



CONTEXTUALIZE

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Thesis Book 2020



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CONTEXTUALIZE

— Cultural exhibition design for
the Comb Museum

A thesis submitted in partial fulfillment of the
requirements for the degree Master of Design
in Interior Studies [Exhibitions & Narrative
Environments] in the Department of Interior
Architecture of the Rhode Island School of Design.

By

JIAAI HE

2020

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CON·TEX·TU·AL·IZE

To consider an idea, event, activity etc together with everything relating to it in order to understand it better.

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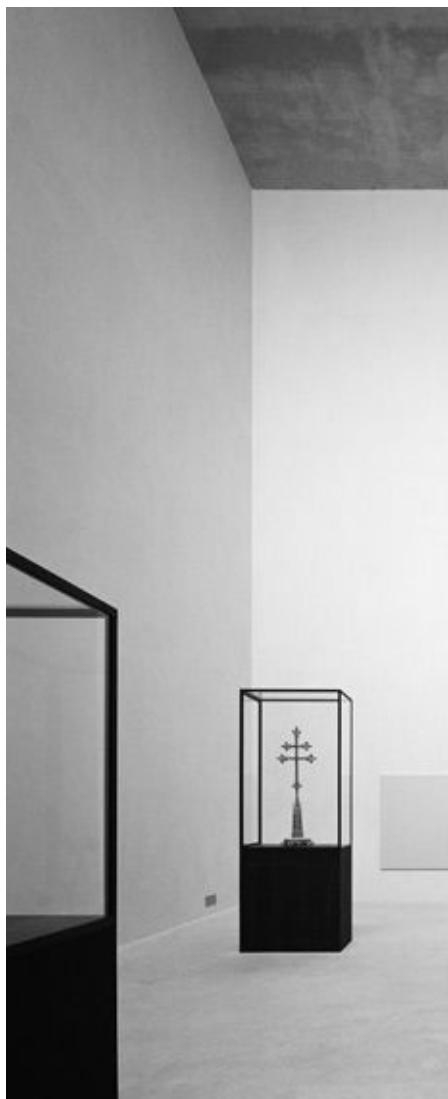


CHAPTER I

BACKGROUND

WHEN YOU ARE VISITING AN EXHIBITION,

WHAT ARE YOU LOOKING AT ?



Kolumba Museum
Köln, Germany

Museum is the public community space of the city. It is a part of the city and a continuation of the urban space. Architects complete the mission of inheritance through architecture and make people closer to history and art from the perspective of architecture itself. We as the designers, should attach importance to architecture, but at the same time should not neglect the function of museum. The communication between objects and people is the main purpose of the space, including the architecture with people and more about the displayed objects with people.

ABSTRACT

Museums, as a continuation of the urban environment, enrich people's recreational life and also carry the mission of education. Museums protect culture outside a textbook and make history closer to people's lives. However, the present museum has not reached an ideal state for the expression and embodiment of cultural objects.

Time and history shape the objects, and the objects inside a museum record and memorialize the period of their creation. Stories and contest behind cultural objects' creation are integral to knowledge and understanding. What do we remember after a museum visit? **Displaying the full range of historical content to the audience pays respect to the cultural object and to the culture. The task of museums is to communicate and generate an intimate connection of information to the public in order to have the**

exhibition engage viewers in new conversations about the meanings of objects.

Audiences will be able to deepen their understanding of the object from different perspectives without prejudice. In view of the relationship between museums and cultural objects, my thesis questions existing display methodology and how museum could reveal complexities of history in order to bring honor to even the smallest cultural object for audiences to see the layer by layer social context behind it.

This thesis will emphasize the relationship between the audiences and the displayed object, allowing people to pause for a moment in front of the object to experience it within historical context. To balance the value of the cultural object and the stories behind it, the exhibition will work on the display system to connect the information with the exhibits thus enable audience to

apply the stories onto the object. The thesis proposes a special museum for the double-sided wooden comb from my hometown Changzhou, China, as a prototype for cultural objects. Settled in a two-story building along the Grant Canal, the museum will take advantage of the natural light and the existing building. Distracting and transforming the light, a large string installation will direct people's attention to the displayed combs. Creating a spatial experience for the viewing public, the strings will connect the objects with the content on the wall to guide people to have an integrated understanding of the social context hidden by the little wooden comb.

Combining with other regions and their cultural history, this mode of presentation can be extended to any region to contextualize the cultures and help people better understand the larger stories by providing people with a kind of autonomous way to explore.





Cultural objects are a carrier of context, which carries information about human life in a specific moment of the historical process and in a defined environment and socio-political condition. The task of museums is to communicate and show the connection of those information embeded in the object to the public in order to have visitors engaging in new conversations about the hidden biography of objects.

Image Left: British Museum, London, UK

Image Right: Design Concept

INTRODUCTION



A Museum is a place for stories. The cultural objects inside record and memorialize the period of their creation, and are the witnesses to a unique period of history. They passed from one generation to the next, not simply because they are elegant, but because they have inherent meaning and have been deemed worthy of preservation. As the recorder and witness of history and culture, museums need to make the exhibits weave into their background environment, so that the audience can fully perceive the context from different perspectives. In current museums, these objects are trapped in glass cases. They are static and isolated, with an invisible wall between them and the outside world, isolating their communication with the audience. Sometimes, museums do provide background information on the site, but people could have a hard time to connect the large paragraph of text with the displayed object. Then, when people are visiting an exhibition, what do they see? An object? A fine work of art? An exhibition is more than displaying items.

The current situation provokes the questions about how the objects can speak out to our current society, to the world that came before us, and for the possible future. Ultimately, it would be responsible and necessary for viewers to see the layer by layer large story hidden behind the object through an exhibition, to show the original justice of an object

within limited exhibition space, to make the trivial things in life relate to the broader historical and social context, and thus create greater significance. This thesis investigates the dialogue between the viewers and the displayed objects, to find the culture voice through the audiences' discovery, contemplation, and connection.

The double-sided wood comb is a kind of folk-art craft in my hometown — Changzhou. The comb is small in size but contains a long history of 1600 years. It has witnessed the changes in human life and has seen the rise and fall of the city along the vicissitudes of history. The comb exhibition will be held in a house among the Comb Lane in Changzhou, which was built hundreds of years ago along the Great Canal as a concentrated comb production workshop. Starting from the comb, the exhibition will introduce the entire comb manufacturing industry. It will showcase the relationship between the comb and human life, then explore the connection of comb and urban changes, and also the reflection of comb to national politics.

Cultural objects are a carrier of context, which carries information of natural and human social life in a specific era, process, environment and conditions. The little double-sided comb is shaped and highlighted by the vivid big story behind it, and viewers need to know the background clues as an entirety.

CHAPTER II RESEARCH

“梳篦世家延陵地”

“扬州胭脂苏州花，常州梳篦第一家”

“官梳名篦”

“文亨穿月，篦梁灯火”

HISTORY OF COMBS



Figure 1
HORIZONTAL COMB



Figure 2
PAINTED IVORY COMB



Figure 3
COMB FROM QING DYNASTY



Figure 4
MONOCOLOR DOUBLE-SIDED COMB

“ 削竹成篦，朝京门内比户皆为 ”

Before the Qing Dynasty, people had the habit of growing hair and only shaving their hair once in their life, usually choosing an auspicious day around the 100th day of their birth to shave their hair. [1] Shaving hair has also been regarded as a shame and punishment in history, which is also from an angle to show the ancient Chinese people attach great importance to hair. Because of this, the tool used for hair carried with a significant meaning of longevity. Since prehistoric times, the material and technique of making comb have evolved to form a culture. My hometown Changzhou is famous for the combs culture that has lasted for hundreds of years. Changzhou, the city of Piling, was a canal port along the Grand Canal. It was prosperous during the Tang Dynasty as recorded in historical books, and the combs from Changzhou were packaged and sent to the imperial ladies.[2]

The double-sided comb is Changzhou's specialty and only produced in this area. It is hard to imagine that a small little comb needs to go through seventy-two and a half steps in its production. According to historical records, Changzhou's comb industry began in the Jin Dynasty, dating back more than 1600 years ago. With the development of the Great Canal, the trade in combs became increasingly prosperous. By the end of the Ming dynasty, comb from Changzhou had become well known

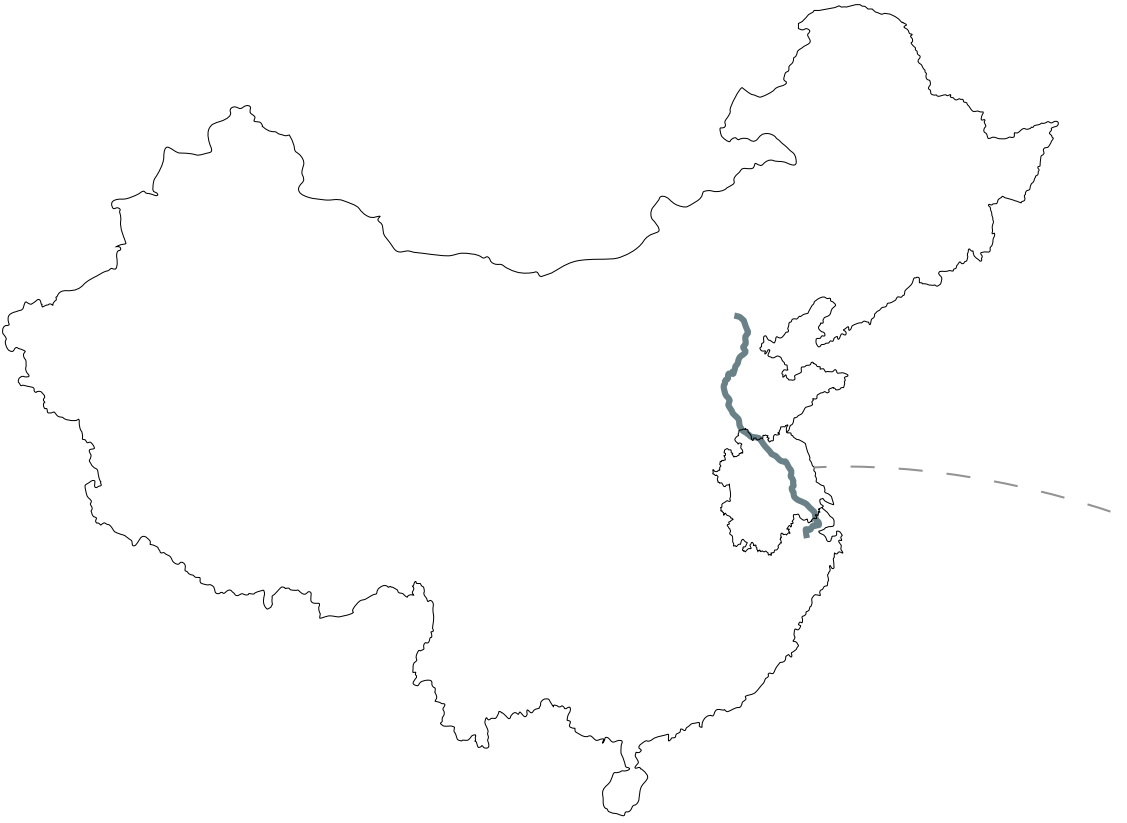
in history. In the Qing Dynasty, the comb became a royal tribute to the Forbidden City. Every year in July of the lunar calendar, local officials would order 60 combs made of box-wood and 60 combs made of bamboo for the royal family through the Great Canal.[3] Since then, it has a great reputation as Palace Comb and become the city's mainstay industry. Artisans carved flowers on bamboo beams, inlaid silver ornaments, and decorated the combs with jewelry, allowing them to gradually move in the direction of art. In the early years of the Republic of China, the export market expanded, and the comb production reached to its peak point at 6 million produced each year. However, as time changed and the royal aristocracy ceased to exist, the development of the comb suffered a blow. When the comb industry declined, the entire city was no longer prospering. With the demand falling down, craftsmen cannot make combs for a living, so some of them turned to other businesses. Later, with the impact of war and the modern machinery industry, the number of old masters with refined skill decreased, and led to a fault in the transfer of skills from one generation to the next. It was listed as National Intangible Cultural Heritage in 2008.[4] The combs from Changzhou have come a long way in history. The changes in combs not only show alterations in this industry but also reflect the development of the city and the country.

[1] Kurt S. Stenn, *Hair: a Human History* (Pegasus Books, 2016)

[2] Genhe Tang, *Changzhou Comb Factory Journey*, vol. 1 (Changzhou: Factory Publication, 1986), 130-132.

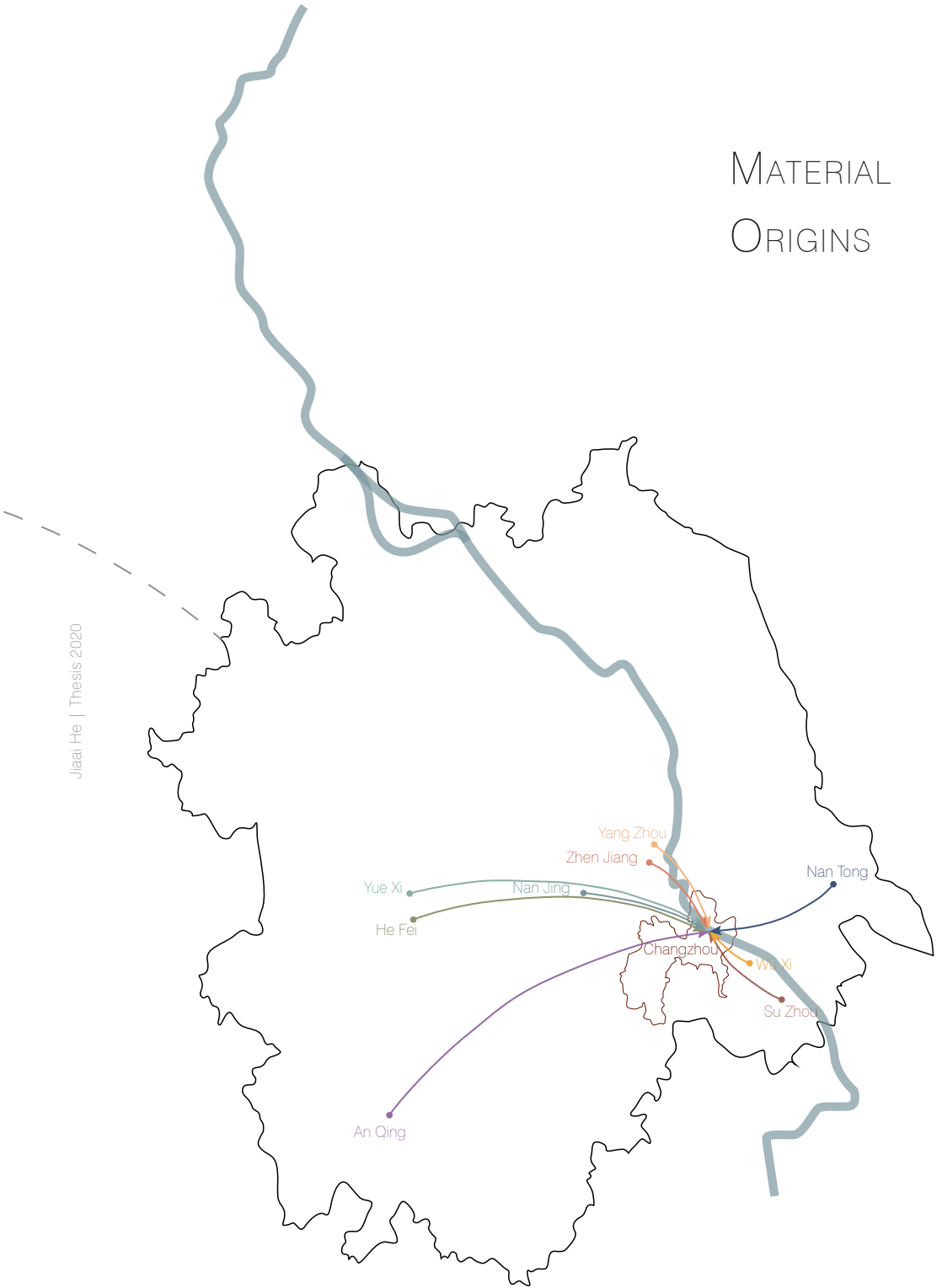
[3] Sun, Facheng. *Changzhou's Comb*. Vol. 1. Nanjing, China: South-east University Publication, 2011.

[4] Local Editing Committee Changzhou, ed., *Changzhou City Journey* (Beijing: China Social Science Publication, 1995),2.



The smooth flow of the Great Canal provides convenience for the material transportation in Changzhou. Changzhou is located in the mid-latitude, the climate is warm and humid, the rainfall is abundant, the sunshine is sufficient, and the four seasons are distinct. All these advantages provide a nice habitat for different kinds of trees to grow and thus provide enough materials for the comb industry.

MATERIAL ORIGINS



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Comb is quite strict to material requirement. It requires the raw material to be fine and smooth, and at the same time, to be firm, so that the comb won't out of shape easily. Nearby provinces like Zhejiang, Anhui and Shandong are also rich in trees, which can provide a steady stream of raw materials for Changzhou comb production. Boxwood, Jujube wood and bamboo are three of the most common materials for the combs manufactured in Changzhou.



BOXWOOD

Mainly in Jiangsu and Zhejiang province, suitable for engrave. Most commonly used for comb production. Box trees grow slowly, hundred year wood can only make small combs, a nice engraved comb need a wood at least 300 years old.

Zi Shi, "Changzhou's Comb in Ancient Time," Daily News, March 13, 2016, <https://kknews.cc/fashion/nm2232.html>)



JUJUBE WOOD

Jujube wood grows in Zhejiang and Anhui. Jujube wood has smooth texture, is another good choice for comb making.



BAMBOO

Grow in Yangtze river basin, firm and flexible. The bamboo from Yixing, the city next to Changzhou, are considered as superior quality for comb making. The combs more than four years, grown on the side opposite to the sun will be suitable for comb.

MAKING PROCESS

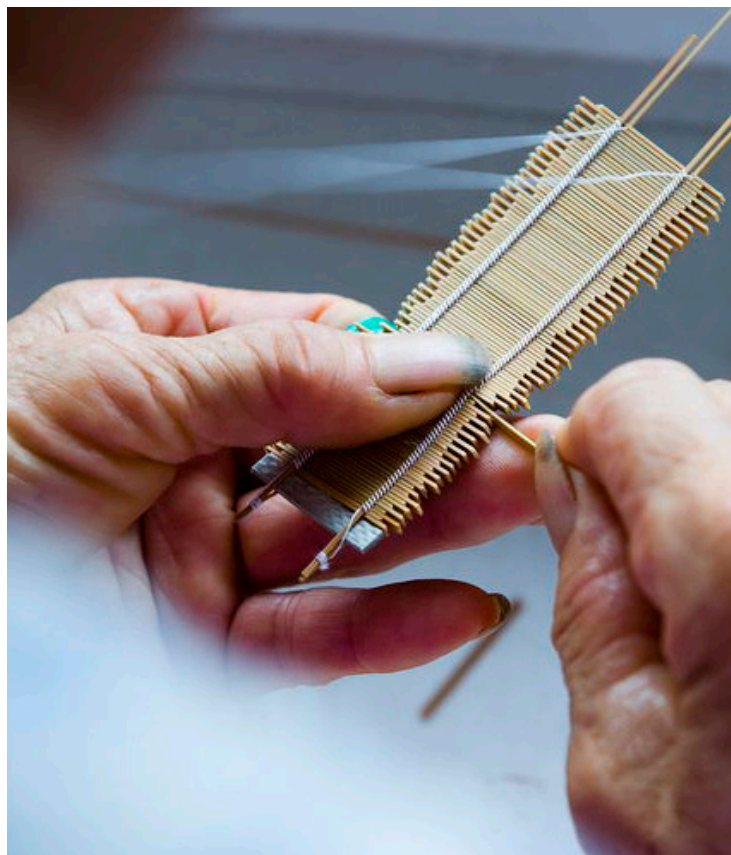


Figure 5

The double sided comb made in Changzhou is been famous for its meticulous and unique production process all around the country. Comb artisans weave their skill and wisdom make delicate piece of art. The process is complex, involving 12 different jobs and seventy-three steps in procedure. From the beginning of choosing the material to the final step of detection, the comb will go through at least a dozen people and each person should finish sets of the operational process. According to old legends, Chen Qizi, the founder of the comb industry, died at the age of seventy-three. Therefore, the artisans considered the number senventy-three unlucky and regarded the final inspection as a half-process. Therefore, the overall making process is considered to be comprised of seventy-two and a half steps.



Figure 6

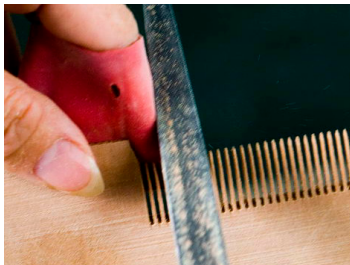


Figure 7

Facheng Sun, Changzhou's Comb, vol. 1 (Nanjing, China: South-east University Publication, 2011)

Image Credit

[5] Peide Yuan, Comb Making Process

[6] Peide Yuan, Comb Making Process

[7] Scott, Comb Making Process

1. 砍毛竹 [CHOP THE BAMBOOS]
2. 锯竹筒 [SAW THE BAMBOO PIPE]
Saw the bamboo pipe into a 20cm bamboo pipe
3. 开竹片 [SPLIT BAMBOO STRIP]
Split the bamboo pipe into 1.5cm pieces according to the axial and radial direction
4. 劈竹黄 [CUT THE BAMBOO INNER SKIN]
Cut off the bamboo inner skin, and keep green bamboo filament in 0.25cm thickness
5. 开篾丝 [MAKE BAMBOO FILAMENT]
Split the green bamboo filament into 3-3.5mm silks
6. 劈二黄 [SPLIT BAMBOO'S 2ND INNER SKIN]
Split 0.25cm of the green bamboo filament to another layer of the bamboo inner skin.
7. 晒篾丝 [DRY THE BAMBOO FILAMENT]
Drying the bamboo filament in the sun.
8. 锯竹筒 [SAW THE BAMBOO PIPE]
Sawing bamboo pipe to make bamboo beam.
9. 开梁坯 [MAKE THE BEAM PROTOTYPE]
Split the beam makings into 1.3-1.4cm bamboo strips.
10. 劈竹黄 [CHOP BAMBOO INNER SKIN]
Chop the bamboo inner skin over 0.6cm thick.
11. 铡篾梁 [CUT THE BAMBOO BAR]
Cut the bamboo bar according to the standard of 1.25cm
12. 倒梁脚 [TRIM THE SQUARE ANGLE]
Trim the square angle to round corner with crescent shaped cutter.
13. 拉竹青 [CLEAR THE BAMBOO GREEN]
Clean the bamboo green on the beam surface, which is smooth without knife marks.
14. 晒梁坯 [DRY THE BEAM PROTOTYPES]
Dry the beam in the sun until it turns white.
15. 断骨料 [MAKE RIB BEAMS]
Classify the cattle ribs
16. 煮料 [BOIL THE MATERIALS]
Boil until the grease is removed.
17. 开骨条 [CUT THE RIB INTO STRIPS]
Cut the rib materials into strips.
18. 破酿 [CLEAR THE MARROW]
Clear the bone marrow from the bone



Figure 8

19. 斩坯 [TRIM THE RIBS MAKINGS]
Trim the ribs strips.
20. 拗坯 [SAW THE RIBS INTO SEGMENTS]
Saw the ribs into 5.9-6cm segments.
21. 镟面齐口 [FINISHING THE SURFACE]
Make corrosion treatment on the finished surface.
22. 倒角 [TRIM THE CORNER]
Trim the angles to round corners.
23. 割兀 [CUT THE BONE LINE]
Make two 0.2cm lines in the cutting bone.
24. 矾骨档 [POUR ALUM AND HYDROGEN PEROXIDE]
Pour alum and hydrogen peroxide onto the bone block.
25. 绞漆 [EXTRACTION OF LACQUER]
Extract juice from lacquer tree.
26. 拌漆 [MIXING THE LACQUER]
Mixing lacquer with water
27. 熬桐油 [BOILED TUNG OIL]
The boiled tung oil is mixed with raw lacquer.
28. 洗染梁 [WASH THE DYEING BEAM]
Washing the dyeing grid beam.
29. 描绘 [DRAW]
Draw patterns on the grate beam.
30. 涂色 [PAINT]
Paint the pattern with proper color.
31. 套金印字 [GOLD PRINTING CHARACTERS]
Set of gold printing characters and engrave them on the bridge of nose in a similar way.
32. 漆篾梁 [PAINT THE BEAM]
Paint the surface seal coat for the beam.
33. 阴干 [DRY THE BEAMS WITHOUT SUNLIGHT]
Dry in the box for 2-3 days.
34. 晒篾梁 [DRY THE BEAM IN THE SUN]
Put the beam under the sun for three days after the color is steadily dyied in the box.
35. 煮篾 [BOIL THE BAMBOO STRIP]
Put the strips into the iron pot and boil them thoroughly.
36. 拉篾 [STRAIGHTEN THE BAMBOO STRIP]
Wash the cooked strips with water and straighten the smooth bamboo strip with a big knife.
37. 铡篾 [CUT THE BAMBOO STRIP]
The cutting strip shall be in line with the 0.22 standard.

38. 吊黄 [HANG THE BAMBOO INNER SKIN]
Hang the bamboo inner skin into a needle hoop.
39. 铡青染齿 [CUT BAMBOO OUTER SKIN AND DYE]
Cut bamboo outer skin with a big knife, put it into the dye and simmer for 1.5 hours
40. 拗齿 [TRIM THE BAMBOO STRIP]
Trim the bamboo strip on the blade
41. 绕线 [WRAP COTTON THREAD AROUND THE BAMBOO PIPE]
Take a piece of bamboo silk, bite it open with your teeth, and then use your fingernails to cleave it through the bite, which called "making the proto".
42. 掐榫子 [PINCH THE PROTO]
Fold the proto strip into 116 thin strip teeth in 11cm.
43. 调漆 [MIXING PAINT]
Prepare paint for glue the combs.
44. 齐口 [TRIM THE OPENING]
Trim the proto strip with scissors.
45. 断梁 [BREAK THE BEAM]
Make a mark on the beam for following break step.
46. 拗梁 [BEND THE BEAM]
Bend the beam makings into two.
47. 摆漆 [LACQUER]
Put the lacquer in the middle of the strips.
48. 胶和匡正 [GLUE AND CORRECTION]
Stick the grate beam well and trim the deflection.
49. 锯头 [SAW OFF THE BEAM HEAD]
Saw off the part of grate beam exceeding the length of comb.
50. 扞口 [TRIM THE TEETH]
Cut to trim the teeth of comb
51. 抽线 [Withdraw the line]
Take out the thread when pinching the strip.
52. 剪档 [CUT CIRCLE]
Cut the bone into a circle.
53. 拉直口 [POLISH THE TEETH]
Use a scraper to polish the teeth.
54. 剔漆 [REMOVE THE SPILLED PAINT]
Remove the spilled paint with a scraper.
55. 磨圆头 [ROUND GRIND]
Use a big file to smooth the comb beam head.
56. 扩齿捋光 [SCRAPE THE BEAM AND TEETH]
Scrape the paint off the beams and teeth.



Figure 9



Figure 10

57. 锉齿 [FILE TEETH]
File the comb teeth to the shape point.
58. 打草 [BRUSH WITH THE GRASS]
Brush the comb on the grass.
59. 查破齿 [CHECK THE BROKEN TEETH]
60. 拔换破齿 [REPLACE BROKEN TEETH]
61. 拔换坏档 [SHIFT OUT OF THE BROKEN BEAM]
62. 剪磨骨档 [CUTTING AND GRINDING BEAM]
63. 扞扞破齿 [CUTTING AND BREAKING TEETH]
64. 剪磨骨条 [CUT AND GRIND THE RIB STRIP]
Cut and grind the rib into 0.8cm strips.
65. 锯头子 [SAW THE SQUARE HEAD]
Saw the rib strip into a square head for beams.
66. 镶头 [INLAY JOINT]
Dig holes at both ends of the comb to place the square beam head.
67. 嵌头 [EMBED THE BEAM HEAD]
Embed the square head at both ends.
68. 光头 [POLISH]
Polish the beam
69. 拨齿均匀 [EVEN SHIFTING TEETH]
70. 修磨圆头 [GRIND ROUND HEAD]
USE A FILE TO GUIDE THE WHOLE BEAM HEAD INTO A ROUND HEAD.
71. 扞齿刮档 [SCRAPE THE STRIPS]
USE A SCRAPER TO CLEAN THE COMB.
72. 上蜡抛光 [WAX AND POLISH]
- 72.5 检验 [Final test]

Facheng Sun, Changzhou's Comb, vol. 1 (Nanjing, China: South-east University Publication, 2011)

[8] CCTV Discovery of Traditional Wooden Comb

[9] [10] Langqiao, Traditional Handmade Wooden Comb



LIFE WITH COMB

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Making combs is a process that has been inherited from generation to generation. In the flourishing age of combs, each family has numbers of people engaged in the comb industry. At that time, families were large. The men went out to work and farm, while the women and children made combs at home. "Sitting on a small bench all day, knitting with thread and weaving with fingers, I can't move for a whole day." Guifen said. She is now one of the few comb craftsmen in Changzhou. When she was young, Guifen could make 200 pieces of woven piece in one day. Now, she is getting old, her hands and eyes are not as flexible as before. Now she can only make 50 pieces in one day. Because of the complexity and time-consuming of the comb making process, few apprentices can stick to it. Only the heir of the family making comb in generations still know about those important steps in the making process. At the same time, because the glue used to make the comb is made by each family, the proportion of the paint is different with different firmness, and these secrets can only be passed on to the offspring of their own family.

The Last Craftman, Di Jia, 12
Jan. 2017, www.renwencz.com/2017/0112/198.html.

The comb played many roles in ancient time, from which we can see the social culture and atmosphere at that time. With the development of a commodity economy in the Ming Dynasty, shops specialized in comb appeared. Combs had different prices due to distinctive materials and craft processes. People often tried to use "objects" to show their identity and wealth. Businessmen were fond of luxurious combs inlaid with gold and silver, while literati preferred plain and elegant wooden combs.[1] At the same time, comb was a very popular gift, which sustains the meaning of longing. Comb also had certain private property, so men and women could not use the same comb, and a woman's comb could only be touched by her husband. In Ming and Qing Dynasties, men still had long hair and beard, so that lead combs were popular with men. "The main components of lead comb are lead and tin, which are melted into liquid state, recast into combs

with many medicinal materials, and then boil the combs with the remaining medicinal materials. After three days and three nights of boiling, take them out to dry and put them aside for three or five days, then the lead combs can be used. These combs can achieve the effect of darkening moustache and sideburns." [2]

Another reason for the popularity of combs comes from people's health customs. According to a record in the Journal of life 《摄生纂要》 [3], it is believed that combing hair with boxwood every day can dredge blood and firm hair, and combing hair in the morning can refresh the day. In Li Shizhen's Compendium of Materia Medica 《本草纲目》 [4], there are also diseases that recorded can be treated by combs. Objects are the traces and fragments of human life activities. They had been used by people and had been so close to human body.

[1] Renshu Wu, The Economic Society of the Late Ming Dynasty (Zhonghua Book , 2008), 231.

[2] Renshu Wu, The Economic Society of the Late Ming Dynasty (Zhonghua Book , 2008), 247.

[3] Journal of life , ancient Chinese medical classics compiled by Yu Xiangdou.

[4] The Compendium of Materia Medica (also known by Bencao Gangmu) is a Chinese herbology volume written by Li Shizhen during the Ming dynasty

COMB AND SOCIOLOGY

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"Nüshi Zhen Tu"

Image Credit: Figure 11 "Nüshi Zhen Tu", a Chinese narrative painting on silk that is traditionally ascribed to Gu Kaizhi

COMB AND CITY

Comb as a kind of folk art and as a mark of Changzhou, has been continued for thousands of years. It has witnessed the growth and transformation of this city. Changzhou is an ancient city with more than three-thousand years history. It was called "Piling Yi" in ancient time. It was a post-station along the Great Canal for postman to stop their boat or horse to have a rest. During Qianlong period in Qing Dynasty, the emperor stopped here for several time, so that the station also called " 皇华馆 "(Royal House). Once the emperor walked around the city, he saw the comb workshops among the city and thought the craft were highly skilled.

Since then, every year in July of the lunar calendar, local officials would order 60 combs made of box-wood and 60 combs made of bamboo for the royal family from Changzhou. The appreciation from the royal family made the combs from Changzhou more well-known around the country. As a ripple effect, the orders from the royal family made more nobility interested in the comb and increase the price of the combs. During Qing Dynasty, because of the prevalence of combs in aristocracy, the city was wealthy and prosperous. In the late Qing Dynasty, the environment inside and outside the country changed dramatically. Royal family and nobility were overthrown, and man began to cut down their hair, so that the demand decreased extremely. Few people bought combs, which made the booming manufacturing industry lose its market. Slow sales lead the city into a poor situation.

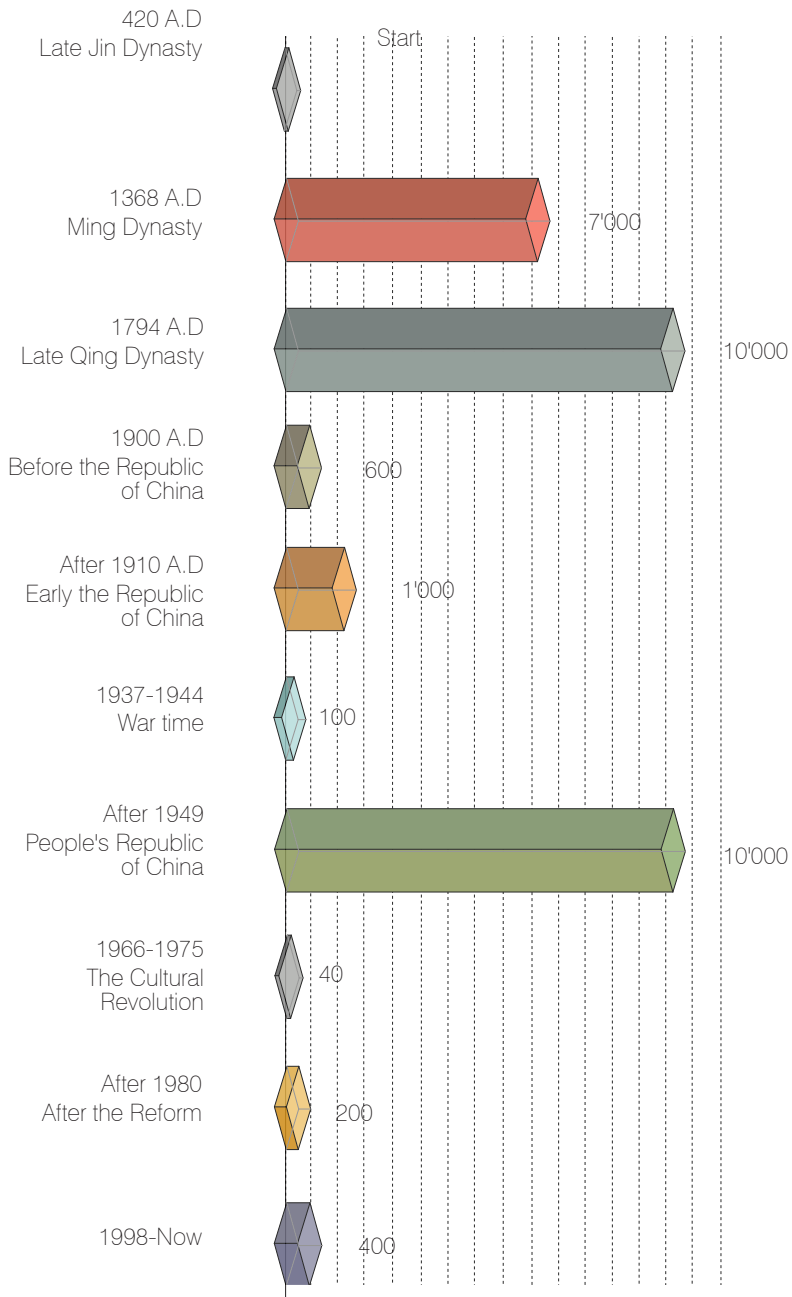
Image Credit: Figure 12
"Jianghu Huixiu"
Traditional Chinese ink painting of the city view
in old Changzhou from
famous artist-Quanbao Ji.



“梳篦世家延陵地”

The rebirth of the comb industry began when the People's Republic of China was founded. In the era of peace, the sales volume of combs had picked up, and craftsmen had re-invested in this industry and brought the peak point for the annual output. After the 1990s, the city turned into industrialization. Most of the making process were replaced by machines so that the urban unemployment rate was rising rapidly. Later, when double-sided combs rarely used in life anymore, the city transformed the comb industry into a handcraft art culture to development the tourist industry and made the combs as souvenirs. Now, the comb and its culture is a symbol for the city.

Amount of People in Comb Industry in Changzhou



Genhe Tang, *Changzhou Comb Factory
Journey*, vol. 1 (Changzhou: Factory
Publication, 1986), 130-132.

Started in late Jin Dynasty, the comb industry in Changzhou had been appeared on historical records. The Hengshun Comb Shop neary by the West Gate founded by Bu's family in 1621 is the earliest record for that. Because of the prosperous development and the sufficiency of material, the comb industry became the city's main business during Qing Dynasty. Chinese society has always been family-oriented, so that when Bu's comb shop succeeded, they pull their relatives all into this field and neighbors started to imitate their business too. Therefore, during Qing Dynasty, all most all the families near the West Gate and South Gate area were making combs.

In Qing Dynasty, the royal family got interested about the combs. People in Changzhou use combs as contribution for the royal family. Empress Dowager Cixi also paid special attention to Changzhou's combs. The Changzhou Ivory combs Li Lianying used to comb the West empress dowager's hair are still in the Imperial Palace in Beijing. Because of the appreciation and demand, craftsmen had an exhusting but wealthy life at that time. However, time passed

into a war period. From 1900 to 1944, because of years of war, the comb street was destroyed and most of workshops suspended production. The area near the West Gate and South Gate became an empty district. After the establishment of the People's Republic of China, the government restart the unique industry and encourage the talented craftsmen to back into the production. After a short peek point in 1950s, the Cultural Revolution completely turned the industry down. Luckily, the comb making skill had been inherited.

When the city stepped into an industrial revolution, factories increase the work efficiency and so that the production can be sell overseas. Because people gradually reduce the use of combs and Changzhou become a tourist city, the city changed the strategy. The ratio of trade in goods was used to be over 55% and tourist souvenir 10%, but now move than 90% are tourist souvenirs. Since the development of the Jin Dynasty, the comb has changed the urban pattern of Changzhou, and the city has also witnessed the development and inheritance of the comb.

The little comb closely related to the large country. The Grand Canal connected the entire country and also provide a precious opportunity for the trading of comb. The comb transported through the canal to the forbidden city. Similarly, other cities also have their contribution for the royal family. Suzhou contributed their silk and Hangzhou contributed their deliciated fans for the royal ladies. From the contribution map on the right we can see that the more developed city in south-east area had already developed with light industry and started with crafts production. However for those place in North and Western part of China, they were more depended on natural productions.

COMB WITH THE COUNTRY

During the peaceful time period in Ming and Qing, the comb industry developed rapidly, but at the time the royal family turned down and the Manchu Queue[1] was cut off, the comb industry was significantly impacted. The sales amount went from 6million to hundreds of thousands. The foreign trade relation also influence the field. In Qing dynasty, the country was largely closed to trade and so that there was no substitute came , from other country. However, when the country open the trade in 1946 and the whole country jumped into rapid industrial period, the cheap daily using combs from Japan and US occupy the original market. Because the double-sided comb is not a necessities of life, people tended to use the cheaper combs, so since then the double-sided comb separated into two trend: precious collection and cheap volume produced artware.

Different Trades Among the Country



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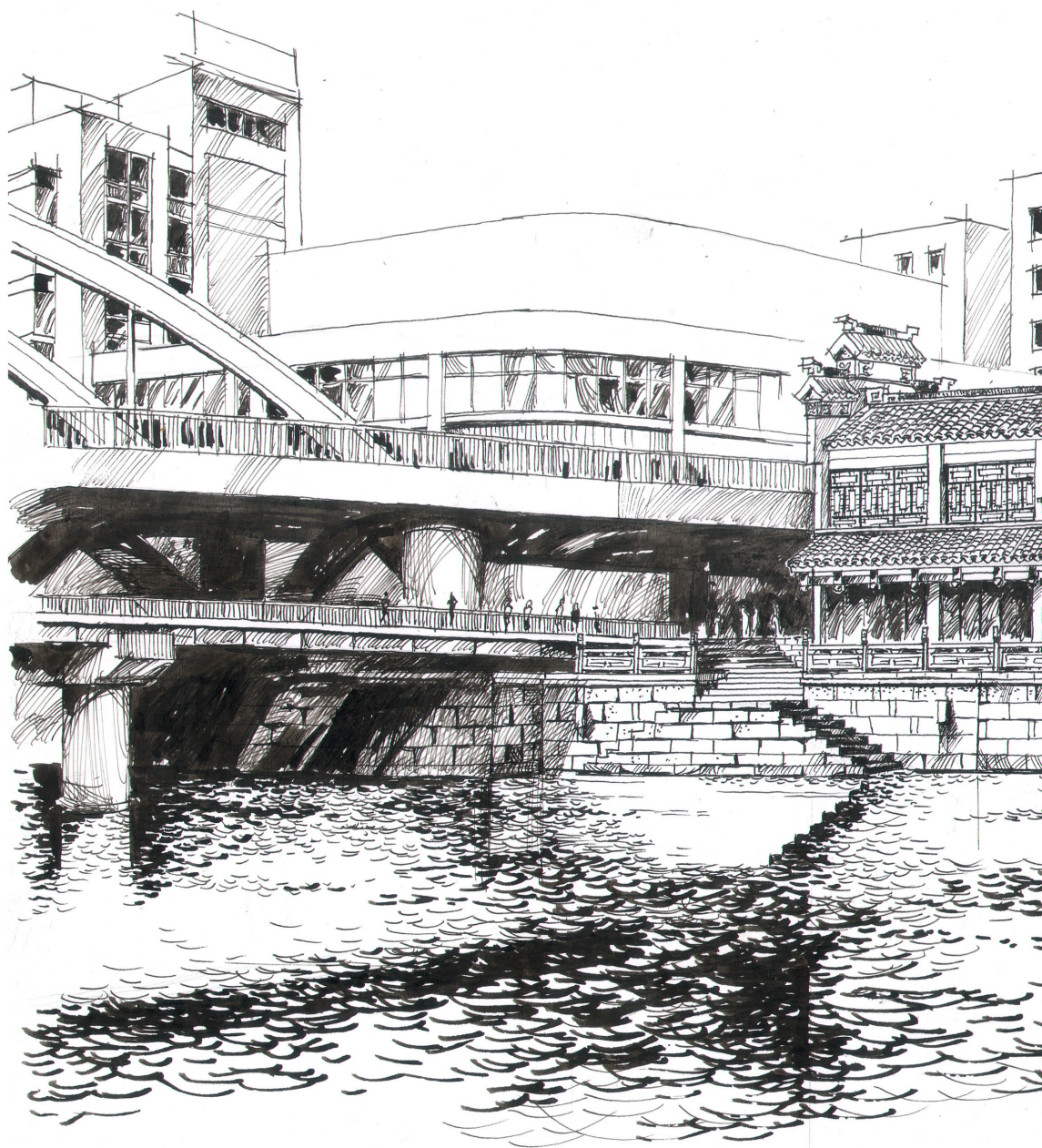
[1] "The Manchu queue or the Manchu braid was a hairstyle that all men in China during the Qing Dynasty (1644-1912) had to wear. After the overthrow of the Qing dynasty, Chinese men no longer had to wear the Manchu queue."

[2] Local Editing Committee Changzhou, ed., *Changzhou City Journey* (Beijing: China Social Science Publication, 1995), 2.

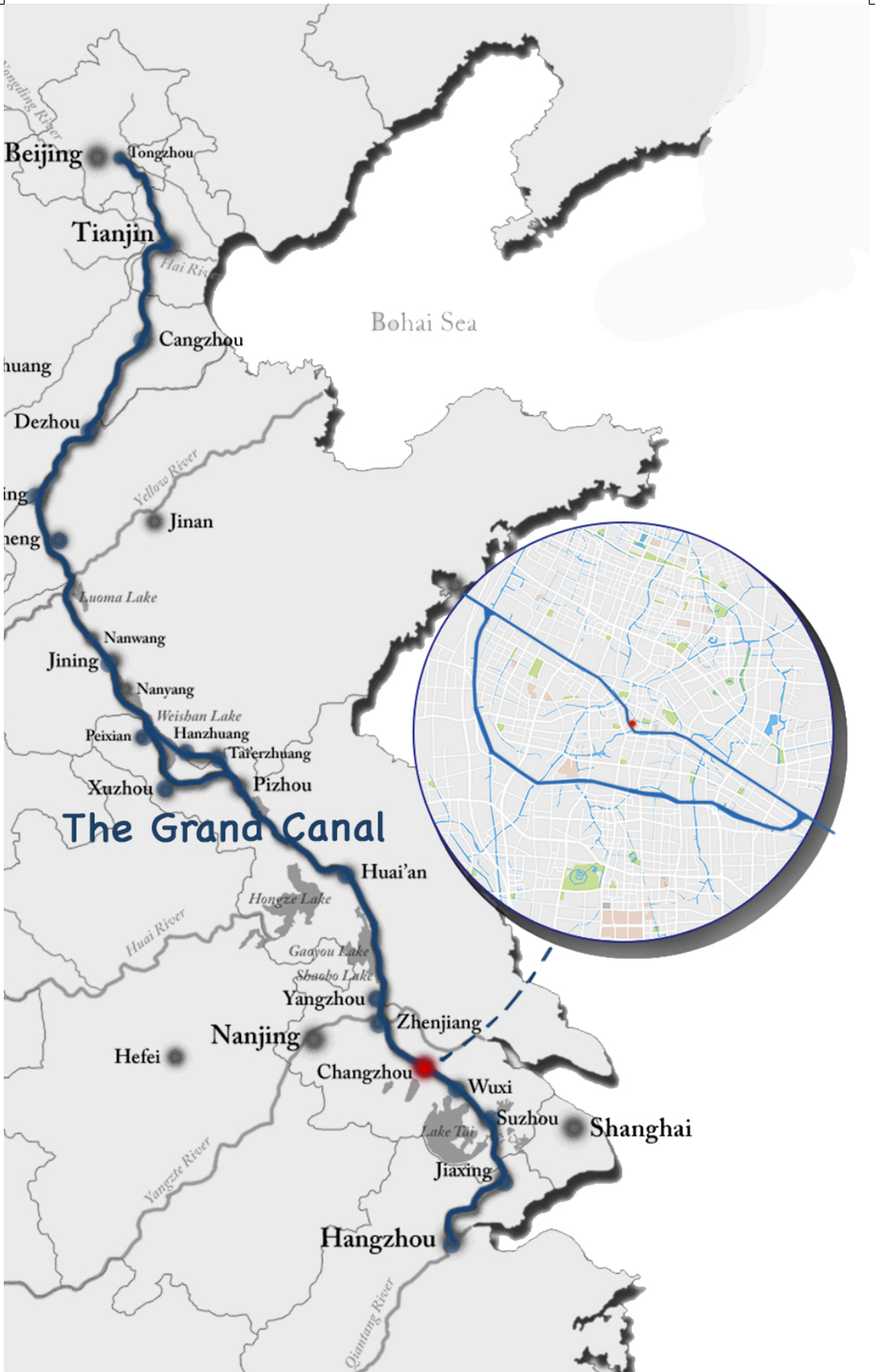


CHAPTER III

SITE

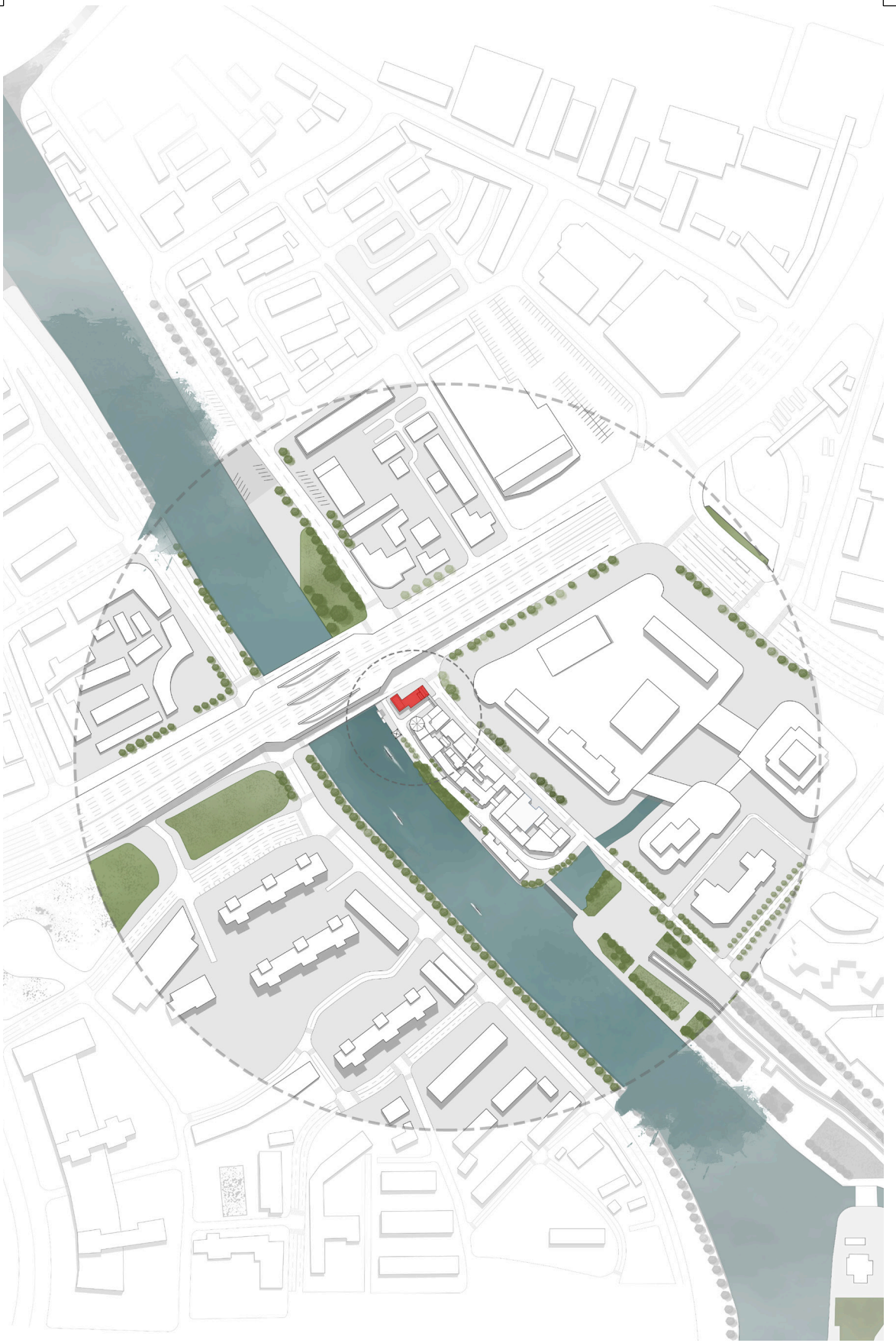




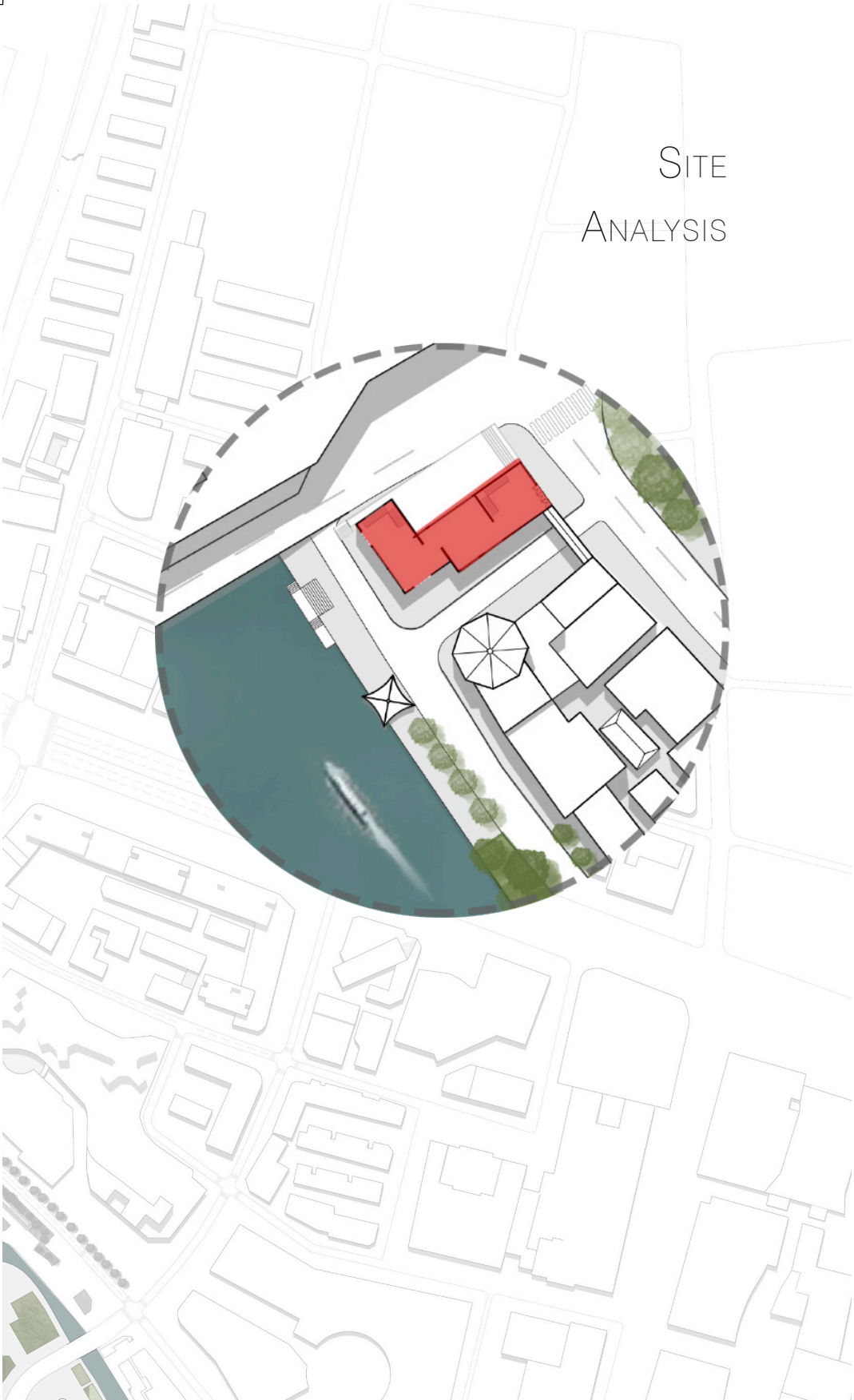


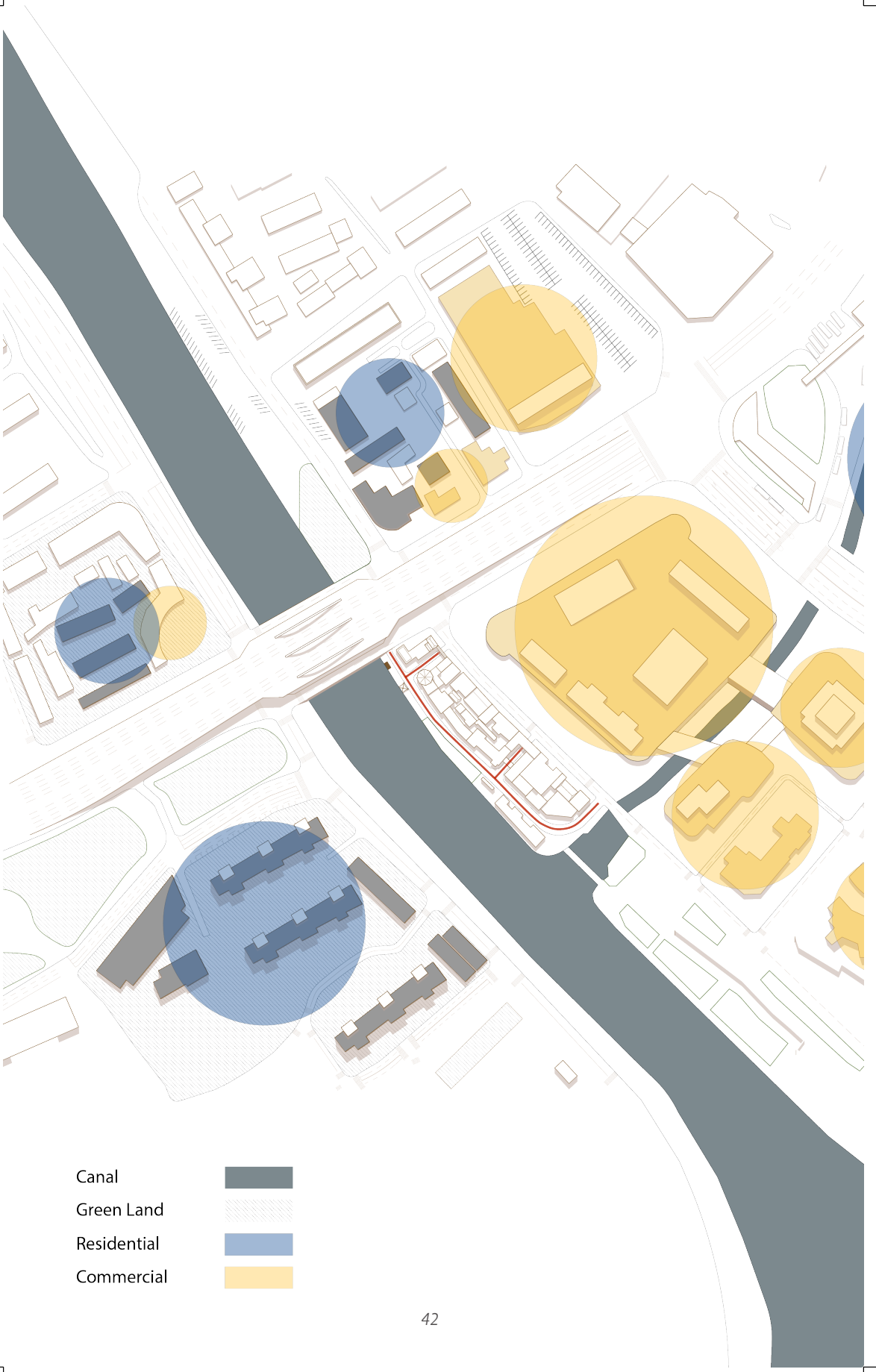
HISTORY OF THE SITE





Changzhou is a city built along the river and prospered depend on the river. The Grand Canal passes through Changzhou and has been flowing in the city for 2508 years. It changed the city's life and culture. In ancient times, the Grand Canal brought booming trade and plenty of living resources to the city, also it attracted the attention and presence from Emperor Qianlong. When Emperor Qianlong heard about the exquisite craft of Changzhou comb, he landed from the Biji Lane, which was called Flower Street at that time. When Emperor Qianlong saw the comb workshop full of streets, he praised the craftsman's meticulous craftsmanship and gave it the name Biji Lane — means Comb Lane. It is an important historical and cultural area of Changzhou City, bringing with excellent historical resources and environment. As a precious memory in the process of urban development, the Comb Lane represents the past glory of the city and also witnesses the rise and fall of urban development.



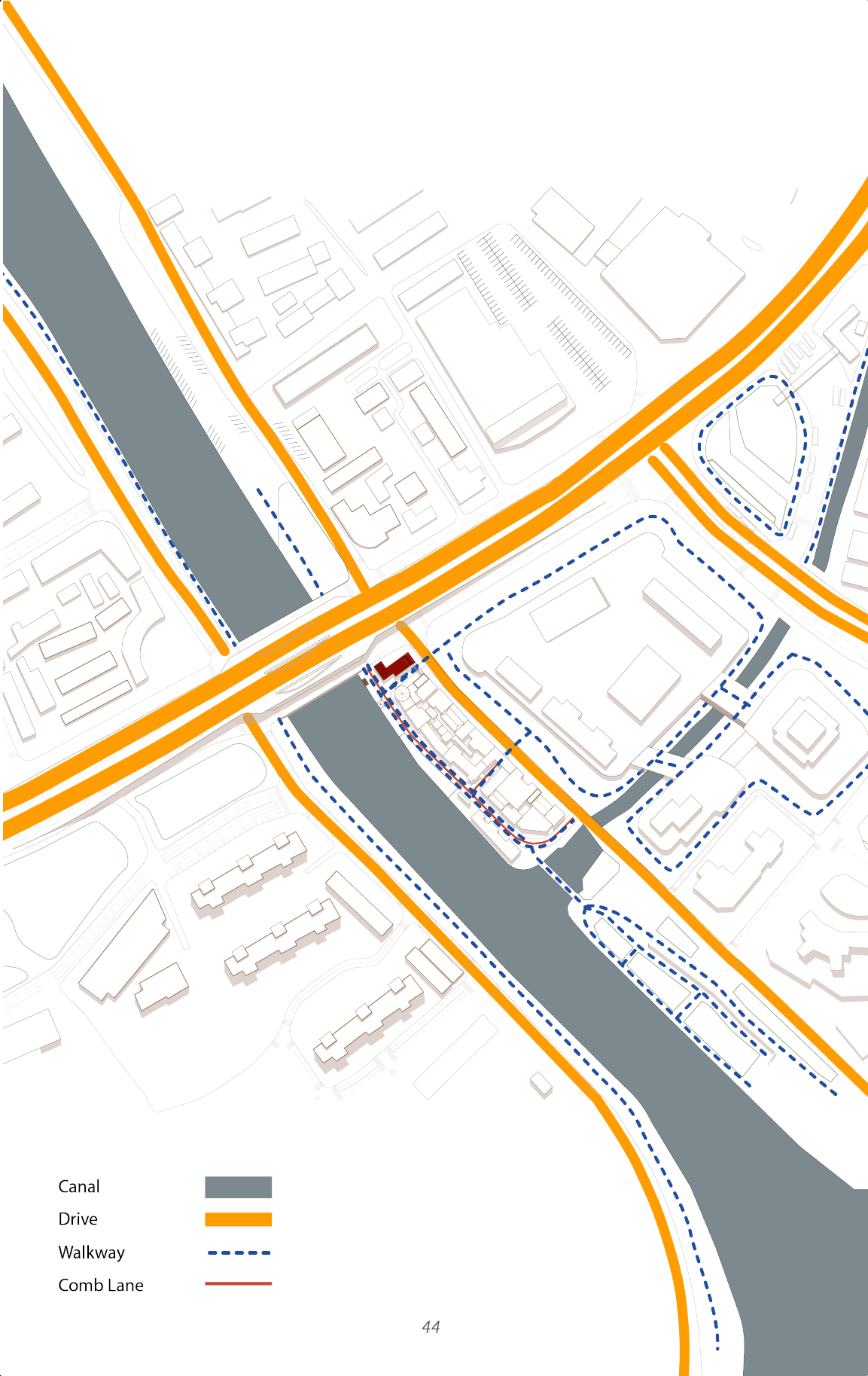
SITE
ANALYSIS








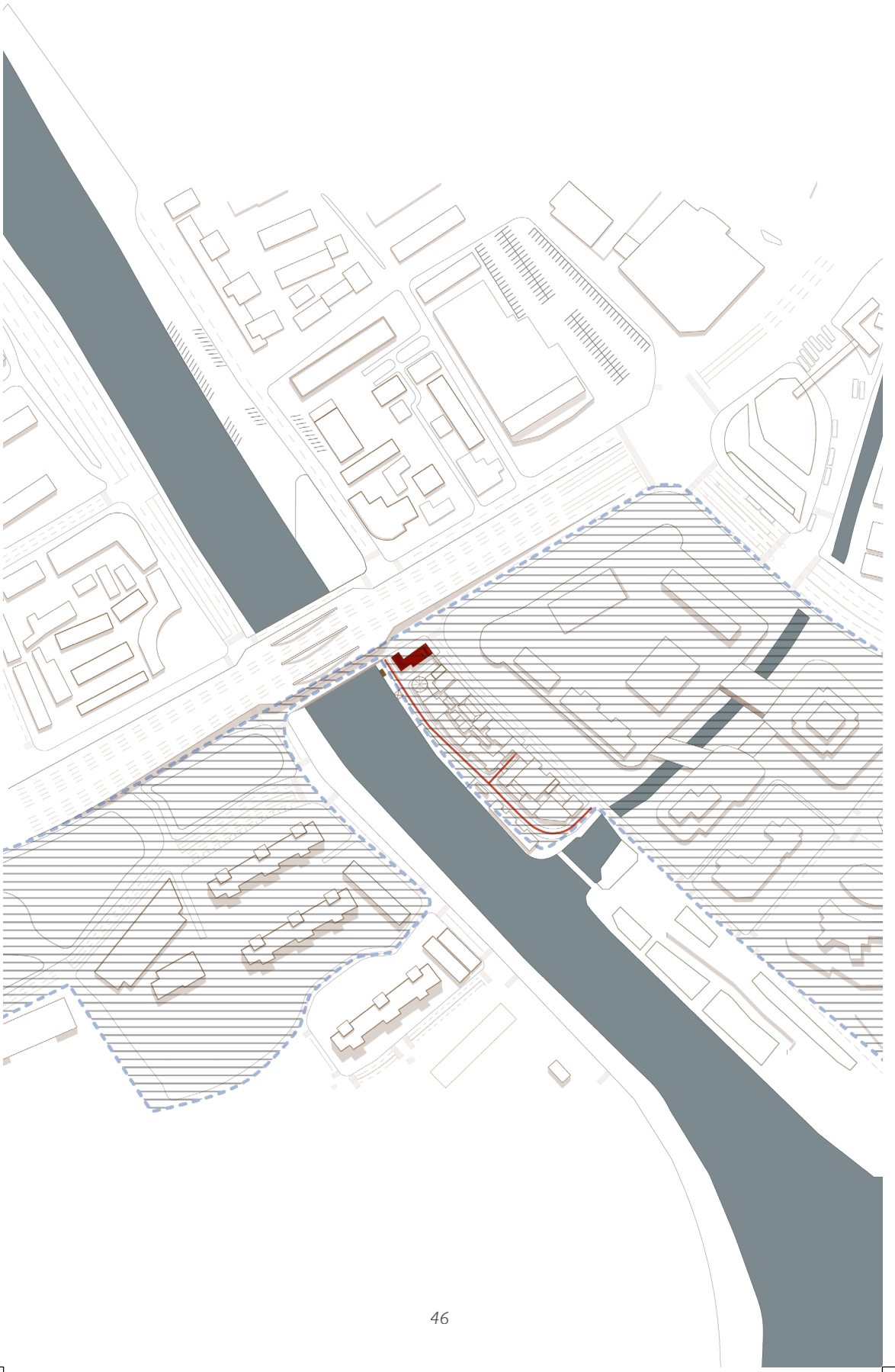
- Canal 
- Green Land 
- Residential 
- Commercial 

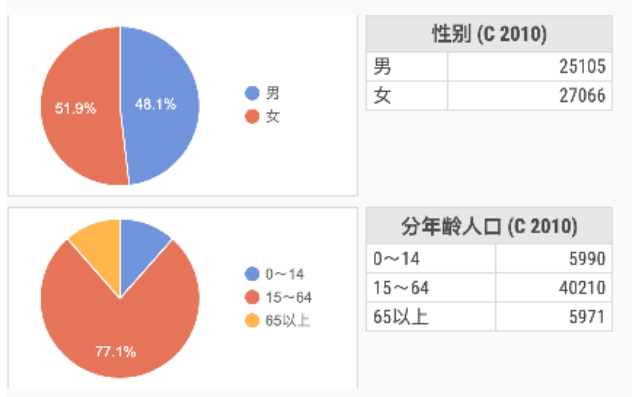
The Comb Lane is located in the central of Changzhou. It is along the Grand Canal and surrounded by several commercial complexes. Opposite the river, is a quiet residential area. As a historic site among crowded commercial space, Comb Lane is able to access to a large amount of people, especially younger age people, which is good for me to hold the exhibition here to promote the traditional culture to the new generation.



- Canal 
- Drive 
- Walkway 
- Comb Lane 

As the space is located in the center of Changzhou among commercial shopping spaces, the traffic here is very convenient. Fast driveway from every direction of the city can access here. Also, there are some designed walking paths around the site. Since the Great Canal is a big historic gift to Changzhou, so the government designed walking paths along the river on both sides of the Great Canal, next to our site. The walking paths slow down people's life rhythm and will bring them a chance to walk into my exhibition.





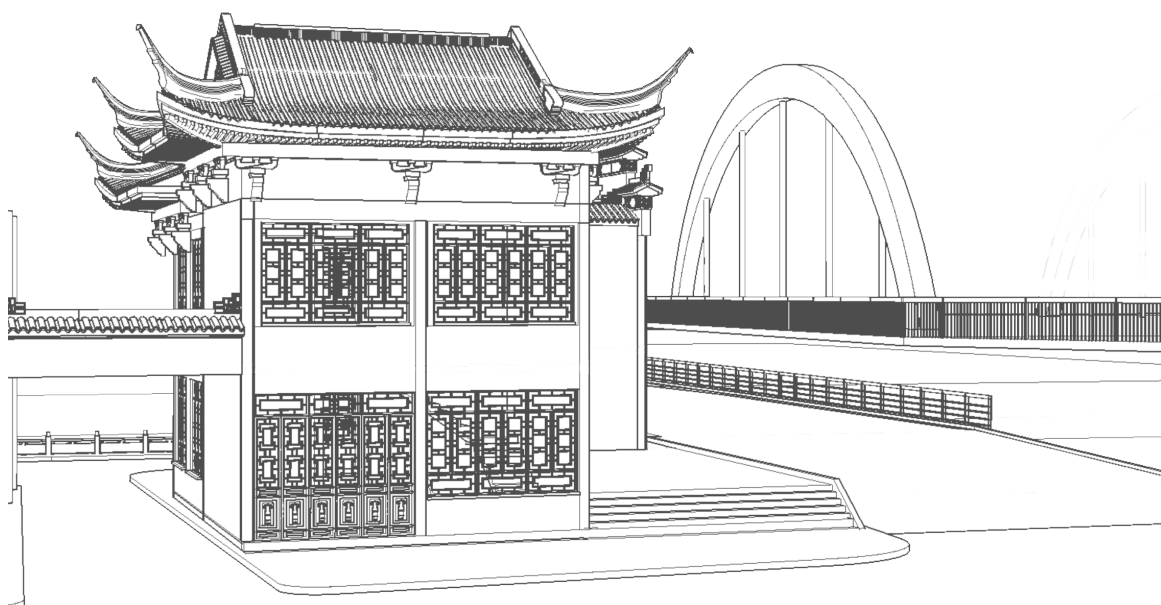
A large population live in this area. Several residential area brings a stable population in this part. Over seventy percent of the population are from 15 years old to 64 years old. These people will be the target audience for my exhibition.

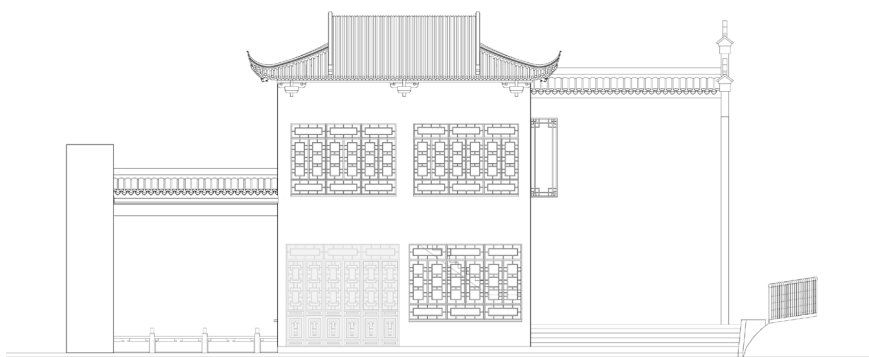
"Changzhou," City Population, July 30, 2019, <https://www.citypopulation.de/zh/china/townships/changzhou/>





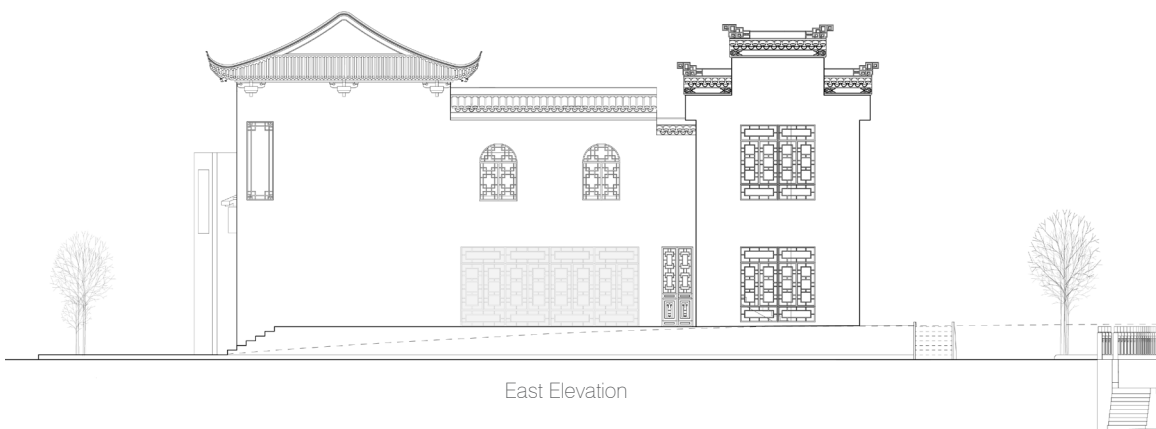
EXISTING
CONDITION



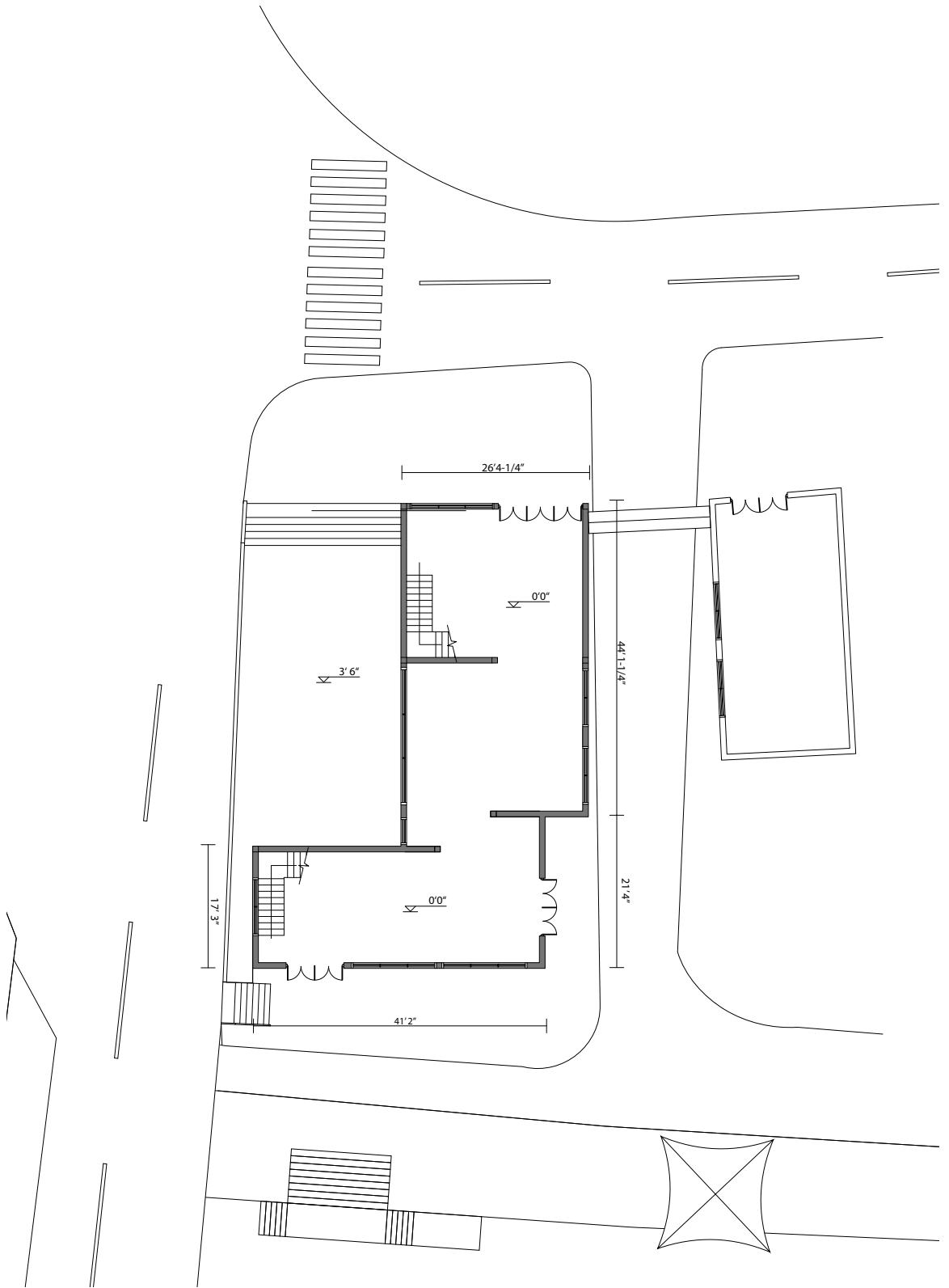


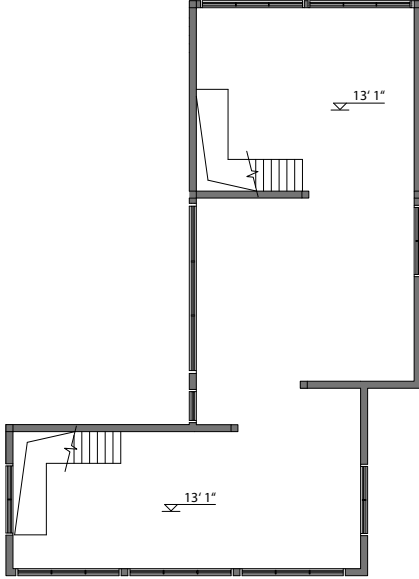
South Elevation

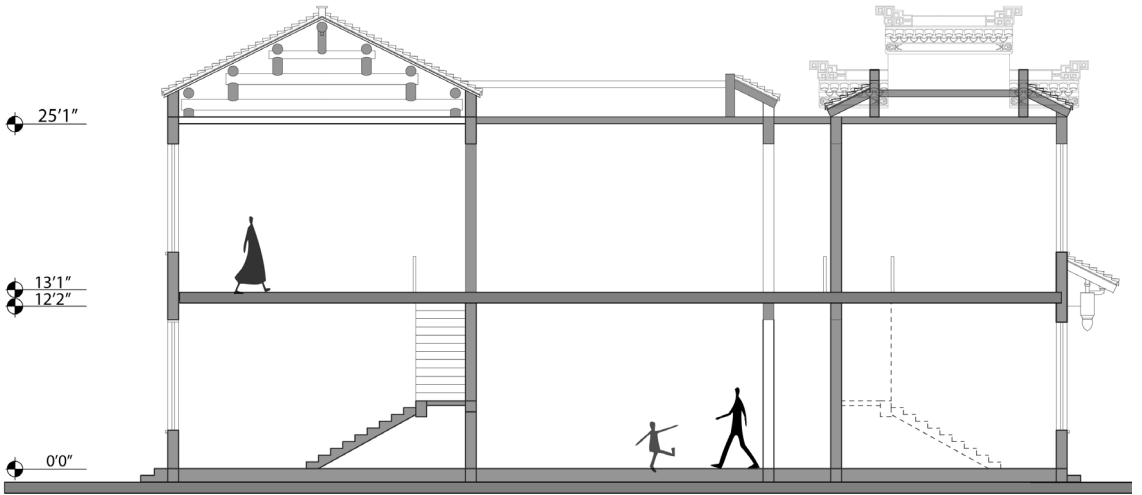
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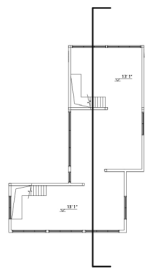


East Elevation



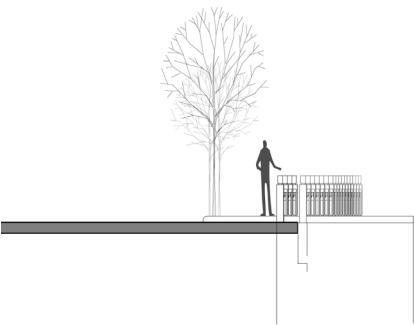


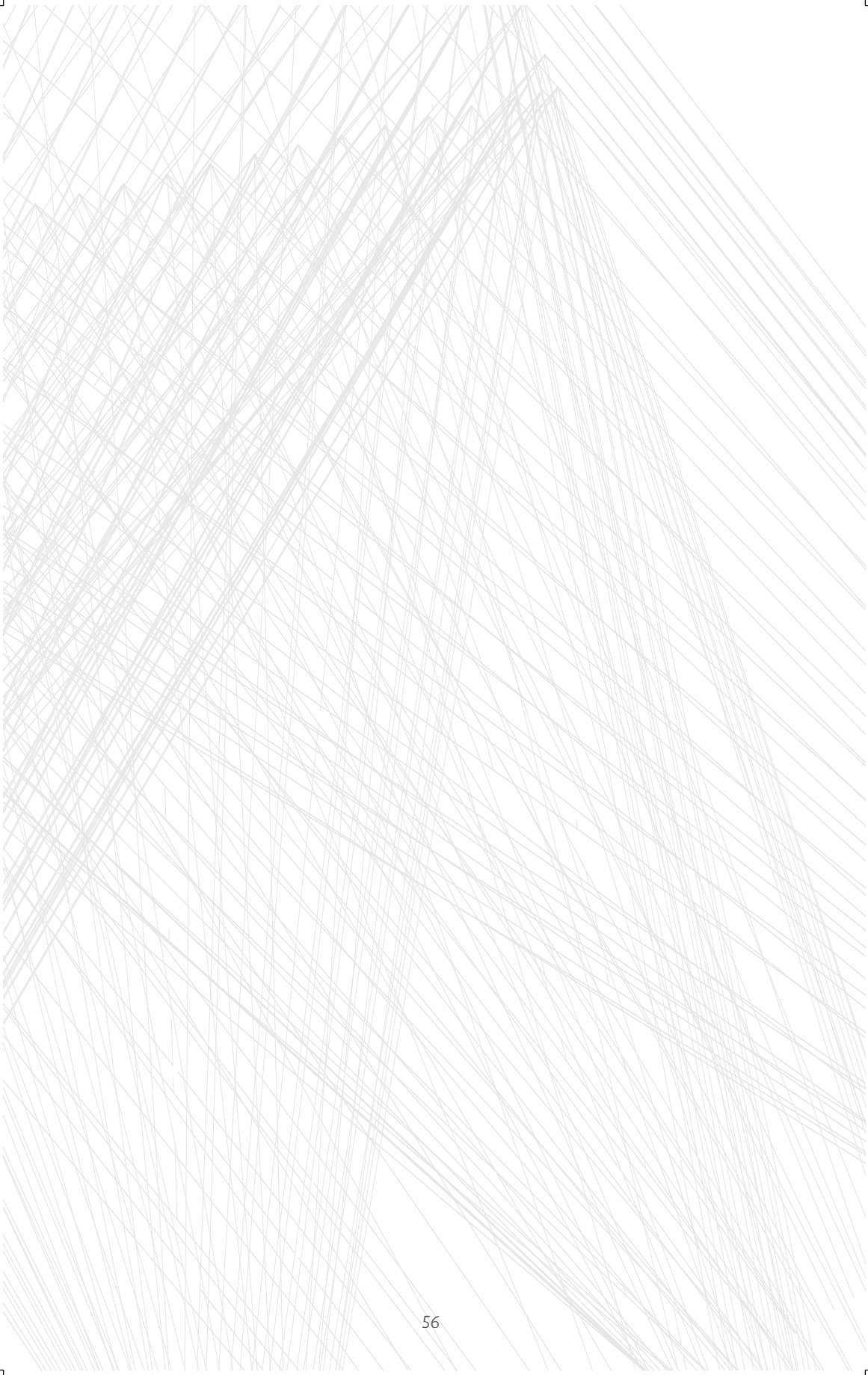




The Comb lane is located in the downtown surrounded by large modern shopping center and several residential buildings. As a memory of the city, the government has preserved the street as a viewing trail, so that the building will be able to access to large amount of people.

The entire street keeps in a historical looking with traditional roof and window elements, but it was rebuilt in 1980s with a concrete structure. The building for the museum is a two story building at the west end of the Comb Lane, right in front of the port on the river. This is a two-story building with doors on thress sides and windows all around. The total area is approximately 325 square meters (3498 sqft) with a 3.9m floor height (12.8ft).





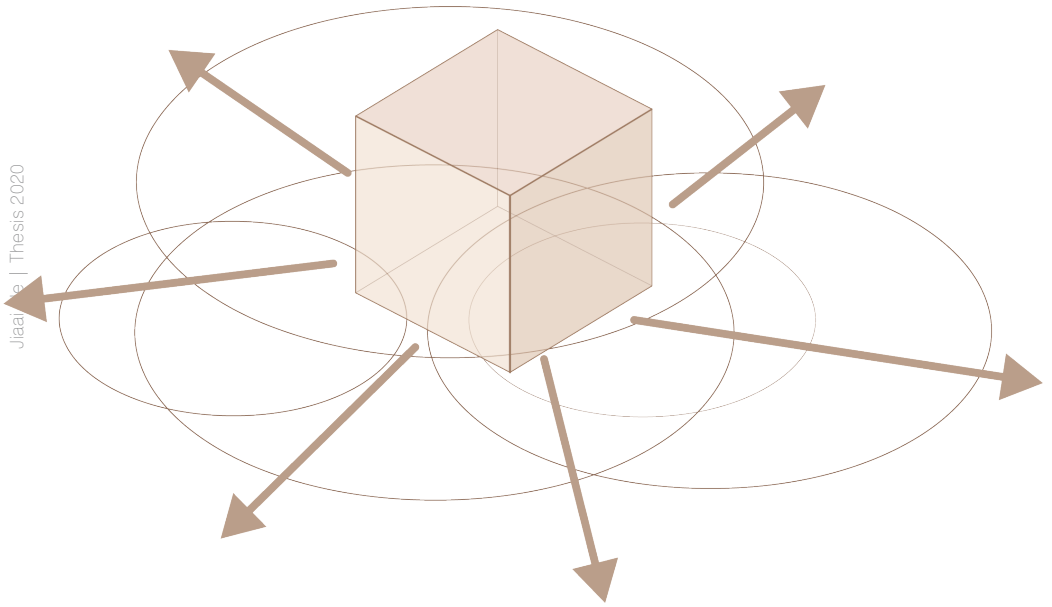
CHAPTER IV

EXHIBITION NARRATIVE

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EXHIBITION CONCEPT

Cultural object is a carrier of context, but the depth and knowledge behind are often unseen. Displaying the full range of historical content to the audience pays respect to the cultural object and to the culture. The task of museums is to communicate and show the connection of those information embeded in the object to the public in order to have visitors engaging with the layer by layer hidden biography of objects.

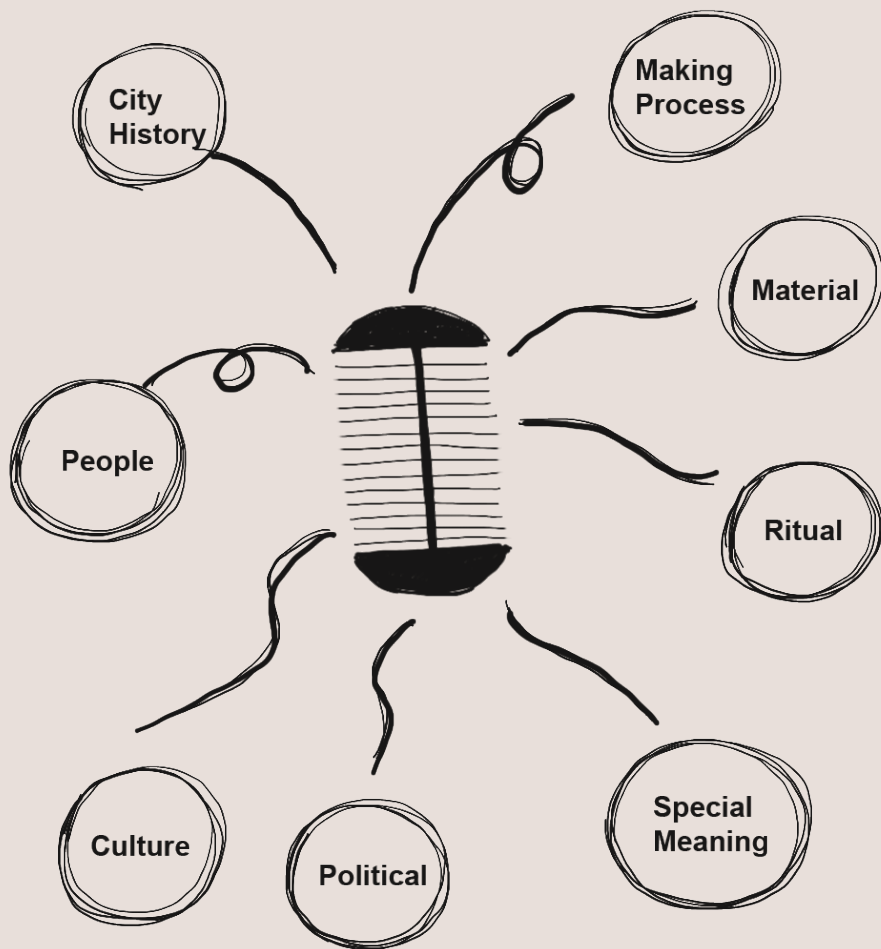


Changzhou was a post-station along the Grand Canal, during Qing dynasty, Emperor Qianlong was attracted by the exquisite craft of the comb, and since then the double-side comb becomes a royal contribution. Comb played many roles in the ancient time, from which we can see the social culture at that time. Making combs is a process that has been inherited from generation to generation. In the flourishing age of combs, each family has numbers of people engaged in the comb industry. It is hard to imagine that a small little comb needs to go through seventy-two and a half steps in its production.

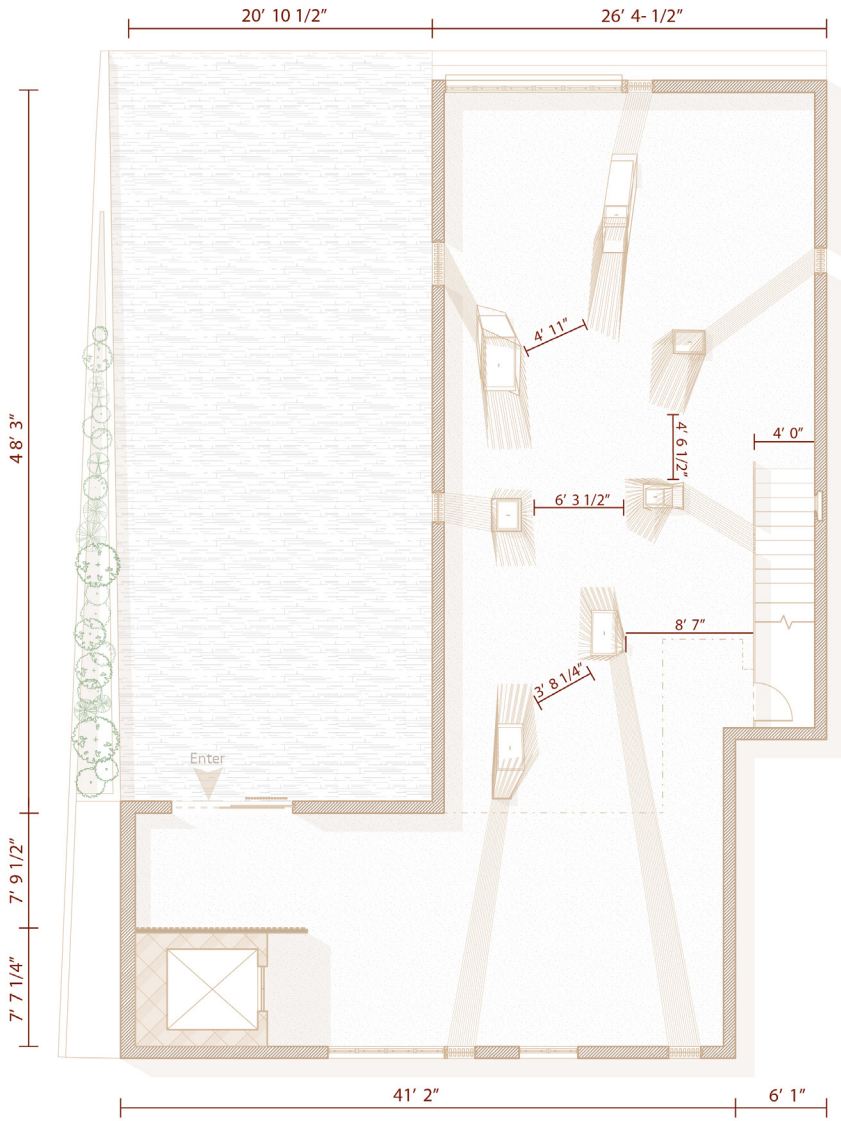
The exhibition is going to talk about these stories from different perspectives in the history, from the object itself of materials, making process, special meaning at the time, and then enlarge to wider story of the people making it, the city, and the political stories.

The exhibition will work with a large installation made of optical fibers to guide people's attention to the objects and also to the content around.

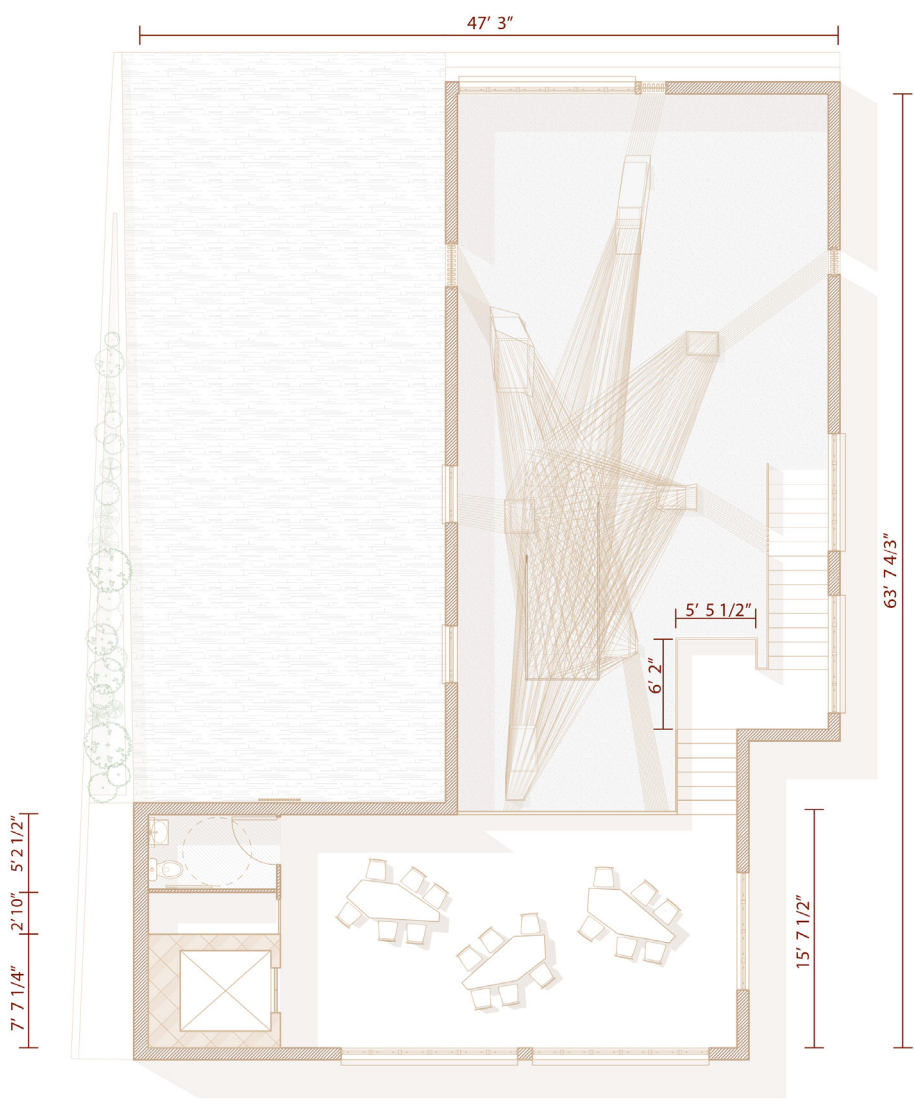
The major exhibition space is on the first floor. The fibers will connect with seven pedestals within the displayed object. On the second floor there will be a multifunctional workshop and rest place. By modifying the distance and angle of the strings, people will be able to walk under the installation tour among the strings.



FLOOR PLAN



First Floor Plan



Second Floor Plan

7. **Ivory Golden Comb**

Ivory beam with golden engrave, bamboo

Box size: 29.2 cm x 20.7 cm x 3.7 cm

Comb size: 6.5 cm x 11 cm

Qing Dynasty

Collection of Empress Dowager Cixi



5.

Wooden Handmade Comb

Jujube wood

6 cm x 10.5 cm

1940s



3.

Ox bone Comb

Ox bone beam with bamboo

6 cm x 11 cm

Modern handcraft

Painting of flowers and birds in traditional Chinese style on the beam.



1.

Large Bamboo Double-sided Comb

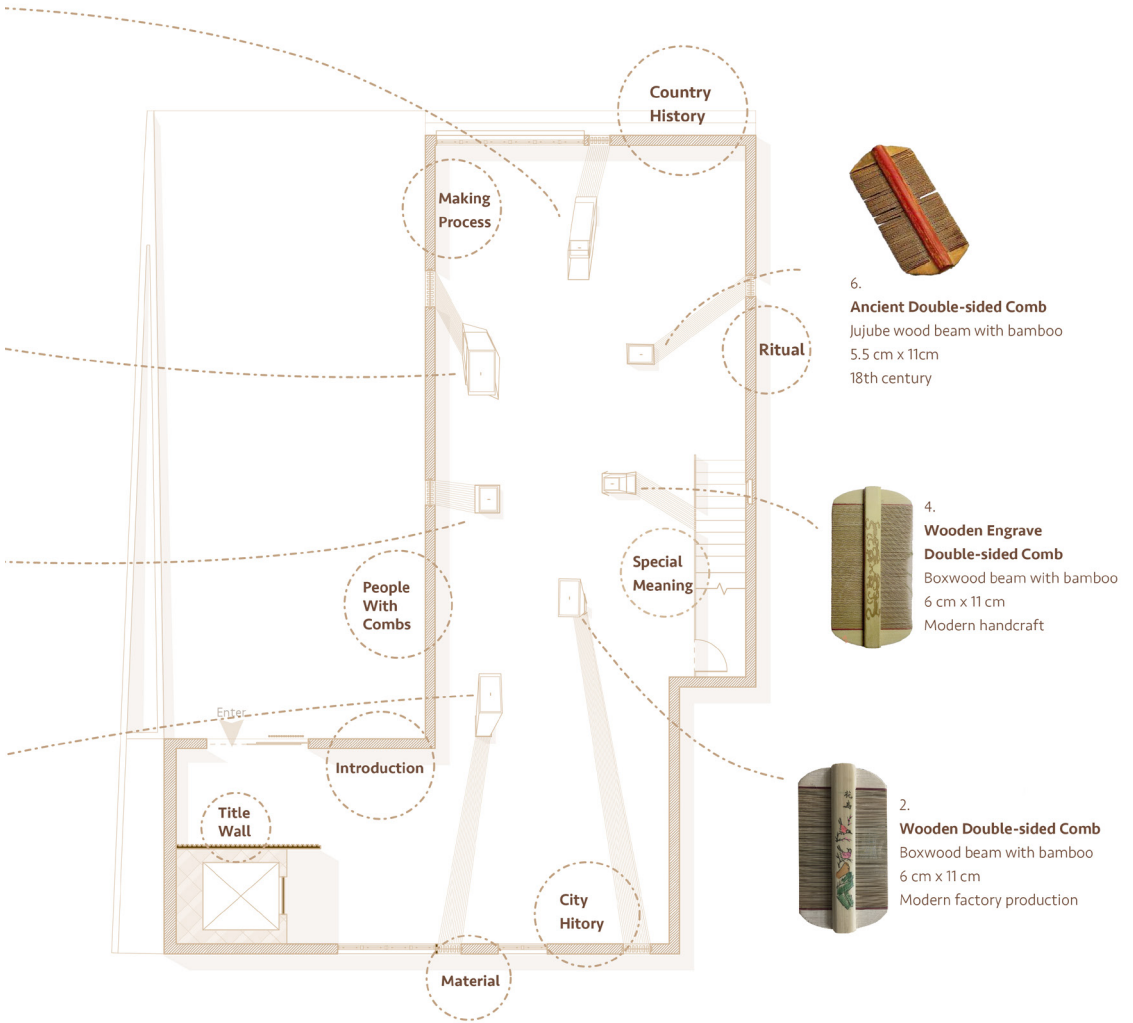
Bamboo

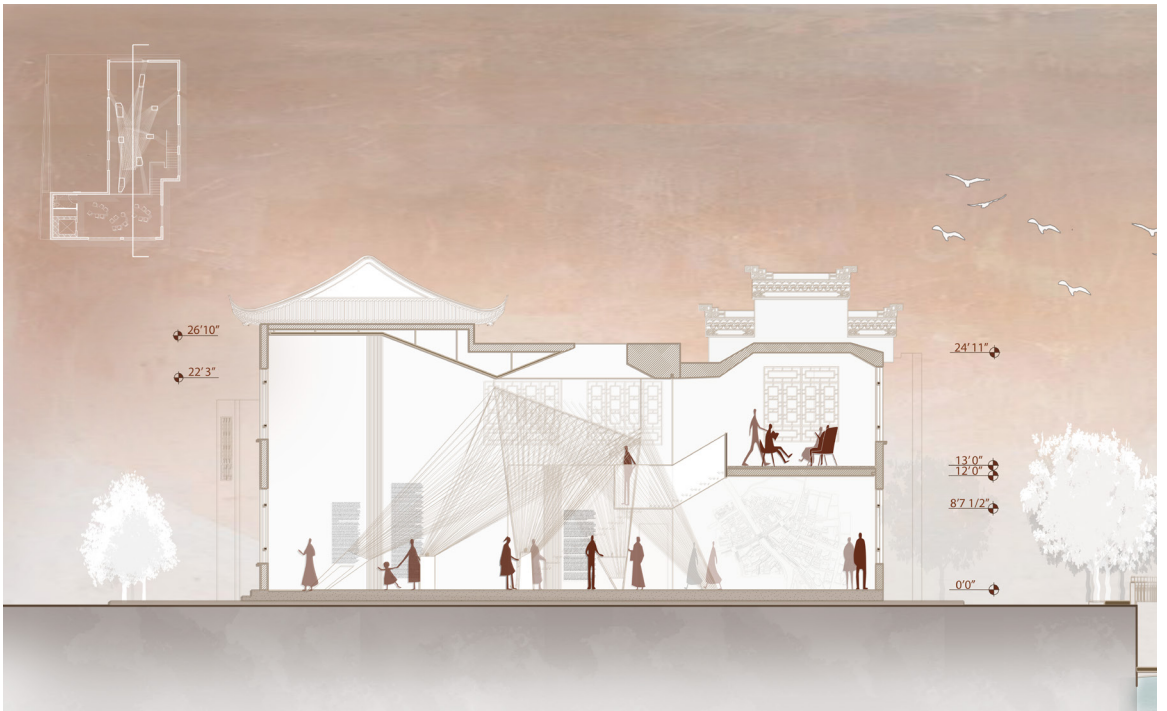
6.7 cm x 12 cm

Modern factory production



DISPLAY LAYOUT





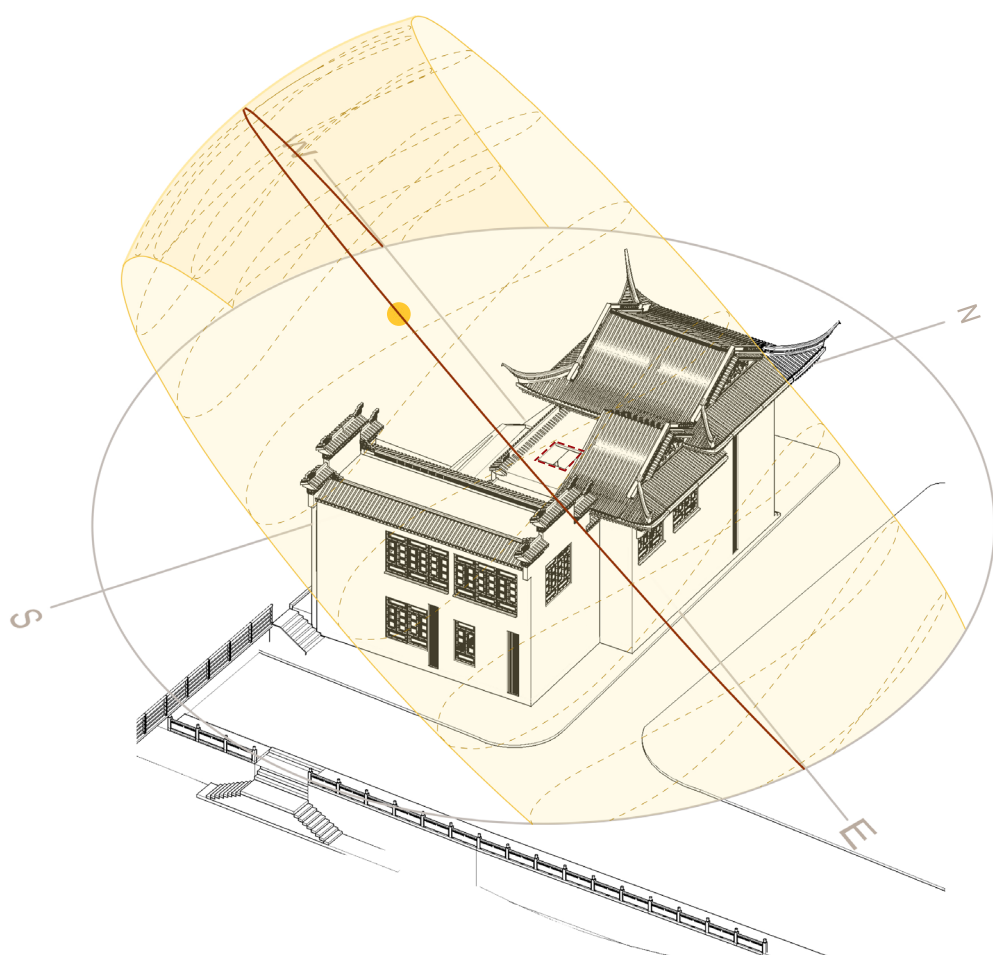
SECTION

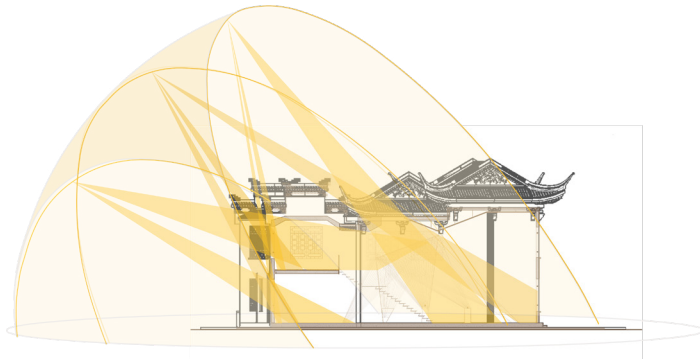


Working together with the fiber installation, the light will be able to go in the main exhibition hall and to the objects. Absorbing from one opening and then exploding to seven different directions, the strings represent the concept of how one object can be seen in distinct perspectives.

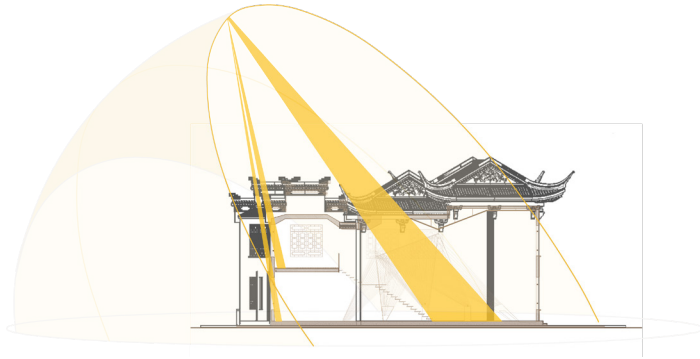
DESIGN DIAGRAMS

By considering the existing building structure, the roof is one of the most important elements to show the historic perspective. So the design is going to keep the delicated roof structure. But since it need light for the interior space, the design will open a part of the flat roof top to become a light well. The window at south side will allow sunlight to come in during wintertime, the light well helps in spring and summer time.

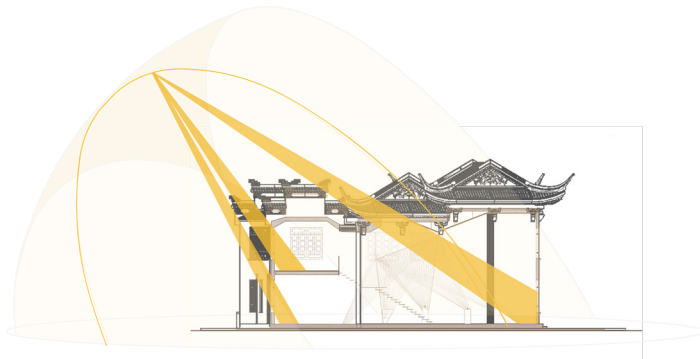




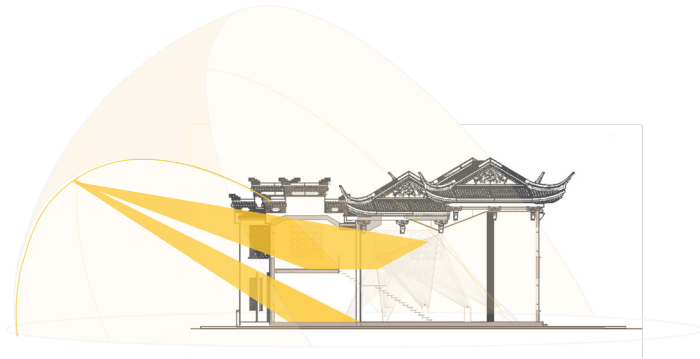
Light Comparison



Summer

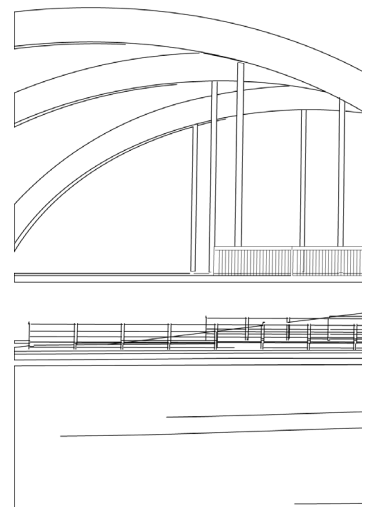
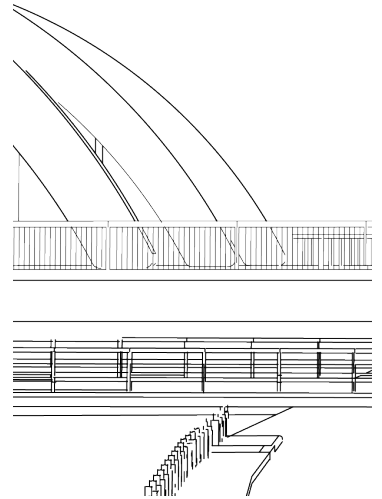


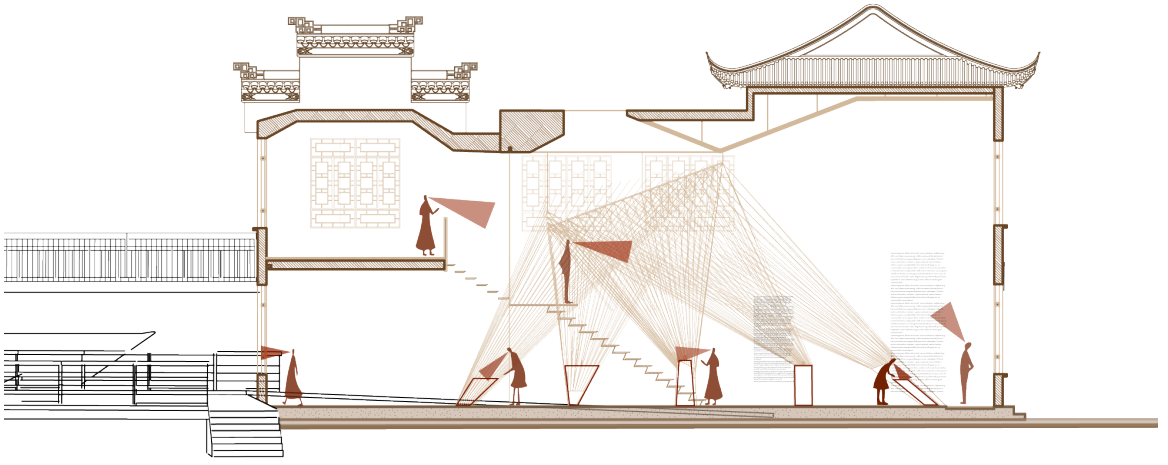
Spring / Fall



Winter

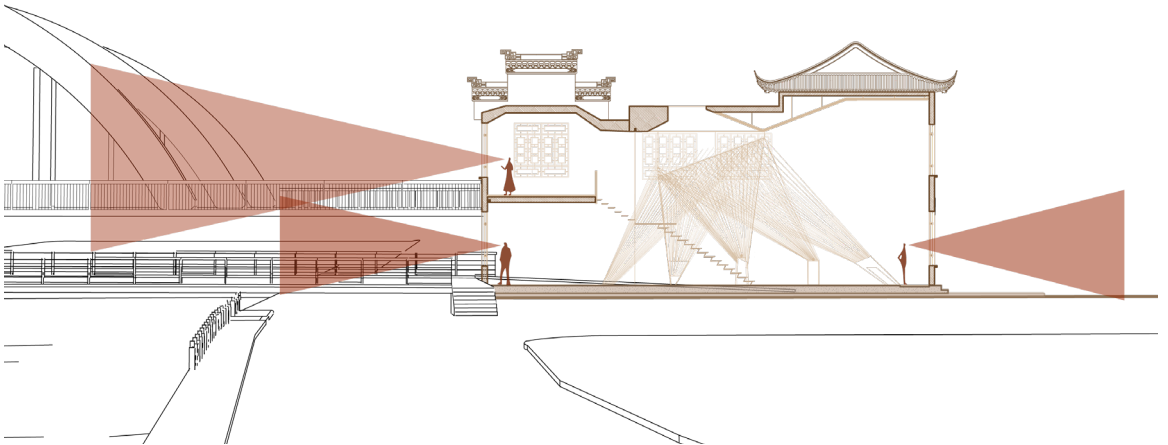
The exhibition system displays the combs at distinctive height, so that people can view the combs in different perspectives, as also, the exhibition have include the outside view, the canal and the city view, as a part of the exhibition to help explaining relationship between combs and the city.



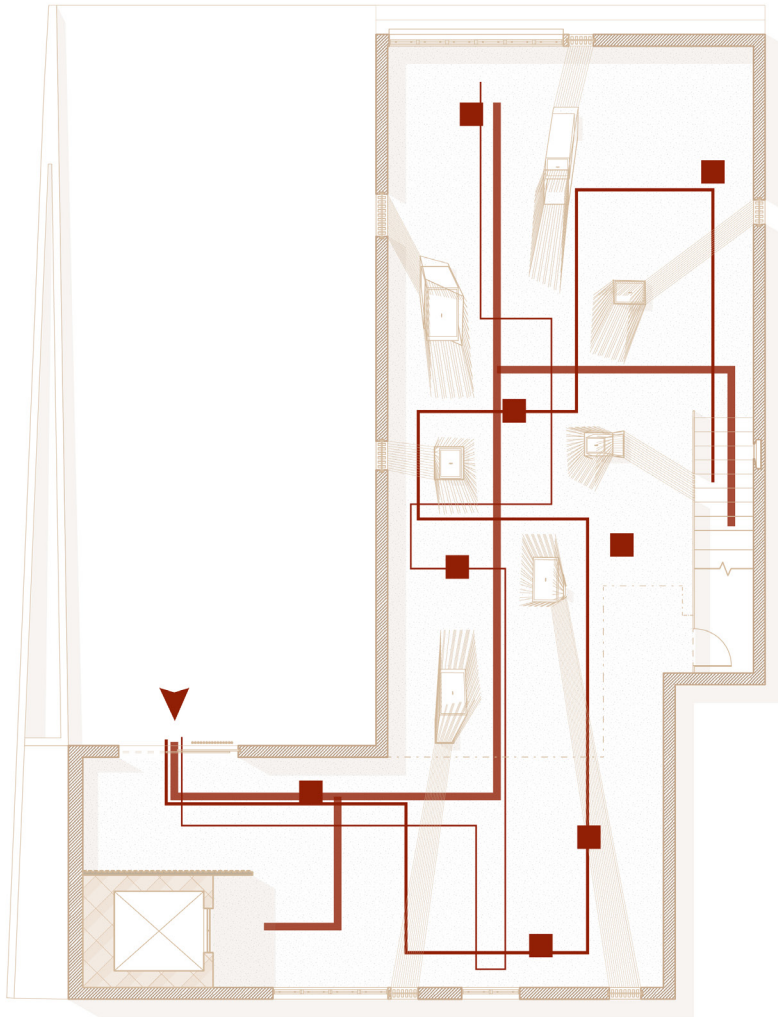


Interior Visual Diagram

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Exterior Visual Diagram

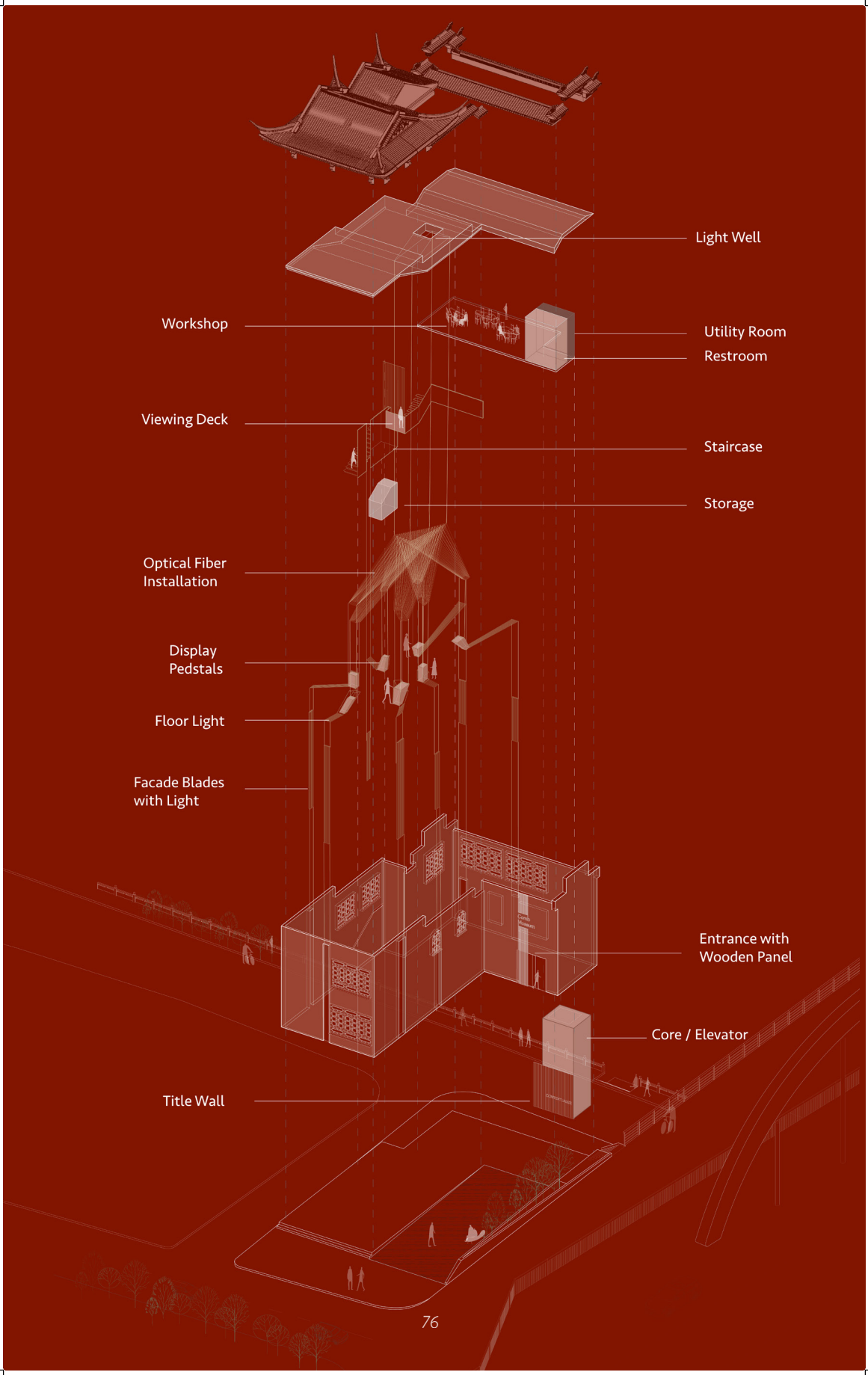


Circulation Diagram

Within a free circulation for the exhibition, people will be able to walk among the strings to have an intimate experience with the displayed combs. The seven combs are from different time period made of different materials. In order to have people pause a moment in front of the object, the display system creates several spots for people to stop and see the combs carefully.

CHAPTER IV

EXHIBITION DETAILS



Light Well

Workshop

Utility Room
Restroom

Viewing Deck

Staircase

Storage

Optical Fiber
Installation

Display
Pedstals

Floor Light

Facade Blades
with Light

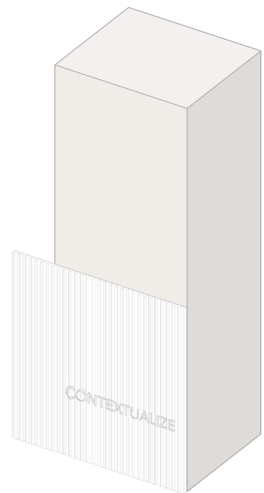
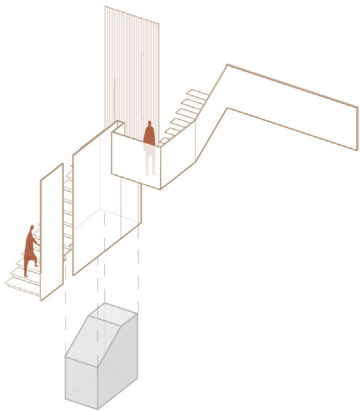
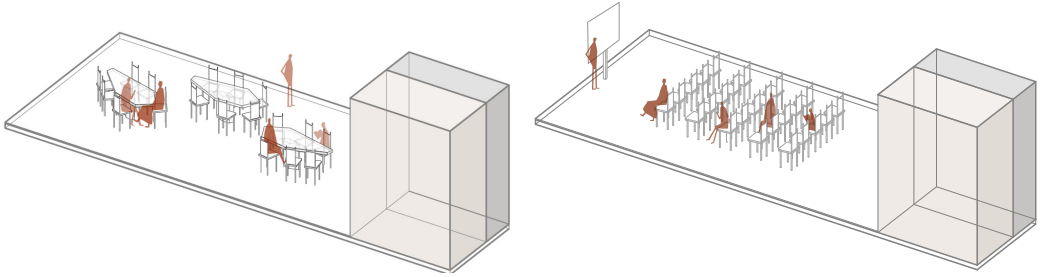
Entrance with
Wooden Panel

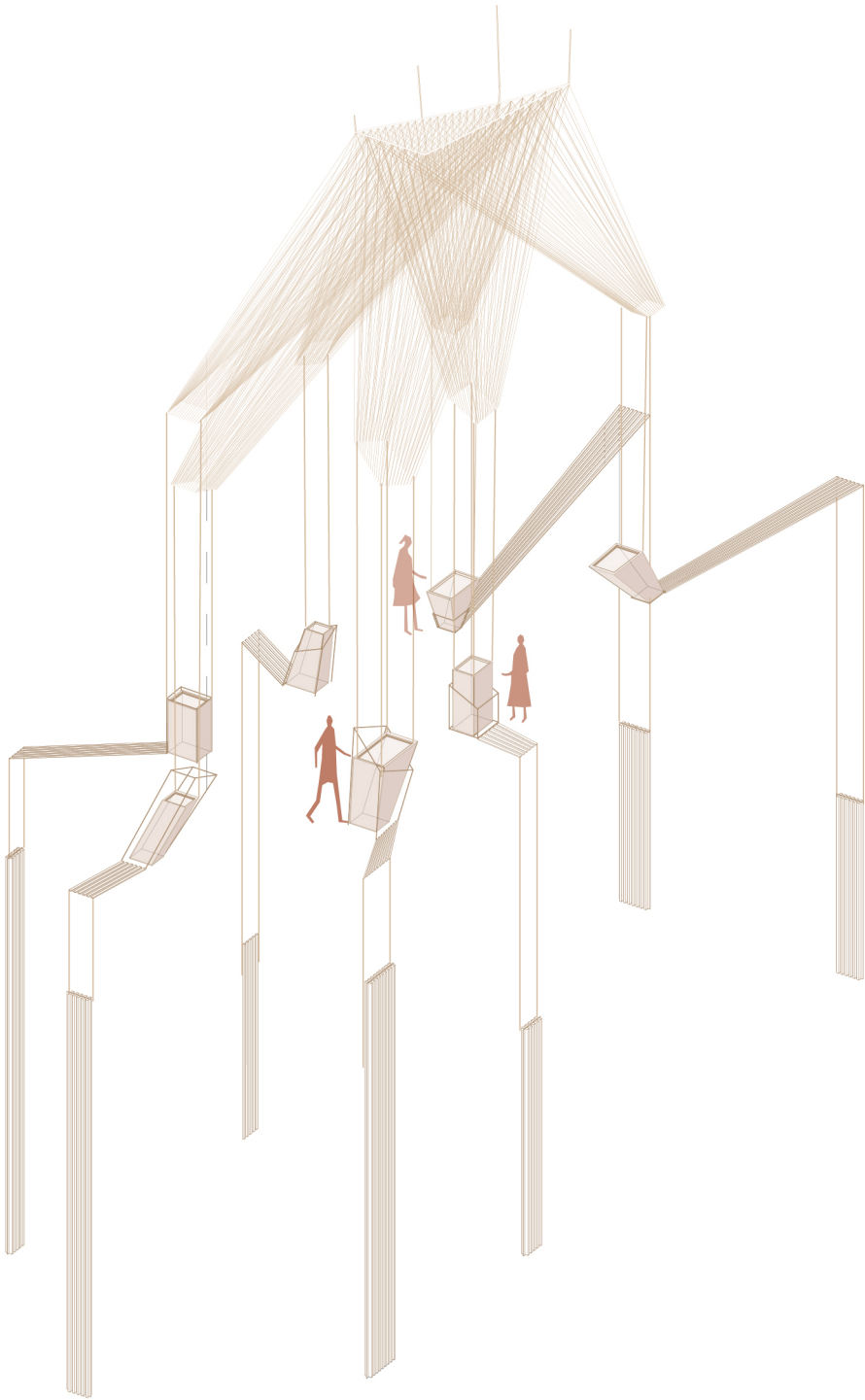
Core / Elevator

Title Wall

EXPLODED DRAWING

As a small specialist museum of combs, the design programming will include major exhibition space, comb workshop, educational open space, rest area and commercial space. These different function areas will provide the viewing public more possibilities to explore the stories behind the comb. Museums, as a continuation of the education, should allow people to get in touch and experience the content shown in the exhibition. The workshop and educational space will be able to show the information in distinctive medias and bring the exhibits closer to the public. In order to promote the local industry with the city's culture, the commercial space will not only help the combs to go further throughout the world but also help the city to remember it. The staircase located on the east side of the building. It contains a hidden storage room under and also a viewing deck for people to see the exhibition from another angle. For the main entrance, The title wall at the entrance will have same vertical element with the interior space. The ADA accessible elevator will be at the back of the title wall.







6. 将准备好的竹筒的横面切割成竹片
- 6 Split the bamboo into 2nd inner skin. Split the 2nd inner skin into bamboo filament, another skin of the bamboo inner skin.
7. 将竹片用刨子刨平
- 7 Dry the bamboo filament. Grind the bamboo filament with the turn.
8. 将竹片制成竹条
- 8 Saw the bamboo pipe into bamboo pipe (max. bamboo length)
9. 将竹条制成1.3-1.4cm的竹片
- 9 Make the bamboo prototype Split the bamboo lengths into 1.3-1.4cm bamboo
10. 将竹片削去靠近竹筒内壁的竹皮
- 10 Chop bamboo inner skin. Chop the bamboo inner skin over 0.6cm
11. 将竹片制成1.2cm的标准竹片
- 11 Cut the bamboo inner skin. Cut the bamboo bar according to the standard of 1.2cm
12. 削竹片时，用锋利的刀以45度角修制成圆角
- 12 Trim the square angle. Trim the square angle to round one with crescent-shaped cutter
13. 将竹片表面清理干净，并用砂纸打磨
- 13 Clear the bamboo green. Clean the bamboo green on the bamboo surface, which is smooth without knots
14. 将竹片放入锅中煮白
- 14 Dry the bamboo making. Dry the bamboo making until it is white
15. 将竹片放入锅中煮白
- 15 Make the bamboo cattle ribs
16. 将竹片放入锅中煮白
- 16 Boil the bamboo. Boil until the green is removed
17. 将竹片放入锅中煮白
- 17 Cut the bamboo ribs. Cut the bamboo ribs into strips
18. 将竹片放入锅中煮白
- 18 Clean the bamboo. Clean the bamboo snow from the bone
19. 将竹片放入锅中煮白
- 19 Trim the bamboo making. Trim the bamboo ribs
20. 将竹片放入锅中煮白
- 20 Saw the ribs into segments. Saw the ribs into 5-6cm segments
21. 将竹片放入锅中煮白
- 21 Finish the bamboo making. Make completion treatment on the finished surface
22. 将竹片放入锅中煮白
- 22 Trim the bamboo. Trim the square angle to round corner
23. 将竹片放入锅中煮白
- 23 Cut the bamboo. Cut the bamboo into 0.2cm thick in the cutting bone
24. 将竹片放入锅中煮白
- 24 Soak the bamboo in alum and hydrogen peroxide. Put alum and hydrogen peroxide on the bamboo surface
25. 将竹片放入锅中煮白
- 25 Mix the lacquer. Mix the lacquer
26. 将竹片放入锅中煮白
- 26 Mix the lacquer. Mixing paint and water
27. 将竹片放入锅中煮白
- 27 Coat the bamboo. The bamboo surface is coated with lacquer
28. 将竹片放入锅中煮白
- 28 Wash the bamboo beam. Wash the bamboo beam
29. 将竹片放入锅中煮白
- 29 Draw patterns on the bamboo beam
30. 将竹片放入锅中煮白
- 30 Paint the bamboo. Color the pattern with proper color
31. 将竹片放入锅中煮白
- 31 Set up the printing characters. Set up gold printing characters and arrange them on the bamboo beam in a similar way
32. 将竹片放入锅中煮白
- 32 Seal the bamboo. Seal the bamboo
33. 将竹片放入锅中煮白
- 33 Dry the bamboo. Dry the bamboo for 3 days
34. 将竹片放入锅中煮白
- 34 Put the bamboo in the sun. Put the bamboo in the sun for three days
35. 将竹片放入锅中煮白
- 35 Wash the bamboo. Wash the bamboo with water and pull out the bamboo

INTERIOR RENDERING



Combat with the city.

The city is the most important element in the urban landscape. The urban landscape is the result of the interaction between the city and the surrounding environment. The urban landscape is the result of the interaction between the city and the surrounding environment. The urban landscape is the result of the interaction between the city and the surrounding environment.

Combat with Country

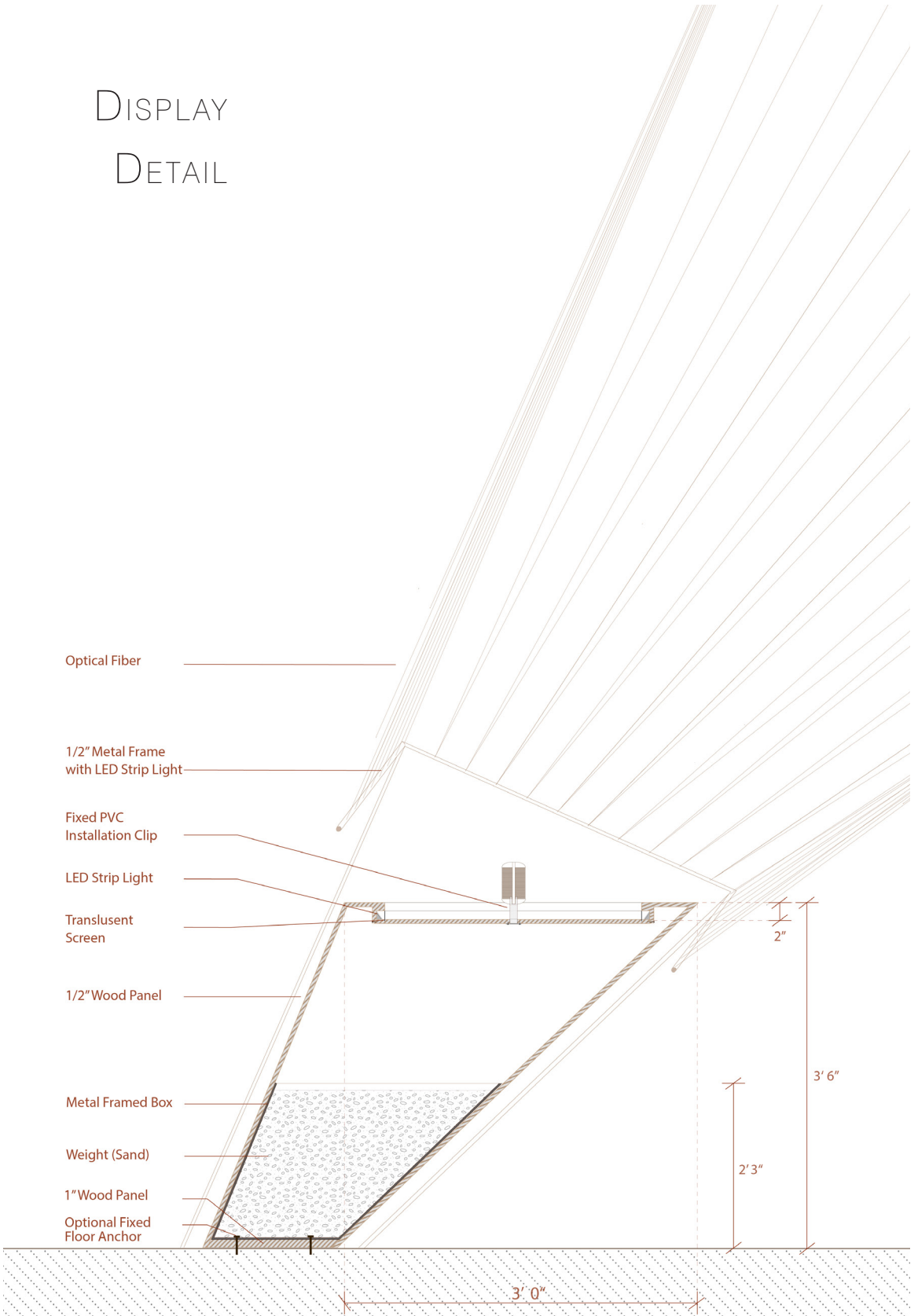
The urban landscape is the result of the interaction between the city and the surrounding environment. The urban landscape is the result of the interaction between the city and the surrounding environment. The urban landscape is the result of the interaction between the city and the surrounding environment.



A photograph of a wooden wall with the word "CONTE" in glowing white letters. A person is blurred in the background on the left.

CONTE

DISPLAY DETAIL



Optical Fiber

1/2" Metal Frame
with LED Strip Light

Fixed PVC
Installation Clip

LED Strip Light

Translucent
Screen

1/2" Wood Panel

Metal Framed Box

Weight (Sand)

1" Wood Panel

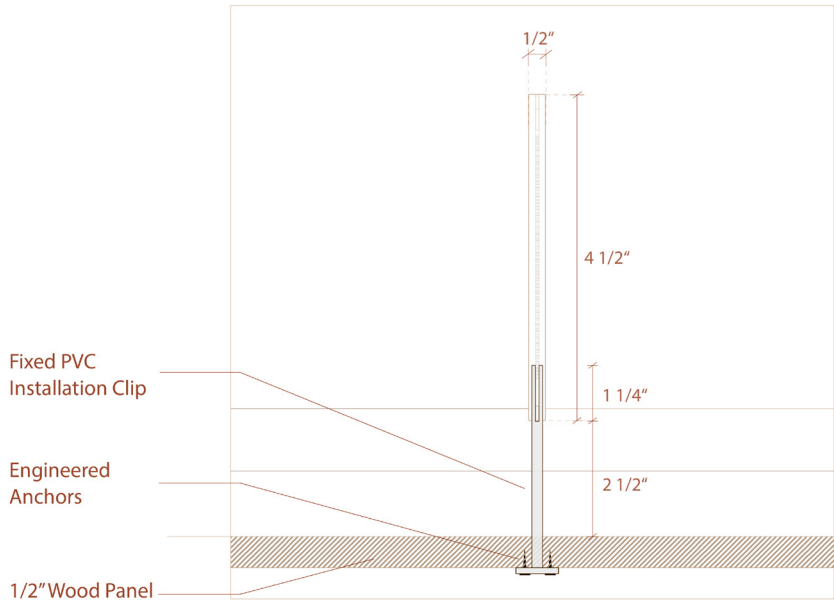
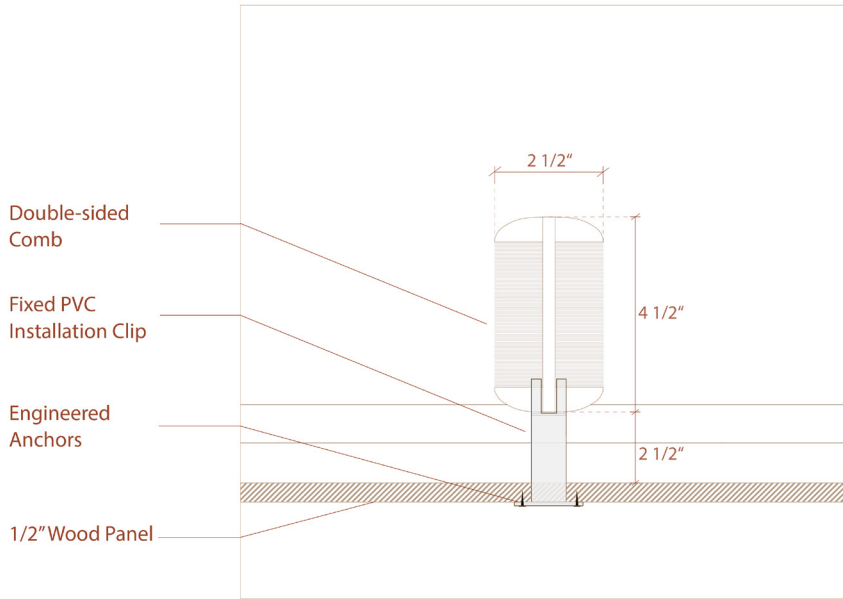
Optional Fixed
Floor Anchor

2"

3' 6"

2' 3"

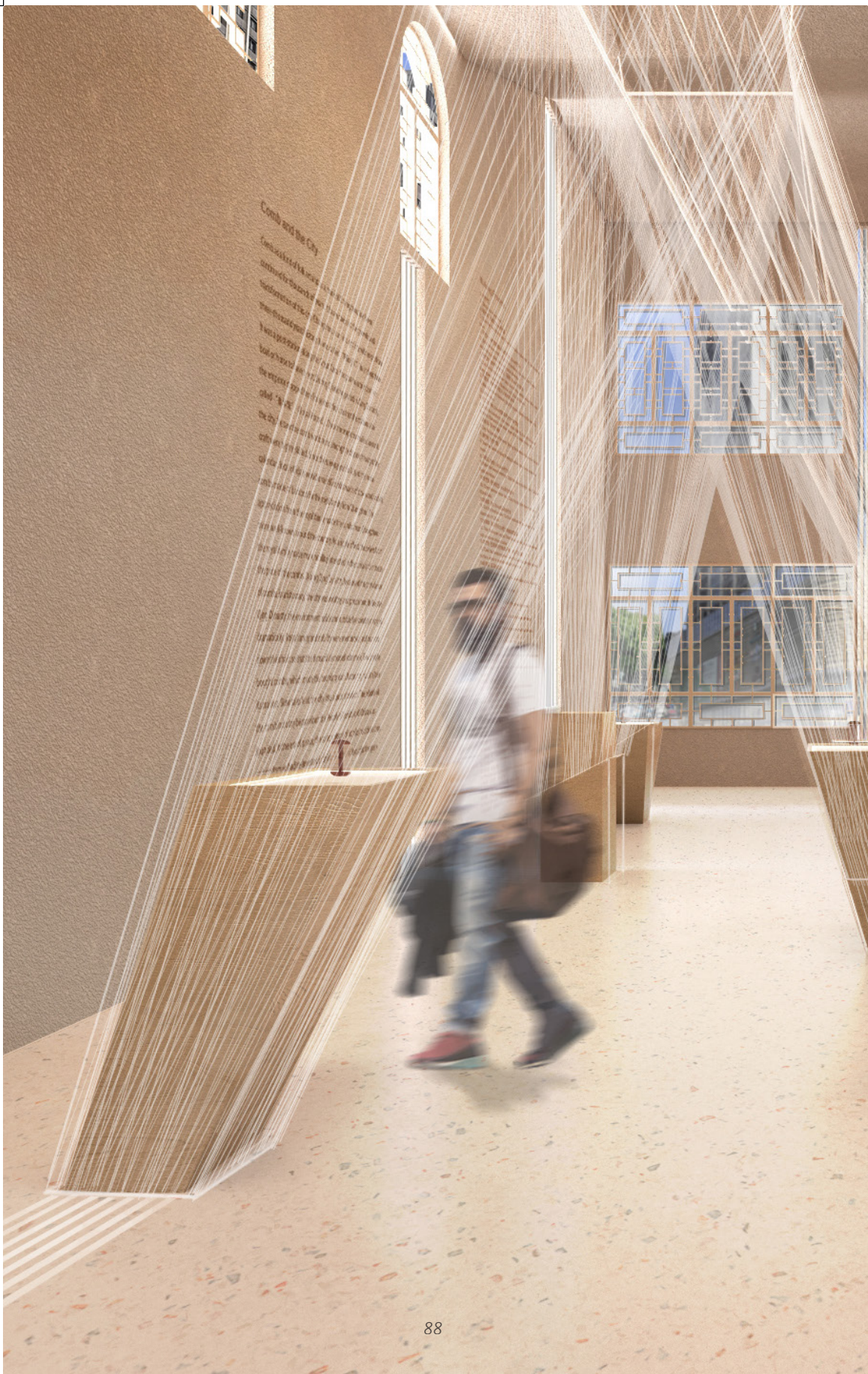
3' 0"





The image shows a close-up of a wooden display panel with a weight system and strings. The panel is made of light-colored wood with a visible grain. A weight system is attached to the top edge, and several thin, light-colored strings are suspended from it. The background is a textured, brown surface. The text is positioned in the upper right quadrant of the image.

The pedestal is made of half inch wood panel with a weight system inside to make it stable. The pedestals are in different height and shape depending on the light and string installation, so there will be optional floor attachment for some of them. The combs will display by a transparent plexy clip, when viewers see it in a distance, it will look like floating. Also, there are LED light hidden around the display panel.

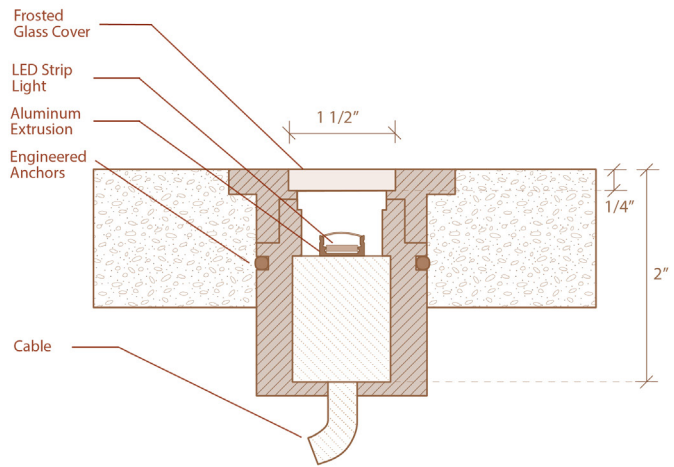




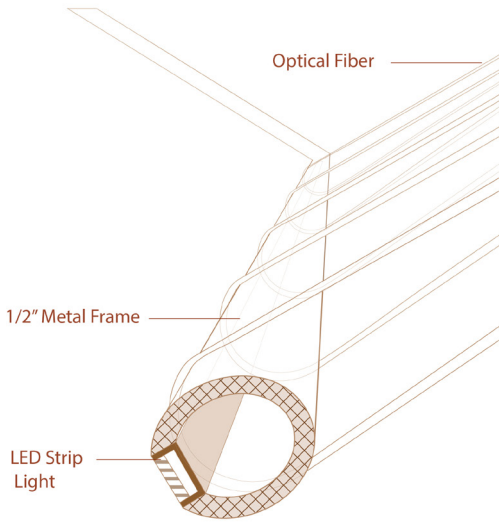
LIGHTING DETAIL

All these will look differently at night. The frame light up the optical fiber and the light connects the entire space.

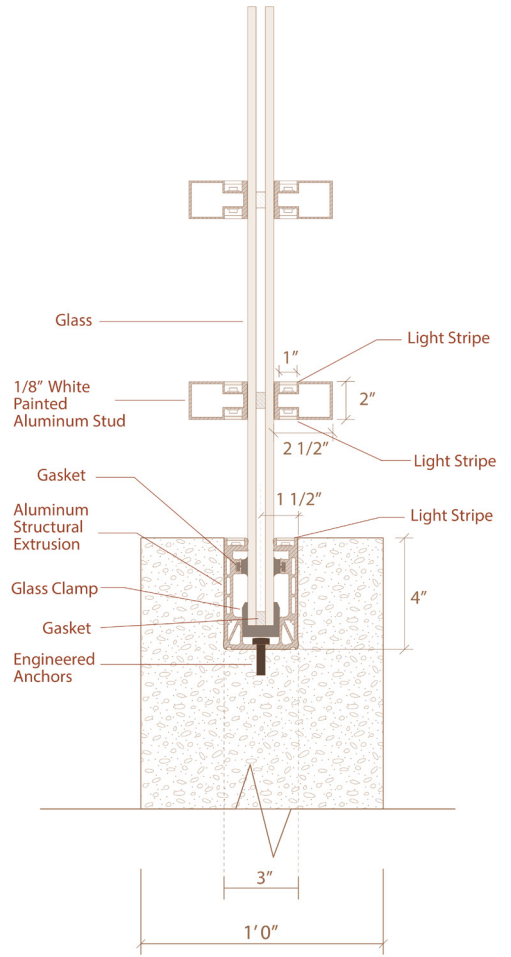
The frames are with hidden LED strip light and connect with optical fiber to light up the fiber. The floor light connect the pedestal and the wall. The stud on the wall will also have light stripe in between.



Floor Light Detail



Frame Light Detail



Stud Light Detail

NIGHT VIEW

Chapel Hill, North Carolina

The Chapel Hill campus of the University of North Carolina is a historic and vibrant community. The campus is home to over 20,000 students and faculty, and is known for its beautiful architecture and scenic views. The campus is also home to many historic landmarks, including the Old Well and the Old Chapel. The campus is a great place to live, learn, and work.

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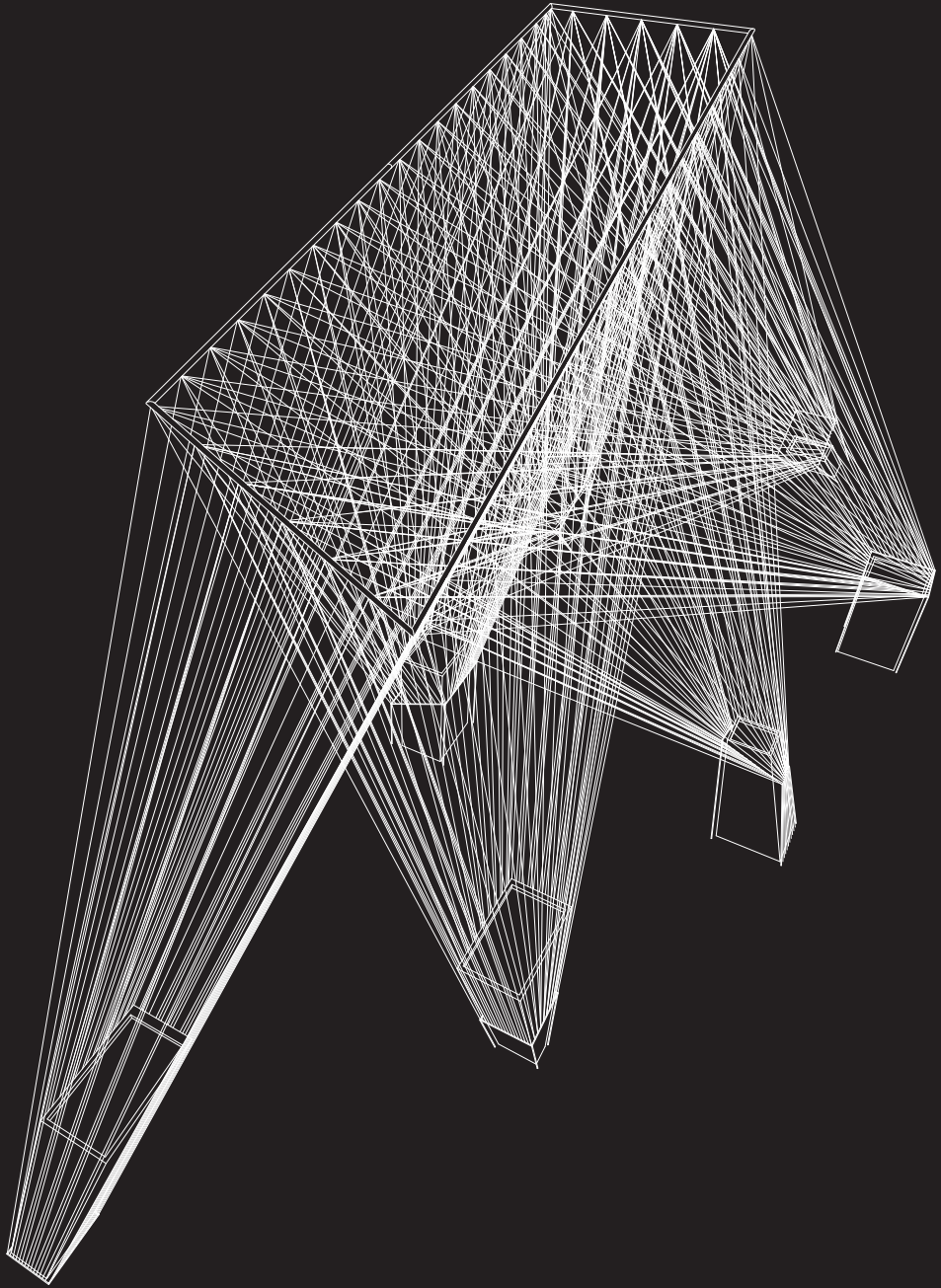


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CONCLUSION

The purpose of exhibition design is not only consideration of how to arrange exhibits, but creation of a display environment full of artistic appeal and personality through design, using space planning, display layout, lighting, color configuration, etc. The goal is to logically present the display content in such a way that visitors accept the information that the designer conveys to stimulate their thinking.

The little double-sided comb is shaped and highlighted by the vivid big story behind it. The goal of the exhibition is to create a new way to display cultural object. The new method can help people apply the information to the object and motivate people's curiosity to discover the larger story from a small starting point.



PRECEDENTS
AND
BIBLIOGRPAHY



PRECEDENTS 1

FROM THE BIRTH OF PAPER TO THE PRESENT

Curator/Artist: \

Time: 1997

Location: Museum SAN | The Hansol Paper Museum

The Hansol Paper Museum founded in 1997, was Korea's first museum specializing in paper and dedicated to collecting, researching and preserving diverse art, crafts and books made of paper. The museum contains four permanent exhibition halls and one educational workshops to show the history of paper. Together with the materials, making tools, print making machine and paper installations, the exhibition encourages the communication between paper, writing and audience. The overall display method and color used in the exhibition are conveying the subtle aesthetics of our ancestors and the practical value of paper. Also, visitors will be able to observe and participate the process of print making to better experience the paper.

Figure 13: Museum SAN Website., www.museumsan.org/enewweb/display/now_gallery.jsp?idx=1&m=2&s=1.



PRECEDENTS 2

THE MARVELOUS SUGAR BABY

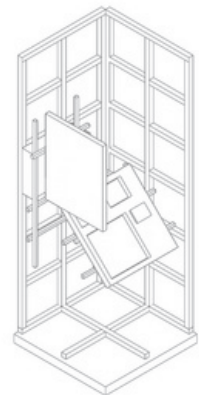
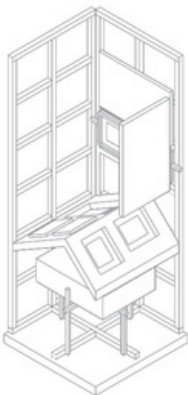
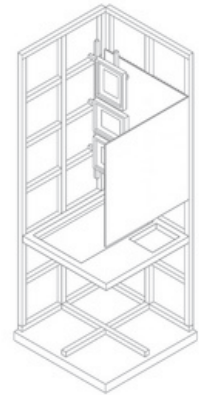
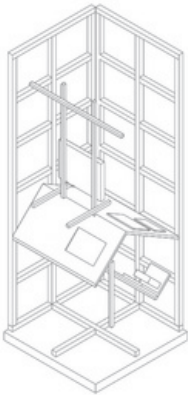
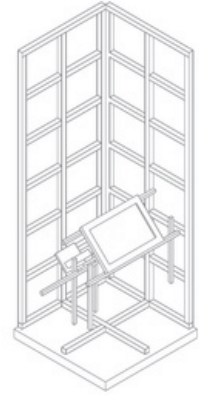
Curator/Artist: Kara Walker

Time: 2014

Location: Domino Sugar factory in Williamsburg, Brooklyn

Titled "a subtlety, of the Marvelous Sugar Baby", the art work dominated by an enormous sugarcoated sculpture in the shape of a woman-sphinx. The sculpture telling the story of the black slaves in the past in sugar industry. Described by Walker: "Sugar Baby fills the space between two rows of steel columns. Evoking an Egyptian temple, the columns also cage her. The sphinx evokes stereotypical depictions of the Southern Mammy archetype." There are 13 molasses-colored boys carrying baskets around the sugar baby, which represent the slaves from cane fields. The woman-sphinx can be interpreted into many layers of meanings through her different identities. When every detail of this sculpture is worth the attention and reflection of the audience, this sculpture is not only an object itself, but also a medium that inspires everyone to think. What do you think of when you look at her, and what do you remember after seeing her?

Figure 14: Major Sulpture of the Marbelous Sugar Baby
Smith, Roberta. "Sugar? Sure, but Salted With Meaning." The New York Times, The New York Times, 11 May 2014, www.nytimes.com/2014/05/12/arts/design/a-subtlety-or-the-marvelous-sugar-baby-at-the-domino-plant.html.



PRECEDENTS 3

BEYOND BAUHAUS RIBA EXHIBITION

Architects: Pezo von Ellrichshausen

Time: 2019

Location: London, United Kingdom

"Instead of a literal translation of the Bauhaus aesthetic, we propose an architectonic experience that evokes both its original ethos and its current deviations."

It is three-dimensional exhibition with bi-dimensional exhibits. The architects used an open structure with 12 designed columns for a distinctive hypostyle room with labyrinth-like atmosphere. The choices of secondary colors and shapes are all come from Bauhaus original content. Walking through the gallery, audiences are able to see the displayed objects in different perspectives and thus have the feeling of mystery and curiosity to explore the objects more.

Figure 15: Section Drawing of the Exhibition System
Tapia, Daniel. "Beyond Bauhaus RIBA Exhibition / Pezo Von Ellrichshausen." ArchDaily, ArchDaily, 21 Oct. 2019, www.archdaily.com/926765/beyond-bauhaus-riba-exhibition-pezo-von-ellrichshausen?ad_source=search&ad_medium=search_result_all.

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IMAGE CREDIT

FIGURE 1: HORIZONTAL COMB

Zhengluxin, and LuYue. *Shu Li De Wen Ming: Guan Yu Shu Bi De Li Shi = The Comb in Civilization*. Shan Dong Hua Bao Chu Ban She, 2008.

FIGURE 2: PAINTED IVORY COMB

Zhengluxin, and LuYue. *Shu Li De Wen Ming: Guan Yu Shu Bi De Li Shi = The Comb in Civilization*. Shan Dong Hua Bao Chu Ban She, 2008.

FIGURE 3: DOUBLE SIDED COMB FROM QING DYNASTY

Zhengluxin, and LuYue. *Shu Li De Wen Ming: Guan Yu Shu Bi De Li Shi = The Comb in Civilization*. Shan Dong Hua Bao Chu Ban She, 2008.

FIGURE 4: MONOCOLOR DOUBLE SIDED COMB

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FIGURE 5: COMB MAKING PROCESS

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FIGURE 6: COMB MAKING PROCESS

Yuan, Peide. “常州梳篦工艺体现文化与经验的积淀.”, Sina, 26 Aug. 2009, news.sina.com.cn/s/p/20090826/12507100.shtml.

FIGURE 7: COMB MAKING PROCESS

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FIGURE 8: CCTV DISCOVERY OF TRADITIONAL WOODEN COMB

FIGURE 9 / FIGURE 10: TRADITIONAL HANDMADE WOODEN COMB

<https://www.kunming.cn/En/Upload/Resources/Image/2019/12/06/270376.Jpg?1575612790680>, Google, [www.google.com/imgres?imgurl=https://www.kunming.cn/en/upload/resources/image/.i&docid=EwMfUrYp64BQ-M&w=600&h=369&q=comb making&ved=0CLcBEDMomQJqFwoTCKC-JL2C5OgCFQAAAAAdAAAAABAD](http://www.google.com/imgres?imgurl=https://www.kunming.cn/en/upload/resources/image/.i&docid=EwMfUrYp64BQ-M&w=600&h=369&q=comb%20making&ved=0CLcBEDMomQJqFwoTCKC-JL2C5OgCFQAAAAAdAAAAABAD).

FIGURE 11: "Nüshi Zhen Tu"

A Chinese narrative painting on silk that is traditionally ascribed to Gu Kaizhi.

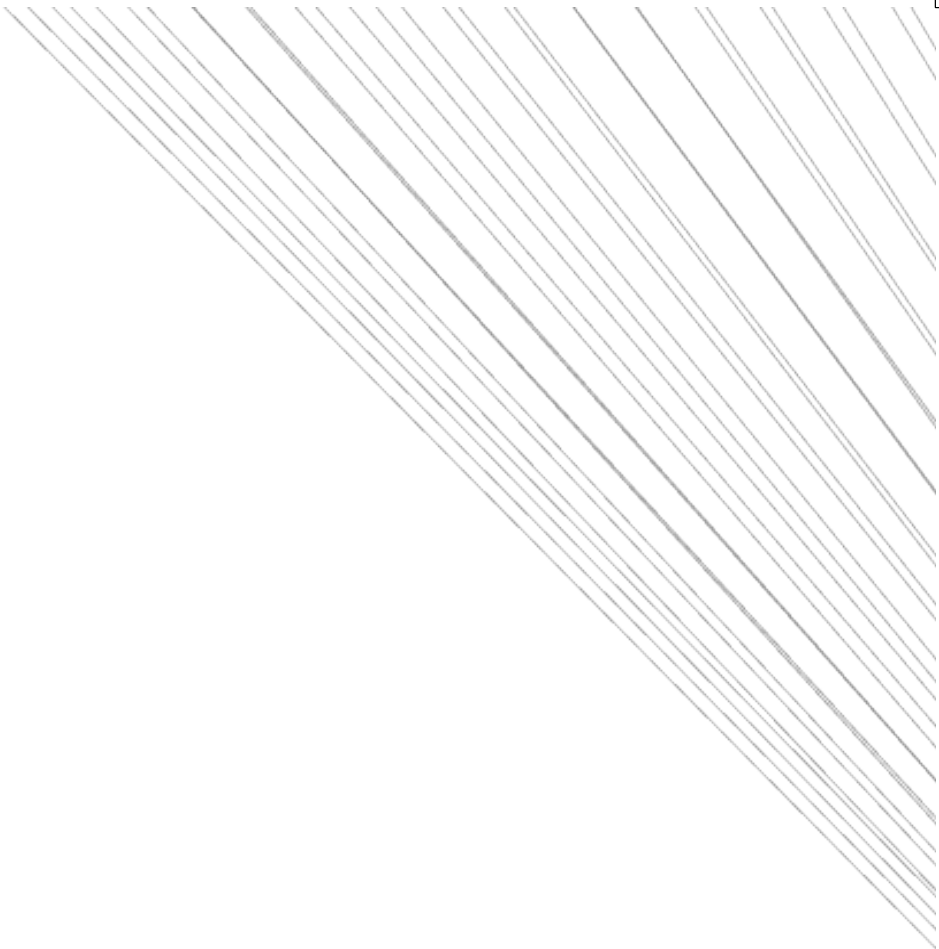
FIGURE 12: "JIANGHU HUIXIU"
Traditional Chinese ink painting of the city view in old Changzhou from famous artist-Quanbao Ji.

FIGURE 13: PHOTO OF THE EXHIBITION
"Qiu Zhijie: *Breaking through The Ice.*" UCCA Center for Contemporary Art, ucca.org.cn/en/exhibition/qiu-zhijie-breaking-ice/.

FIGURE 14: MAJOR Sulpture OF THE MARVELOUS SUGAR BABY
Smith, Roberta. "*Sugar? Sure, but Salted With Meaning.*" The New York Times, The New York Times, 11 May 2014, www.nytimes.com/2014/05/12/arts/design/a-subtlety-or-the-marvelous-sugar-baby-at-the-domino-plant.html.

FIGURE 15: SECTION DRAWING OF THE EXHIBITION SYSTEM
Tapia, Daniel. "*Beyond Bauhaus RIBA Exhibition / Pezo Von Ellrichshausen.*" ArchDaily, ArchDaily, 21 Oct. 2019, www.archdaily.com/926765/beyond-bauhaus-riba-exhibition-pezo-von-ellrichshausen?ad_source=search&ad_medium=search_result_all.

FIGURE 16: PERSPECTIVE OF THE EXHIBITION
Tapia, Daniel. "*Uncanny Values: Artificial Intelligence & You Exhibition / Some Place Studio.*" ArchDaily, ArchDaily, 25 June 2019, www.archdaily.com/919539/uncanny-values-artificial-intelligence-and-you-exhibition-some-place-studio?ad_source=search&ad_medium=search_result_all.



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