connected to the different areas of the city downtown. One of them ends at 8 pm, giving people more nightlife in downtown. A bus transit center links the three main bus lines, along with coach lines connecting with other towns and small cities nearby. Public transportations also include the city's bicycle-sharing systems. Some private-owned taxi service is also available at a particular spot.

POPULATION

Until now, the loss of the population in the town is mainly because young people are going to the new town, the city downtown, or even the bigger cities for jobs and living. Older people take up a large portion of the population in some districts.

However, the situation does not look too bad. Although a large population is leaving the town, the suburban people and people living in the village are coming to the town. What is more, based on the recent government plan, the developers are planning to build more residential buildings in the town. They try to use the lower housing price to encourage young people who could not afford the downtown housing to buy a condominium here. Besides that, some big houses are also at the developing stage to attract rich retired people, especially along the river bank area. Some of the developments have already started on the north of the railway.

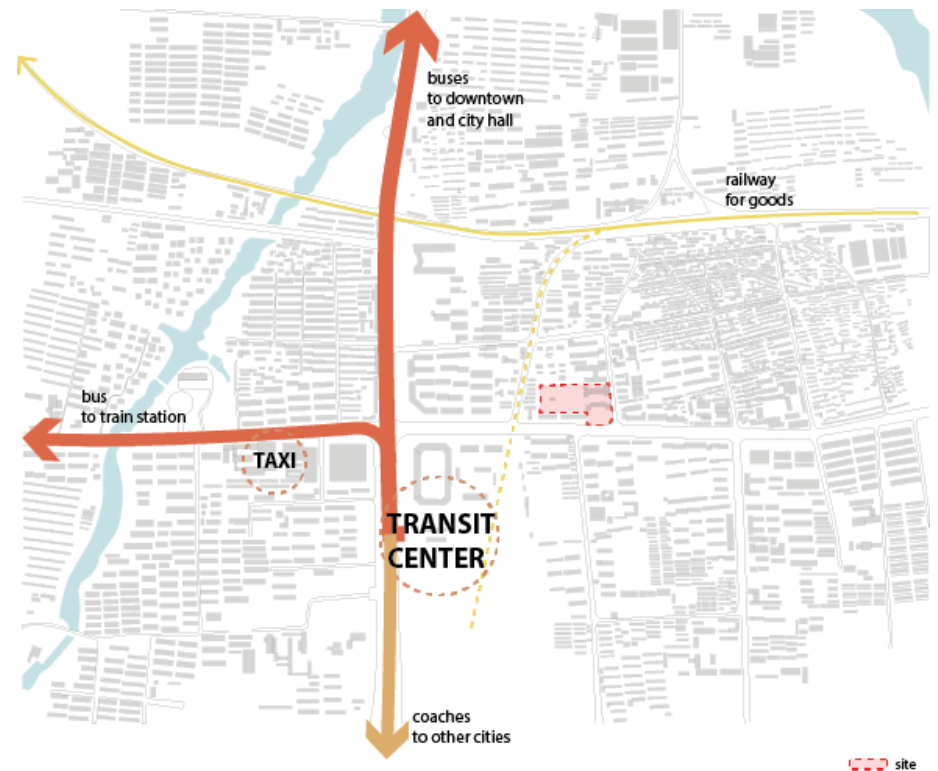


Figure 27: Transportation diagram

THE CHOICE OF THE SITE

According to the thesis aim, to gather people most and encourage people to use the facilities, the site should locate at a walkable spot or at least a place that is easy to reach by public transportation. Considering the size of the town and people's daily life, the chosen block is on the edge of the old and new districts, in the center of the old town with several residential blocks nearby. It is near the bus stops and it is easy to get by bike or by foot for local people. On the south of the block, the 6th Road is the main Road in the town, where markets and commercial activities happened most. There is even a night market happened on both side of the Road as well. Thinking of using an adaptive reuse method, the two abandoned buildings on the corner and the uncultivated land in the middle are good choices of the site to develop.

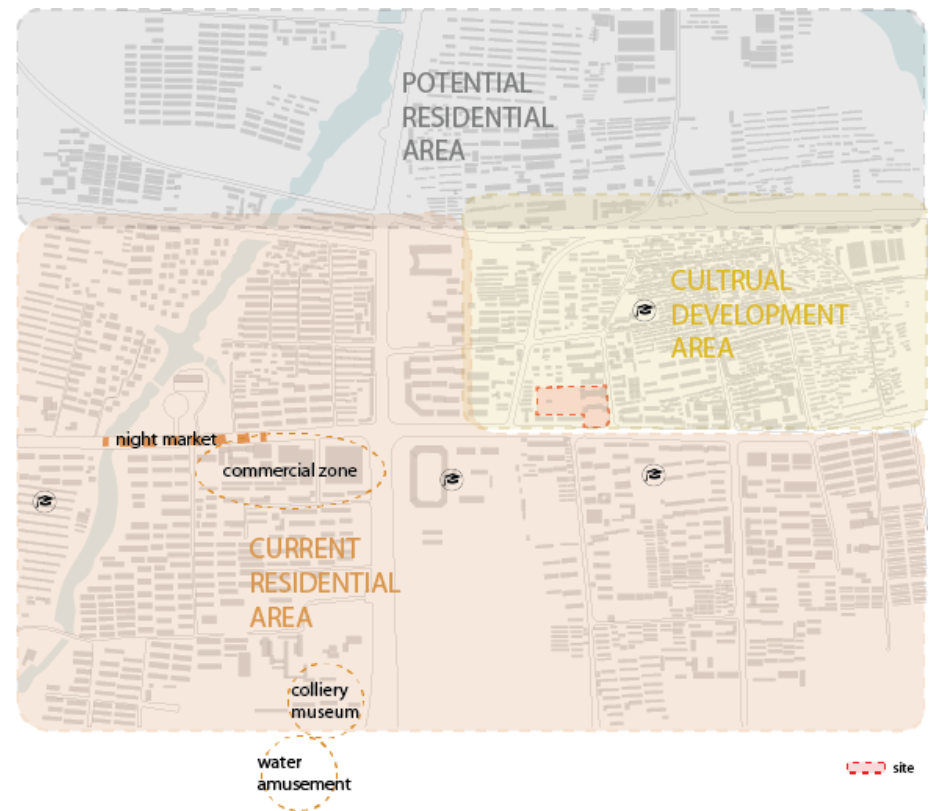


Figure 28: Residence zone and people's main activity zone

NEIGHBORHOOD

The whole German and Japanese concession was nominated as a provincial historical preservation area in 2006, which contains most of the main buildings built at the Wartime. In 2013, it became one of the national historic preservation spots.

The site is located in the southwest corner of the historic preservation area, which is between the 3rd Road and the 6th Road. On the north, it was the first coal well-mined by the Germans and was kept in use until recently it was closed. The original Gothic church was located between the colliery and the hospital, but it was demolished in the 1960s. Nowadays, people could still see some German-style buildings in the social welfare department there. The train station and other facility buildings are on the east of the colliery, which is abandoned for years.

Around the site, there are several existing buildings. Walls about one floor high separated the block into different parts. On the south of the site, two buildings located next to the 6th Road were the condominiums owned by the former hospital staff and now owned by individuals. In the southwest corner of the block, a transformer substation still in use, but the residential houses on the north of it are already abandoned. Some of the houses have already been demolished in the west part of the site. On the north of the site, two groups of buildings were listed in the historic preservation category. One has five elongated one-floor houses, and the other contains 14 tiny houses and cabins, which are usually in pairs with a tiny courtyard. These buildings are used initially as officer houses and then became nursing and kindergarten accompany the four hospital buildings built on the southeast corner of the block. After that, it became a private hospital before it is closed.

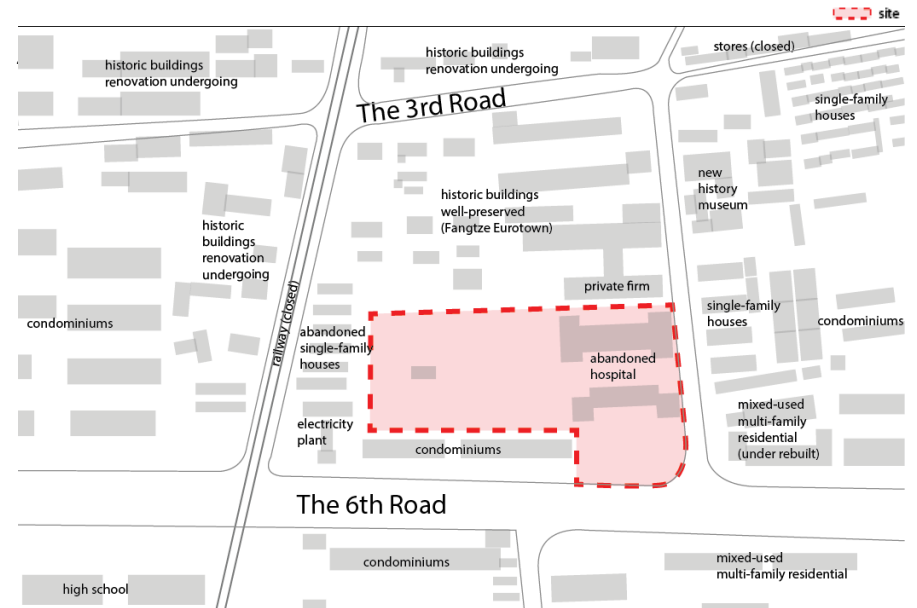


Figure 29, 30: Site information

BUILDING INFORMATION

The four buildings on the southeast corner of the block used as a military hospital in the late 20th century, and then the hospital moved with the military campus so that the buildings were left. The back two buildings were used for other services, and the front two served as a private hospital for several years until that moved as well. Another company uses the back two buildings, but the front two are abandoned at present. The wall at present separates the two parts.

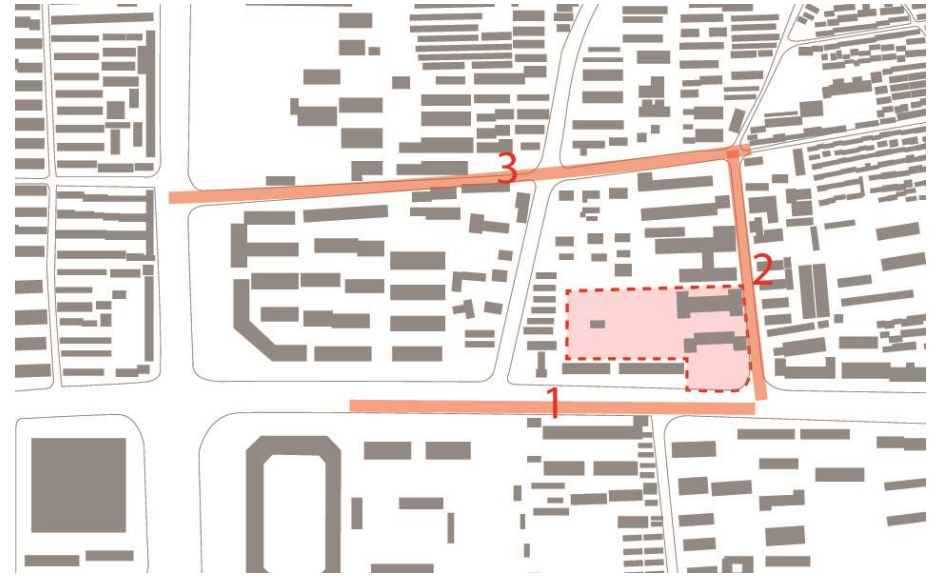


Figure 31 Map of the street view



Figure 32: 1. Street view from the Sixth Road



Figure 33: 2. Street view from Wenhua Road



Figure 34: 3. Street view from the Third Road

WHY REHABILITATE

1. As illustrated before, the two abandoned buildings are built in the latter half of the 20th century, and the structure is brick with concrete. Although the windows are all broken, the main structures of the buildings are stable enough to reuse. Therefore, the buildings could be reused after some refurbishment and reorganization of the interior space. That could save a large sum of material and do a favor to the environment.

2. The two hospital buildings are typical samples of how buildings are built in the 1950s. The main interior corridor connects all rooms on both sides of the building. Three stairs are in the building, one in the middle, two on each side of the building. Recently, this type of building is reducing, because many of them are demolished and there are new buildings built. One of the reasons is that it is not old enough to be protected and not new enough to attract people to live. It is a challenge to keep the building under these circumstances, but some of this building type should be kept as evidence of that time.

3. The old building is one of the leading hospitals in the town, and in many people's minds, it carries memories along with the old district. Keeping the buildings could let the memories kept along with the descendants. The older people could tell the stories to the young people and let them know how post-war life was in the district. That is one of the ways that could encourage the population and reactivate the neighborhood because the memories link the history and the future.



Figure 35-38: Site pictures

DESIGN

PROGRAM CHOICE

According to the site analysis, a large number of sites are all residential blocks, with an additional building in every district. These buildings are usually empty but could be developed by residents into different programs. Therefore, sometimes programs could be added to and let people develop by themselves. Besides that, some essential educational programs are lost, even though there are several schools nearby.

People's daily life – for adults, besides works, a workout space is lack from this district. Some exercise facilities are installed in every district, but that is not enough for a heavy workout. For retired people, their time is much more than other ages, and some activities like Chinese Chess and Taiji are popular among them. For young people, one of the leading facilities they need is space for after school time. Some study rooms or after class courses could happen here. What is more, exercise space should also be added. For the community, some small lectures could also be held here.

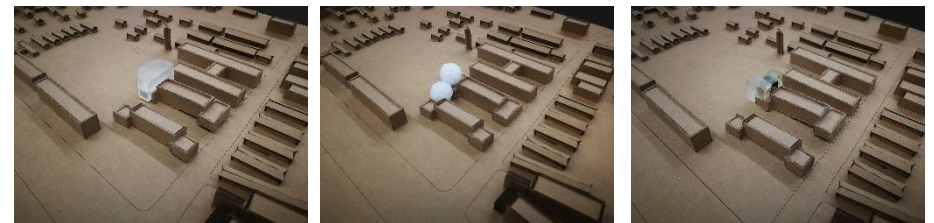
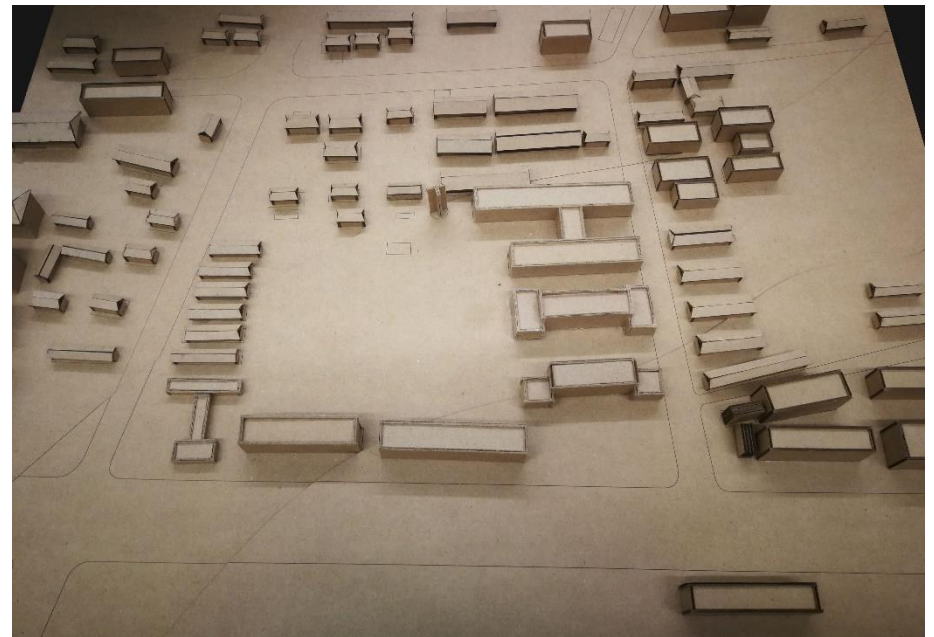


Figure 39: Site model

Figure 40-42: Schematic development of the new construction

“After dinner activities” – it is a particular time for all ages. People are willing to go out and walk after dinners, which usually happen from 5 pm to 7 pm. Children will play together except their homework is not finished. There is a large sum of people exercise at a square or an ample space with music. The square dance is one of the most popular exercises in China. Clues show that once there is a program added at night, there could be people gathered. One example is the water amusement park in the south of the town. Some programs could be added to the project so that the building could be used during night time.

Education programs – two of the educational programs lacking in this town are a library and a gallery. A library could do more than its original purposes. It is a resource space for all ages, and it also could be a space with reading rooms for adults and children. A gallery is not only to gather local and global arts and collect memories, but it has more functions such as cultivate people’s aesthetic. All in all, the settled programs are library, gallery, study rooms, exercise rooms, playground, a lecture room, rooms for interests’ courses, such as ceramics and Chinese chess.



Figure 43: Site plan

DESIGN DESCRIPTION

There is a large gathering space when people are entering the building, and they could see roughly how the programs are oriented. The ceramic course and Chinese chess course are on the left, which have the doors connecting to the outside, in order to get more interaction with the outdoor space. On the right, a reception space guides people to the lecture hall. There are rooms for small meetings and storage. The library is designed to fit into the old interior space, which has many same offices in the middle of the building and two large storage rooms on each side. Children's library is on the ground floor, which is organized to be more user-friendly to children. The interior space is designed with a curving wall so that it will not have sharp edges that might hurt kids. The climbing space and many places that could be seated attract children to come. The old doors and the front walls are removed so that all the offices are changed into one open space with bookshelves put on each side. The left dividing walls not only support the structure and the bookshelves but also provide a semi-private space for people reading there. The glass wall on the second floor makes the space transparent and could be seen through but leave the sound outside the library space. A bridge connects reading rooms in the back building and the library in the front. Different sizes of the rooms give people choices. Under the reading room, a prominent public space with a gathering function is on the right of the building. A café is located next to the side door. If people enter from the side door, they will experience the café, the public space for talking, and then come into the private study room. The designed sequence is from public space to private space.



Figure 44: Lobby view in the front building



Figure 45: Library interior view



Figure 46: Section

The gallery is on the public gathering space, with a collection of paintings and old furniture. It also could hold a personal exhibition with the lecture hall and the gathering space, together to introduce whole progress. Also, the gallery space interlocks with the public room, in order to give the space more conversation. The program is located in the newly built part that a glass wall is extruded from the site and intrigue people on the road. During the night, the light from the gallery could also be a spot to attract people into the building.

The exercise program has its entrance in the back of the building. The program does not connect with other programs, but doors are open to the outside playground, which is in the west of the site. It is card control. Based on the popularity, some activity programs are put into the program, such as table tennis, volleyball, badminton, basketball (outside), soccer (outside), yoga, and the exercise room with facilities. Some new programs are also added to give more choices like a sauna, racquetball, and rock climbing. The Taiji program is located on the top of the building. One for fresh air, another reason is for a higher view.

In all, the circulation is trying to be more diverse and interlock than the former one but still can clearly show people where their destination should be. Under this circumstance, the programs are gathered as tight as possible on the whole site and provide efficient ways for people to enjoy them.

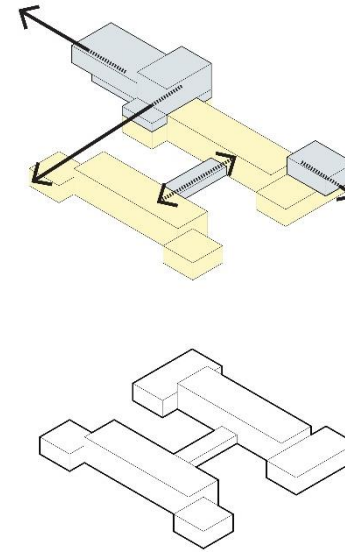


Figure 47: Program organization

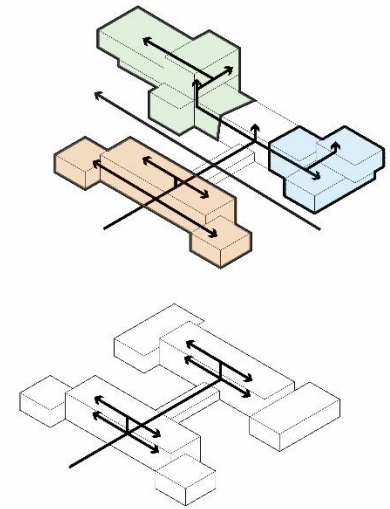


Figure 48: Circulation diagrams



Figure 49: Long section with gallery on the right and sports rooms on the left

The change of the gate and the courtyard aims to invite people into the building. The former entrance has a tree bed in the middle, and all the cars circulated from the gate to the front buildings. It is the right way for the hospital since it clear the way for the ambulance and the trees provide a semi-private space from the hospital to the public road. However, for a community center, the more critical function is to invite people into the building and use it. Therefore the tree bed is removed, and a fountain is added into the courtyard. A fountain could be a place for young people to play with, and a bright view through the courtyard to the building makes people know what it is and attract people into the building. Moreover, parking is added on both sides of the courtyard, one for cars and the other for bicycles. The side door is opened on the Wenhua Road, going through the bridge which connects the two buildings and providing another choice for people to enter the site, especially when the café is opened next to the side door with an outdoor patio for sitting.

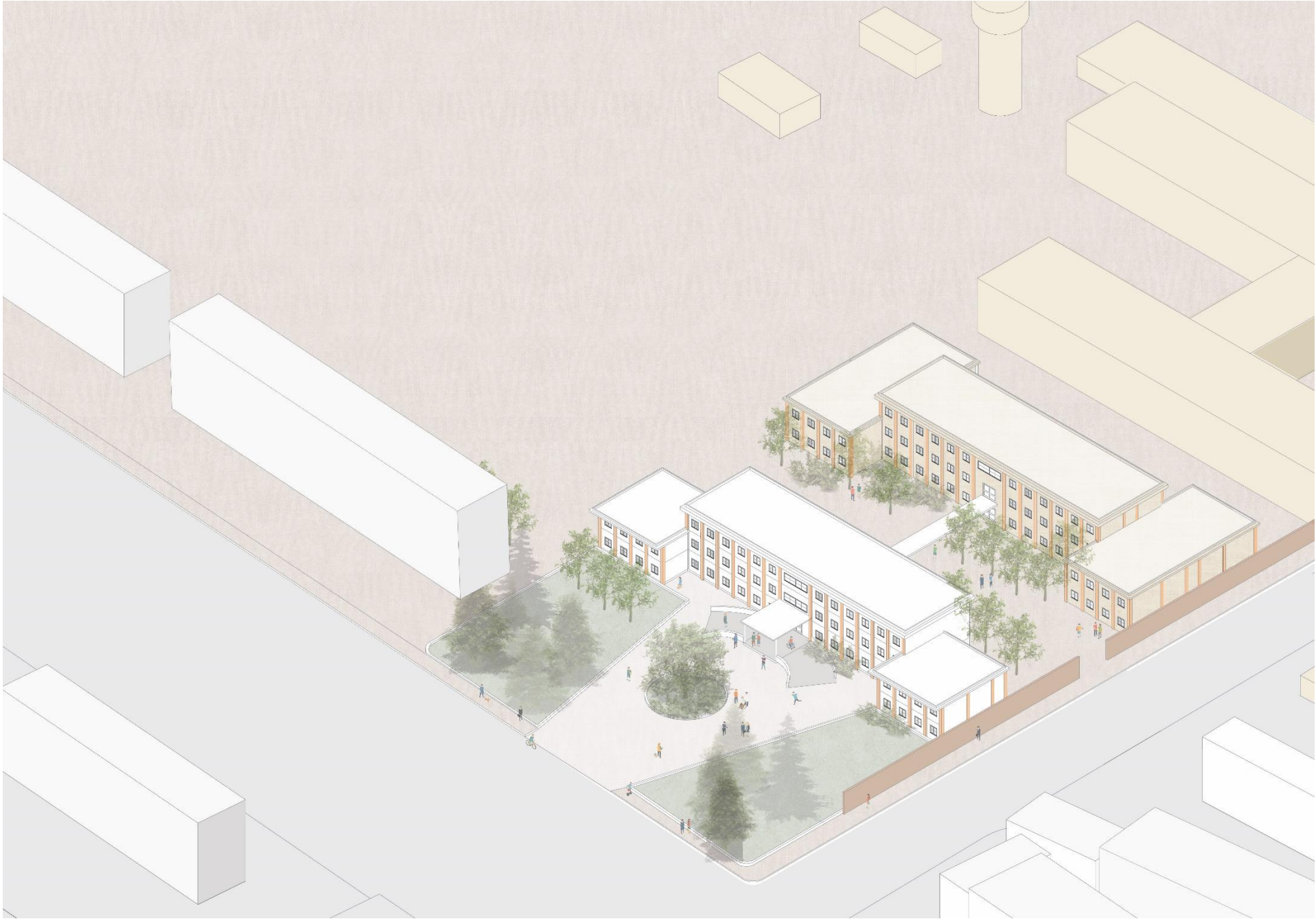


Figure 50: Axon view of the existing site

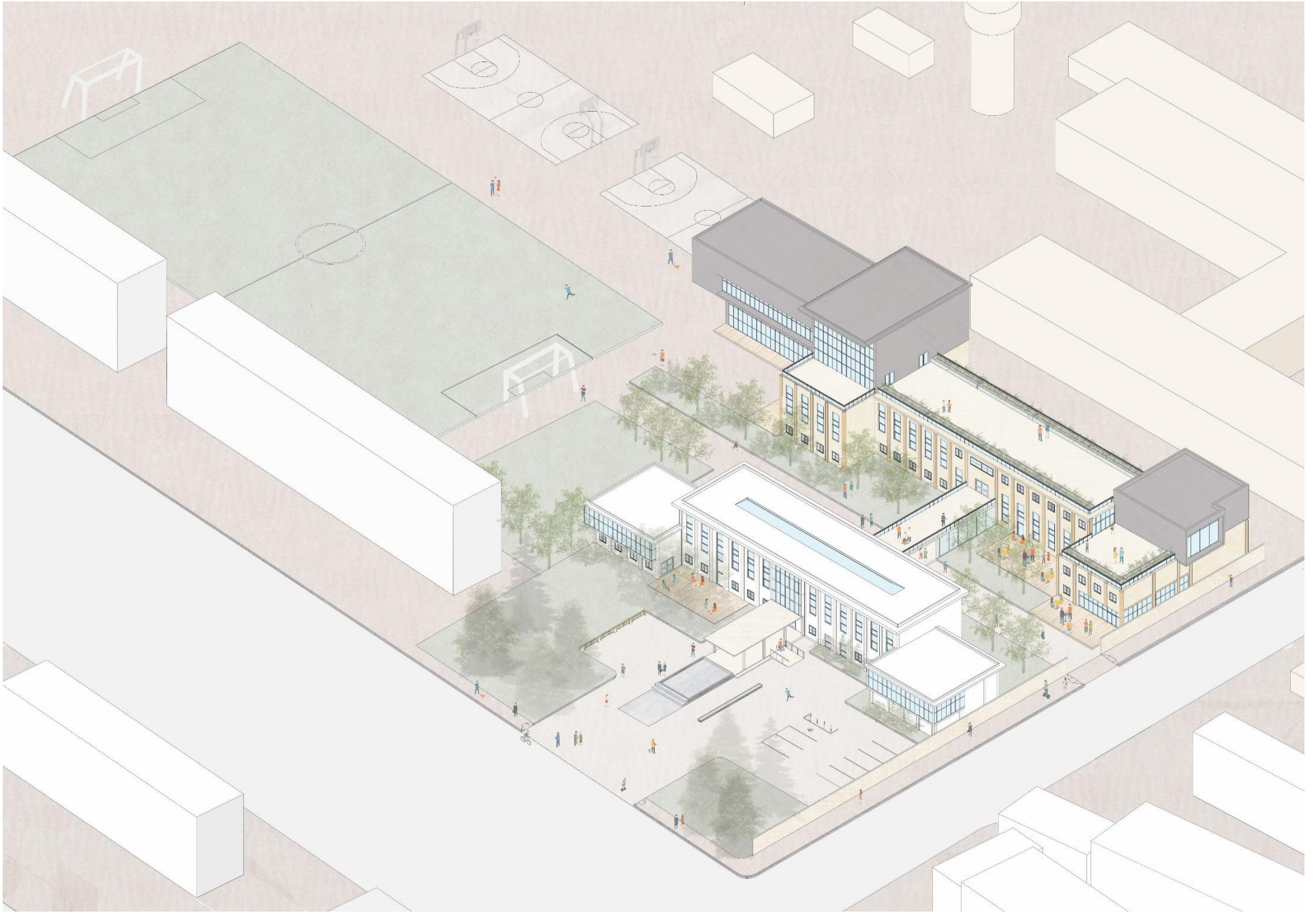


Figure 51: Axon view after refurbishment

For the landscape, because of the size of the site, there should be some light landscape design. The former uncultivated land transforms into the playground, so there is not much more to put. Nevertheless, some benches could be added to provide some spots for people watching the games and for parents whose children are playing on the ground. Storage space could collect some seats which could be used in some matches. What is more, the walls mentioned in the site analysis are one of the main points in the landscape design. The wall on the back of the site dividing the Fangtze Eurotown and the wall could be demolished because both of the two projects are open to the public; there is no need to separate one from the other. Also, the connection could encourage more people to visit both sites. The wall on the back of the building could be kept since it is the division of the community center and the existing company. It does not have too much space in between but could be the right spot for a little garden with a wall as a background view, which could be seen on the ground floor where the gathering space and café located, same as the wall between the Wenhua Road and the community center. The wall landscape also has a water system that connects with the fountain on the front courtyard. The water is one of the themes that connect all the programs in the project.



Figure 52: Looking to the courtyard from the back building gathering space

Since the former two buildings are preserved, the outside texture does not change too much. To make the front building integrated with the surroundings, the white color of the facade is kept to fit the color code on the street view; the back building keeps the light yellow color to adjust to the historically preserved site on the back. The new construction part uses more dark colors with aluminum, glass, and steel. The steel is the main structure, which is a material more and more popular in recent years compared to concrete. The dark color shows a contrast with the surrounding buildings during the daytime. During the night, the new “cubes” are lighted by the interior lights, and the lighting could be seen from outside because of the glass wall. The two methods could both make the new construction as the “beacon” of the project. In order to reduce the effect of the sunlight and maintain the interior lights’ comfort, some of the glass walls are pushed back to make some shelters to prevent light, and some of them use facilities to cover during certain times. There are a rainwater collecting system and a roof garden, and the collected rainwater is used to irrigate the garden and to the toilet.



Figure 53: Night street view

Plans:

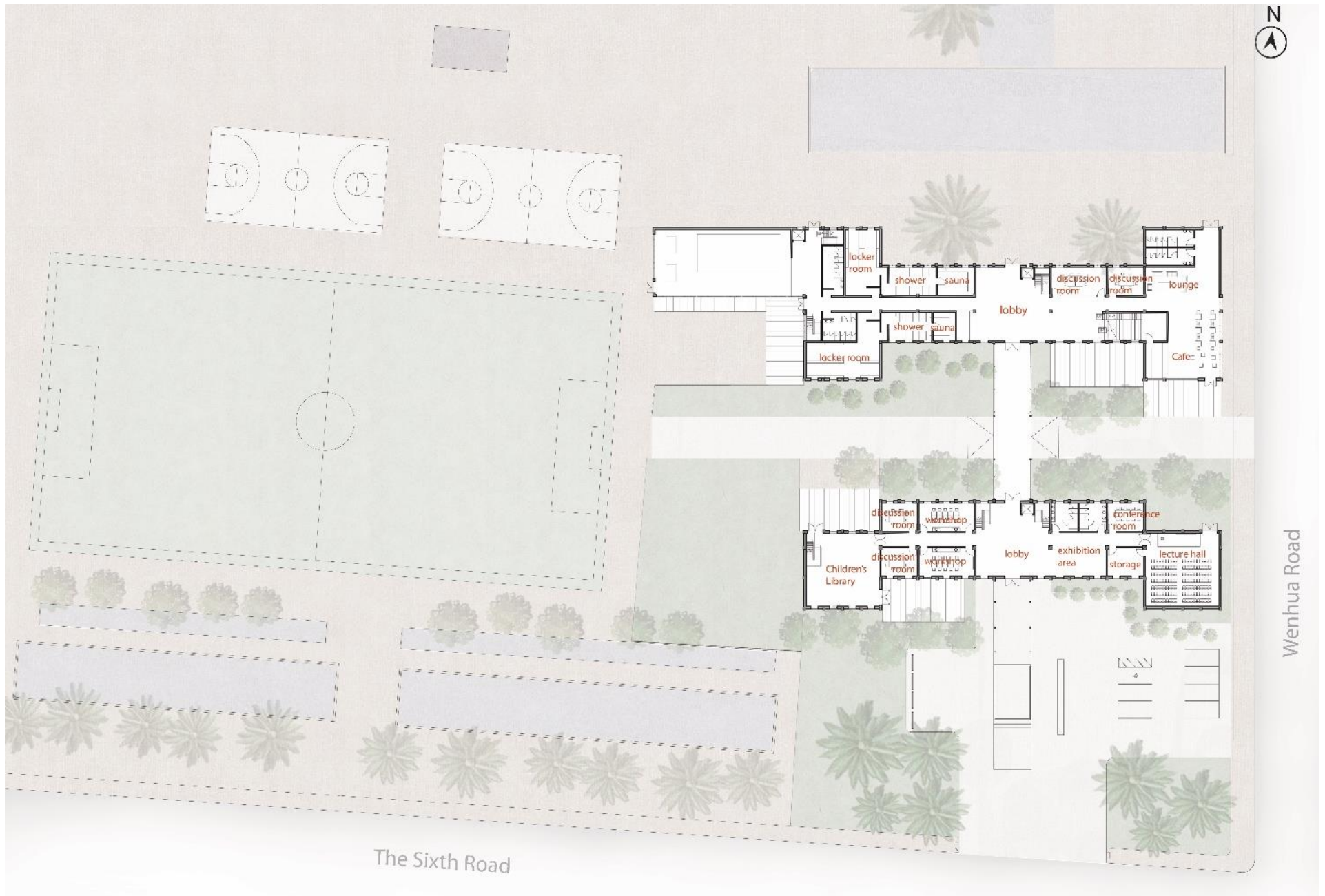


Figure 54: Ground floor plan

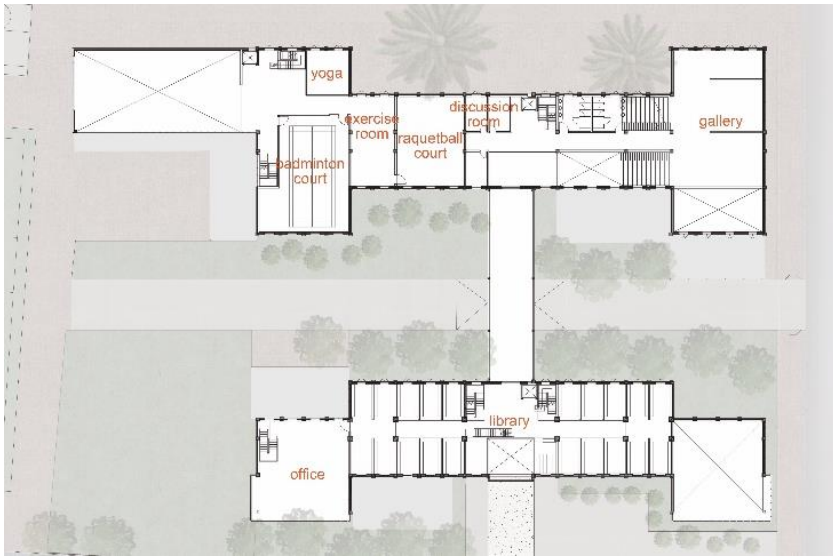


Figure 55: Second floor plan

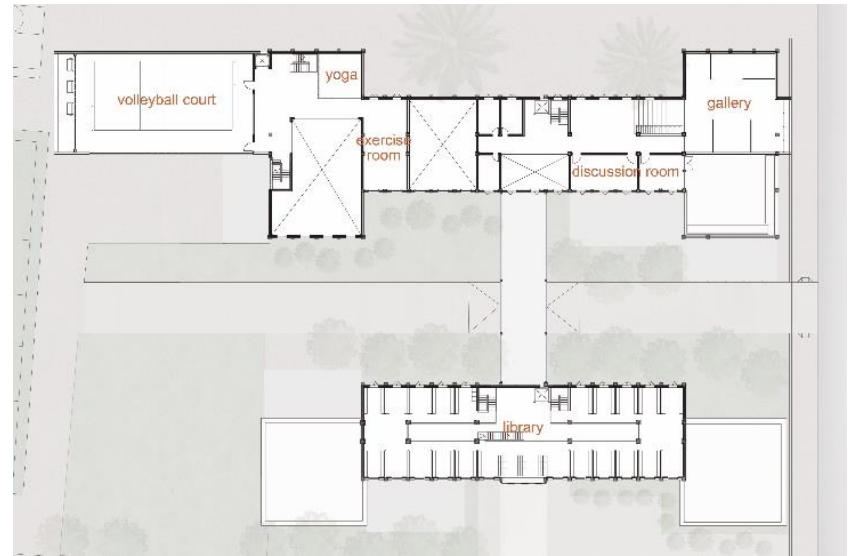


Figure 56: Third floor plan



Figure 57:
Side entrance
view



Figure 58:
Side entrance
night view



Figure 59:
Courtyard view to the
back building



Figure 60:
Evening view of the
playground

CONCLUSION

INCREASING POPULATION. With the problem of local population decrease and the increased population of planned potential residents, it is a question for the town that how to manage these two groups and get people involved in the neighborhood construction. Since the big economy environment is hard to change with a design, but a design idea at least could help people living here enjoy the neighborhood better. That is one of the aims of the thesis. Therefore, for both the old residents and the new coming residents, a lively community center could be a suitable choice to start.

ADAPTIVE REUSE AND FITTING THE CONSTRUCTION TIMELINE. The question of how the new construction integrates with the local buildings. It is not an ancient city, but with clear building construction timeline. The local single-family houses happened almost at the same time with the colonial constructions, and then it is the new construction of 3 or 4 floors. After that, some new buildings with a dynamic façade and stable structure came out. Therefore, it is no need to put an advance or vintage design in this district. The best is to follow the timeline and build a current construction type that the neighborhood needs with the most simple and straightforward design. That also saves the budget as well. What is more, some attractive elements are added to the building.

HOW TO REACTIVE THE NEIGHBORHOOD. William H Whyte said, "People will sit where they can sit." Same as the building, people can gather where they can gather and play. That is why there are many group activity programs are created in the project. The previous example is the community center in downtown, which people have no idea whether this will be fully occupied or not when it has been built. However, it is one of the most popular centers in the city at present. Based on that, the community center could have the same situation.

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Appendix

Additional site photos:

Part 1 Fangtze Eurotown



Part 2 View of the railway next to the site



Part 3 Single family houses in historical district

