

CHAPTER FOUR

FINDINGS

Data collected on historic and newly built teahouses in China, the proposed lease space, and local coffee shops are reported in this chapter. These data were used to develop a design solution for this project, which was to design a contemporary teashop based on Chinese traditions.

This chapter is organized into three phases. The first phase presents a review of drawings and photos of historic and newly built Chinese teahouses; the second phase presents information on the proposed site; and phase three presents results from observation of four local coffee shops.

Historic and newly built teahouses in China

Data on Chinese teahouses were divided into three sections. First, pictures related to the early Chinese teahouse exterior and interior design in the southern region were reviewed. Then drawings, pictures, and plans of an existing historic teahouse in Shanghai were noted. The exterior and interior elements including building form, interior layout, interior furnishing, furniture, motif, materials, and specific accessories were recorded and analyzed. The last section included information obtained from drawings, pictures, and plans of newly built teahouses in China. Analysis of this material helped to determine traditional features of the Chinese teahouses in the southern region as well as the function and operation of teahouses.

Early Chinese teahouse exterior and interior design in Shanghai

In urban areas of China, the teahouse industry was fully developed between the late 19th to early 20th century. Typically, there were about 300~600 teahouses in a big city, such as Shanghai, Guangzhou (capital of Guangdong province), and Chendu (capital of Sichuan province) (Ukers, 1935; Feng, 1982; and Chen, 1982). During World War II (1937~1945 AD), the number of teahouses dropped dramatically. After the war, many remaining teahouses were merged with restaurants, where wine, food, and tea were served. Modern decorative styles were often adopted by these restaurants (Feng, 1982).

Little has been written about these teahouses and few photographs exist. In all the literature reviewed for this study only four historical photographs were found of Chinese teahouses which show the exterior and interior conditions. These four photos found in Ukers' and Burton 's books were taken by western scholars between 1860-1930 (see Figure 13a,b, 14a,b).(pages40-41

Based on the dress of people and their pigtailed in the photographs, these photographs were taken before 1911 (because all people were required to cut off their pigtailed in 1911). Figure 13a is an exterior view of Yian teahouse in Shanghai. Figure 13b shows an interior view of an historic Shanghai teahouse. Figure 14a,b present the exterior of the *Huxinting* teahouse at different times. This teahouse exists as the oldest one in China and still serves as a teahouse in the old city of Shanghai today. Although the original photos are small and unclear, they are the only visual record of both the exterior and interior of these teahouses. These photos are helpful for determining architectural design features, interior furniture and decorative items of historical design.

The *Yian* teahouse (see Figure 13a) was a two-story building with traditional wood framework. It was located along a street connected with other stores in a neighborhood setting. A large wooden board carved with the teahouse name hung at the entrance on the first floor. The second floor extended to form a balcony facing the street. The roof of the balcony was also extended and was supported by columns. The railing on the balcony was carved with traditional lattice.

Figure 13b shows the interior of a teahouse in Shanghai. There is no record of the name of this teahouse. From the photo, large square tables with marble tops can be seen. According to the drawings in the book *Interior design reference manual*, the tables, chairs and stools used in the photo are Qing Dynasty style with carved motifs. Chinese paintings and couplets were hung on the wall for decoration. *GongDeng* (palace lanterns) were used both for lighting and decoration. The tea sets used in this teahouse appear to be white porcelain.

Huxinting (Mid-lake pavilion)

The *Huxinting* teahouse, regarded as the oldest existing traditional Chinese teahouse, is located in the *Old Town* of Shanghai. The *Old Town*, which was described as a "maze of narrow alleys", is located beside the *Huangpu* river near the business center of the city. Actually, it was the center of the city in the late Qing Dynasty (1644~1911AD). Figure 14a & b are photos of the *Huxinting* (Mid-lake pavilion) teahouse dating between late 19th and early 20th century. Figure 14(a) shows the early condition of *Huxinting* with traditional lattice work covered by white paper for windows and doors of the exterior walls. In front of the teahouse was a wooden bridge. In figure 14 (b), a later photo, shows a number of changes have been made. The exterior windows were replaced by glass. The teahouse was expanded to include an additional seating area. A large

sign was hung at the entry of the teahouse. A wooden bridge was replaced with a stone and concrete bridge.

Today this whole area is preserved to keep its traditional appearance. There are hundreds of shops that sell traditional goods and handicrafts, as well as restaurants that serve traditional foods. In the center of the *Old Town* is *Yu Yuan* garden, which is a Ming (1368~1644) garden built between 1559~1577AD by an official named *PanYunduan*. *Huxinting* originally was a part of the "*Yu Yuan*" garden. A zigzag bridge connects the *Old Town* to the main entrance of the *Yu Yuan*. The *Huxinting* teahouse is at the middle of the bridge (see Figure 15). The whole teahouse, whose central structure is constructed as a Chinese traditional Ting (pavilion), stands in the middle of the lake. This is where the name "*Huxinting*" (Mid-lake pavilion) came from. In the year 1784 AD, this building was reconstructed and expanded. In 1855, it served as a teahouse with a new name "*Wanzai xuan*" (the willow pattern teahouse). In 1965, it was repaired and serves as a teahouse today.

The *Huxinting* teahouse is closely linked to with the *Yu Yuan* garden, not only because they were built during the same year and by the same person, but also because the teahouse is in close proximity to the garden. The *Huxinting* has the same architectural styles as the buildings inside the *Yu Yuan*. Materials and colors used were the same, but exterior and interior decorations of the *Huxinting* teahouse were much simpler than those of the buildings in the *Yu Yuan* garden.

- Exterior of the *Huxinting* teahouse

The exterior of the teahouse can be divided into three parts: platform, building proper, and roof (see figure 16,17,18). The concrete platform supports the whole building on columns that were sunk into the lake. The zigzag bridge, which now is made from stone and concrete, connects with the teahouse platform. On one side of the middle of the zigzag bridge is the entrance of the teahouse. The other side has a stone stair that extends into the lake. In the center of the stair is a traditional *Chuidai* (a string of steps) which has a relief sculpture of a dragon (see Figure 16).

The teahouse is a two-story building. As mentioned in Chapter Two, like traditional Chinese buildings, the *Huxinting* has a wood frame structure. Columns on the platform support the weight of the building. Therefore, the placement of the exterior and interior walls has more flexibility for openings. Windows and doors occupy all the exterior walls of this teahouse, and

all can be opened to get natural light and fresh air. All columns, beams, window lattices, and doors are painted red, which is the color of happiness in Chinese culture. Two-large red lanterns, which represent joy and prosperity, are hung above the entrance.

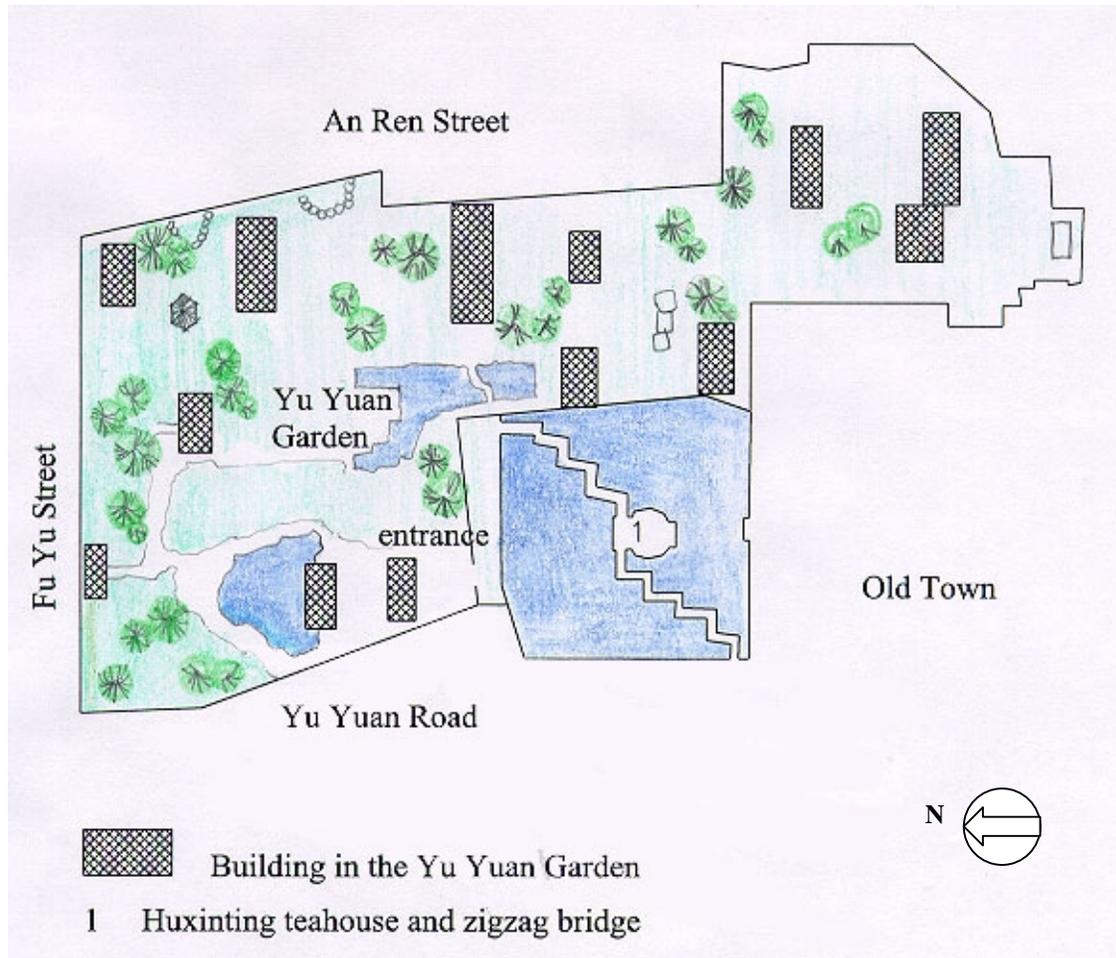


Figure15. Location of the *Huxinting* (Mid-lake pavilion) teahouse and *Yu Yuan* garden

The first floor exterior walls of the front part of the teahouse are unique. The part under the windows is called "*Meiren Kao*" (Chair back) in traditional Chinese architecture. Typically, seating near the windows was for people to sit close to the water and watch fish. Figure 27 shows how this structure was changed at different times and finally, an exterior wall was added to the chair back, forming a built-in chair in the interior of the teahouse. The wall portions below the second floor windows are red wood lattices against white wood boards. The motif of the lattice

developed from the Chinese word *Xi* (happiness) and *Shou* (longevity) (see Figure 28). Similar motifs are widely used throughout the exterior and interior as decoration for this teahouse and other stores in *Old Town*.

The style of the roof is typical southern Chinese style. The roofline is formed by exaggerated curves turning upwards. Because of the traditional wood framework, the roof not only curved vertically, but also horizontally. The structure of the teahouse roof seems complicated compared to roofs of other historic buildings. The entrance is covered by a pyramidal shaped roof with two small pyramidal roofs on each side. The rear part is a half-hipped/half-gabled roof (see Figure 22). In addition, there are parts of the roof that extend over the first floor windows for keeping out of the rain and sunshine. Grey tile, which is a southern traditional material, is applied to the entire roof. Each corner rib of the roof is decorated with three ceramic animals and the roof ribs and roof ridges are decorated with traditional motifs of cloud and Ruyi (see Figure18).

- Interior of the Huxinting teahouse

This teahouse has a north-south orientation, and has a symmetrical plan. The shape of the entrance is composed of a square with an octagonal bay on each side. The rear part is rectangular. Because windows occupy all the exterior walls, the interior of the teahouse is light. The view from these windows overlooks the Old Town traditional stores and the classical Chinese garden, *Yu Yuan* (see Figure 19).

Interior layout:

Figures 20 and 21 show the first and second floor plan for the *Huxinting* teahouse. The bridge expands at the teahouse entrance to provide more space. A retail shop is located inside the front entrance, which sells tea sets and books about tea. This area also serves as a display area for many different kinds of rare teapots, which are not easily found in other stores. On the wall directly opposite to the front entrance hangs a large Chinese flower painting (see Figure23). On the left side of the store area is a staircase leading to the second floor of the teahouse, and on the right side is an arched doorway leading to the rear part of seating area. On either side of the entrance area is a seating area, which has built-in seats along the exterior walls (detail see figure 27). The entrance area, the staircase, the doorway, and the two seating areas are large and open. They are visually divided by the structural components such as columns, beams, and brackets (see Figure 30). Behind the staircase are the kitchen, service area, and restrooms. The kitchen

and service areas occupy only a small part of the teahouse. The kitchen is for cooking some snack foods and preparing hot water. The service area is for preparing teas and serving customers' orders. The service area is open to the seating area and partially open to the stairway due to a fan-shaped window. The restroom area is separated by the Chinese traditional wooden screen doors (see Figure 24). A small office area and a storage area are located on either side of the entrance door and are separated by interior wooden partitions.

The second floor of the *Huxinting* teahouse has a similar interior layout, but its ceiling height is lower. This creates a feeling of more privacy and comfort (see Figure 25, 26). The front and rear areas are all for seating. Compared with the first floor, there are more columns in the front section of the second floor along the windows. Between these columns, half walls are used to separate the groups of seats. There is a showcase at the front of the room for displaying the historical materials about this store. Above the staircase is a small office area, and behind that is the kitchen area for the second floor. In front of the door of the kitchen is a screen partition for separation. Opposite the staircase is a counter, which serves as a service area.

Interior finishes of the teahouse

The interior finishes of this ancient teahouse are quite simple. Grey stone flooring is used on the first floor, and wood flooring is used on the second floor. All interior wooden surfaces, such as columns, beams, brackets, walls, built-in seats, windows, doors, wood-floors, interior screen partitions, and the staircase are covered with dark red paint. White paint was applied to interior walls, the first floor flat ceiling and part of the second floor ceiling. Therefore, red, white, and grey are the three colors that dominate both the interior and exterior. The ceiling structure is exposed on the second floor above the staircase.

Furniture and decorative items

Ming and Qing style furniture was used in this teahouse. On the first floor along the windows, small rectangle tables are used with the built-in seats (see Figure27). Square tables with rectangle stools are used in the rear section of the teahouse. Round tables with chairs and fan-shaped stools are used in the front part of the first floor and entire second floor. Each table has a floating marble panel set in the top wooden frame. Marble is a practical material used as the tabletop in teahouses, because it is easy to clean and resistant to heat and moisture. In addition, the color and the pattern of the marble become part of the aesthetics of the interior. Some of the tables have carved wooden motifs and miniature sculptures. The showcases are

decorated with relief wooden Xi (happiness) and Shou (longevity) motifs (see figure 25, 28). The style of the display counter on the first floor is like the Chinese traditional Bogujia (antique display case) (see Figure 23, 30). All the furniture was painted dark brown or black.

Columns and brackets in the interior not only served as structural support for the building, but also served as decorative elements. The brackets are carved with a series of curved lines (see Figure 23). The interior screen partitions use Ruyi motif for decoration, which represents fortune and the granting of every good wish (see Figure 24).

Historical Chinese *Gongdeng* (palace lanterns) are used both for lighting and decorative elements (see Figure 23) in this teahouse. There are two shapes of *Gongdeng*, one that is hexagonal and the other is octagon shaped. *Gongdeng* is made of a brown wood frame covered with paper or silk. The wood frame is carved with traditional motifs such as Xi and Shou, and then covered with paper or silk that is painted with Chinese landscapes, flowers, and bird paintings. Red tassels hang around the lamps. There are also wall lamps attached to the columns. The frame of the wall lamp is made of bronze. Painted glass is set into the frame. The shape of the wall lamp is like a flower.

Historical Chinese paintings and calligraphy of quotes related to tea are framed and covered with glass and hung on the beams (see Figure 25,26). The glass helps to keep moisture from the paintings. The tea set used for preparing tea in this teahouse consists of one tea plate, one big teapot, one small teapot, teacups and one big bowl. The tea plate is used for holding the entire tea set and also prevents the water or spilled tea from staining the table. The big teapot holds hot water and the small one holds tea. The big bowl is for holding used tealeaves. Teapots are made of pottery, and tea plates, teacups, and big bowls are made of porcelain with a brown glaze to match the teapot color.

The *Huxinting* teahouse is the oldest teahouse existing in China today and is regarded as the most accurate representation of historic teahouses of the southern region of China. It is often mentioned in Chinese literatures and travel guides, and remains as a prime tourist attraction. This teahouse and its surrounding area have been well preserved, and *Huxinting* has retained much of its original appearance. The oldest photograph (Figure 14a) indicates that its architectural structure has remained unchanged. Interior furniture and lighting fixtures are the same style as the ones found in the historical photograph in figure 13(b). But no photographs were found that documented the early interior of this teahouse.



Figure16. Front view of Huxinting teahouse
(View from the entrance of the Yu Yuan garden)



Figure17. Exterior of Huxinting teahouse (view from the entrance of zigzag bridge)



Figure 18. Exterior of the Huxinting teahouse (the beautiful curved roofline)



Figure 19. Old Town Street (view from the windows of the Huxinting teahouse)

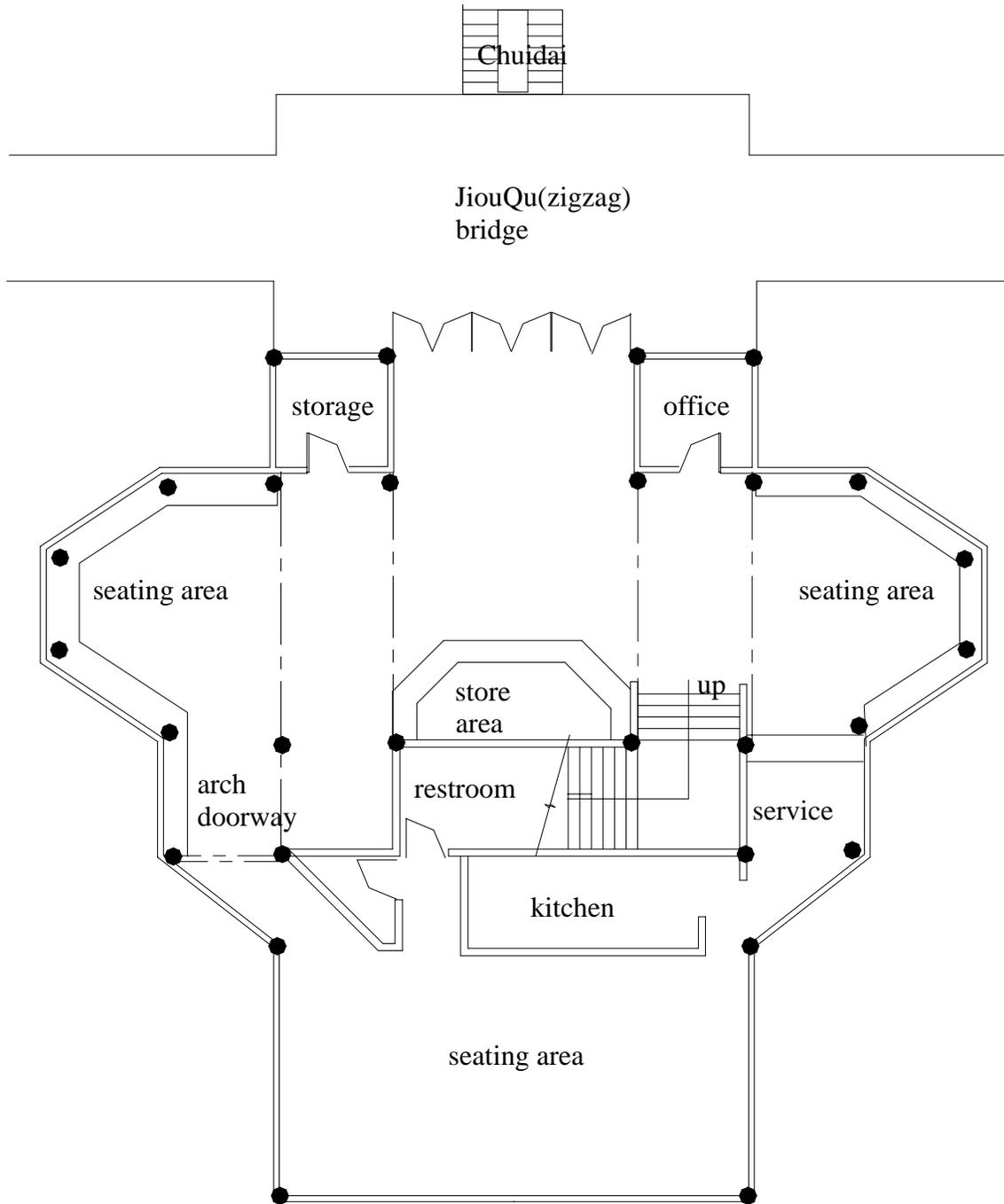


Figure 20. First floor plan of the Huxinting teahouse

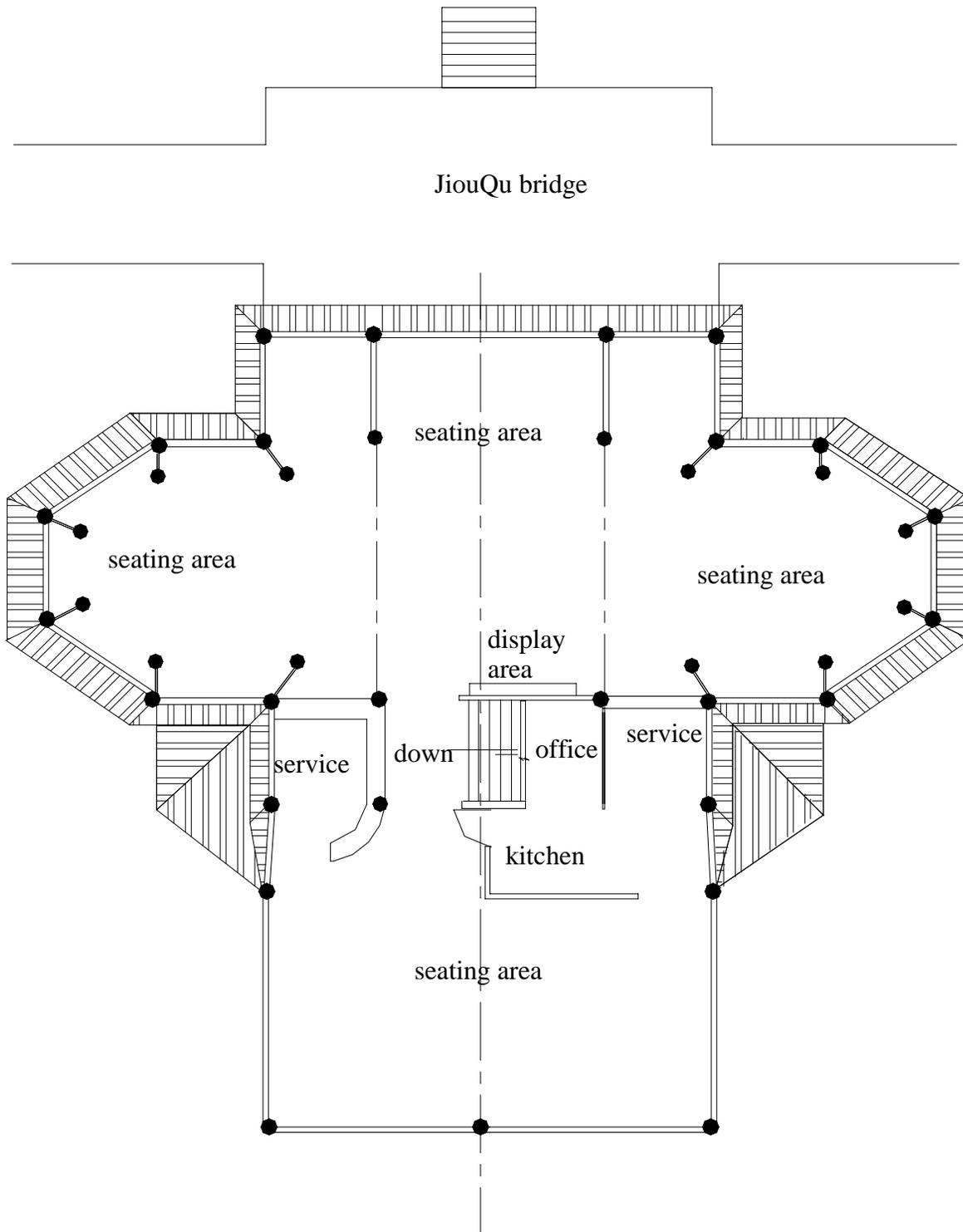


Figure 21. Second floor plan of the Huxinting teahouse

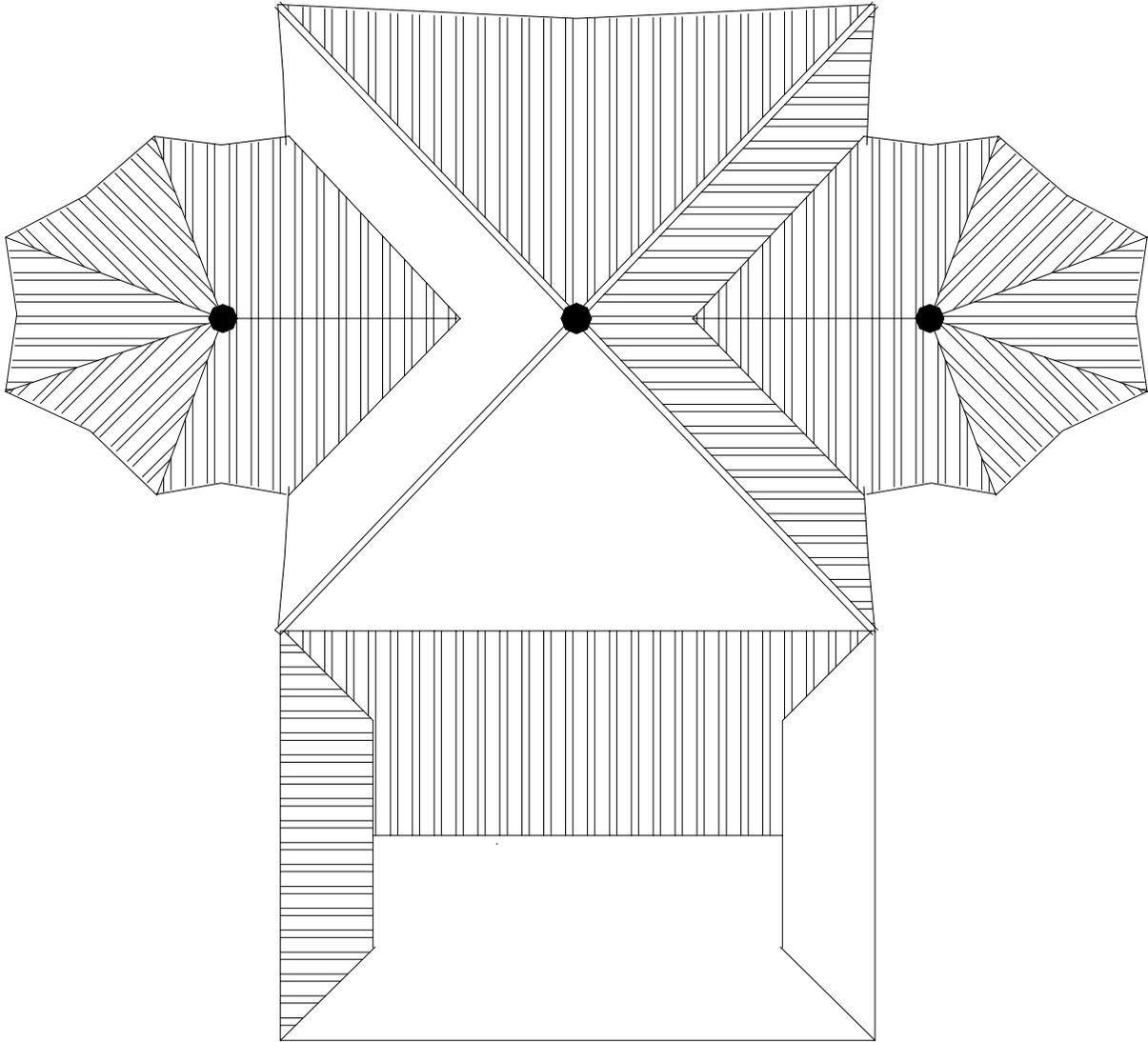


Figure 22. Roof plan of the Huxinting teahouse



Figure 23. Entrance of the Huxinting teahouse



Figure 24. First floor of the teahouse interior (rear part)



Figure 25. Second floor of the teahouse interior



Figure 26. Second floor of the teahouse interior

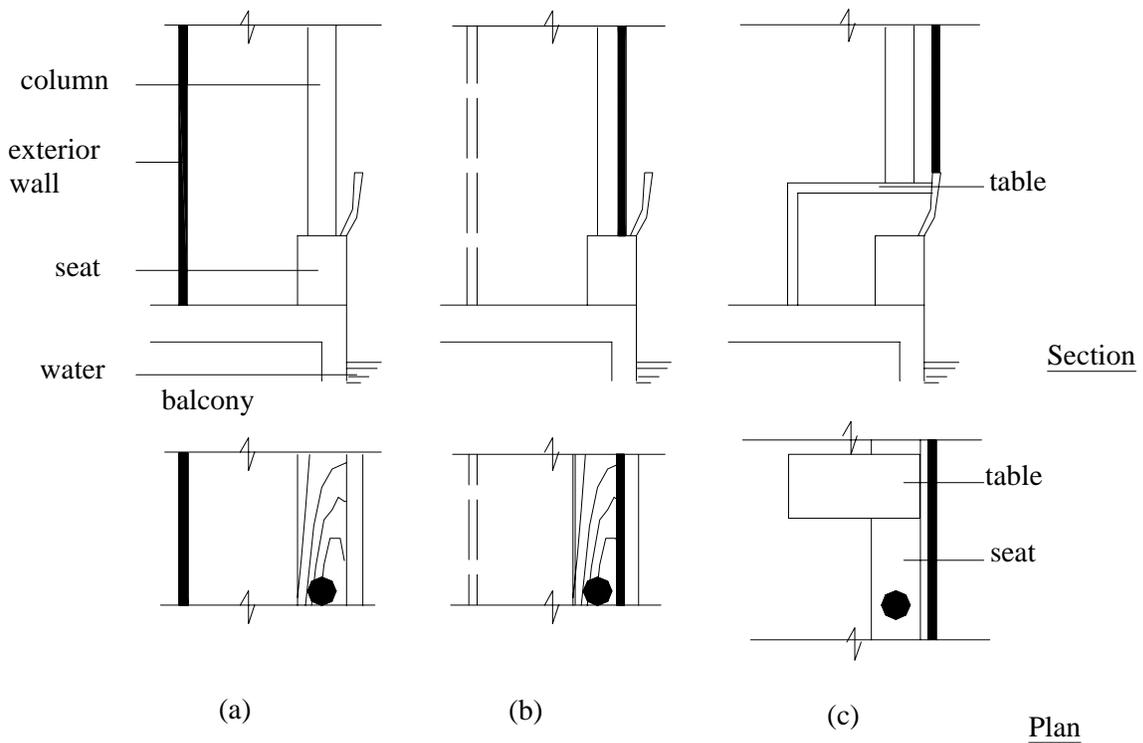
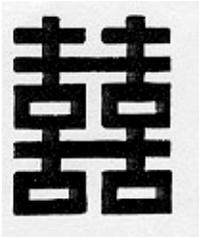


Figure 27. Section and plan of Meiren Kao(Chair back) in different times of the Huxinting teahouse

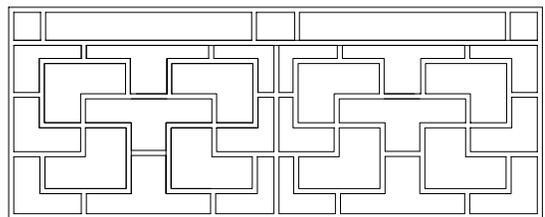
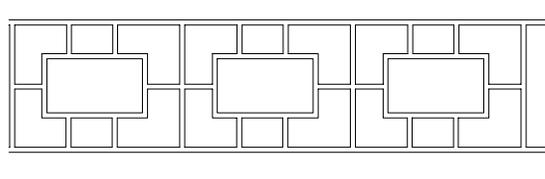
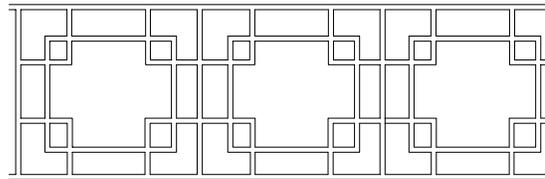
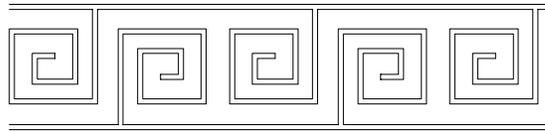
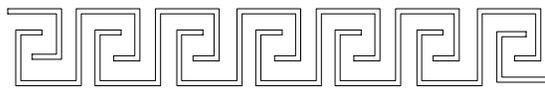
- (a) original structure with balcony seating outside the wall
- (b) exterior wall moved toward the seats
- (c) exterior wall moved to the seats back, formed a built-in chairs in the interior



Longevity (Shou)



Happiness (Xi)



Motifs developd from Chinese word "Xi" and "Shou"



Ru Yi motif

Figure 28. Traditional motifs in the exterior and interior of the Huxinting teahouse

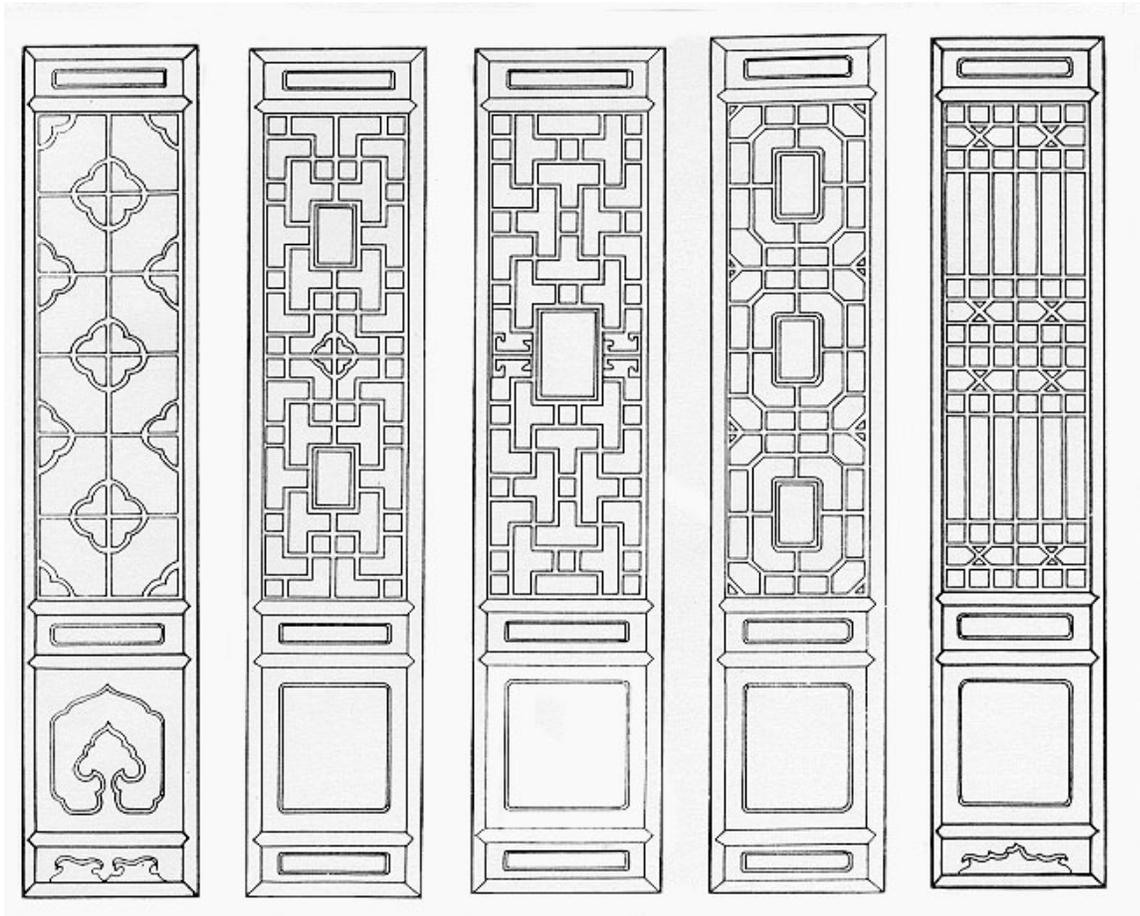
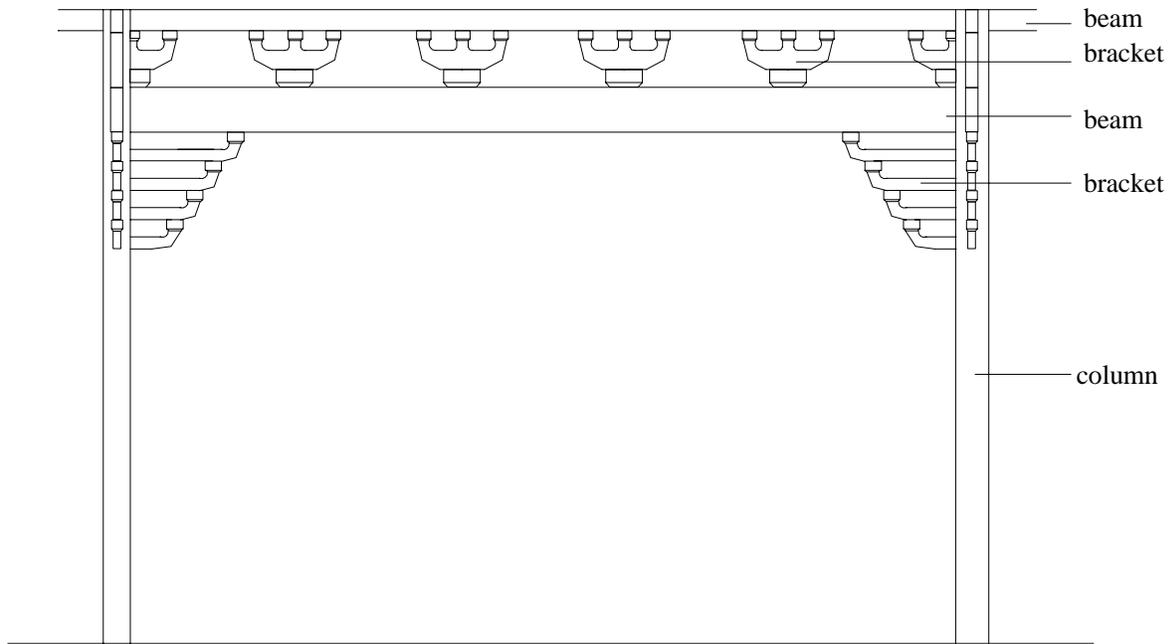
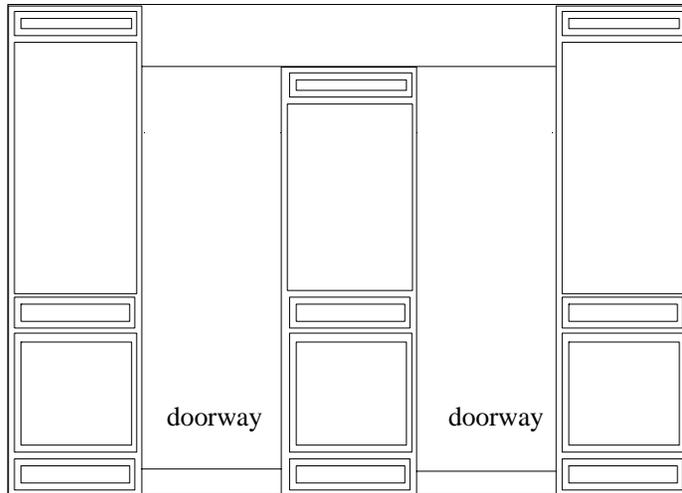


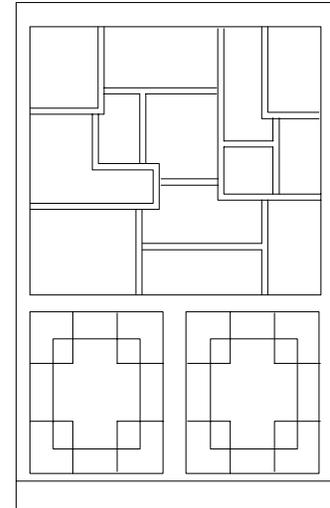
Figure 29. Interior and exterior partitions used in the Huxinting teahouse and other Old Town stores (Zhang & Zheng, 1993)



(a) The interior structural details of the teahouse



(b) Interior wooden partition



(c) Buogu Jia

Figure 30. (a). Structure (b). Interior wooden partitions
(c). Traditional Buogu Jia (Antique display case)

Newly built Chinese teahouses

In China, many teahouses were built in the early 1990's in large urban cities, such as Shanghai, Beijing, and Guangzhou. These new teahouses began to appear as western type coffee shops were becoming popular and as there was a growing recognition of loss of Chinese cultural traditions. A newly built teahouse is called "tea-art house", a name which attempts to blend traditional tea culture and art together. Many of the teahouses combine tea ceremony performance, new techniques for making tea products, and tea-related business together. In addition, these teahouses provide many activities, such as tea ceremony, tea brewing instruction, and sometime exhibitions of rare teapots. The design of these teahouses reflects influence from Chinese tea culture and traditions, and also from foreign countries' tea culture, such as the Japanese tea ceremony. Chinese traditional architecture and traditional culture from both southern and northern regions are apparent in design.

Three newly built teahouses, two from Shanghai, and one from Beijing are used as examples of current teahouse design. Information on signage design, interior layout, and interior design features is noted. These three teahouses were opened during 1997~1998. The two Shanghai teahouses are located along streets in newly developed residential communities. One is *MingYuan*; and the other is *HuaYunMingYuan*. These two teahouses occupy the first floor of the front part of high rise residential buildings. The Beijing teahouse, called *JiGuGe*, is located in a commercial shopping center. It is on the second floor of a two-story building. An outside stair leads to the outdoor seating area and the main entrance of the teahouse. The styles of the exterior and interior designs, the usage of colors, and decor of these three teahouses are all a blending of new and historic design. Historical motifs, furniture, and lanterns continually appeared in these teahouses. Modern materials and equipment, such as air-conditioning, telephone, water-fountain, and lighting fixtures are also used in these teahouses. Figure 31~33 show floor plans along with interior views.

- Exterior façade and signage

These three teahouses all use traditional features, such as wooden lattice windows, lanterns, teapot and wood signage boards, as visual images to communicate with customers.

Ming Yuan teahouse applied neon lamps on its façade to attract young people. Black marble covers the exterior wall to present a contemporary appearance. A large wooden carved teapot is attached to each window. Two stone lions, typical Chinese design features, stand on

each side of the door. Two columns on the façade are painted red with traditional Chinese couplet.

HuaYuMingYuan teahouse has a big tea sign hanging above the front entrance. Simplified wooden partitions painted dark red inspired from historical designs are used on the façade. Bamboo louvers are used on the wooden lattice windows. The "Cha"(tea) character is applied to each window

The *JiGuGe* teahouse chose the traditional roof as the identifying image to reflect Chinese historical tradition. A large blue-white porcelain teapot sits on a stone table at the front entrance. This teahouse has a large outdoor tea drinking area with traditional stone tables and stools.

- Interior layout and furnishing

All three teahouses organized their interior spaces into four areas: seating, service, kitchen, and stage or display. The seating area normally includes a larger open area and a smaller private area or private rooms. The kitchen, which only occupies a small area of the teahouse, is connected with the service area. *HuaYuMingYuan* and *Ming Yuan* teahouses have small stages in their seating area for traditional performance. *JiGuGe* teahouse has a large display area with bookshelves used for holding different kinds of tea, tea sets, and snack foods. Each shelf of these bookcases is surrounded by an elegant lattice frame. Customers are served at tables. Every table has one tea set, which includes a small stove, a large teapot (for holding hot water), a tea plate, a small teapot (for brewing tea), and teacups.

Red, dark red, brown, and white are the main colors found in all three teahouses. Simplified traditional motifs and patterns are applied to wall panels, counter surfaces, and interior partitions. Ming & Qing style furniture with red sandalwood color, or various motifs carved in relief is commonly used in the interiors. A variety of tea sets are used as the ornamental items. Similar to the historic teahouse, Chinese calligraphy, paintings, and palace lanterns are used for decorating

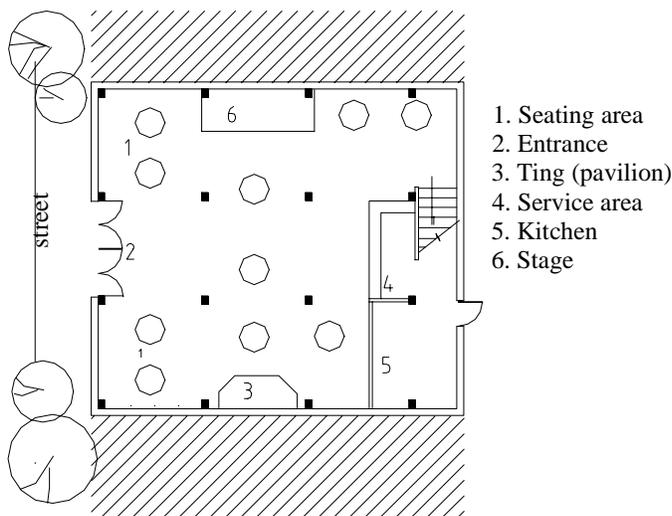
Contemporary lighting fixtures, such as compact fluorescent downlight and track lighting provide illumination to the teahouse interiors. Custom-made lighting fixtures decorated with traditional lattice are used to reflect the historic theme.

- Summary of historic and newly built teahouses

Both historic and newly built teahouses provide traditional tea serving function. Their kitchens only occupy a small area in the stores. Traditional paintings, tea quotes, and palace lanterns are used as decoration.

The historic teahouse is based on traditional wood framing, curved roofs, and large windows for natural light. Its symmetrical interior is divided by interior partitions with traditional motifs developed from Chinese characters. Building structure is also used as interior decorative element. White and darker colors, such as red, brown, and dark gray are used. Classical furniture is made from high quality wood with various motifs carved in relief.

Historical themes appear in the designs of these newly built teahouses. Instead of traditional symmetrical layouts, these teahouses organize their spaces in response to their functional needs. Contemporary construction techniques and materials are widely applied. Simplified and enlarged historical motifs are used as signage and decorative elements. Some traditional exterior architectural elements, such as Ting (pavilion) and roofs, are used in the interior for ornament.



(floor plan is not to scale)

Figure 31. Floor plan and interior of the *HuaYuMingYuan* teahouse (Interior Stage)

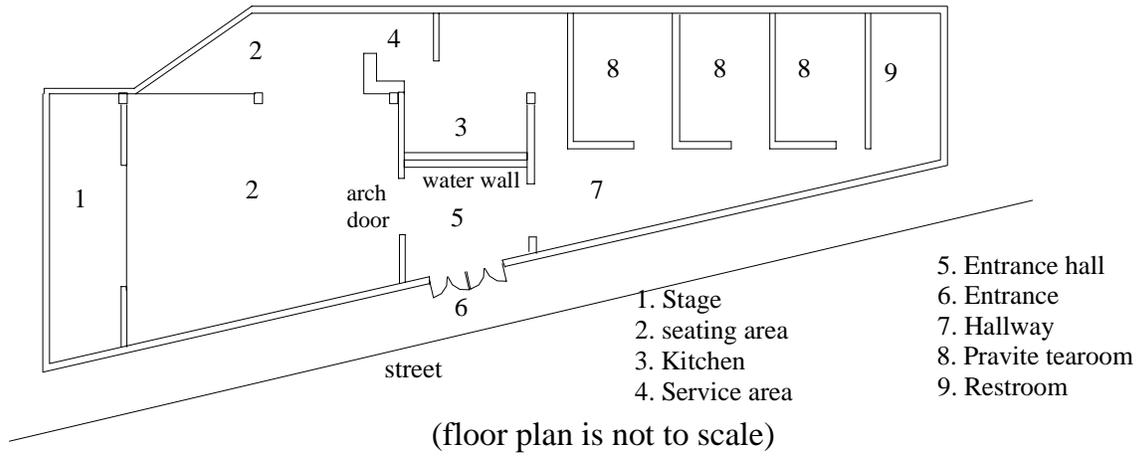
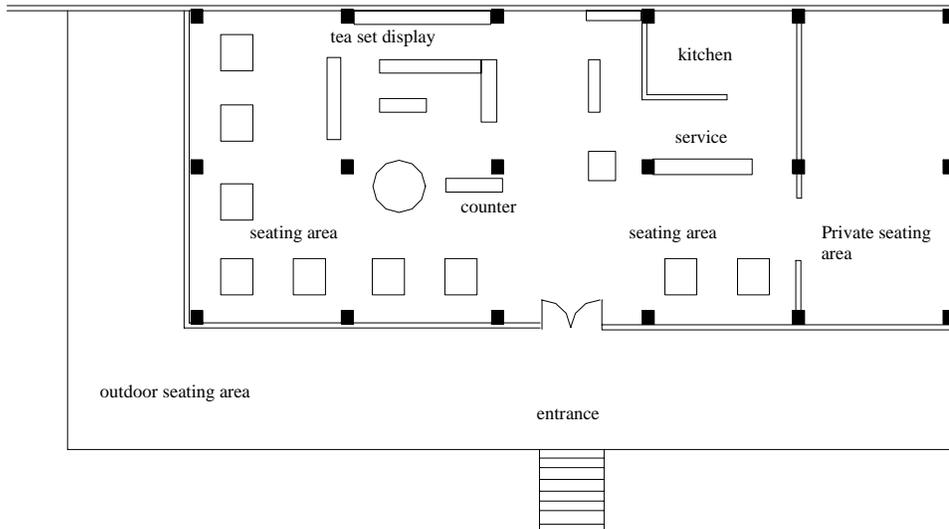


Figure 32. Floor plan and interior view of *Ming Yuan* teahouse



(floor plan is not to scale)

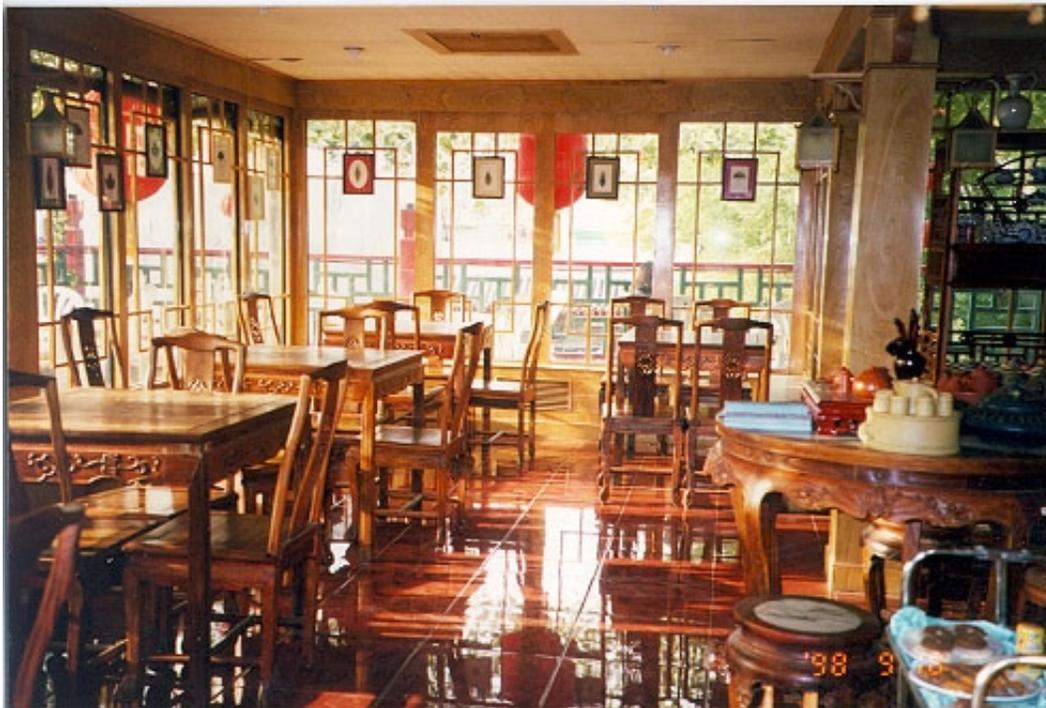


Figure 33. Floor plan and interior view of the JiGuGe

Proposed lease space

The proposed site for this teahouse design is located on a street adjacent to a university campus in Blacksburg, Virginia. The stores on this street provide goods and services for university students, such as copy centers, coffeehouses, restaurants and bars. The location is only a five-minute walk from the university library and the student center, making this an ideal location for a teashop. The proposed rectangular space, which has appropriately 1800 square feet, is located at the end of a row of shops and on the first floor of a two-story building (see Figure 34). The main entrance is to the far-left side facing the street with a dock located opposite the entrance and connected with the parking lot. Two large windows open to the street.

Two columns stand in the middle of the space. The ceiling along the wall is lower than the central part. Three storage areas and one restroom are separated by wood panels. Wallpaper covers the wall, and grey carpet is used as the floor covering. Acoustic ceiling tiles with 2x4 fluorescent lighting fixtures are used in the interior. Figures 35, 36 show the exterior façade and floor plan of this space.

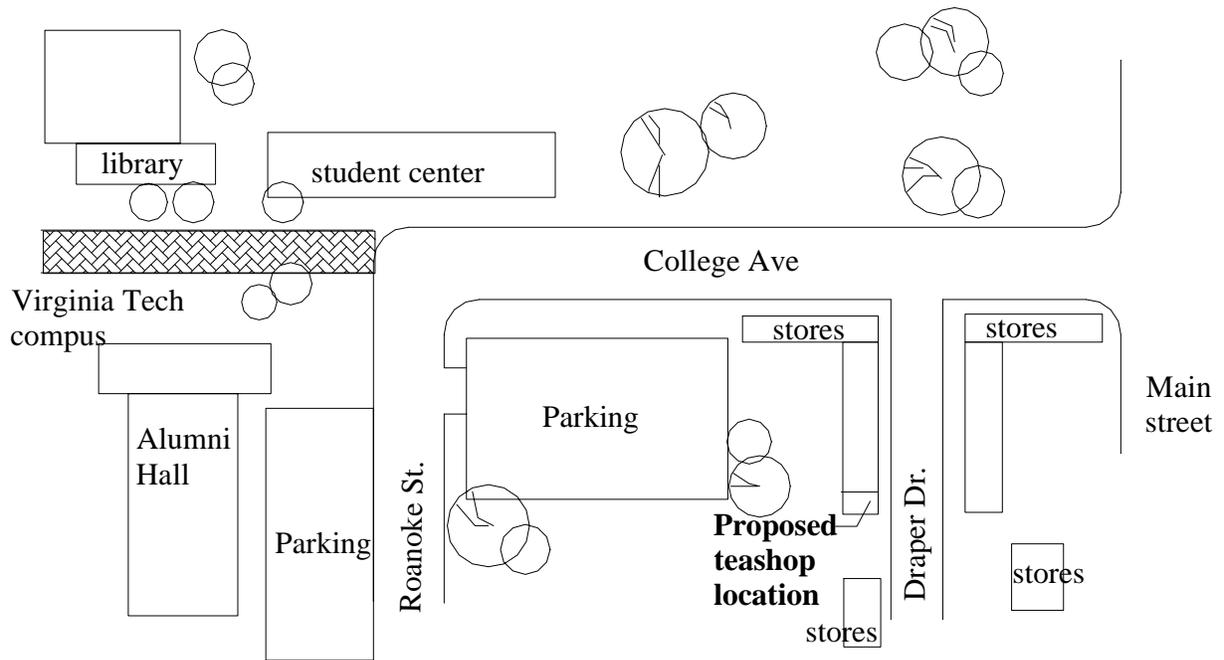


Figure 34. Schematic site plan (n.t.s)



Figure 35. Front elevation of the proposed space

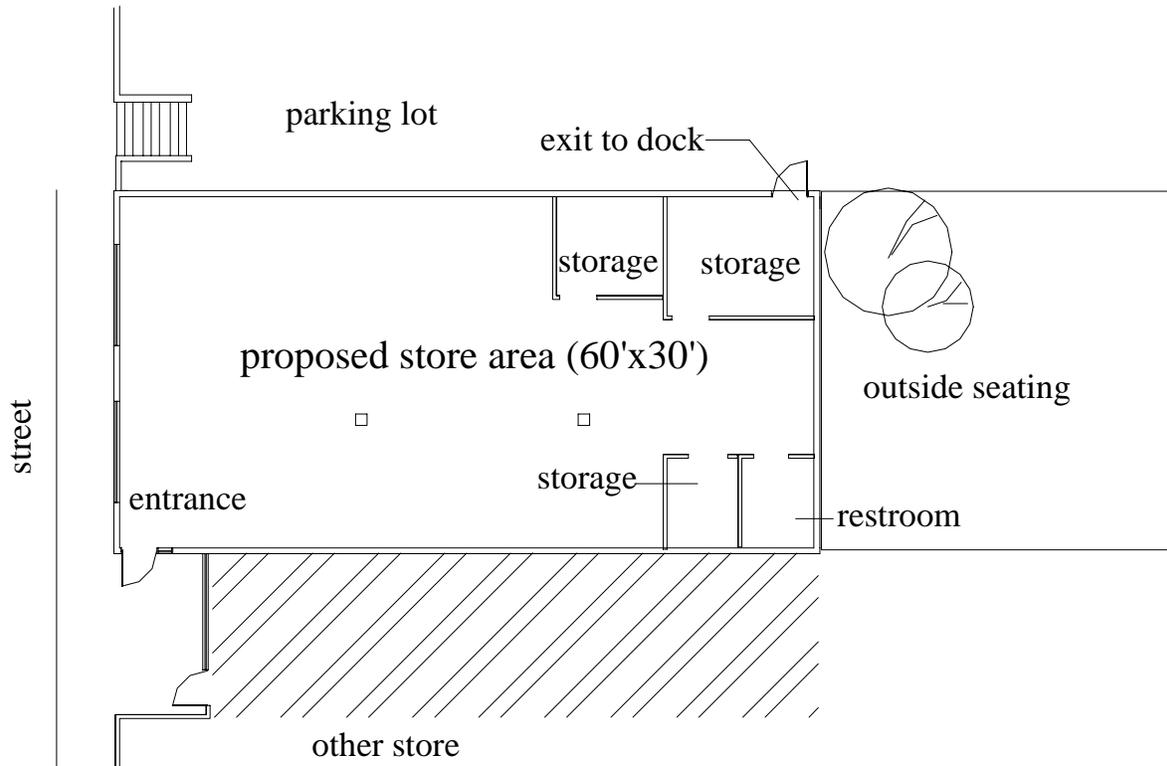


Figure 36. Floor plan of the proposed space

Observations of local coffee shops

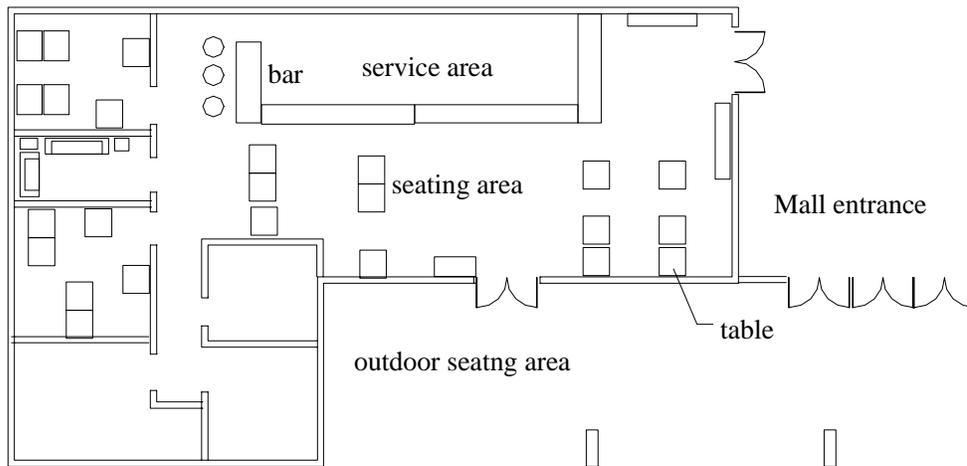
Coffee shops have been increasing dramatically since the early 1990s in America. For this phase of the study, observation of four local coffee shops were completed to gather information on customer activities, services and types of food provided, signage design, and interior space layout. Given the similarity of purpose and function of coffee shops and teashops, data collected were used to make design decisions for this project. The coffee shops observed included: *Easy Chair*, *Bollo's*, *Espresso Corner*, and *Mill Mountain Coffee & Tea*. These four coffee shops are all located near campus. The *Easy Chair* is located in a mall. *Bollo's* is located opposite the proposed site for this study in the first floor of an existing building. The other two, *Espresso Corner* and *Mill Mountain Coffee & Tea*, are located on the main street in the downtown area which is also near the campus and within walking distance. These locations are all set among numerous other shops catering to the university students. Figures 37 to 40 show the floor plans of these four coffee shops along with exterior views.

Observations:

- User activities in the coffee shops:

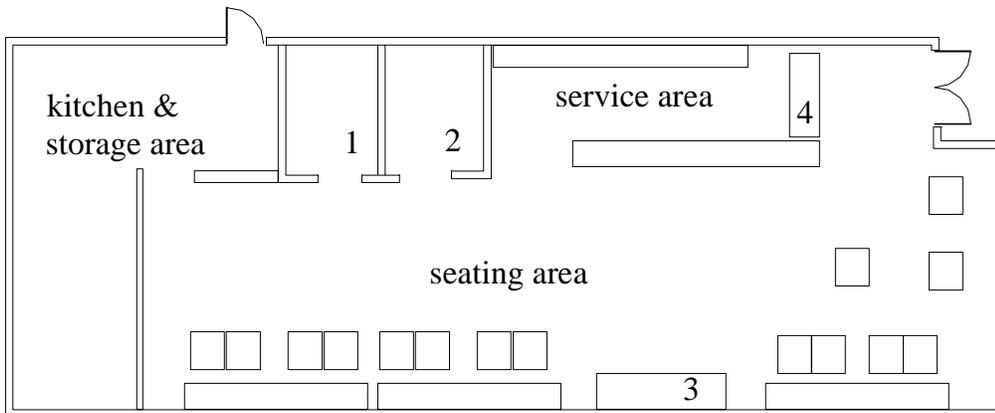
The customers' activities in these four coffee shops are quite similar. Drinking, eating, talking, reading and writing are the main activities observed in all four coffee shops. Most of these coffee shops provide newspapers and magazines. Customers (many of them are students) brought books and other items to use the coffee shop as a place to study. Some of these coffee shops, such as *Easy Chair* and *Espresso Corner* even provide sofas for customer seating. *Easy Chair* has small separate rooms for both individuals and large groups. Tables and chairs in all four shops can be rearranged for use by larger groups. Using personal computers is another activity found in the *Bollo's*, *Mill Mountain Coffee & Tea* and *Espresso Corner*. Each of the activities observed and the times spent on the activity are reported in Table 1.

Nearly half of the customers bought some drinks and food then left. There were large amounts of traffic between the entrance and the service counters. A little more than half of the customers chose to stay in the coffee shops for drinking and other activities. In *Easy Chair*, *Espresso Corner*, and *Bollo's* the percentage of people choosing to stay was 60.8%, 59.7%, and 52.1%, respectively. In *Mill Mountain*, the percentage was 47.9%. For all four, the average time that customer stayed was between 30-40 minutes. Individual and two-person activities were most common. Individuals most often were reading or writing and occupying a single table.



(Floor Plan is not to scale)

Figure 37. Floor plan and exterior view of the **Easy Chair** coffee shop

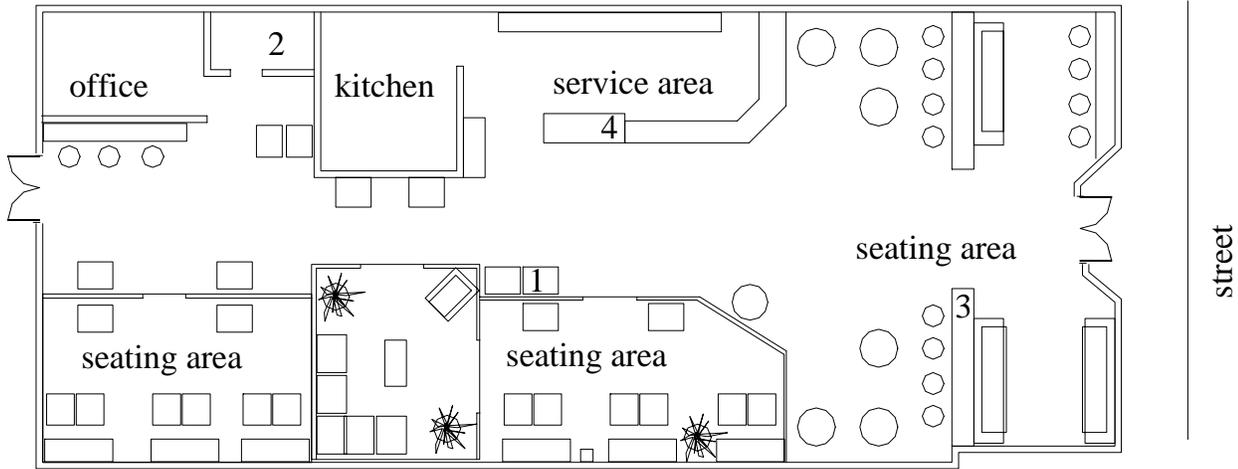


street

1. restroom
2. closet
3. self-service counter
4. glass display case

(Floor Plan is not to scale)

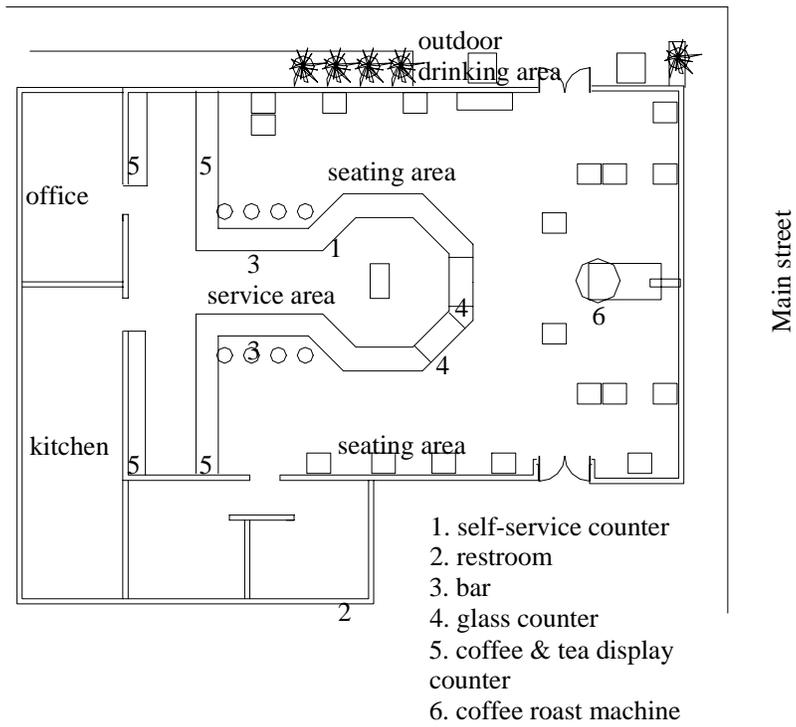
Figure 38. Floor plan and exterior view of the **Bollo's** coffee shop



- 1. self-service counter
- 2. restroom
- 3. bar
- 4. glass display case

(Floor Plan is not to scale)

Figure 39. Floor plan and exterior view of the **Espresso Corner** coffee shop



(Floor Plan is not to scale)

Figure 40. Floor plan and exterior view of the **Mill Mountain Coffee & Tea** shop

Table 1. Activities and average per customer times spent in minutes on these activities in a total six hours of observation:

Activities	Easy Chair		Bollo's		Espresso Corner		Mill Mountain	
	No.	minutes	No.	minutes	No.	minutes	No.	minutes
*Buy and go	85		68		100		115	
Individual eating & drinking	13 6 1	11-20 21-30 31-40					6	11-20
Mean (minutes per activity)		19						15
Individual reading & writing while eating or drinking	2 12 10 4 1	11-20 21-30 31-40 51-60 71-80	4 9 14 5 2	21-30 31-40 41-50 51-60 61-70	12 42 15 6	11-20 21-30 31-40 51-60	4 17 23 4 4	11-20 21-30 31-40 51-60 71-80
Mean (minutes per activity)		33.6		42.6		27.8		34.8
Individual using PC while eating or drinking	---	---	1	51-60	1 1	51-60 71-80	1 2	71-80 81-90
Mean (minutes per activity)				55		65		81.6
Two drinking/talking (n)*	2(2) 2(2) 6(2) 8(2) 2(2)	0-10 11-20 21-30 31-40 51-60	7(2) 1(2) 1(2)	11-20 21-30 31-40	9(2) 3(2)	31-40 51-60	1(2) 1(2) 7(2) 1(2)	11-20 21-30 31-40 51-60
Mean (minutes per activity)		29		18.3		40		34
Two reading/writing while eating or drinking	1(2) 6(2) 7(2) 2(2) 1(2)	0-10 11-20 21-30 31-40 61-70	1(2)	0-10 21-30 31-40	5(2) 12(2) 3(2) 1(2)	11-20 21-30 31-40 41-50	3(2) 3(2)	21-30 31-40
Mean (minutes per activity)		23.8		30		25		30
Group activities(n)*	2(3) 1(3)	21-30 31-40	1(3) 1(4)	21-30 31-40	1(3) 1(3)	21-30 31-40	2(3) 1(7)	21-30 31-40
mean		28.3		30.7		30		30.38
Total number of customers [B]	217		142		248		221	
Total number of customers for stay [A]	132		74		148		106	
Percentage of customers for stay (%) [A/B]	60.8%		52.1%		59.7%		47.9%	
Mean (minutes for stay)		29.7		31.35		33.69		38.9

- Buy and go: The mean does not include the persons who just buy and go.
- (n): Number of customers in one group

- Services provided by the coffee shops

Coffee, espresso beverage, chocolate drink, ice tea, fruit juice, soda and ice cream along with cake, cookies, muffins, and breads are the main items served in all these coffee shops. The *Easy Chair* and *Mill Mountain Coffee & Tea* shops serve sandwiches and salad. All these coffee shops serve tea. *Bollo's* serves bag tea. Loose tea, which is imported from a variety of countries, is served in *Espresso Corner* and *Mill Mountain Coffee & Tea*. The *Easy Chair* and *Mill Mountain Coffee & Tea* also sell many different kinds of coffee beans. *Mill Mountain* has a large machine sitting in the middle of the store along the front window for roasting coffee beans.

Counter-service is the main form of service provided in all four coffee shops. Customers order their drink and food at the service counters and pick up their orders. Another self-service counter is located near the main service counter providing sugar, cream, ice water and other items. Most of the drinks are prepared in the service areas. Most kinds of food are cooked and prepared in the service areas as well. Some foods are displayed in a glass case.

- The signage design:

The *Easy Chair*, located at the entrance of a mall, has two storefronts: one is inside the mall and the other is outside near the main entrance to the mall. Both facades have large windows and glass entrance doors. The store logo is placed on the exterior glass door and above the interior entrance. The word "coffee" in neon hangs inside the exterior window. A display case holding merchandise, which can be seen through the interior window, functions as self-advertisement. The signage of *Bollo's* coffee shop consists only of its name in painted letters on the front window. *Espresso Corner* and *Mill Mountain Coffee & Tea* have awnings above their front windows. Large and clear logos are printed on the awnings. The exterior of *Mill Mountain Coffee & Tea* has a well-kept landscape along with a few tables and chairs functioning as the outdoor seating.

- Interior space layout:

These four coffee shops have quite similar functional areas, which include seating areas, service areas, small kitchen areas, and restrooms.

In the *Easy Chair*, the service counters are located right in the middle of the store against the back walls. The seating areas are along the front windows. The cashier unit faces the main entrances. A bar area with three high stools is on the left side of the service counter. Three private seating rooms, one with a group of comfortable sofas, are located at the left side of the

store. There is no separate kitchen in the store. The food preparation area is behind the service counter, which occupies one-third of the store area.

Mill Mountain Coffee & Tea shop has its service counter and bar area in the middle of the store. Against the back wall are the display cases, which hold many different kinds of coffee beans and teas. The seating area surrounds the central service area. A small kitchen is behind this service area.

Bollo's and *Espresso Corner* coffee shops each has a small storefront facing the street. Their spaces are planned with the service area arranged along one wall, and a seating area along the other wall. *Bollo's* has its entrance in the right corner of the storefront. Part of its seating area is along the window facing the street.

Espresso Corner coffee shop has its large store area divided into different zones as the bar area, the sofa area, and the casual drinking area. The service area and kitchen area occupy one-fourth of the entire store. The number and types of seating in these coffee shops are reported in Table 2.

Table 2. The number and types of seating in the coffee shops:

		Table for two	Table for four	Group of sofas	Bar	Total
Easy Chair	Seating area	4	4		3	51+1group sofa
	Private room	4	4	1		
Bollo's		13	3			38
Espresso Corner		16	11	4	12	88+4 group sofas
Mill Mountain		12	3		8	44

The tables in the four coffee shops are all movable. A table for two is the basic style that can be rearranged as a table for four or more as needed. Two person groups often occupied a four-seat table. In *Mill Mountain* the bar area which is a part of the service area was fully occupied by individual customers much of the time. However, the bars, which are standing alone in *Espresso Corner*, were almost empty. Sofas were used by individuals for reading or for group conversation. Often, one large group of sofas was occupied by only one or two persons.

- Interior finishes and furniture

Acoustic ceiling tiles and vinyl composition floor tiles are widely used in the interior. Blackboards are used to show prices in all four coffee shops. Paintings, art works, and photographs from local artist are the main items for interior ornament.

The interior walls of the *Easy Chair* are painted blue. A variety of hats hang on one interior blue wall for decoration. Green and red paint is applied to the walls of the private rooms. Each tabletop is painted with different abstract paintings.

Bollo's has a different approach in its interior. The exposed ceiling structure is painted black. An exposed brick wall is hung with rotating art. A piece of stainless steel is used to cover the counter surface.

In the *Espresso Corner*, natural wood finishes and light beige colors dominate the interior to create a warm space. The floor of part of the seating area is raised and covered with grey carpet. A variety of furniture, paintings, artworks, photographs, and lighting fixtures are used in the interior.

The interior of the *Mill Mountain* has a large area of dark wood flooring, counter surface, and wainscot paneling. The wall above the paneling is painted light orange and hung with paintings by local artists. White ceiling tiles are used.

Lighting differs in each of the four coffee shops. In the *Easy Chair*, fluorescent lighting fixtures provide equal amounts of illumination to the entire space. In *Bollo's*, the interior seems dark. Track lighting provides illumination to all the areas. While in *Espresso Corner*, the service area has the highest lighting level illuminated by 2x4 fluorescent lighting fixtures. Eyeball downlights along with table lamps are used in the seating area for the activities, such as reading and writing. The interior of the *Mill Mountain Coffee & Tea* shop seems dark due to a large areas of dark wood. The service and bar area are highlighted. The tables along the walls and bar counters are illuminated by lighting fixtures hanging from the ceiling. Eyeball downlights provide illumination to the merchandise.

Summary of the findings:

The findings from historic Chinese teahouses, newly built Chinese teahouses, and local American coffee shops are summarized as follows:

Historic Chinese teahouses:

- Historic teahouses accommodated many social activities while drinking tea.
- Large areas of exterior walls are opened as windows for natural light and natural ventilation.
- Interior décor and furnishings are simple. Building structures are used as the integral part of the interior design.

- Interior partitions are widely used. Motifs developed from Chinese characters, such as Xi (happiness), Shou (longevity), and the shape of RuYi are used on interior items surface.
- Hardwood furniture is used. Chairs and marble top tables are heavy and difficult to move.
- Grey, red, white, and dark brown are the main colors predominating the exterior and interior of the historic teahouses.
- Palace lanterns provided illumination for the teahouse interiors.
- Display items include historic paintings, calligraphy, and tea sets.

Newly built Chinese teahouses:

- The designs of contemporary Chinese teahouses all derived inspiration from Chinese traditions used for façade designs, identity images, and interior designs.
- Both traditional functions and new activities are provided, such as tea ceremony performance and traditional art appreciation.
- The kitchen occupies only a small area of the teahouse.
- Table service, as opposed to counter service, is the only service in these teahouses.

Local American coffee shops:

- Reading, writing, and using personal computer are customer activities in the local coffee shops in addition to drinking, eating, and talking.
- Self-service is the main service form in the coffee shops.
- The interior furnishing of the coffee shops is simple, economical, and low maintenance.
- A service counter is in the center of the coffee shops for preparing all kinds of drinks and snack foods.
- Paintings, artworks, and photos from local artists are typically used to decorate the interior of the coffee shops.