

A STUDY OF PRESERVATION AND EXPANSION OF THE  
TONGJI FACULTY CLUB

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## **Abstract**

The Tongji Faculty Club was a typical modern architecture in the early founding of China in 1950s. The building was influenced by the Western Modernism while strongly stood for Shanghai vernacular architecture. Led by the core concept of flowing space, the design method was different from either the method that starting from functioning space while ending up with classical details, or the method that composed by several enclosed spaces. The preservation of the Tongji Faculty Club is not only necessary but urgent for that it is a good precedent for architects and architecture students and it symbolizes the turning of Chinese regional modernism.

The character defining features of the Tongji Faculty Club includes the gable roof, the surrounding gardens, the flowing space, and the designed decorations. The restoration design starts from the study and comparison of historical drawings and documents, followed by a digital restoration model of the original interior and exterior appearances of the building. In the end of this research, a check list of each restoration parts was provided by priority for future reference of the owner and the government.

## **Acknowledgments**

I would like to pay my deepest respect and memorial to my Doc I committee chair Spencer Leineweber. She had been a dedicated mentor and knowledgeable adviser for me. Unfortunately, I lost her in the middle of my dissertation writing process, but her influence on me will remain through the rest of my life.

I offer my sincere appreciation to my committee member Glen Mason, who provided me many professional suggestions in preservation techniques and always have time to drive to school for my committee meeting. Thanks to William Chapman, who led me into the field of American preservation and always be kind and encouraging. Thanks to my Doc II chair Pu Miao who was very supportive for my research and gave me many life advices. My completion of this dissertation could not have been accomplished without the guidance of any of them.

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# Introduction

## Preface - Define the Problem

The Tongji Faculty Club, built in 1956, is a typical modern Chinese building from the 1950s. The building has features that borrow from modern architecture such as the efficient functional arrangement, the flowing spaces and the configuration in the plan. On the other hand, it also has the elements influenced by Chinese traditional architecture such as gable roofs and gardens. The strategy of borrowing and transforming modern architecture theories, and applying them on traditional Chinese building typologies is one of the many approaches in Chinese modern architecture history. The other approaches include the "Chinese Architectural Style"<sup>1</sup>, the "National Style"<sup>2</sup> or academic Western modern architectural style. Therefore, the study on the Tongji Faculty Club will add more diversities on the development of Chinese modern architecture.

The importance of the Tongji Faculty Club was for a long time neglected but began to be realized by the society in the recent years. It was rewarded with the price of Excellent Architecture Design by the Architecture Society of China, and registered as the Shanghai Outstanding Historical Architecture in 2005. Even though the building is on the protection list, many mistaken renovations have already been done on it, and there is still no specific preservation strategy designed for it.

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<sup>1</sup> The expression "Chinese Architectural Style" first officially appeared in the *Capital Plan* published in 1927. The *Capital Plan* was an urban planning for Nanjing after the Republic of China chose it for the capital. The *Capital Plan* proposed that the city planning should be based on the European and American theories, while the architecture style should be based on Chinese traditional architectural style. The reason mentioned in *Capital Plan* to use the "Chinese Architectural Style" were: 1). In order to carry forward Chinese traditional culture; 2). Colors in Chinese traditional architecture match the best with each other; 3). Chinese traditional architectures create great natural illumination and ventilation; 4). Chinese traditional architectures can be separated into different stages and built.

<sup>2</sup> The "National Style" was first proposed in the Soviet Union. China borrow the idea and applied it on Chinese modern architectures from 1952. The feature of the "National Style" in China is the big sloping roof and the modern concrete multi-story structure.

Currently, the Tongji Faculty Club is used as an activity center for the residences of Tongji New Village and a conference room for Tongji faculties and students. The features of modern or regional architectures have been partly neglected and altered. Its unique character of applying a modern western architectural style on Chinese traditional style is disappearing. The aim of this research is to argue that the Tongji Faculty Club is one of the diverse approaches of Chinese architects to modern architecture in the 1950s, and it is necessary and very urge to preserve and even restore the unique visual features of the building. The expected outcome of this project is a practicable preservation design on the Tongji Faculty Club.

The building's character defining features have been lost because of several transformations and so-called renovations. The first transformation happened in 1958 only two years after the completion of Tongji Faculty Club. In the 1970s, the building was abandoned to be a storage. In the 1980s it was reused as the resident's activity center. During the period from the 1980s to the 2000s some renovations have been done on the building to provide a better environment and service to the users. Since they were not done by preservation professionals, the renovations have also impacted or disrupted many visual character features. The building's original site also changed because of the development of the surrounding neighborhood. There was a river on the west of the site and a wide lawn on the site (see fig. 1-1). Now the river disappeared and the lawn shrank. Its surrounding buildings also changed from low-rises to multi-rises and high-rises.

Besides the renovations, additional structures have been built around the original building site because of the requirement for more functions and service for the growing populations. Those structures were taking up former gardens. Other problems caused by

the transformations on the building include the change of number and locations of entrances and doors, and the changes of the construction details like window frames and balcony railing.

The intention of my project is to preserve Tongji Faculty Club with greater integrity to its original design. By preservation, the character of architecture can be revealed and the functions can be better used. In order to achieve this result, four research questions need to be solved in this thesis:

1. Identify the visual character defining features of the building by studying the introduction articles, construction drawings and original photos.
2. Evaluate the condition of the building, decide the parts that need to be replaced.
3. By analyzing the Chinese preservation regulations, identify the existing shortages and propose possible improvement.
4. Identify the process of the formulation, execution and management of a preservation project in Shanghai or China.

## **Research Object**

The primary objective of this research is formulating a preservation design for Tongji Faculty Club that is supported by international and Chinese preservation regulations.

The research time ranges from the foundation of the first institution of historical preservation 1922 (Peking University institute of archaeology founded) to today. This time range includes the 92 years' development of Chinese historical preservation which is the theoretical background of the research. The research time range also includes the process of design, construction and maintaining Tongji Faculty Club from 1957 to recent.

The research region is global, but focus on China. The research object is in Shanghai, China. The Chinese law research and case study will be in China, and the region of international law research and case study will be global.

## **Existing Research**

The existing researches can be mainly covered by three categories:

The first category is the documents and researches on the Tongji Faculty Club. These documents include the original construction drawings, the articles that the architects published regarding the building, the speeches of and memorial articles about Zou-shen Huang, the mentor of the architectures, reflexing his design philosophy which has a great influence upon the architects. The researches on the Tongji Faculty Club covered its design strategies and the architects' educational back grounds. There were the *Another "Modern" – A Space Reading of the Tongji Faculty's Club* by Yong-yi Lu analyzing the flowing space design of the building and tracing that back to the Western Modern architecture theories, and the *Filling Colors for the Five Black-and White Photos on the Sixth Issue of 1958 of Architectural Journal* by Dong-yang Liu emphasizing on the interior design of the building.

The second category is international and Chinese regulations about historical preservation. The international charters including *The Venice Charter* which is the theoretical foundation in the field of conservation and restoration, *The Burra Charter* is a regional principle based on *The Venice Charter* and have instructions on preservation strategies, and *The Principles for the Conservation of Heritage Sites in China* issued by China ICOMOS is based on the *Act of the Preservation of Cultural Relics Promulgated by P.R.C.* and also



integrate with international preservation conventions.

The third category books and researches on preservation precedent and techniques. The Preservation of Modern Architecture covers issues ranging from American preservation history and philosophy to various case studies. The Masonry Construction Manual contains detail drawings of brick walls.

Based on the three kinds of sources, the preservation design of the Tongji Faculty Club will have a solid stand point, strict references from the international and domestic preservation regulations, and actual project process to learn from.

## **Research Approaches**

The research first digs into the design and time background of the Tongji Faculty Club. By presenting the unique modern architecture design method of this building, and comparing with other modern architectures in the same time China, the research will show the importance of the building as an attempt of Chinese modern architecture and the necessity of preserving its design features.

Then the research identifies each visual character defining features in this building, and decide if they are changed or not. This part includes illustration of the features, comparison of the original drawings, descriptions and photos with current photos, and definition of by what degree the feature will be counted as changed or not. This process is helpful in deciding the preserving parts and restoring parts in the design phase. After that, the current condition of the building is reviewed and evaluated. This is also for deciding the building parts that should be replaced.

Furthermore, the research collects and compares the Chinese reservation regulations with the global ones to find supporting article for the restoration project of the building. In the same time, the research also finds out the shortage in the Chinese regulations that prevent or slow down the preservation project managements.

Finally, the research formulate a preservation strategy for the building by applying the value estimations of each features and building parts.

## **The Structure of Thesis**

Introduction

Chapter 1 The Tongji Faculty Club - Design, Architects and Impact on History

Chapter 2 The Current Condition and Value Identification of the Tongji Faculty Club

Chapter 3 The Current Condition of the Tongji Faculty Club

Chapter 4 The Preservation Ethic in China

Chapter 5 The Schematic Preservation Design of the Tongji Faculty Club

# **Chapter 1 The Tongji Faculty Club - Design, Architects and Impact on History**

## **1.1 The historical data collection of the Tongji Faculty Club**

The Tongji Faculty Club was built as a club for Tongji University faculties in their residence village in Shanghai China. The two architects De-huan Li and Ji-zhong Wang both taught in the Architecture Department in Tongji University. After they were assigned this project, they decided to take the opportunity and make it a teaching case to show the students how to create flowing space in modern architecture.

The initial design and condition of Tongji Faculty Club are discovered in two sets of drawings - the original construction documents (1956) and the design drawings collection (1958) published in *Journal of Tongji University*. There are a few differences between the construction documents and design drawings. After comparison and analysis, the conclusion is the construction document is more like the original design intention of architect and the design drawings on journal is a faithful reflection of the building after its completion. The difference between the design and built project may because of the budget limitations.



Figure 1-1: Tongji Faculty Club Master Plan, 1956.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 6.

Through the interview with Ji-zhong Wang,<sup>3</sup> three facts can be concluded:

1. The design of Tongji Faculty Club fully embodied the ideas of the design architects. There was no pressure from the government or the executive level of the university before or during the design. Also, the design was not influenced by the current architecture trend.

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<sup>3</sup> The interview with Ji-zhong Wang was conducted on 4/24/2014 in Shanghai. The interviewers were Professor Jun-yang Wang, Yin-qing Xin, and me.

The architecture in the same time as the Tongji Faculty Club were either designed by "Chinese Architectural Style" or western modern architectural style. However, the design architects applied modern architectural theories on Chinese regional style, making the Tongji Faculty Club both modern and regional.

2. The functions of Tongji Faculty Club were determined by the faculty union. The design was based on the function in a large part.

3. The design of Tongji Faculty Club had a teaching purpose as well being activity center. It was an experimental architecture assembling many design theories and thinking. The professor used to take students on a tour inside the building to explain modern architecture or how to design a specific space or how a wall separates a space.

## 1.2 The character of space design in the Tongji Faculty Club

### The relationship between the exterior space and the site

The west and east side of the Tongji Faculty Club were both wide lawns, and the former faculty dining hall was adjacent to it on the north. The master plan (see fig. 1-1) illustrates the faculty dining hall was east-west direction and the Tongji Faculty Club was north-south direction. A platform stretched out from the south of the dining hall. The two buildings framed the lawn in the west. The west is also the direction of main circulation and entry. This

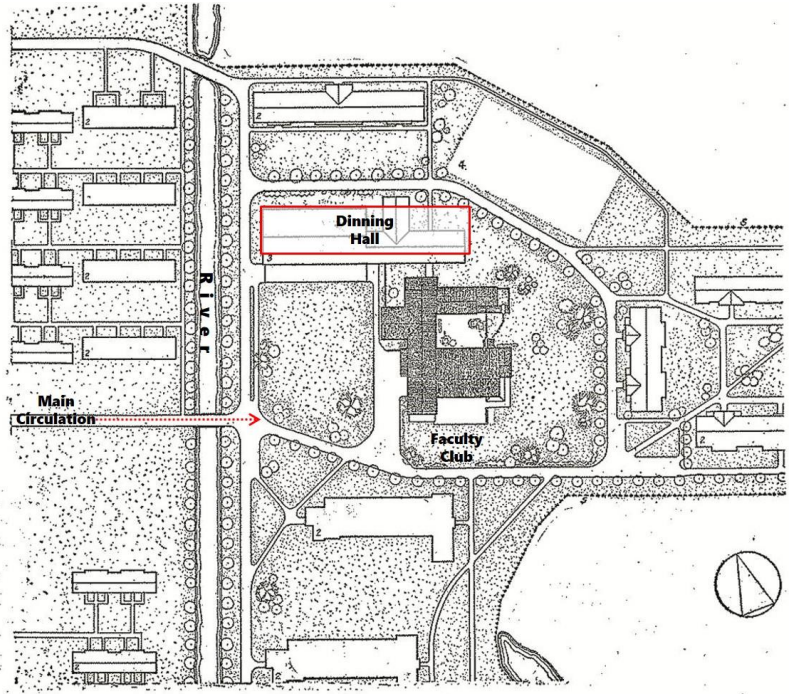


Figure 1-2: Tongji Faculty Club Master Plan, 1956.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 6.

configuration has obvious advantages: the north-south direction enables the building to embrace the view from east and west as much as possible.



1. Entrance, 2. Lobby, 3. Closet, 4. Canteen, 5. Activity Room, 6. Ballroom, 7. Garden House, 8. Storage, 9. Poolroom, 10. Bar, 11. Lounge, 12. Patio, 13. Restroom, 14. Meeting Room, 15. Storage.

Figure 1-3: Tongji Faculty Club First Floor Plan, 1956.

*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 7.



16. Meeting Room, 17. Reading Room, 18. Meeting Room, 19. Music Room.

Figure 1-4: Tongji Faculty Club Second Floor Plan, 1956.

*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 8.

The entrance of the Tongji Faculty Club was on the first floor of the building, facing to the west (see fig. 1-3). In the *Tongji Faculty Club*, Li explained: "..., the entrance is facing the direction that the majority of faculty circulation came from (most faculty lived in the west part of the village). In the same time, this entrance and the dining hall are both facing to the lawn but from two directions. If the entrance is facing south, it will be parallel instead of interact with the dining hall. Thus, the connection between the two buildings will break.



This entrance is also totally visible from west and south-west. A piece of brick wall with a metal lamp on it stretches out from the building indicating the entrance."<sup>4</sup> (See fig. 1-5)



Figure 1-5: Tongji Faculty Club, Entrance.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.

### **Interior Functions Layout**

The Tongji Faculty Club is used for faculty's spare time, relaxing, chatting, meeting and

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<sup>4</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Journal of Tongji University*, Vol. 3, No. 1 (1958): 6.

entertainment. The main design requirement is quiet.<sup>5</sup> The main structure in the north-south direction has activity room, lobby and poolroom on the first floor and music room, reading room and meeting room on the second floor. The south-east part is for ballroom and greenhouse. The north-east part are bar and lounge.

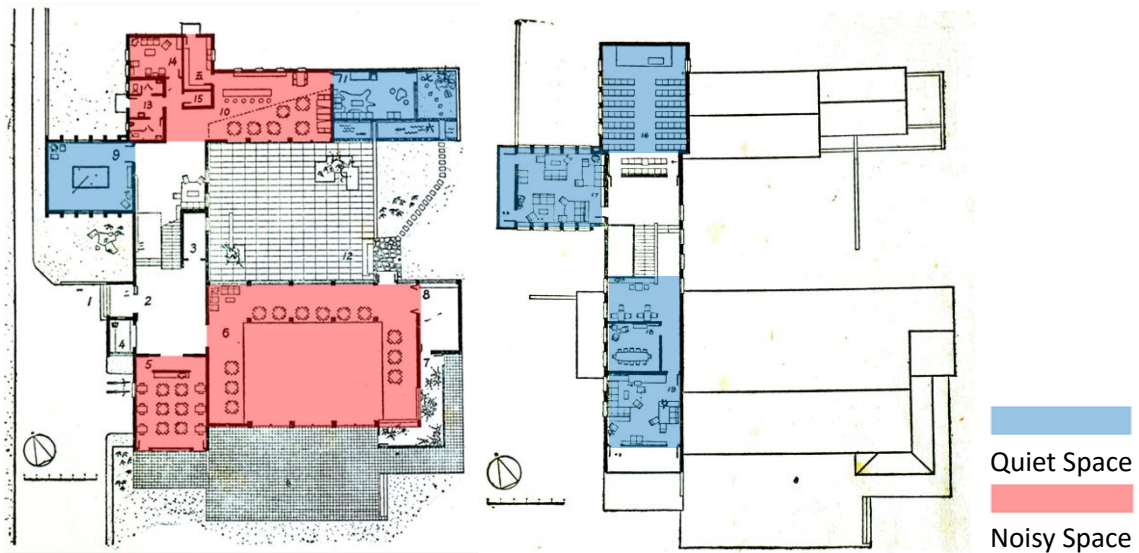


Figure 1-6: Quiet and Noisy Functions.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 8.

The distribution of functions is according to the degree from quiet to noisy. For example, the ballroom, active room and bar are comparatively noisy, so they are placed together on the first floor, while the lounge and poolroom are quiet so they are placed on the edge of the building. The meeting room, reading room and music room are all quiet so they are on the second floor (see fig. 1-6).

Another feature of the functional distribution in the Tongji Faculty Club is there are six

<sup>5</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Journal of Tongji University*, Vol. 3, No. 1 (1958): 6.

gardens around the building. Four of them are enclosed by buildings or walls, and the other two are open towards the outside at less in one direction. Each garden is different from the others and has an interior space it belongs to, so, the activities indoors can extend to the outdoor (see fig. 1-7). The views from each room to the gardens are also different. In the poolroom, one can see the banana garden on the south of it; in the meeting room on the second floor, one can see the garden on the north-west corner. The garden room is next to the ballroom, and the activity room has access to the lawn on the south. The best view exists in the lounge, from the windows one can see the patio, the little garden on its east and the lawn outside (see fig. 1-8, 1-9, 1-10, 1-11, 1-12, 1-13, 1-14).

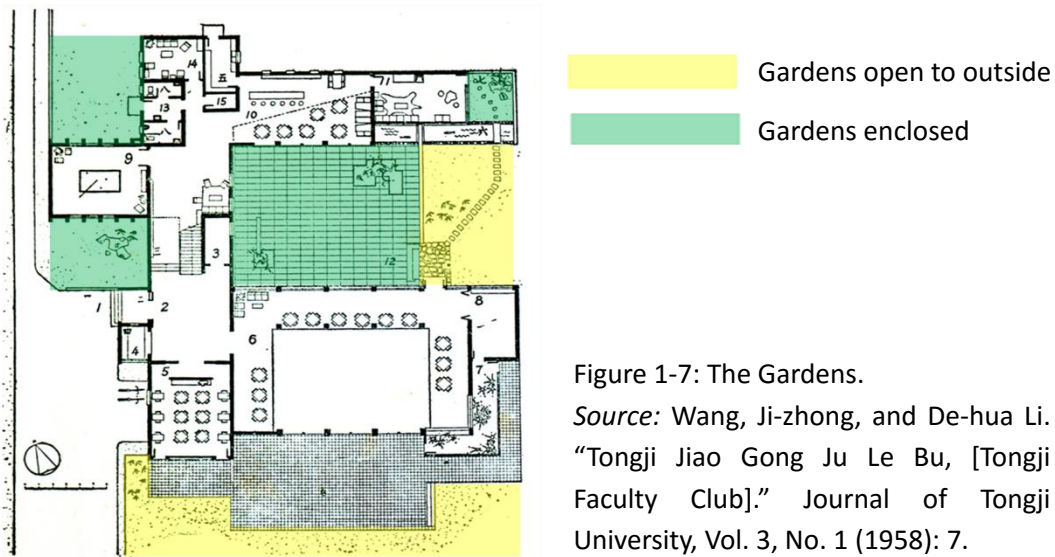




Figure 1-8: Garden View from the Pool Room

*Source: Drawn by the Author.*

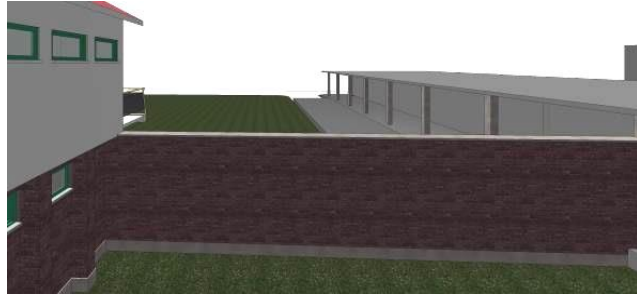


Figure 1-9: Garden View from the Meeting Room

*Source: Drawn by the Author.*



Figure 1-10: Patio View from the Ball Room

*Source: Drawn by the Author.*



Figure 1-11: Garden House View from the Ball Room

*Source: Drawn by the Author.*



Figure 1-12: Garden and Patio Views from the Lounge

*Source: Drawn by the Author.*



Figure 1-13: Patio View from the Bar  
*Source: Drawn by the Author.*



Figure 1-14: Patio View from the Corridor  
*Source: Drawn by the Author.*

The functional layout of a building corresponded to the use-pattern of the users. In the Tongji Faculty Club, the life scene of the faculties in the old time can be easily imaged. If there was any precedents, they are houses of Bauhaus faculties and those faculty clubs in western universities. In the 1950s, Tongji professors would get together, dance, play cards and draw. At the doorway to the ballroom, the closet was for ladies to put in their fur coats. The bar and lounge were for drinking, social and private chatting.<sup>6</sup> Viewing the Tongji Faculty Club was built for old Shanghai's intelligentsia to satisfy their requirements of high quality social life which was not mentioned neither in Li or Wang's articles (see fig. 1-15, 1-16).



Figure 1-15: The Ball Room and Platform  
*Source: Drawn by the Author.*

<sup>6</sup> This scenario was mentioned by Dong-yang Liu, an architecture critic and former Tongji alumnus, in a meeting. As he mentioned, he was paraphrasing from one of his conversation with De-hua Li.



Figure 1-16: The Bar and Patio  
*Source:* Drawn by the Author.



Figure 1-17: Tongji Faculty Club, Lounge.  
*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.

## The Flowing Space

The design of space in the Tongji Faculty Club mainly expresses the "extension of space". The "extension of space" is contrary to enclosed or divided spaces. The space in the Tongji Faculty Club extends from the entrance to the seven main functions - dancing, drinking, playing cards, billiards, music listening, meeting and reading.

After entering the front door, one can see a painting on the wall in the front of him. There is no signal of direction in the lobby. So each space has no primary or secondary differences. On the right hand is a wide door frame. The scene of the big space of ballroom comes out of the frame, attracting people's views. The patio cannot be seen from the entrance otherwise the attraction to the ballroom would be destroyed and the patio would have no mystery. The activity room in the south is much smaller than the ballroom so instead of a door a screen was put behind its door to make it looks deeper and to keep the space connected. On the left hand is the lobby, the corridor and the stairs to the second floor which are hollow to reduce the feeling of space being disconnected. At the end of the corridor, there is a colorful wall guiding people into the bar which doesn't have a door either. The floor and ceiling are extended from the corridor to the bar to strengthen their links. Therefore, the space from the entrance to the lobby, from the lobby to the bar and from the bar to the patio don't feel like one single unit but like one space changing its size and form constantly (see fig. 1-20, 1-21, 1-22).

The space also extend vertically in the Tongji Faculty Club. In the atrium, the wall against the stairs extends from the ground to the same height as the second floor railings, making the space flowing upper to the second floor. In that, when people walk into the lobby they feel like wherever they can see there is endless spaces.<sup>7</sup>

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<sup>7</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Journal of Tongji University*, Vol. 3,



**Linear Corridor**

**Punctual Transforming Space**

Figure 1-18: The Diagram of Linear Corridor and Punctual Transforming Space.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 12.

The "flowing space" is a result of the "extension of space". It was applied as the core in space design of Tongji Faculty Club. It made "the space inside buildings not only limited in a room but running through fluently."<sup>8</sup> To make the space more concentrated and fluency, the design architects proposed that if a regular linear corridor can be shrank to a punctual transforming space, the transportation area would be reduced (see fig. 1-18).

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No. 1 (1958): 15.

<sup>8</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Journal of Tongji University*, Vol. 3, No. 1 (1958): 12.



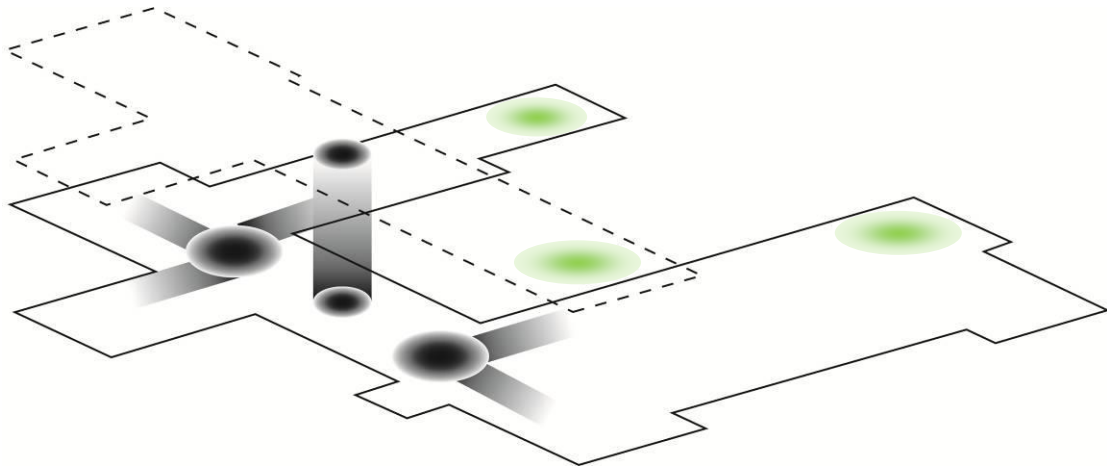


Figure 1-19: Transforming point of the building.

*Source:* Drawn by the Author.



Figure 1-20: Tongji Faculty Club, Lobby.

*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 13.



Figure 1-21: Tongji Faculty Club, The Stairs and The Atrium, 2014.

*Source:* Taken by Heng-zhong Lü

Interior colors are also an important part of the space design in the Tongji Faculty Club. Different environmental colors can affect people's moods and feelings and strongly contrasting colors can also attract eyes. For example, the columns in the ballroom used two colors to reduce the volume of the columns visually - mahogany on the east and west sides and yellow on the north and south sides.



Figure 1-22: Tongji Faculty Club, The End of The Corridor.

*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 14.

### 1.3 The Construction and Material Details in the Tongji Faculty Club

#### Construction Details in the Tongji Faculty Club

Most exterior walls of the Tongji Faculty Club are painted white, but there are three red brick walls. Those are the exterior walls of the poolroom, the north wall against the entrance and the west wall of the canteen, and the wall on the east of the patio (see fig. 1-23). From the plan view, these walls are not included in the main structural frame and are not bearing load. From the functional view, these walls are not enclosing any interior space (see fig. 1-24, 1-25, 1-26). These walls have special treatment because they define, guide and divide exterior spaces. The design architects made these walls distinct on purpose. They are like abstract sculpture. The visitors would be attracted by their colors and walk along them. When they approach to the end of the walls, the sudden turn of spaces such as a big opening or a new view will be amazing experiences for the visitors.

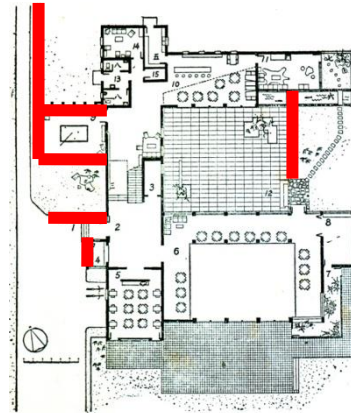


Figure 1-23: Brick Walls Locations

Source: Drawn by the author.



Figure 1-24: Tongji Faculty Club, The West Wall of The Poolroom, 2014.  
 Source: Taken by the author.



Figure 1-25: Tongji Faculty Club, The Wall against The Entrance, 2014.  
 Source: Taken by the author.





Figure 1-26: Tongji Faculty Club, The Wall on The East of The Patio, 2014.

*Source:* Taken by Heng-zhong Lü



Figure 1-27: Tongji Faculty Club, Ballroom.

*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Architectural Journal*, No. 6 (1958): 19.

The corner window in the south-east of the ballroom was opened to the green house on the south-east corner. In masonry-concrete structure, the corner column is crucial to the whole structure and cannot be moved. So the window was designed to align at the inner surface of the walls so it looked like the corner column didn't exist (see fig. 1-27, 1-28).

The triangle timber roof trusses of the meeting room were learned from Soviet Union. To increase the ceiling height, the architects chose to expose the trusses. In that way, the building structure was

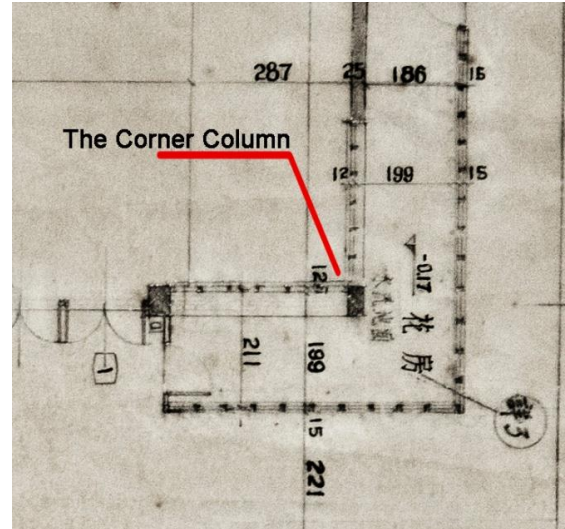


Figure 1-28: The Plan of the Green House.

Source: The Tongji Faculty Club Construction Document, 1958.

expressed in the interior space. The tube-

lights were in a right angle with the trusses. This design was also a good teaching example for students to learn how to take advantage of the original structure and turn them into interior decorations (see fig. 1-29, 1-30).



Figure 1-29: Tongji Faculty Club, Meeting Room.

*Source:* Wang, Ji-zhong, and De-hua Li. “Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club].” *Journal of Tongji University*, Vol. 3, No. 1 (1958): 11.



Figure 1-30: The Meeting Room Roof Structure Section.

*Source:* The Tongji Faculty Club Construction Document, 1958.



## **Decoration Details in the Tongji Faculty Club**

In the original design, there was a logo lamp on the wall against the entrance. It was an abstract graphic of a trowel which indicates the working class. It was also criticized for being too abstract.<sup>9</sup> The drawing of this lamp was lost so it cannot be restored for the time being. According to Wang, the lamp was removed because Si-cheng Liang<sup>10</sup> was going to visit Tongji at that time. If he saw the lamp, there is a big chance that he would think that is an abstract art and does not go well with the national ideology. That would be a disaster for the building and even the whole architectural department.

### **1.4 The Modernism and Regionalism in Tongji Faculty Club**

The Tongji Faculty Club is an architecture using both modernity and national aesthetics. The modernism was embodied in the functional distribution, the plan layout and the design of space. The Chinese national features like windows between inside and outside, the borrowed views came from Chinese garden design.

### **1.5 The Time and Architects**

#### **The Education Background and Practice Experience of the Design Architects**

The architects of Tongji Faculty Club - De-hua Li and Ji-zhong Wang graduated from Shanghai St. John University Architecture Department and were under the influence of

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<sup>9</sup> In the *Editor's Note* of the *Tongji Faculty Club* published on the *Journal of Architecture*, the last sentence was: "However, there are many place in this building contents the concept of abstract art, leaning to excessive pursuit of form."

<sup>10</sup> Si-cheng Liang was the first architect to write Chinese architectural history in a western way. In his later years, he became a government architect.

modernism from Europe especially the Bauhaus. Henry Jorson Huang, Li and Wang's professor, studied with Walter Gropius and followed him from the Architectural Association School in London to the Harvard University Graduate School of Design. He was the founder and the first dean of the Architecture School in St. John's University in Shanghai.<sup>11</sup> In Huang's speech *Chinese Architecture*, his proposition of architecture having its national character is very clear. He thought the society needs "a contemporary Chinese architecture capable of coping with the modern requirement and yet remaining still true to our cultural tradition."<sup>12</sup> He said the two forces making Chinese architecture are "on one hand ... the master builders supplying the physical needs and on the other hand, the scholars unconsciously applied the intellectual efforts."<sup>13</sup>

Another person who had great impact on Li and Wang's design theories was Richard Paulick. Paulick was a foreign professor invited by Huang. He used to work for Gropius in Dessau Germany and participated in the construction of Bauhaus school building. Paulick went to St. John University to teach architectural design around 1945. After the World War II, he started "Paulick and Paulick, Architects and Engineers, Shanghai" with his brother Rudolf Paulick and "Modern Homes, Interior designers".

### **The Villa of Yao**

Li and Wang both interned in Modern Homes and worked together in a project called Villa of Yao. The Villa of Yao was built in 1948 in Changning District. It is currently known as a part of Shanghai Xijiao Hotel. The original owner, You-de Yao, was very interested in

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<sup>11</sup> Feng Qian, *Modern Ideals in Collegiate Education of Architecture in China (1920s-1980s)*, (PhD diss., Tongji University, 2005), 80.

<sup>12</sup> Tongji University, Collage of Architecture and Urban Planning. *Huang Zuo-shen Ji Nian Wen Ji*, [Festschrift of Zuo-shen, Huang]. (Beijin: China Architecture & Building Press, 2012), 25.

<sup>13</sup> Tongji University, Collage of Architecture and Urban Planning, *Huang Zuo-shen Ji Nian Wen Ji*, [Festschrift of Zuo-shen, Huang], (Beijin: China Architecture & Building Press, 2012), 26-27.

modern designs. As required by the client, the building should have a Western architectural style and matches well with the modern art collections of the client. The style of the house referred to the American country style river house in the movie *Love Her to Heaven*. The exterior walls of the buildings were made by whole pieces of log. Except interior design, Li and Wang also did space design including living room, inner garden and bar for the villa.<sup>14</sup>

Villa of Yao mixed Chinese traditional material and space with western modern architecture. The strongest Chinese element was the inner garden with almost every Chinese garden elements such as plant, brook, bridge and rockery. (see fig. 1-18) As the conventional design method in Chinese garden, the inner garden of the villa can only be seen after one going through the entrance and turning a 90 degree to the right. (see fig. 1-17) This layout leads the visitor deeper into the building and keep the garden mysterious from the outside. The modern elements of the villa expressed through the sloping glass curtain wall of the inner garden. It was a double-pitched glass wall, dividing the interior and exterior. The brook from the inner garden extended to the swimming pool outside, flowing under the glass wall. In that, the transparency of the glass wall and the flowing water from inside to outside enabled the interior space and view to interpenetrate into the exterior space. The elevations of the building also have modern features. The horizontal division of the panels and decoration details always remind people of Frank Wright's architectures (see fig. 1-31).

In the aspect of space design, the Villa of Yao also have flowing interior spaces which is similar to the Tongji Faculty Club. Starts from the entrance, the space turned 90 degrees to the north from the lobby to the inner garden. Then the space turned to west, south

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<sup>14</sup> Jing Xu, *German Architect Richard Paulick in Shanghai*, (M. Arch. thesis, Tongji University, 2009), 68-70.

and west through the curved stairs on the north of the inner garden, the interlayer floor and the second curved stairs. On the second floor, the space continues to flow into the southern living room and to the eastern and western bedrooms (see fig. 1-32).



Figure 1-31: The Villa of Yao, the Horizontal Elements on the Elevations.

Source: Jing Xu, *German Architect Richard Paulick in Shanghai*, (M. Arch. thesis, Tongji University, 2009), 70.



The Second Floor Plan

The First Floor Plan

1. Inner Garden, 2. Bar, 3. Dining Room, 4. Worker's Room, 5. Bedroom, 6. Bamboo Garden, 7. Private Suite

Figure 1-33: The Villa of Yao, Plans.

Source: Jing Xu, *German Architect Richard Paulick in Shanghai*, (M. Arch. thesis, Tongji University, 2009), 70.



Figure 1-34: The Villa of Yao, the Inner Garden.

Source: Jing Xu, *German Architect Richard Paulick in Shanghai*, (M. Arch. thesis, Tongji University, 2009), 70.



Figure 1-35: The Villa of Yao, the Inner Garden.

Source: Jing Xu, *German Architect Richard Paulick in Shanghai*, (M. Arch. thesis, Tongji University, 2009), 70.

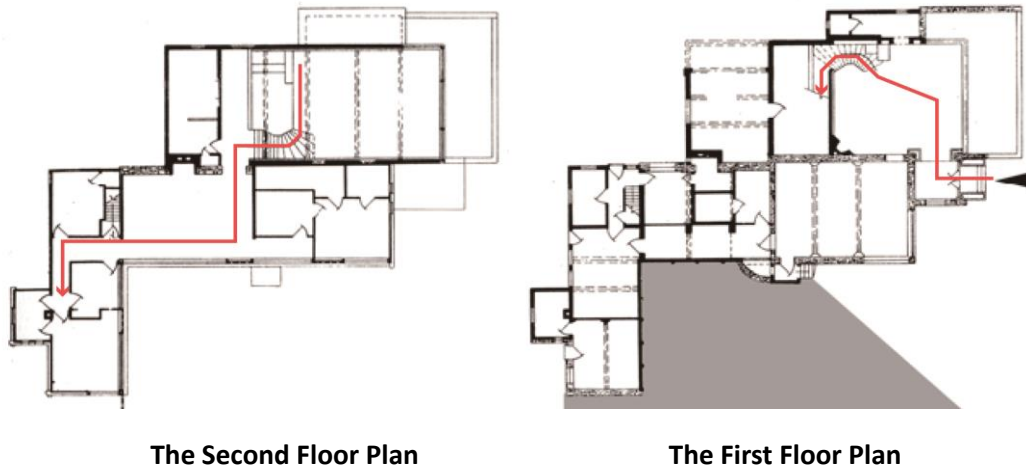


Figure 1-36: The Villa of Yao, the Travel Rout in the Plans.

Source: Jing Xu, *German Architect Richard Paulick in Shanghai*, (M. Arch. thesis, Tongji University, 2009), 70.



Figure 1-37: Shandong Secondary Technical School, Ground Floor Plan of The Dormitory Building.

Source: Qian, Feng. "A Reading of the Design Thinking of St. John's University's Department of Architecture with Reference to a Set of Early Designs for a Technical School." *Time Architecture*, No. 3 (2011): 135.

## The Shandong Secondary Technical School

The first project Li and Wang did together was the Shandong Secondary Technical School in Jinan in 1951. This project had many similarities in details and space organizations with Tongji Faculty Club. In this project, Li and Wang practiced the plan layout, the extended space and details of doors and windows frames which were developed into mature design methods in the later project the Tongji Faculty Club (see fig. 1-37, 1-39).

The strategy of flowing space design can also be found in the dorm buildings of this school. From the perspective of plan, the dorm of the School has a long and narrow floor plan. The plan was bended in the middle part for twice, making it like a shape of "Z" (see fig. 1-37). The twist in the middle created two half-enclosed

lawns in the south-west and in the north-east of the building. The middle part has two entrances so that the two lawns are accessible for students in the dorm. The two lawns are also accessible to each other just by passing through the middle part of the dorm (see fig. 1-38). As a result, the circulation from one lawn to the other would cross with the circulation on the corridor. Not only does this crossing bring the lawns closer to the

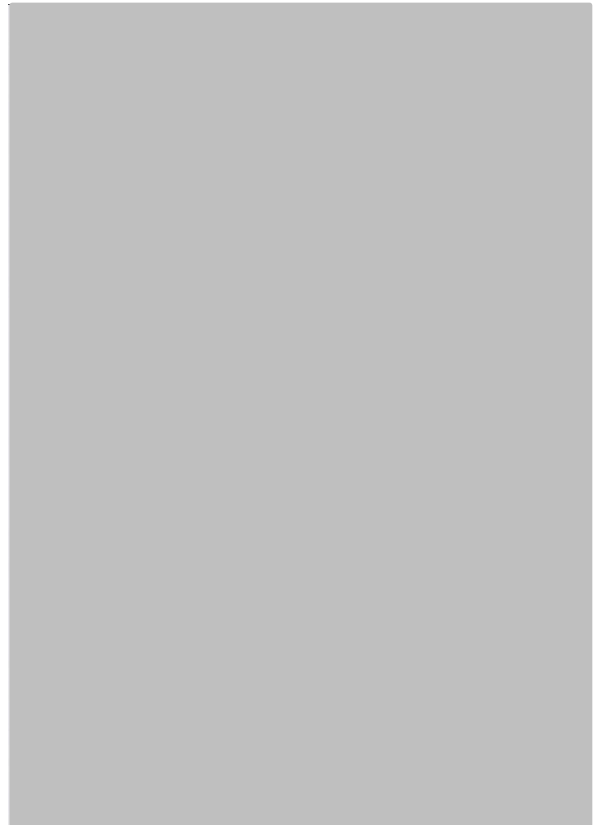


Figure 1-38: Shandong Secondary Technical School, Dorm Space.

*Source:* Qian, Feng. "A Reading of the Design Thinking of St. John's University's Department of Architecture with Reference to a Set of Early Designs for a Technical School." *Time Architecture*, No. 3 (2011): 136.

students, but also make the twisted middle part more active than before.



Figure 1-39: Shandong Secondary Technical School, Campus Map.

*Source:* Qian, Feng. "A Reading of the Design Thinking of St. John's University's Department of Architecture with Reference to a Set of Early Designs for a Technical School." *Time Architecture*, No. 3 (2011): 135.

The relation between this dormitory house and the Tongji Faculty Club also reveals in the building of space volume. The southern lounge of the dorm has a balcony on the second floor which is very similar with the balcony of the music room in the Tongji Faculty Club. The balcony of the lounge is a projection on the southern elevation. The side walls, the



cornice and the balcony work together as an envelope defining the boundaries of the outdoor space. The thin edge of the walls and the cornice contrast with the deep shadowed platform space emphasizing the existent of the projecting volume. In the Tongji Faculty Club, the balcony space outside the music room was also defined by the side walls and the projecting gable wall. Moreover, the outstretched gable cornice on the top added another layer to the elevation (see fig. 1-40, 1-41).



Figure 1-40: Balcony of the Lounge.

*Source:* Qian, Feng. "A Reading of the Design Thinking of St. John's University's Department of Architecture with Reference to a Set of Early Designs for a Technical School." *Time Architecture*, No. 3 (2011): 135.



Figure 1-41: Balcony of the Music Room in the Tongji Faculty Club.

*Source:* Drawn by the Author.



Figure 1-42: Window Frame Pattern.

*Source:* Qian, Feng. "A Reading of the Design Thinking of St. John's University's Department of Architecture with Reference to a Set of Early Designs for a Technical School." *Time Architecture*, No. 3 (2011): 135.

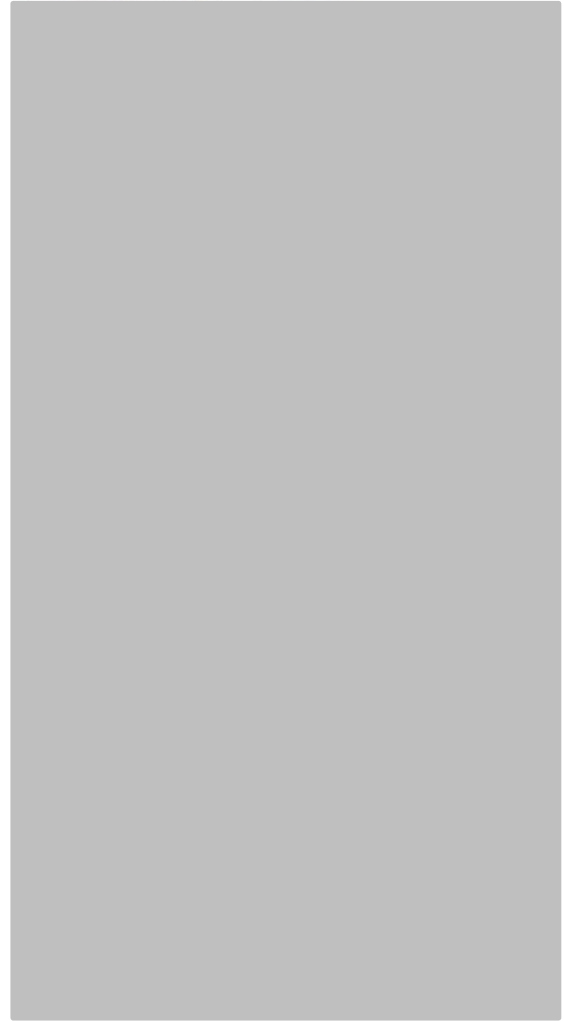


Figure 1-43: Outdoor Stairs.

*Source:* Qian, Feng. "A Reading of the Design Thinking of St. John's University's Department of Architecture with Reference to a Set of Early Designs for a Technical School." *Time Architecture*, No. 3 (2011): 135.

The other similarities between these two buildings lies in constructional details. Located on the end of the "Z" shaped dorm, an outdoor stairway was supported by a single brick wall in the middle and connected to the main building by a bridge on the level of the

second floor. The treads of the stairs were made by steel and there was no riser in between the treads. In contrast with the heavy steady brick wall, the stairway looks delicate hanging against the wall (see fig. 1-43). This combination of light and heavy materials also happened in the lobby of the Tongji Faculty Club. The steel stairs lean against the earth yellow magnesite side wall, clearly but not strongly directing the way to the second floor. The window frame of the dorm has a unique pattern. By fine steel frames, the window was divided into three vertical parts. The middle volume was subdivided into three smaller parts while the two side volumes four parts (see fig. 1-42). The similar window pattern can also be found in the greenhouse of the Tongji Faculty Club.

### **The Historical Background of the Tongji Faculty Club**

The influence of modernism and nationalism in Tongji Faculty Club can be identified in three aspects.

1. *Space, Time and Architecture: The Growth of a New Tradition* was used as a textbook by Huang. In *Space, Time and Architecture* Giedion explained that modern architecture is different from traditional architecture which focuses on building the exterior appearance with the flow and combination of space and time. Huang was influenced by Giedion when he was giving a lecture in Harvard. From then, Huang started to pay great attention on "space" in architectural designs. In Giedion's book, he introduced the flowing space in Mies van der Rohe's buildings. The students of St. John were possibly influenced by this book in their design methods of "flowing space" in the latter time.

Huang's interests were not only in modern architecture but also in Chinese traditional architectures. By comparing traditional architectural spaces in China with the flowing space introduced by Giedion's book, he found the similarity - the change of space and environment when people are walking. This finding was developed into his argument that Chinese regional architectural form can also meet the requirements from modern society. Therefore, the approach to design Chinese modern architecture is to borrow from both the traditional material and craftsmanship, and the modern intelligence.



Figure 1-44: *The Robot Stage*

Source: Tongji University, Collage of Architecture and Urban Planning. *Huang Zuo-shen Ji Nian Wen Ji*, [Festschrift of Zuo-shen, Huang]. (Beijing: China Architecture & Building Press, 2012), 65.

2. Huang also did a project on stage design in 1944 or 1945. For a play named *The Robot*, he designed a black deep sky with twinkling stars, spiral and cantilevered stairs, flat floors and components with abstract shapes which fully expressed the characters of modern art and architecture. (see fig. 1-44)

3. The garden design strategies are similar with the descriptions in *On Chinese Gardens* by Cong-zhou Chen. In the Tongji Faculty Club, the trip from the entrance to the patio is twisted. One has to pass through the lobby, the corridor and the bar on the way. In *On Chinese Gardens*, Chen also mentioned that in a well configured garden the scene one sees is not the way one goes. The key to garden planning is keeping people moving around.

4. The concept of "space design" is different from "Raum Plan". "Raum Plan" was first used by Adolf Loos based on the ideas of economy and functionality. Instead of designing in plan, Loos designed in space (cubes). Each space has its height and volume according to

its importance. However, the "space design" regards different functional spaces as a whole. The space cannot be divided but can only be guided.

### **The Historical and Political Changes in 1950s**

Tongji Faculty Club was designed in a relatively open-minded time. In that, this architecture filled with modernity and abstraction method, humanistic feelings and bourgeois sentiments was tolerated. Designed in 1956, built in 1957 and criticized in 1958, Tongji Faculty Club has a fate related to the critical historical and political changes.

In 1952, the Tongji University Department of Architecture was formed by the St. John's University Department of Architecture and the Zhijiang University Department of Architecture. The St. John's University Department of Architecture had the Bauhaus teaching methodology. Their training included study forms and textures from models, study materials and structure. The Zhijiang University Department of Architecture had the teaching method from Ecole des Beaux-Art. Their trainings focused on architectural drawings and renderings, and designing by proportions and symmetry.

In 1953 and 1954, the design and teaching methodology coming from Soviet Union had reached its peak in China. The "national style" which was a revivalism thought brought by the Soviet Union has a great impact on the Tongji Architecture Department.

In 1955, the Campaign against Waste weakened the "national style". Thus, the thoughts of modern architecture started to grow back in Tongji.

In 1956, the enacted of "Double-hundred Guiding Principle" - let a hundred flowers

blossom and a hundred schools of thought contend gave the academic development a short period of freedom. This is the time when the Tongji Faculty Club was designed and built.

In 1958, China broke up with the Soviet Union in every field including architecture. Before long, Mao started the "Great Leap Forward", then the modernism was criticized.

## **1.6 The Comparison between the Tongji Faculty Club and Contemporary Architecture**

The design of the Tongji Faculty Club can be better understood by comparing it with other contemporary architecture. The two chosen cases were both modern architectures in Shanghai in 1950s.

### **The Lu Xun Memorial Hall(1956) - Folk House Style**

The Tongji Faculty Club successfully combined regional style with modern architecture style. Its advancement comparing to the contemporary architecture in the same style is its outstanding architectural space. The Lu Xun Memorial Hall was an attempt using the folk house style as the regional



Figure 1-45: The Lu Xun Memorial Hall, Floor Plans.  
Source: Qian, Feng, *Modern Ideals in Cloagiate Education of Architecture in China (1920s-1980s)* (Tongji University Doctorate Dissertation 2005), 136.

style.

From the exterior view, the Tongji Faculty Club and the Lu Xun Memorial Hall have many similarities: small volume, asymmetric layout and southern Chinese traditional building details. However, they are very different from the view of interior spaces. the former one has abundant interaction and transformation between the interior and the exterior spaces or the different interior spaces; the later one's interior spaces are linked as a line. Each space is steady, enclosed and has clear boundaries. This two buildings represent two kinds of interior design thoughts - modern and classical. (see fig. 1-45)

### **The Wen Yuan Building(1954) - Modernity and Nationality**

The Wen Yuan Building was designed by professor Yu-lin Huang. It was the first Bauhaus building in China. As the Tongji Faculty Club, it was also a typical architecture of national modernism. (see fig. 1-46)

In the construction aspect, the architect of the Wen Yuan Building chose to conceal the material and structure on the elevation to achieve the balanced proportion. However, the architects of the Tongji Faculty Club were willing to expose the red brick of the walls and emphasize their distinctions.

In the national perspective, the Wen Yuan Building only applied Chinese patterns and graphics as decorations on the top of columns or as a window of the ventilation opening. On the other hand, the Tongji Faculty Club's architects used Chinese space as a main design method.



Figure 1-46: The Wen Yuan Building.

Source: Tan, Beng, *Piano Building vs. Wen Yuan Building: Two Ways of Chinese Modern Architectural Practice* by Huang Yulin, (Tongji University Master Dissertation 2011), 51.

## 1.7 Conclusion

Chinese modern architecture has been developed since 1930s, and experienced multi transfers in building materials, techniques and architectural forms. At the beginning, modern architectures in China were built by reinforced concrete within frame structure but in classic styles. In the 1940s, Chinese architects started to turn their interests from Western classic facade to modernism functional indoor spaces. Up to the 1950s, Chinese architects already applied modern architectural space and techniques innovatively and creatively. Instead of sticking to either classical styles or modern styles, they took the space design methods, which were the true essence in modern architecture, and put them into vernacular architectural styles.

The Tongji Faculty Club was one of the kind modern architecture. As a building designed mainly for a teaching purpose, it combined as many designing details as it can. However,



it did not turn into a hybrid of totally irrelevant small parts but an integrated piece of work where modern and traditional parts coexisted harmoniously.

## Chapter 2 The Current Appearance and Value Identification of Tongji

### Faculty Club

#### 2.1 The Transformation of the Tongji Faculty Club

The current appearance of the Tongji Faculty Club is fresh and in good conditions. It is hard to believe that a 60 years old building would stay like this without any renovations. Even though, there is no recorded document to prove, the several times of transformation and renovation are told around people. According to witnesses, the most recent renovation happened around 2005. The project was really simple. It was supervised by the chairman of the Labor Union, and conducted by a few workers without mapping or drawings. The purpose of those small renovations were mainly to maintain the building functions, and improve the building appearance. Therefore, no major changes were made to the core volume or structure of the building. Yet, there are several parts that have been added, changed or removed.



Figure 2-1: The Current Opening Functions, 2014

Source: Taken by the Author.

The renovations were did according to the usages of the building. Judging from the "Opening Hours" posted in the front of the building, there are four functions working

regularly in this building: the ballroom, the gym, the Pingpang room and the reading room (see fig. 2-1). The Pingpang room is located on the former platform outside the ballroom (see fig. 2-2). The gym is the former bar. The reading room is the former activity room (see fig. 2-3). The ballroom is still on its former position. Besides these four rooms, the pool room is changed to a classroom, the lounge is changed to a meeting room, the reading room is changed to reception room, and the music room, the small meeting room and the lounge on the second floor are changed to offices (see fig. 2-4, 2-5).



Figure 2-2: The Current Pingpang Room, 2014

*Source:* Taken by the Author.

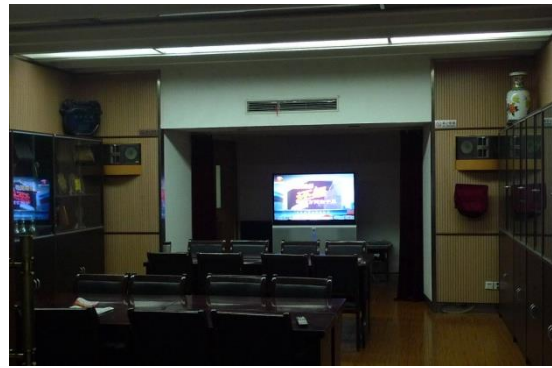


Figure 2-3: The Current Reading Room, Former Activity Room, 2014

*Source:* Taken by the Author.



Figure 2-4: The Former Lounge, 2014

*Source:* Taken by the Author.



Figure 2-5: The Former Music Room, 2014

*Source:* Taken by the Author.

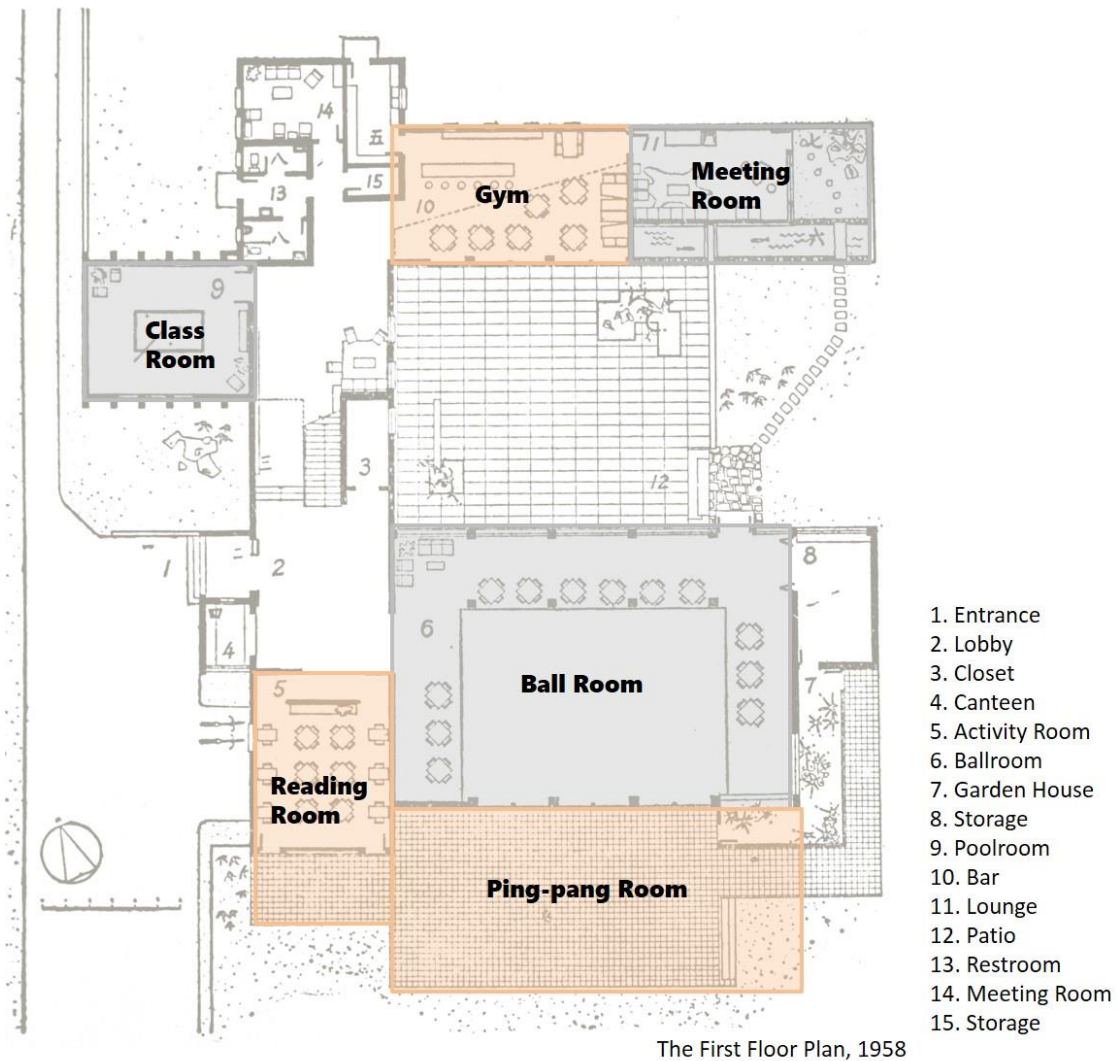


Figure 2-6: The Current Usage and Functions, the First Floor.

Source: Drawn by the Author.

The Tongji Faculty Club symbolizes unique approach to modern architecture in 1950s China. The uniqueness reflects in the visual feature in the building. Those features include the overall feature such as shape and opening, the close range feature such as little components and craftsmanship, and interior features such as flowing space and finishes. Those features are very important for the character of the building. Any change to them would seriously change the building character and affect its uniqueness in the history of

modern architecture. By comparing the current appearance with the original drawings and photos, the research in this chapter decides the important visual feature of the building, and identifies the changes on the building.

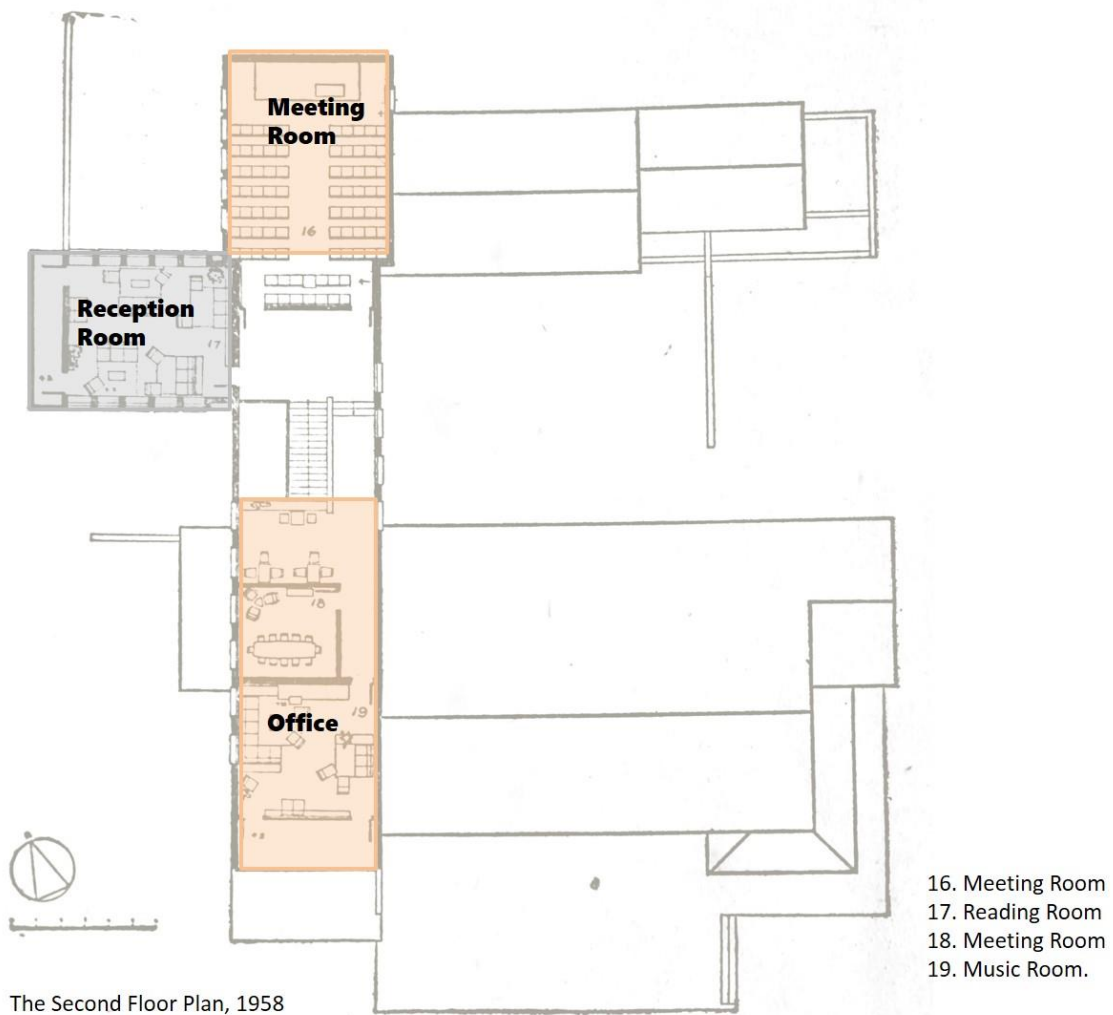


Figure 2-7: The Current Usage and Functions, the Second Floor.  
Source: Drawn by the Author.

## 2.2 Identify the Overall Visual Aspects

### Shape

The main building of Tongji Faculty Club is a two-story box longer in the north-south direction with a projection at the north elevation to the west. There are two one-story wings attached to the main volume on the east. This shape help to separate noisy and quiet areas. Any changes to the existing volumes will affect the building's visual character and disturb the function arrangement.

The building has other visual aspects that help define its overall character, including rectangular windows, the white stucco coating and the red roof and brick. The half enclosed space created by the main structure and the projection create a visual indicate that something important like an entrance id here (see fig. 2-8, 2-9).

The shape of the two-story main structure and the two one-story wings are still existing and kept as the original condition. The projection volume creating a half enclosed space with the main building is not changed. The other visual aspects like the rectangular windows, the white stucco coating and the red roof and

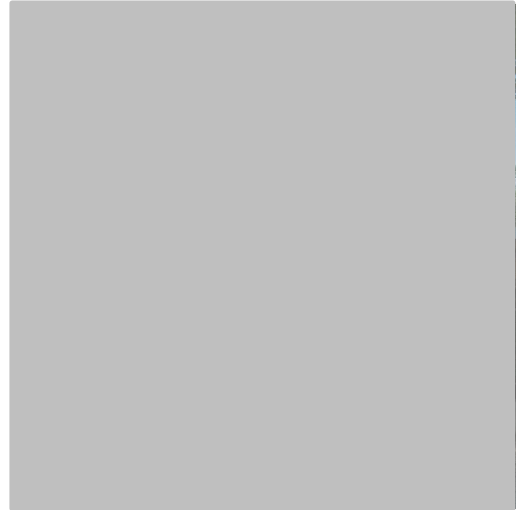


Figure 2-8: The Overall Building Image, 2014

*Source:* Taken by Heng-zhong Lü



Figure 2-9: The Model of the Tongji Faculty Club, 2014

*Source:* Taken by Yin-Qing Xin.



brick are also still existing. The visual elements mentioned above should also not be changed in the future.

## Openings

The opening of the entrance dominates the visual character of this building because of its size, shape, location and materials. Since it is a projection of the main building, it emphasizes on the principal entry to the building (see fig. 2-10). Enclosing this recessed entry with a door, for example, would visually change the character of the building.



Figure 2-10: The Entrance, 2014  
*Source: Taken by Heng-zhong Lü*

The opening of the entrance is still existing. Its size, shape, location and materials should not be changed in the future.

The high windows on the north wall of the reading room contribute to the visual characters of the building because of its location and shape (see fig. 2-11). They are still existing on the north wall of the reading room. Their height, location and shape should not be changed in the future. If any changes such as making the windows bigger or lower happens, the building's visual character and the use of



Figure 2-11: The North High windows of the Reading Room, 2014  
*Source: Taken by the Author.*

the reading room would both be affected.

### Roof and Related Features



Figure 2-12: The Roof, 2014.  
*Source:* Taken by the Author.



Figure 2-13: The Roof Tiles, 2014.  
*Source:* Taken by the Author.



Figure 2-14: The Gable Roof, 2014.  
*Source:* Taken by the Author.



Figure 2-15: The Gable Roof,  
*Source:* Ji-zhong Wang and De-hua Li, "Tongji  
Jiao Gong Ju Le Bu, [Tongji Faculty Club],"  
Architectural Journal, No. 6 (1958): 18.



The roof of Tongji Faculty Club is a visual feature because it is gable roof. The red tile makes it high visible. As described in the *Tongji Faculty Club* on the *Journal of Architecture*, the roof materials were "red roof tiles",<sup>15</sup> it seems like the roof material has not been changed (see fig. 2-12, 2-13). The gable roof gives people the feeling of home, and it was cheaper than a flat roof in 1950s (according to Wang).<sup>16</sup> Comparing the old and new photos of the roof above the music room, the gradient of them are the same (see fig. 2-14, 2-15). Thus, the roof structure is also not changed. Its gradient, material and color should not change in the future. If there is any changes to the roof or its material, such as changing it to a flat roof or changing the roof tiles, the character of this building would also be changed.

## Walls

The walls on the first floor of the projection volume are one of the visual features of the Tongji Faculty Club. These walls are also exterior walls of the pool room. The west wall extends from the building to the north, connecting to the dining hall, and also exceeds a little out of the south wall. There are other five pilasters uniformly



Figure 2-16: The Poolroom Exterior, 2014

Source: Taken by the Author.

distributed on the south wall which exceed the same length and in the same thickness as the west wall. On the north wall, there are also five pilasters in the same location, length of exceeding and thickness. The connection between the west wall and the dining hall

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<sup>15</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 18.

<sup>16</sup> Said by Ji-zhong Wang in the interview on Apr 4th, 2014.

makes the lawn a half enclosed space. The north extension part of the west wall defines the boundary of the garden outside of the rest rooms. The uniformly distributed pilasters create a pattern together with the south exceeding part of the west wall, and imply the extension in the north-south direction is very important in the this part of the building. The form of these walls are the same as their original status and should not be changed in the future. If any changes like cutting out the extension of the west wall or removal of the pilasters happens, the character of the building will be seriously affected (see fig. 2-16).

The north wall near the entrance and the west wall of the canteen are one of the visual characters of the building. The two walls extend from the entrance to the west and south, their projected intersection indicates the location of the entrance of the building. The red color of the brick makes them visible from the outside. These walls appear as described in the drawing and should not be changed in the future. If any changes such as adding coatings on the walls or removal of the north wall happen, the visual character of the building would be certainly changed (see fig. 2-10).

The wall on the east of the patio extends from the windows of the lounge to the south. The color, location, material, height and thickness add to the visual character. It defines the boundary of the patio and should not be changed in the future. If any changes like adding coatings on it or moving it to the west or east happen, the visual character of the building would be changed (see fig. 2-17).



Figure 2-17: The East Wall of the Patio, 2014

*Source:* Taken by the Author.

## Projections

The balcony on the west side of the reading room is one of the visual characters of the building because of its location, size, shape and the view of the lawn it provides to the visiting guests. It is still existing but the form and material of its railings have been changed. The replacing railings are awkward and not as beautiful as the ones in the drawings (see fig. 2-18, 2-20, 2-21). In the preservation design, those railings should be replaced by the ones that made according to the drawings. On the other side, its size and location was not changed and should also not be changed in the future.



Figure 2-18: The Balcony of the Reading Room, 2014  
*Source:* Taken by the Author.



Figure 2-19: The Balcony of the Music Room, 2014  
*Source:* Taken by the Author.



Figure 2-20: The Railings of Balcony.  
*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.



Figure 2-21: The Railings of Balcony, Section.  
*Source:* The Tongji Faculty Club Construction Document, 1958.

The balcony on the north side of the music room is one of the visual characters of the building because of its location, size, shape and the view it provides to the visiting guests. The structure of it is still remaining. However it was constructed into a part of the interior space and an extra projection of balcony was added on the outside of the old one. The railings of the balcony were changed to straight stainless steel (see fig. 2-19). The visual character of the building has been affected by those changes. In the preservation design, the additional balcony, window and railings should be removed, and the windows should be replaced with the railings that made by the drawings.

The entrance part of the building including the canteen, the wall near the north of the entrance and the pitched roof is a visible projection of the main structure. The entrance structure creates a transition part for people coming from the outside to the inside space through the extending north wall, the roof and the recessed opening. This part is kept as

drawings and should not be changed in the future design. If any changes like removal of the projecting entrance happen, the visual character of the building would be affected (see fig. 2-10).

The greenhouse on the south-east corner of the ballroom is one of the visual characters of the building because of its glass curtain wall, frames, location, "L" shape and the view it provides to the interior (see fig. 2-22). It was removed and the windows that would add a



Figure 2-22: The Greenhouse Exterior,  
*Source:* Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 18.

feature to the building were also removed along. The visual character of the building was seriously changed. In the future design, the green house should be renovated as described in the drawings and photos.

## Materials

The white color of the stucco on the exterior walls except the entrance, the pool room and the wall on the east of the patio is one of the visual character of the building. The white color is simple, clean and commonly used in modern architecture, and contrasts with the red color of brick walls. These white walls are maintained or restored, and should be preserved in the future design. It would change the visual character of the building if the white walls are painted in other colors (see fig. 2-8).



Figure 2-23: The Brick Wall only with a layer of painting.

*Source:* Taken by the Author.



Figure 2-24: The Brick Wall with White Stucco Coating and painting.

*Source:* Taken by the Author.

There are still three places - the entrance, the pool room and the wall on the east of the patio - that does not have white stucco coating (see fig. 2-23, 2-24, 2-25).



Figure 2-25: The Pattern of the Brick Walls.

*Source:* Drawn by the Author.



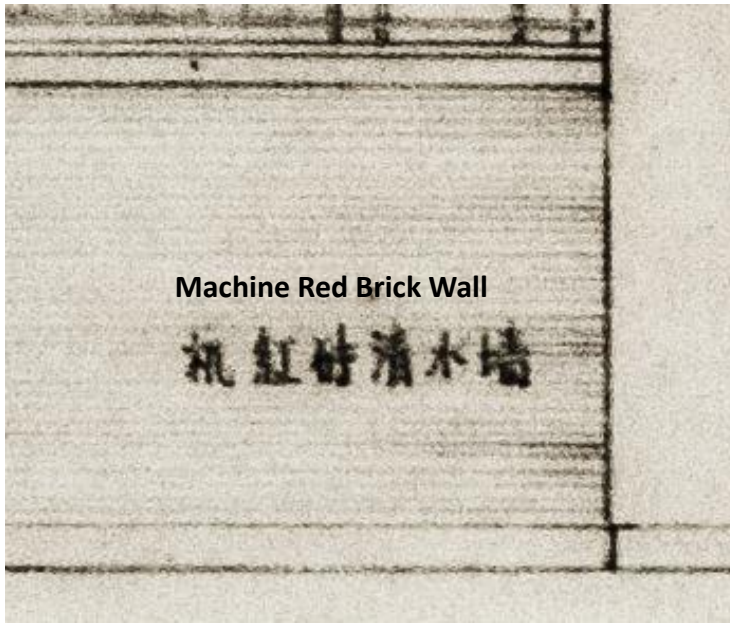


Figure 2-26: The Amplification of the Brick Wall Part of the West Elevation.

Source: The Tongji Faculty Club Construction Document,

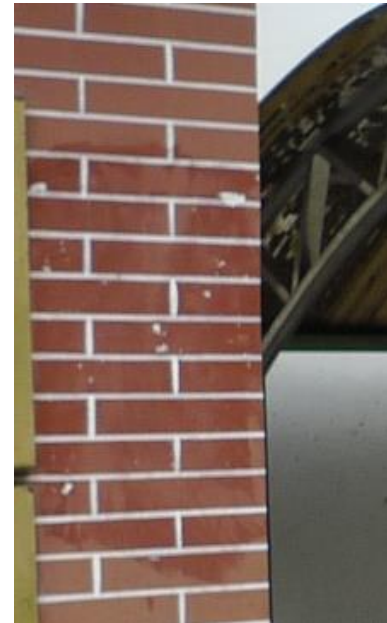


Figure 2-27: The Painted Brick Wall, 2014.

Source: Taken by the Author.

The red brick walls of the exterior walls of the poolroom, the north wall against the entrance, the west wall of the canteen and the wall on the east of the patio are visual characters of the building. The red color makes these walls stand out from the white field. The architects wanted to emphasize that these brick walls are different from the other walls of the building because they are not load bearing walls but important in defining exterior spaces. These three walls used to be "Machine Made Red Brick Wall" ("机红砖清水墙"), as described in the construction document (see fig. 2-26, 2-28). However, they are now painted with a plaster layer and a red stucco coating and white lines to imitate the bricks and joints (see fig. 2-27). It impacts the visual character because it conceals the visual character of brick material.

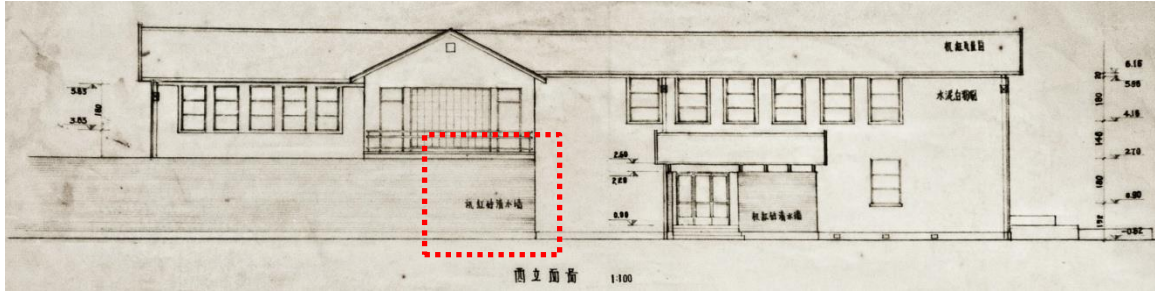


Figure 2-28: The West Elevation.

Source: The Tongji Faculty Club Construction Document, 1958.

The wood window frames are painted into white instead of pine green (see fig. 2-18). The weather board on the south of the music room was also painted white instead of light grey blue (see fig. 2-19). They impact the visual character because of their colors.

## Settings

The lawn in the west of the Tongji Faculty Club is luxury for this high density residential area, and it is important to the overall character because of its location, size and view. The lawn provides a wide view of the building. Since the lawn blocks the front of the building entrance, a path was created on the south of the lawn and turned to north leading to the entrance. The path is also important to the character of the building because of the first impression of people entering the building. If the path is moved to the front of the entrance, it will cut the lawn in half so that the integrity and view of the lawn will be affected. It will certainly change the overall character of the building if the lawn is removed or cut in half by the path (see fig. 2-29).





Figure 2-29: The Tongji Faculty Club, Bird's Eye View.

Source: Drawn by the Author.

The settings of the building such as the location of the lawn part of the dining hall on the north of the lawn was kept as original. The shape of the lawn and the paths around it have been slightly change but does not affect the character of the setting. The west half part of the dining hall on the north of the lawn was remained.

The fence to the south of the building extends to create a garden. The fence and the garden are very important to the visual character of the building because the fence continues the west



Figure 2-30: Tongji Faculty Club, Entrance.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.

wall of the pool room. The garden had a platform which was an extension of the ballroom. When the weather is clear, the dancer can dance from indoor to the outdoors on to the platform. Any change such as removal of the fence or the platform will seriously affect the visual character of the building (see fig. 2-30).

The wooden fence and the platform outside the ball room were removed and replaced by an iron fence. There used to be a lawn in the garden. The lawn was also removed.

The dining hall on the north of the lawn is important in the defining of visual characters. The dining hall was in an east-west direction. It turned the lawn into a half enclosed space that opened to the direction of circulation with the Tongji Faculty Club. The connection between the dining hall and the faculty club was the extending wall of the pool room. Any changes like removal of the dining room or cut of the extending wall would affect the overall visual character.

Nowadays, the east half part of the dining hall is removed and replaced with a small one-story building. The connection between the dining hall and the faculty club was broken.

The tree pools in the patio were removed. There are new additional tree pools in the patio with rectangular shapes. Their numbers and locations are also different from the original ones (see fig. 2-31). They impact the visual character because of their locations, shapes and number.



Figure 2-31: The South-east Corner of the Ballroom, 2014

*Source:* Taken by the Author.

## Structure

The Tongji Faculty Club is a masonry-timber structure building. This can be seen from the revealed brick walls, the regular opened windows and window posts, and the timber beams of the pitched roofs. If the structure system is changed, the visual characters of the building would also be changed.

In the current situation, the masonry-timber structure of the building is still existing and not changed.

### 2.3 The Visual Character at Close Range

#### Materials



Figure 2-32: The South-East Corner of the Ball Room, Current.  
*Source:* Taken by the



Figure 2-33: The Green House Window Pattern.  
*Source:* The Tongji Faculty Club Construction Document, 1958.

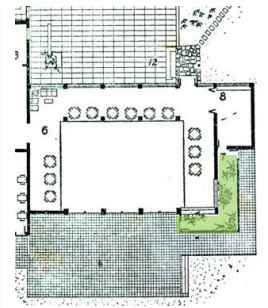


Figure 2-34: The Green House Location.  
*Source:* Drawn by the Author.

In the Tongji Faculty Club, the pattern of the window frames on the glass roof and curtain wall of the greenhouse is important to define the visual character. The frame is formed

with vertical and horizontal sashes. The vertical sashes are isometric arrayed. In the first row, three horizontal sashes are placed isometrically from top to bottom, dividing the row into four rectangles in the same shape. In the second row, two sashes divide the space into three rectangles. The third row is the same as the first one, the fourth row the second, and so on (see fig. 2-33). Changing the frame pattern to a uniform grid, for example, would drastically alter the character at arm's length.



Figure 2-35: The Ballroom and Corner Window.

*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Architectural Journal*, No. 6 (1958): 19.

The window frame of the greenhouse was removed along with the greenhouse. There is no other window frame having the same pattern existing in the building (see fig. 2-32, 2-34).

The colorful components of the building are important to define the visual character,

ranging from the pine green color of the wood frames of windows and doors,<sup>17</sup> the light grey blue color of the weather board on the south of the music room<sup>18</sup> and the lemon chiffon color of the railing in the balcony of the reading room and the music room<sup>19</sup>. The strong contrasting colors outstand from the white field, a technique in modern architectures. <sup>20</sup>Any changes to the components such as painting them white would seriously affect the visual character.

The colors on the window frames, the gable walls and the railings are not existing any more. They were either painted in other colors or replaced with other materials. The removal and replacement of these elements affected the visual character of the building.



Figure 2-36: The Patio Plan.  
 Source: Wang, Ji-zhong, and De-hua Li.  
 "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty  
 Club]." *Journal of Tongji University*, Vol. 3, No.

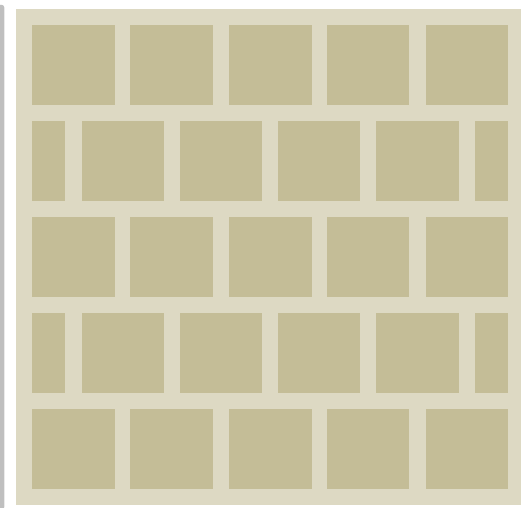


Figure 2-37: The Patio Ground Tiles  
 Pattern.  
 Source: Drawn by the Author.

<sup>17</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

<sup>18</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

<sup>19</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

<sup>20</sup> Said by Ji-zhong Wang in the interview on Apr 4th, 2014.

There are two tree pools in the patio with right angle geometry shapes. A cherry bay, commonly used in Chinese garden, was planted in each pool. Changes such as replacing the plants, altering the shape, or adding another tree pool would seriously change the character at arm's length (see fig. 2-36).

The structures of tree pool are different in the plan drawings and in the photo taken in 1958 (see fig. 2-39). In the plan, the shape of the tree pool is as the description above. However, in the photo, the north-east pool looks like a rectangular shape from its southern perspective. Neither of these two shapes existing today.

The pattern of the ground tiles in the patio are important in defining the visual character because of the staggered array, the square shape, and the wide visible joints. Changes such as aligning the squares or removing the joints, for example, would seriously change the character at arm's length (see fig. 2-37).



Figure 2-38: The Current  
Patio Ground Tile.

*Source:* Taken by the  
Author.



Figure 2-39: The Patio.

*Source:* Wang, Ji-zhong, and  
De-hua Li. "Tongji Jiao Gong Ju  
Le Bu, [Tongji Faculty Club]."  
*Journal of Architecture*, No. 6  
(1958): 18.



Figure 2-40: The Lamp.

*Source:* The Tongji Faculty  
Club Construction  
Document, 1958.

The floor tiles in the patio described above are not existing any more. They were replaced with simple aligned square tiles with invisible joints (see fig. 2-38).

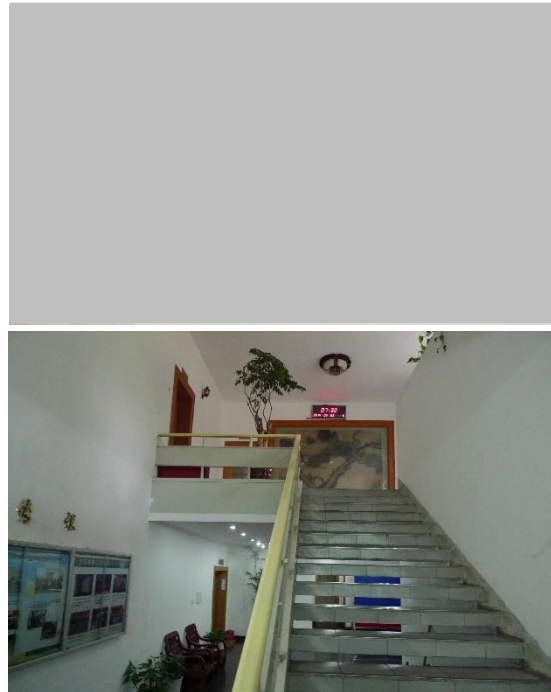
The logo lamp on the wall near the entrance is important in defining the visual character because of the abstract shape, the function as a lamp and the meaning of a trowel. The trowel symbolize the working class, one of the most respected classes in China in 1950s. Change such as removal and replacement, for example, would seriously affect the visual character of the building at arm's length (see fig. 2-40).

The logo lamp on the wall near the entrance was removed. It was replaced by a board with the name of the "Faculty Club" on it (see fig. 2-18).

## 2.4 Identify the Visual Character of Interior Spaces, Features and Finishes

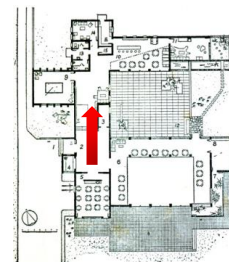
### Related Space and Sequences of Spaces

The first floor corridor, the stairs and second floor atrium were visually linked together. The no-riser stairway visually links to the corridor. The stairway provides access to the upper floors. These related spaces are very important in defining the interior character of the building. Changes such as installing doors in the corridor or enclosing the stair would seriously impact the way that character is perceived (see fig. 2-41).



The materials in the first floor corridor, the stairs and the atrium have been changed, however, it does not affect the space sequence they create. So the flowing space sequence from the first floor corridor to the stairs and the atrium is still existing and kept as the original condition.

Figure 2-41: The stairway, Corridor and Atrium, 2014  
Source: Taken by the Author.



The first floor corridor and the bar room were a sequence of two related spaces. This connection was enhanced by the continuous ceiling from the corridor to the bar. These related spaces are very important in defining the flow of the spaces on the interior of the building. Changes such as adding a door on the bar entrance would seriously affect the



interior space character (see fig. 2-42).

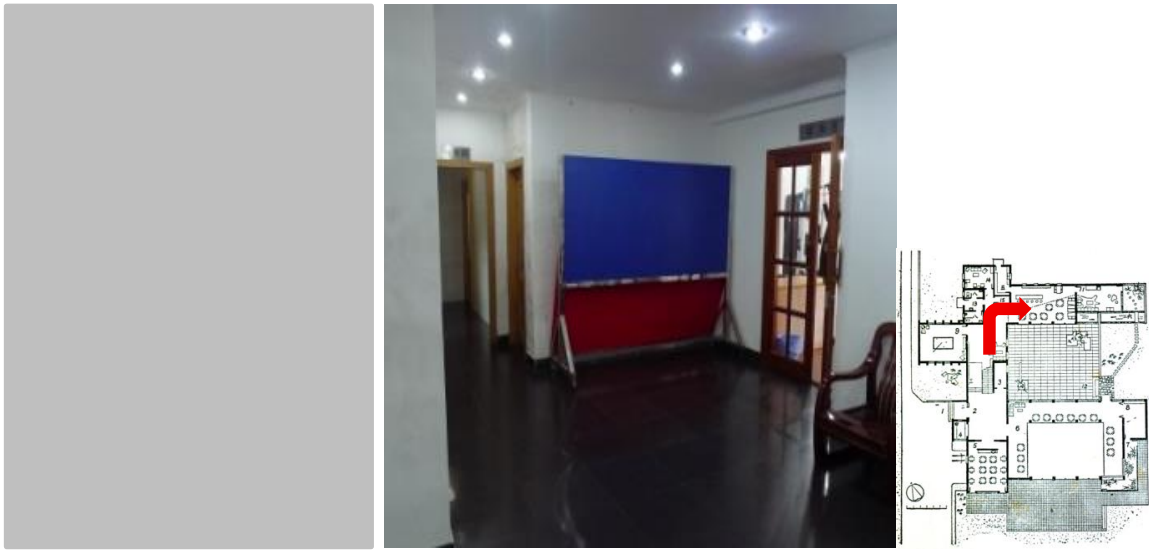


Figure 2-42: The End of The Corridor.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 14.

The bar and the patio were separated by five door leafs. A brick wall starts from the lounge, extends to the south, and ended ten feet away from the exterior boundary of the ball room. The bar, the opened five doors, the patio and the ten-foot break created a space sequence from the bar to the patio and to the outside garden in the east. These related spaces are very important in defining the interior character of the building. Changes such as adding a wall between the bar and the patio or a door on the break of the east wall would easily destroy the visual character of this flowing spatial sequence (see fig. 2-43).



Figure 2-43: The Bar and the Patio.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 15.

The space sequence of the first floor corridor and the bar was broken by the added door on the bar entrance. The space sequence from the bar to the patio and then to the outside was affected because of the added wall between the bar and the patio. They impact the interior visual character because they frame the spaces into a single room instead of connection each space.

## Interior Features

The structural concrete slab on the second floor is very important to the interior character of the building, due to the color white, the shape and the area covered from the lobby to the end of the activity room, making the two spaces visually connected. Change such as adding a ceiling below would certainly change the interior character of the building. (see fig. 2-44)



Figure 2-44: Structural Concrete Slab, 2014

*Source:* Taken by the Author.

This structural concrete slab is still existing on the second floor. Its location over the lobby and the activity room is also kept as original.

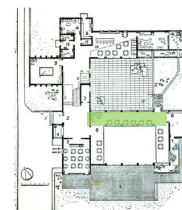
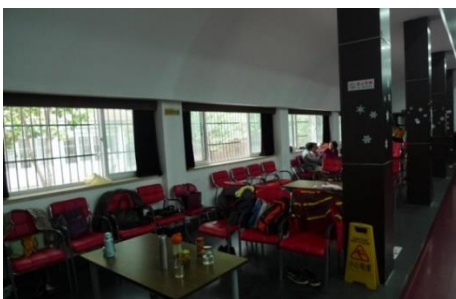


Figure 2-45: The Curved Ceiling in the Ballroom, 2014

*Source:* Taken by the Author.

The curved ceiling in the north side of the ballroom is very important to the interior character of the building, because of its location, shape and elegantly showing the tectonic part of the building. If the curved ceiling was changed to a flat ceiling the interior character of the building would be seriously damaged (see fig. 2-45).

The curved ceiling in the ballroom is still existing in the same location. Its character features like the radian and the span are also kept as original.



The bar ceiling has two parts. The southern part is higher than the northern part. The area of the southern part is showed by the dash line in plan. Even though both the northern and

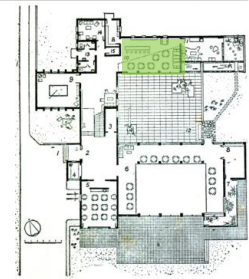
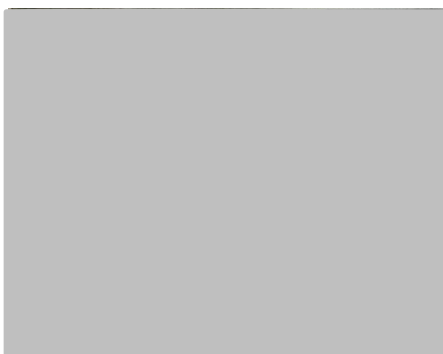


Figure 2-46: The Bar Ceiling, 2014

Source: Taken by the Author.

southern parts seemed like trapezoid in the plan, the southern part looks like a parallelogram from the bar entrance in reality. The anti-perspective strategy used here is to attract and guide people's attention to the door of the lounge. The point lights in the ceiling, on the other hand, are all in the same height. The lights in the northern part are implanted into the ceiling, while the lights in the southern part are overhung. If the ceiling was changed to a flat board, the anti-perspective effect would disappear and the interior character of the building would be affected (see fig. 2-46).

The southern part of the bar ceiling is still higher than the northern part. The boundary of the higher part is also as shown in the original plan.

The south-east corner window in the ballroom is very important to the interior character of the building, because of its location, its wooden frame and the view of the greenhouse. The window align at the inner surface of the wall so the corner column is outside of the window and invisible from the ballroom. Changes such as removal the window or altering the window frame would certainly change the interior character of the building.



Figure 2-47: The South-east Corner of the Ballroom, 2014

*Source:* Taken by the Author.

The corner window of the ball room was removed. It was replaced by a window on the south wall (see fig. 2-47).

The tube-lights in the meeting room were very important to the interior character of the building, because of their right-angle position under the beams. Changes like removal of the tube-lights would seriously affect the interior character of the building.

The tube-lights in the meeting room were removed. They were replaced by chandeliers (see fig. 2-48).

The interior colors are very important visual characters. The lobby had dark red concrete floor, raw-shrimp color wall and white ceiling.<sup>21</sup> The activity room had light green wall and black frame of the screen in the entrance.<sup>22</sup> The wall against the stairs was earthy yellow. The railings of the stairs were black and the railing panels were lemon yellow.<sup>23</sup> The second floor ceiling was river-crab-shell cyan.<sup>24</sup> The meeting room had light blue gray wall. The painting on the outside of

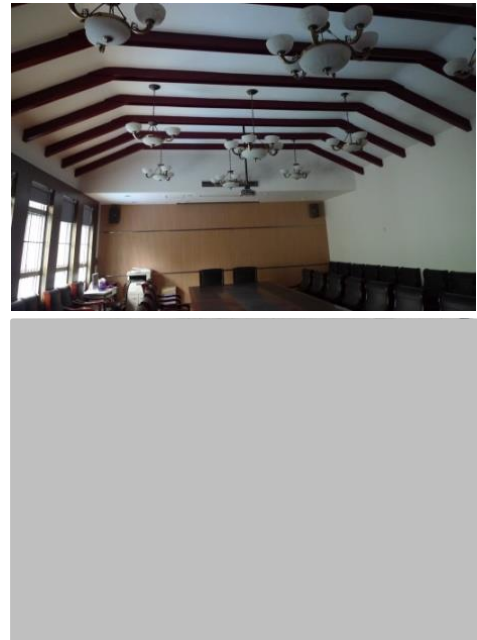
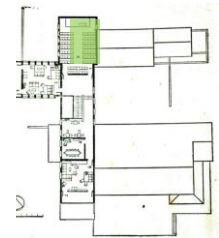


Figure 2-48: The Ceiling and Lights in the Meeting Room, 2014

Source: Taken by the Author.



<sup>21</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

<sup>22</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

<sup>23</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

<sup>24</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

the meeting room had a dark blue gray frame.<sup>25</sup> The ballroom had green terrazzo floor, bright yellow platform and bronzing walls.<sup>26</sup> The columns in the ballroom were painted mahogany on the east and west sides and yellow on the north and south sides so that the column would look thinner because yellow is a bright color and mahogany is relatively a dark color.<sup>27</sup> These colors are strongly contrastive and have impacts on the atmosphere of the indoor area. Changes like painting the interior walls in white, for example, would seriously change the interior character of the building.

These interior colors are not existing. All the interior walls and ceilings are currently painted white. The floor materials and colors are not kept as the description above either.

The tube-lights in the meeting room were replaced by chandeliers. Compared with the tube-lights, the chandeliers do not go well with the simple straight lines of the timber beams. They impact the interior visual character because their positions and style.

The point lights in bar were changed to droplights. The function of room was also changed to a gym. The droplights are easy to stand out from the white field because they are bigger and bulgier than the point lights so that the anti-perspective detail of the ceiling is hard to be noticed. The change of function led to the change of furniture and finishes so that the interior visual character would be impacted.

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<sup>25</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

<sup>26</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

<sup>27</sup> Ji-zhong Wang and De-hua Li, "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]," *Architectural Journal*, No. 6 (1958): 19.

## Exposed Structure

The exposed triangle timber roof beams in the meeting room are very important to the interior character of the building, because of the position, shape and color. If the trusses are covered by a ceiling, for example, the interior character of the building would be changed (see fig. 2-49).

The triangle timber roof beams are still existing and exposed. Their location, material, shape and color are kept as original.



Figure 2-49: The Meeting Room.

*Source:* Wang, Ji-zhong, and De-hua Li.

“Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club].” *Journal of Tongji University*, Vol. 3, No. 1 (1958): 11.

## 2.5 Added Items Impacting Visual Character

### Additional Structures outside the Building

The greenhouse on the south-east corner of the ballroom was removed. On the position it used to be, a one floor pitched roof structure was constructed. It impacts the visual character because it cutting down the connection between the ball room and the east garden of the building.



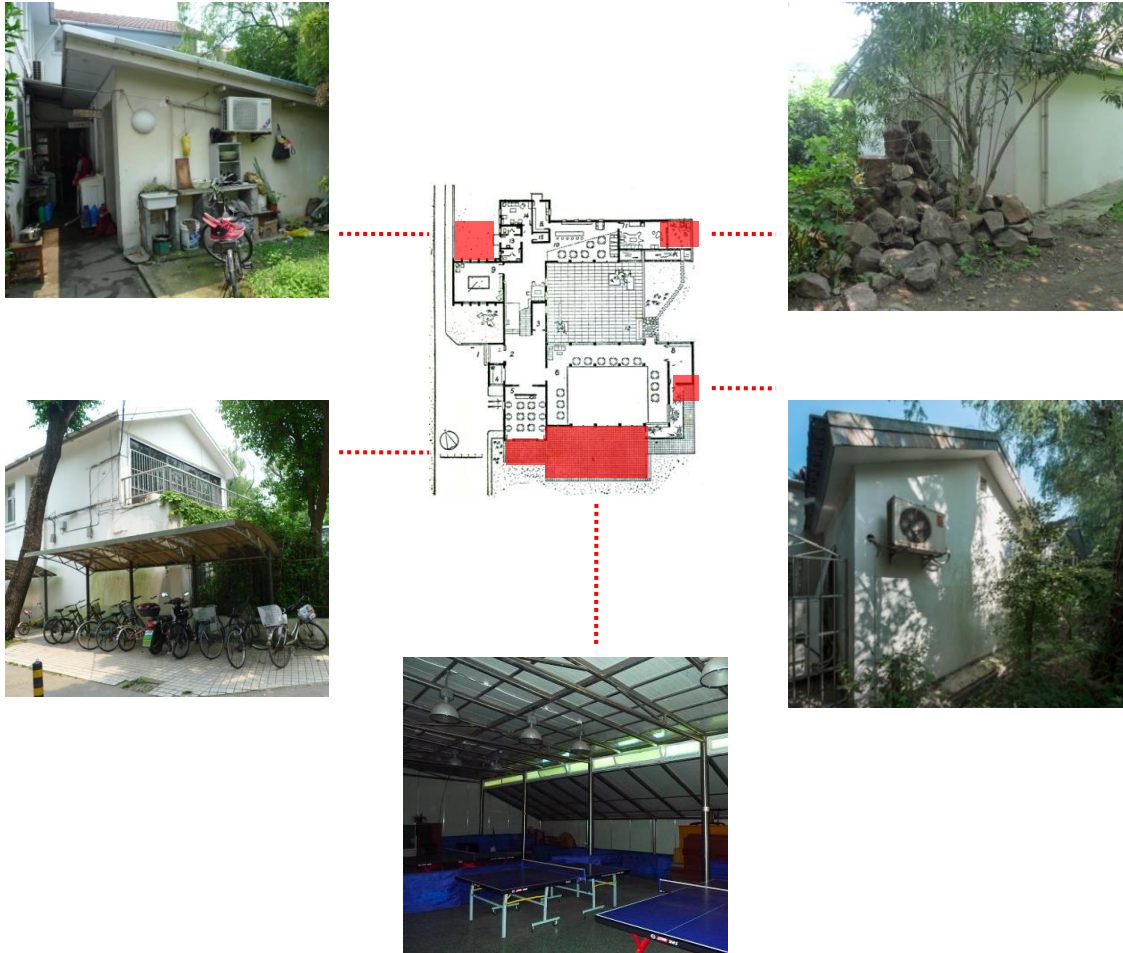


Figure 2-50: The Added Structures, 2014

Source: Taken by the Author.

The platform in the south of the ballroom was removed and replaced by a blue-roof structure used as a ping-pang room. It impacts the visual character because it took up the place of the southern garden, and cuts down the connection between the ball room and the southern garden (see fig. 2-50).

## 2.6 Added Items Not Impacting Visual Character

The added board on the wall near the entrance does not impact the visual character,

because it is not in a bright color and shape fits very well in the wall.

## **Chapter 3 The Current Condition of the Tongji Faculty Club**

The physical structure and envelope are in a comparative good condition. Most part of the building looks clean and fresh from the outside, and the inside spaces are functioning well too. There are only some small damaged points on the wall surface and in small components. Identifying these damages is important for the renovation and the restoration strategies of the building. This chapter is about the damages and their possible causes.

### **3.1 The Current Condition of Exterior Walls**

#### **The Red Brick-like Stucco Coating on Walls**

On the first floor of the building, there are six pieces of walls which look like brick walls. Most of them were painted with red and white stucco coatings and have another layer of plaster under the red coating except three surfaces (see fig. 3-4). The east surface of the west wall of the pool room and the east surface of the wall outside the patio do not have the layer of plaster but have the layer of red coating (see fig. 3-1, 3-3), and the north surface of the wall on the north side of the pool room does not have either plaster layer or red coating (see fig. 3-2). On the walls with plaster and stucco layers, the wall outside the canteen has some peeling off on its corner (see fig. 3-4, 3-5).

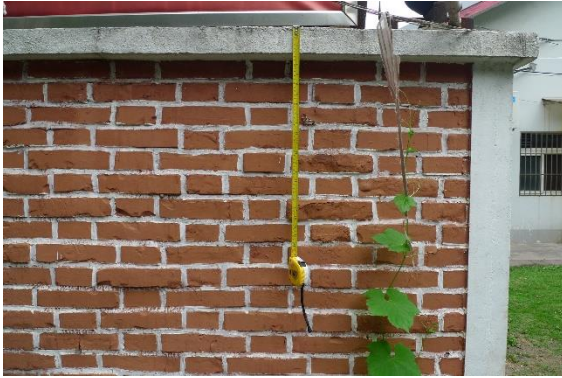


Figure 3-1: The East Surface of West Wall of the Pool Room, 2014

*Source:* Taken by the author.



Figure 3-2: The North Surface of North Wall of the Pool Room, 2014

*Source:* Taken by the author.



Figure 3-3: Damage on the West Wall of Canteen, 2014

*Source:* Taken by the author.



Figure 3-4: The East Surface of Wall outside the Patio, 2014

*Source:* Taken by the author.

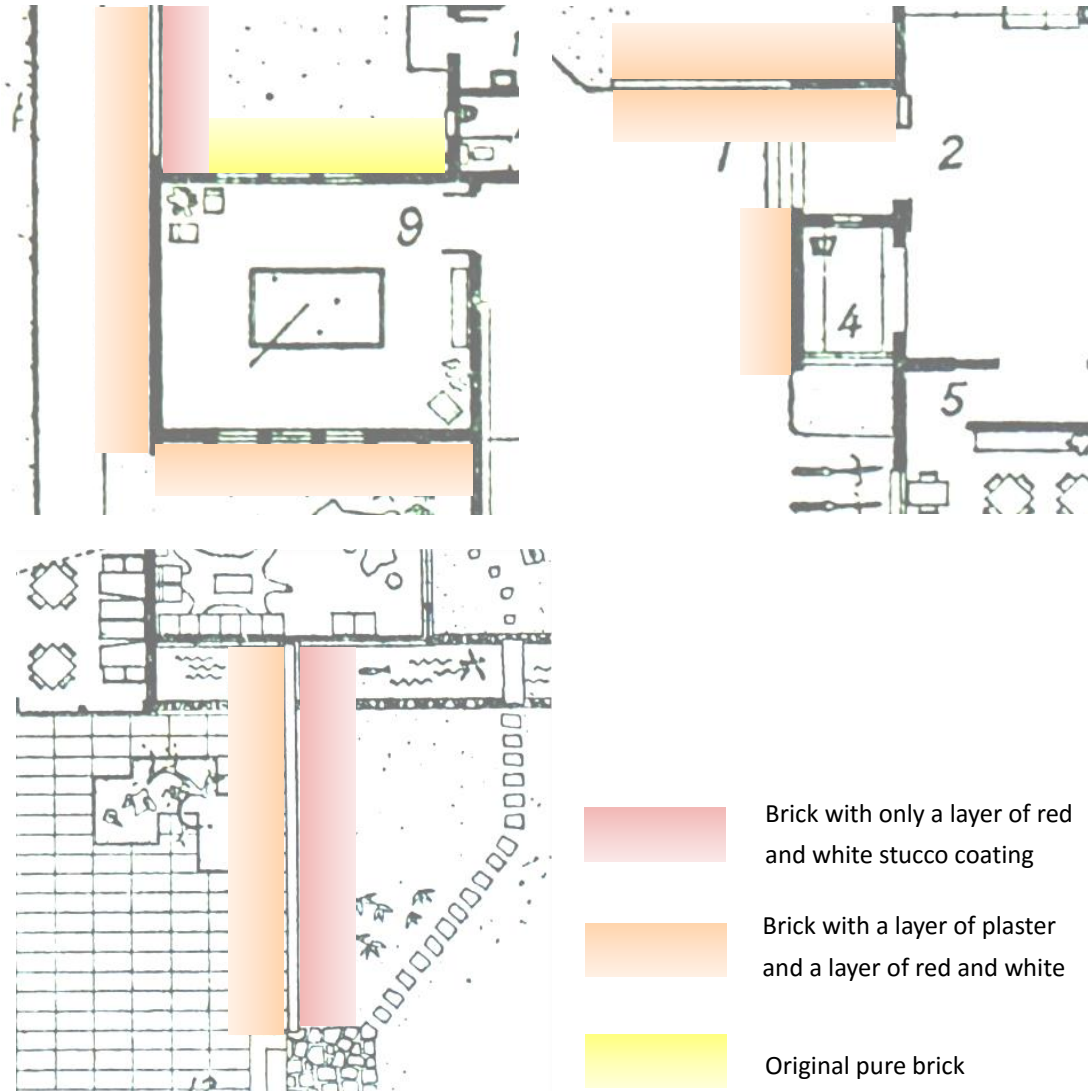


Figure 3-5: The Current Condition of Each Side of the Brick Walls

Source: Drawn by the author.

### The Mildew on Walls

Another damage on the wall surface is green mildew on the feet of the walls. There are three most serious parts, the west wall of the pool room, the west wall of the activity room, and the north wall of the ball room (see fig. 3-6, 3-7, 3-8).

The possible reason for the mildew on the wall of ballroom is that the moisture comes out from the sewer next to the wall. For the wall next to the bike parking, the possible cause is the rain water from the canopy.



Figure 3-6: The West Wall of the Pool Room, 2014

*Source:* Taken by the author.



Figure 3-7: The West Wall of the Activity Room, 2014

*Source:* Taken by the author.

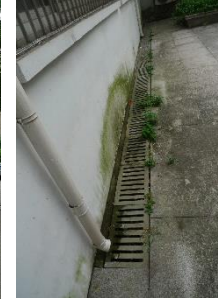


Figure 3-8: The North Wall of the Ball Room, 2014

*Source:* Taken by the author.

## 3.2 The Current Condition of Small Components

### The Damage on Cornice and Gable

The wooden cornice on the addition part on the north-east corner of the building, and the wooden cornice and gable outside the music room have some damage on them. The light blue painting on the cornices were partly peeled and the wooden materials underneath were exposed. The painting on the gable has vertical cracks along the joints of the wooden panels underneath (see fig. 3-9, 3-10).





Figure 3-9: The Cornice and Gable outside the Music Room, 2014  
*Source:* Taken by the author.



Figure 3-10: The Cornice on the Additional North-east Corner, 2014  
*Source:* Taken by the author.

### **The Chinese preservation codes system composition**

In a Chinese historical heritage preservation project, the regulations that have impacts on the schematic decisions should be divided into the state laws and the regional regulations. The regional regulations should not conflict with the state laws but expand their ranges and details.

### **The Damage on Ceiling**

There is a damage point on the south-west corner of the ceiling in canteen. A part of white stucco coating was peeled off, and the wooden structure under the coating was exposed. There is also light yellow mildew stains around the exposed area (see



Figure 3-11: The South-west Corner of the Canteen Ceiling, 2014  
*Source:* Taken by the author.

fig. 3-11).

The cause of the mildew is that it is in the corner of the roof, so it is easy to get wet by the rain water. After a long time soaking with rain water, the mildew happen and the strength of this corner of the ceiling was weaken. Finally, the stucco coating was peeled off by the gravity.



## **Chapter 4 The Preservation Ethic in China**

### **4.1 Preservation Philosophy**

The Tongji Faculty Club has been through several awkward transformations and so called renovations. Those renovations were aimed at improving the building conditions but due to the neglect of its historic and artistic values by the constructor and the lack of specific preservation strategies, some important characteristic features of the building were lost through the construction. This disregard of historic building comes from Chinese preservation philosophy and preservation regulations. The preservation philosophy was mostly influenced by the traditional ideology and social transformation. The preservation regulations include the cooperation of decision-making department and executive department.

#### **The Destiny of Historical Monuments in Ancient China**

Through the Chinese history, primarily ethnic Han history, the number of preserved historic buildings is very small. One reason is because of fragile of timber architecture. The other reason is the concept that monumental buildings are symbols of reign, and the destruction of these buildings means the overturn of a dynasty. Whenever a new force conquered the old one, the remained palaces and capital would either be dissembled or burned. The only exception was the Beijing City of Ming Dynasty. When the Manchu troop entered the city in 1644, they preserved the Forbidden City and the urban area of Beijing. Because the Manchurians did not share the same ideology of Hans, moreover they admire and learned from Han culture for decades. The timber material and constantly replacement of monumental buildings in Ancient China showed that the concept of

building preservation and making a building that would last forever was very weak.

The feature of timber architecture is another reason that historical architecture was not seriously preserved in China. The timber palace and temples were composed by small elements, and could be finished really quick in just one or two years. So it was not a big deal to turn down a palace and build a new one.

In Chinese philosophy, everything in the universe is keeping changing. The death and birth of a creature is regarded a circle of life which can be repeated again and again. The wooden materials of Chinese buildings were also regarded having life even though they cut down and painted. Therefore, the process of burning them down, blending ashes into earth, growing new trees from the earth, and building a new palace from the trees is also regarded as circle of life. And this was not a destroy but rather a reborn action.

### **The Impact of Cultural Revolution on Chinese Historic Buildings**

Historic buildings either traditional timber architecture or modern architectures all suffered damages in different degree during the Cultural Revolution. The theme of the Cultural Revolution include the objection to Feudalism, Capitalism and Revisionism. In architectural area, the decorations such as murals and sculptures on traditional buildings were categorized as feudal features, while the abstract elements and decorations on modern architectures were considered as capitalism features. The sculptures were smashed and murals were peeled by the Red Guards<sup>28</sup>. People who kept historical relics in their homes were reported and put to jail. After this revolution, the consciousnesses of historical preservation in Chinese people's minds were diluted and weakened. As a result, the position of cultural protection and development is always of secondary importance

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<sup>28</sup> Members of a Chinese youth movement that attempted to effect the Cultural Revolution (1965–71).

compared to the ideological construction.

### **The Contradiction between the Urban Development and Historical Preservation in China**

The deficiency in the field of historical preservation is also related to the requirement of economical growth after 1978. In most circumstances, the need of building protection should give way to the urge of development. There are three levels of conflicts, the conflict between population increase and historical preservation, the conflict in financial distribution, and the disjunction between legal department and executive department.

In the process of Chinese urban expansion, historical buildings especially private residences were reconstructed or renovated to meet the modern requirements of living. Additions were also common to adapt the expansion of a single family. In the urban design perspective, historical cities were torn apart to fit in the new functional plans or renewed as tourist attractions. These renovations and reconstructions may cause seriously damages on historical buildings' character features.

When the economic developments were put in the first national priority, the cost on historical preservation seemed like a waste of money if the project is not commercial or monumental. The financial source of preservation of each level of listed building is corresponding to each level of government. For example, the state listed National Outstanding Historical Building will get fund from the state government, while the Shanghai listed Superior Historical Building will get fund from Shanghai government. In that, in the underdeveloped areas, the government expenditure will be major spent on municipal engineering and stimulating the market. In developed areas like Shanghai, the government expend more percentage on historical preservation but still not enough to

cover all the listed buildings.

The non-action of government in most historical preservation failure resulted from the liability ambiguity. In most cases, the general preservation guideline is formulate by legal department, and the specific preservation strategies to each building were passed down to executive departments. However, historical building like the Tongji Faculty Club still do not have specific preservation measures. Another unreasonable factor is that most heads of departments are not professionals. Instead, they were appointed to their position just for five to ten years and after their appointments they would be transferred to another department. As a result, those heads would pay more attention on developing their political achievements in a short term than long term works like historical preservations.

#### **4.2 Comparison on Preservation Codes between China and ICOMOS**

In 2005, the Tongji Faculty Club was added into the list of Superior Historical Building Protection, thus any interventions on this building are restrained by national preservation laws and local regulations. However, the Chinese historical preservation regulation system is still in the stage of developing. To formulate a comprehensive preservation strategy, it is necessary that researching on overall Chinese relevant regulations and fill up the blind spots and shortcomings by using globally mature regulations as reference.

The Chinese regulations that will be discussed in this section are the *Act of the Preservation of Cultural Relics Promulgated by P.R.C.* and its collateral terms, the *Regulation for Historical Cultural District and Superior Historical Building Protection* and its predecessor the *Measures for the Administration of Superior Modern Buildings Protection in Shanghai*. These are edited by Chinese state or local governments and have

legal effects. The international regulations will include the *International Charter for the Conservation and Restoration of Monuments and Sites (the Venice Charter 1964)*, the *Burra Charter 1999*, and the *American National Historic Preservation Act of 1966*. The *Venice Charter* was the first agreement that western architects reached on the objects and degree of historical preservation. The other charters are the application of Venice Charter in different regions. The most recent document is the *Principles for the Conservation of Heritage Sites in China*. It was based on the *Venice Charter* and Chinese conventions. Although it was not legal requirement but a suggestion by the government, it is the most comprehensive guideline on Chinese historical preservation.

### **The Act of the Preservation of Cultural Relics Promulgated by P.R.C.**

The journey of Chinese cultural heritage preservation started from the beginning of 20th century. The *Antiques Preservation Law* issued on July 1930 symbolized that China started to build the frame of modern antique heritage preservation. The relics classifying system was built after the foundation of P.R.C. from 1956. The *Temporary Rules of the Preservation and Administration of Cultural Relics* (1961) was issued in that period and was the predecessor of the *Act of the Preservation of Cultural Relics Promulgated by P.R.C.*.

In the Chinese state laws, the most recent law of historical heritage preservation is the *Act of the Preservation of Cultural Relics Promulgated by P.R.C.*. It was issued in 1982 and revised in 2002. It was the first nationwide culture relics preservation legal document after the foundation of P.R.C.. After that, the Enforcement Regulation of the Act of Preservation of Cultural Relics was issued. These two documents established the national preservation system and philosophy.

In the second article of the *Act of the Preservation of Cultural Relics Promulgated by P.R.C.*, the state protect building was described as:

*Historical buildings with historic, artistic and scientific values.*

*Modern and contemporary buildings that are connected with significant historical events, revolutionary movements or famous characters, and with commemorative meanings, educational significances or historical values.*<sup>29</sup>

The *Act of the Preservation of Cultural Relics Promulgated by P.R.C.* also stipulated that historical or contemporary buildings that have historic, artistic or scientific values can be nominated as a Key Cultural Relics Site Under the State Protection, the Key Cultural Relics Site Under the Province Protection, or the Key Cultural Relics Site Under the City Protection depending on the significance of their values.<sup>30</sup> Each level of the Key Cultural Relics Site has its corresponding government. Each site should have the scope of protection, a mark board, record archive, and full-time managers. Governments above the county level should formulate specific protecting measures for each historical site.<sup>31</sup>

The state regulation defines the general scopes of historical architectures and responsibilities of the governments. However, this Act is the only existing state regulations relevant to historical preservation. The dozen pages of Act supposed to cover the area of relics, historical building, building groups and districts is obviously not comprehensive or detailed enough. To enhance the legal basis of historical building preservation and respond to the general requirements from state regulations, each

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<sup>29</sup> Article 2, Act of the Preservation of Cultural Relics Promulgated by P.R.C..

<sup>30</sup> Article 3, article 13, Act of the Preservation of Cultural Relics Promulgated by P.R.C..

<sup>31</sup> Article 15, Act of the Preservation of Cultural Relics Promulgated by P.R.C..

government above the county level enacts their local regulations to apply to preservation practices.

### **The Measures for the Administration of Superior Modern Buildings Protection in Shanghai**

Shanghai has always attached great importance to the protection of historic buildings and districts. In 1986, Shanghai was authorized as the Famous Historical and Cultural City.<sup>32</sup> In 1989, Shanghai proposed the first list of Superior Historical Building Protection. Since then, in 1993, 1999 and 2005, the second, third and fourth lists were published successively.

When the first list was issued, there was no relevant regulation about the protection of historical buildings, so those buildings were protected according to the regulations of historical relics. The *Act of the Preservation of Cultural Relics Promulgated by P.R.C.* defined historical buildings as relic units and its content was mostly about the ownership and management of the relic units.

In 1991, Shanghai government published the *Measures for the Management of Superior Modern Buildings Protection of Shanghai*, initially forming the management mechanism composed of Planning Bureau, Real Estate Resource Bureau and Cultural Management Committee.

The *Measures* defined the "Superior Modern Buildings" as the buildings and building

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<sup>32</sup> The Famous Historical and Cultural City was first proposed in the Act of the Preservation of Cultural Relics Promulgated by P.R.C.. In the article 14, the Famous Historical and Cultural City was defined as a city with particularly abundant historical relics and has significant historical value or revolutionary memorial.

groups built from 1840 to 1949 with historic, artistic and scientific values.<sup>33</sup>

The *Measures* divided the conservation of buildings into four classes:

*1. No change to the original appearance, structural system, plan distribution and interior finishes of the building.*

*2. No change to the original appearance, structural system and basic plan distribution of the building, and interior finishes adding a character to the building. The rest part of the building can be slightly changed.*

*3. No change to the original appearance of the building. The rest part of the building can be slightly changed under the premise that the original interior structural system is preserved.*

*4. Under the premise that the original integrity and style features of the building are preserved, the exterior and interior of the building can be partially slightly changed.*

The *Measures* was the first attempt to legally manage and advance the preservation of historical buildings in Shanghai. Its tries of defining the scope of preservation objects and classifying the categories of preservation degrees are obvious. However, in the aspects of the concrete application in each building, the restrict on preservation strategies were very loose due to the requirement of city development. The *Measures* implied that there are a certain differences between the preservation principles and their realistic feasibilities. It proposed that the preservation strategies of a building do not need to correspond strictly to its preservation class, but preservation on some key features of the building is enough.

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<sup>33</sup> The Chinese Modern Period is from the First Opium War in 1840 to the establishment of P.R.C. in 1949. This period covers the time that ancient China being invaded by foreign counties and symbolizes the turn from traditional society to modern society of China.



## **The Regulation for Historical Cultural District and Superior Historical Building Protection**

Based on the *Measures for the Administration of Superior Modern Buildings Protection in Shanghai*, in 2002, Shanghai City Congress formally issued the *Regulation for Historical Cultural District and Superior Historical Building Protection*. Since then, the historical heritage protection works in Shanghai have a regional regulation in the true sense of law. This regulation legally established the legal system, management system and operational mechanism of the historical heritage protection projects in Shanghai.

After the *Regulation* was issued, the fourth list of the Superior Historical Building Protection was published in 2005 based on the *Regulation*. This was the first time that the government collected the nominations of historical building from the society instead of a certain departments reporting the nominations directly to the government. This list also had the biggest number and the widest range of building types in the history.

In this *Regulation*, the time limitation of listed buildings expands from buildings built before 1949 to buildings built longer than 30 years. The buildings that can be defined as a "Superior Historical Buildings" should at least have one character below:

1. *The building mode, construction craftsmanship and engineering technology are special in architectural arts and valuable in scientific research.*
2. *Reflecting the regional historical and cultural architectural features in Shanghai.*
3. *Magnum Opuses of famous architects.*
4. *Representative workshops, stores, factories and storages in the history of industrial development of China.*

*5. Other superior historical buildings that possess historical and cultural meanings.*<sup>34</sup>

It is worth noting that it was the first regulation that put industrial building into the scope of protection.

Compared to the *Measures*, the *Regulation* put more emphasis on and add more details in the classifying system of preservation. The general requirements of preservation was also divided into four classes according to the historic, scientific and artistic value of the building and its condition:

- 1. No change to the elevations, structural system, plan distribution and interior decorations of the building.*
- 2. No change to the elevations, structural system and basic plan distribution of the building, and interior decorations adding a character to the building. The rest part of the building can be changed.*
- 3. No change to the elevations and structural system of the building. The interior of the building can be changed.*
- 4. No change to the principle elevations of the building. The rest part of the building can be changed.*<sup>35</sup>

According to the *Regulation*, the City Building and Land Management Department is in charge of the historical building conservation management. Therefore, the City Building and Land Management Department formulated specific conservation requirements for each listed building. These requirements are not only for the owners but also for the potential tenant or buyer. Any repairmen, transformation, extension or other action

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<sup>34</sup> Article 9, Regulation for Historical Cultural District and Superior Historical Building Protection

<sup>35</sup> Article 25, Regulation for Historical Cultural District and Superior Historical Building Protection

would change the current condition of the listed building should be permitted by the relevant department. For example, changes to the interior usage and distribution should get permission from the Building and Land Department, while changes to the plans, elevations, main structure, square footage and height should be permitted by the Planning Bureau.

This *Regulation* had gone one step further than the Measures in the aspects of preservation rights and liabilities yet it was still ambiguous that the preservation classification on each listed building and their preservation strategies, and it did not state the range and requirement of restoration. For example, the Tongji Faculty Club was listed on the fourth list of the "Superior Modern Buildings" in Shanghai, but there were either nor description on the building's important feature or assessment of the building's condition published. Ten years have passed since the building was listed, yet the preservation level of the building is still not decided.

### **The International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter 1964)**

The true dilemma in the preservation of the Tongji Faculty Club is whether to restore the building or not, and if the building is going to be restored, to what degree. Neither of the answers to these questions can be found in the Chinese regulations discussed above. On the other hand, the deficiency in Chinese regulations have long since been stated in Western preservation principles. The *Venice Charter* was discussed and published on the "Second International Congress of Architects and Technicians of Historic Monuments" in Venice in 1964. It proposed clear articles about aspects on the protection of historic heritages such as conservation and restoration.

Even though *The Venice Charter* has its own shortages like it did not provide specific operations on either conservation or restoration, and it did not classify preservation strategies by building kinds, it provide theoretical foundations for the decision making process on either conservation or restoration. In the *RESTORATION* section, the reason and condition of restoration on a historic building was stated:

*The process of restoration is a highly specialized operation. Its aim is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original material and authentic documents. It must stop at the point where conjecture begins, and in this case moreover any extra work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp. The restoration in any case must be preceded and followed by an archaeological and historical study of the monument.*<sup>36</sup>

In the aspect of degree of restoration, *The Venice Charter* stated that:

The valid contributions of all periods to the building of a monument must be respected, since unity of style is not the aim of a restoration. When a building includes the superimposed work of different periods, the revealing of the underlying state can only be justified in exceptional circumstances and when what is removed is of little interest and the material which is brought to light is of great historical, archaeological or aesthetic value, and its state of preservation good enough to justify the action. Evaluation of the importance of the elements involved and the decision as to what may be destroyed cannot rest solely on the individual in charge of the work.<sup>37</sup>

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<sup>36</sup> Article 9, *The International Charter for the Conservation and Restoration of Monuments and Sites*.

<sup>37</sup> Article 11, *The International Charter for the Conservation and Restoration of Monuments and Sites*.

In the aspect of addition, *The Venice Charter* stated that:

Additions cannot be allowed except in so far as they do not detract from the interesting parts of the building, its traditional setting, the balance of its composition and its relation with its surroundings.

### **The Australia ICOMOS Charter for Places of Cultural Significance (The Burra Charter 1999)**

Since *The Venice Charter* is only a general guideline of historical conservation and restoration, regional principles that based on *The Venice Charter* but have the specific instructions on preservation strategies were formulated. One of them is *The Burra Charter*. *The Burra Charter* is an important outcome of Australian government. It provided an example of how to embody the spirit of *The Venice Charter*, and especially how to control and coordinate the contradiction between the requirement of modern city life and the preservation of cultural heritages, through the preservation procedures. Under the direction of *The Burra Charter*, the preservation practice is very successful and it also became the template of other regional preservation principles.

In the sections regarding restoration and additions *The Burra Charter* stated that:

*Restoration is appropriate only if there is sufficient evidence of an earlier state of the fabric.*<sup>38</sup>

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<sup>38</sup> Article 19, *The Australia ICOMOS Charter for Places of Cultural Significance*. Fabric includes building interiors and subsurface remains, as well as excavated material. Fabric may define spaces and these may be important elements of the significance of the place.

*New work such as additions to the place may be acceptable where it does not distort or obscure the cultural significance of the place, or detract from its interpretation and appreciation.*<sup>39</sup>

## **The Principles for the Conservation of Heritage Sites in China**

The *Principles for the Conservation of Heritage Sites in China* was passed and published in 2000. It was based on the *Act of the Preservation of Cultural Relics Promulgated by P.R.C.* and referred to international cultural heritage principles represented by *The Venice Charter*. It is not a documentation carrying the force of administrative regulation but a major standard in the instructions and evaluations in the historical preservation works. The target objects of the *Principles* are heritage sites which are "the immovable physical remains that were created during the history of humankind and that have significance."<sup>40</sup> In the aspect of removal of the additions, the *Principles* defined the removable part as the "structures and components assessed as having no value".<sup>41</sup> It proved the "reinstatement of lost parts of a site",<sup>42</sup> while had attached conditions:

*Restoration to historic condition must be based on indisputable extant physical remains. Conjecture, based solely on documentary records, is not permitted.*<sup>43</sup>

*On the determination of experts, it is permissible to reinstate a small number of missing*

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<sup>39</sup> Article 22, *The Australia ICOMOS Charter for Places of Cultural Significance*. The concept of place should be broadly interpreted. The elements described in Article 22 may include memorials, trees, gardens, parks, places of historical events, urban areas, towns, industrial places, archaeological sites and spiritual and religious places. The term cultural significance is synonymous with heritage significance and cultural heritage value. Cultural significance may change as a result of the continuing history of the place. Understanding of cultural significance may change as a result of new information.

<sup>40</sup> Article 1, *The Principles for the Conservation of Heritage Sites in China*.

<sup>41</sup> Article 12.2, *The Principles for the Conservation of Heritage Sites in China*.

<sup>42</sup> Article 12.4, *The Principles for the Conservation of Heritage Sites in China*.

<sup>43</sup> Article 12.4.1, *The Principles for the Conservation of Heritage Sites in China*.

*components by referencing examples of the same period, type, and regional origin and by using the same materials. The added fabric must be labeled with the date of replacement.*<sup>44</sup>

Compared to the *Act* and the *Regulation*, the *Principles* has divided sections for each aspects in the process of preservation and the articles have more detail description than the former two regulations. However, the *Principles* is, as stated in the preface, only a professional guideline in the projects of historic sites preservations. It does not have as much power as the legal documents. On the other side, in the process of supervision and examination, it is hard for the legal documents as the *Act* to put its articles into practice. This detachment evaluation and legal works will have adverse impact on the results of preservation projects.

The same problem also exists in The Burra Charter and The Venice Charter. The preservation efforts in Australia can hardly compete with the tide of urbanization. A slight inappropriate in the preservation steps is easy to be neglected but will cause negative influence on the historic site. And the ambiguity of rights and liabilities is also a problem.

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<sup>44</sup> Article 12.4.2, The *Principles for the Conservation of Heritage Sites in China*.

## Chapter 5 The Schematic Preservation Design of the Tongji Faculty Club

### 5.1 The Reference of Restoration

In order to guarantee the authentic of the restoration, it is necessary to find believable reference about the building in old time. The original version of the Tongji Faculty Club was kept in the introduction articles and construction drawings. There are three kinds of sources containing the first hand graphical information about the building. The *Architectural Journal* published five photos of the Tongji Faculty Club in 1958. The Journal of Tongji University published a set of schematic drawings including plans, elevations, sections and perspectives also in 1958. The construction document of the building was completed in 1957. The three sources have overlaps, however, some building parts are different in each of them. In that, the first job of restoration is to designate the reference images.

#### Five Original Photos



Figure 5-1: Tongji Faculty Club, Full View.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Architectural Journal*, No. 6 (1958): 19.

Figure 5-2: The Green House Roof Details.

Source: The Tongji Faculty Club Construction Document, 1958.



The first photo was a full view of the Tongji Faculty Club taken from the southeast corner. The balcony of the music room is in the left side of the photo, and the lounge can be partly seen in the right side (see fig. 5-1). There are two differences between the photo and other sources.

The first is the roof material of the green house. In the photo, the roof's material was not indicated and doesn't have any extra decorations, while in the construction document, the roof was made of glass and wooden frame in the same pattern as the curtain wall (see fig. 5-2). The roof in the photo should be the constructed version because of the shortage in budget of building technique. If the green house is going to be restored, it should follow the image in the photo.



Figure 5-3: The Perspective of the Entrance and the Plans of the Activity Room.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.

The second difference is the south end of the activity room. In a perspective of the entrance published on the *Journal of Tongji University*, the southern wall of the activity room was pushed back, creating a grey space between the outside and the inside.

However, the space does not exist in the photo or either version of plans (see fig. 5-3). In restoration of the southern elevation, the perspective cannot be taken as a reference.



Figure 5-4: Tongji Faculty Club, East Wall of Patio.  
*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Architectural Journal*, No. 6 (1958): 19.

Figure 5-5: Tongji Faculty Club, Patio Plan.

*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.

The second photo is the east wall of the patio. The photo was taken from the south angle and showed part of the patio, the eastern garden, the bar and the lounge. The ground tiles pattern and shape of the tree pool are different from the plan. The ground tile was rectangular grid both in the construction document and the schematic drawings published on the *Journal of Tongji University*. On the other hand, the tiles in the photo were squares and placed in a dislocation grid. Moreover, one of the tree pool in the patio was shown in the photo. Judging from a perspective view, it was not in the same shape as illustrated in the plan either. One possible explanation is the shape in the plan was not wide enough for the roots of tree, so in the process of construction, it was replaced by a wider shape. In the restoration of the patio, the shape of the tree pool and arrangement of the tiles

should follow the photo.

The other three photos were taken from the southeast corner of the lounge, the platform of the second floor and the entrance of the ball room (see fig. 5-6). The scenes in these photo were the same as shown in the drawing and description of the architects. So the restoration of these three part can follow either the photos or the drawings.



Figure 5-6: The Stairway from the Second Floor, the Lounge, and the Ball Room.  
*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Architectural Journal*, No. 6 (1958): 19.

## Differences between the Construction Drawings and Schematic Drawings

There are three elevations published on the *Journal of Tongji University*. They were the west, the east and the south elevations. Comparing them with the same dimension of elevations, there are several slight differences (see fig. 5-9, 5-10, 5-11). First, in the journal elevations, the point window frames were “T” shaped, while in the construction drawings the windows were divided into three parts vertically. In the same set of construction drawings, the window frame details are also “T” shaped (see fig. 5-7). In that, the “T” shaped window frames were the architects’ final decision.

Second, in the west elevation on the journal, there was a fence in the south of the building, but in the construction drawings the fence disappeared. According to Ji-zhong Wang, the architect, the fence had the function as a boarder of the southern garden, and it also corresponded to the brick wall of the pool room (see fig. 5-8). So the fence should be kept or restored if the building is going to be strictly preserved.



Figure 5-7: The Window Frame Details.  
Source: The Tongji Faculty Club Construction Document, 1958.

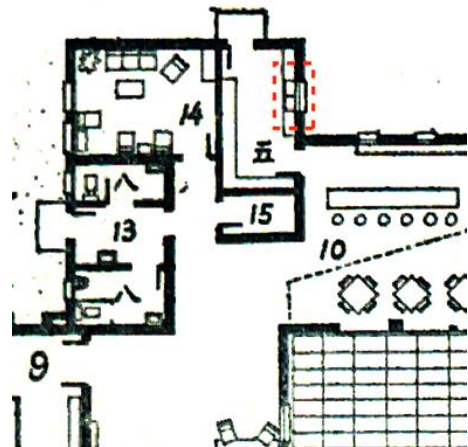


Figure 5-8: The Window Frame Details.  
Source: Wang, Ji-zhong, and De-hua Li. “Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club].” *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.

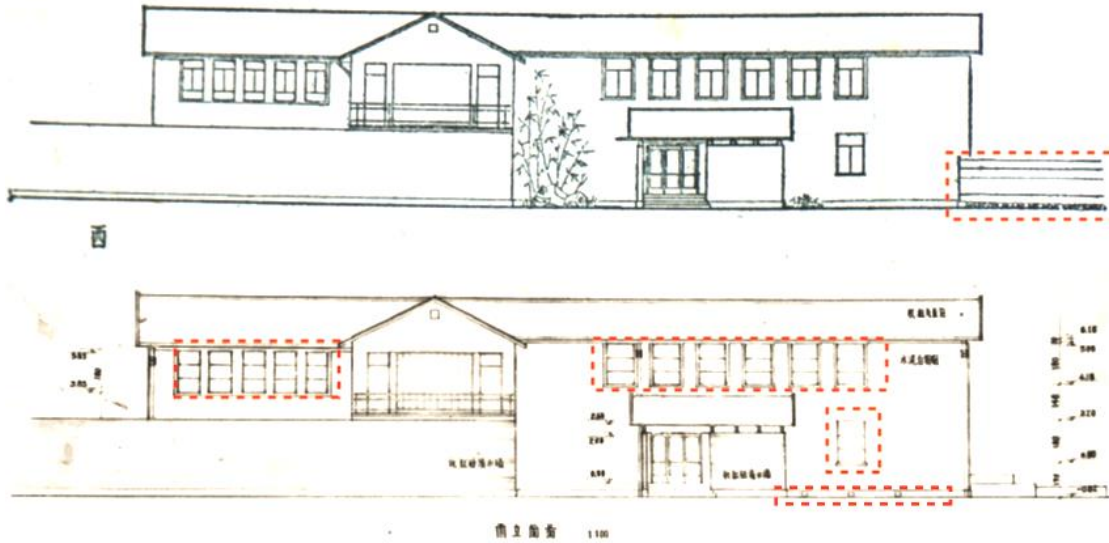


Figure 5-9: Tongji Faculty Club, West Elevation.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." Journal of Tongji University, Vol. 3, No. 1 (1958): 9.

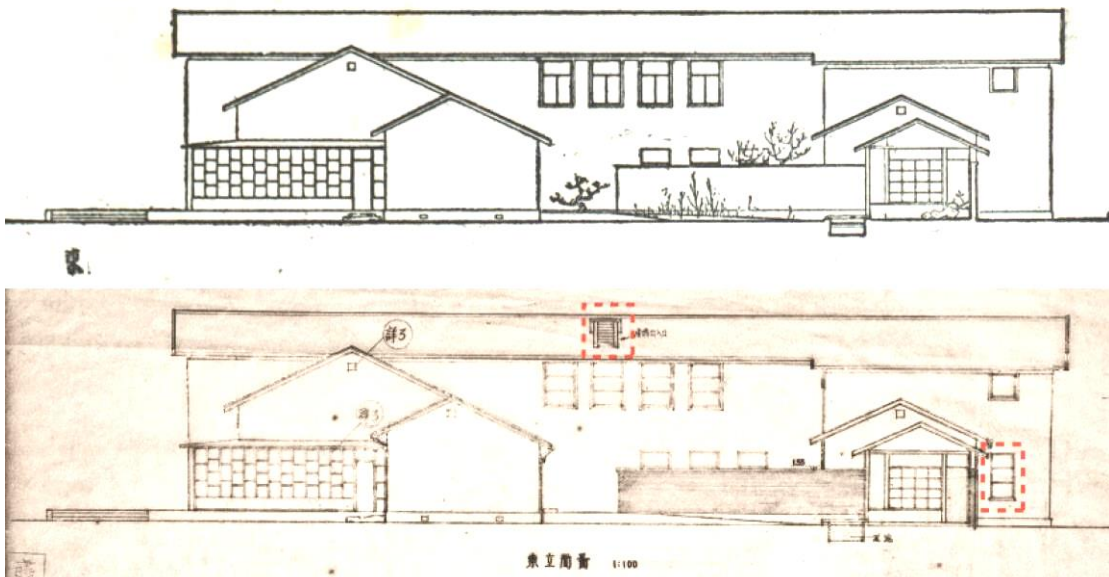


Figure 5-10: Tongji Faculty Club, East Elevation.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." Journal of Tongji University, Vol. 3, No. 1 (1958): 9.

In east elevation of the construction drawings, there was a window on the first floor on the north for the preparing room. The window disappeared in on the journal's elevation. But in the first floor plan of the journal, the window appeared again. In this case, the window of the first floor preparing room should be kept in restoration.

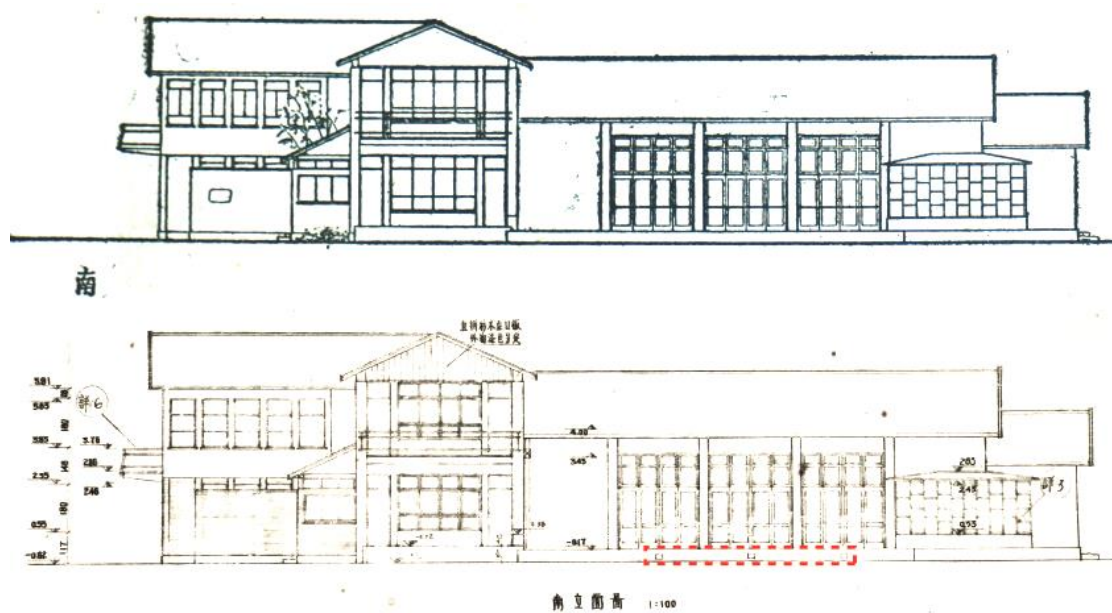


Figure 5-11: Tongji Faculty Club, South Elevation.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.

Besides the elevations, there were also six renderings in the *Journal of Tongji University*. They were visual expression of the architects' ideas of the interior design, and can be the second important reference of in the restoration process. Since they were only drawings of imagination, there would be some inaccuracy compared to the construction drawings.

The rendering of the meeting room showed the exposed roof structure and tube lights. However, they were inaccurate compared with the construction detail drawings of the

roof truss. In the drawings, the horizontal waling was in the middle height of the triangular truss, and the tube lights located right under the waling (see fig. 5-12, 5-13, 5-14). So the meeting room roof should be restored according to the construction drawings.



Figure 5-12: The Roof Truss Detail.

*Source:* The Tongji Faculty Club Construction Document, 1958.

Figure 5-13: The Meeting Room.

*Source:* Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.



Figure 5-14: The Tube Lights Detail.

*Source:* The Tongji Faculty Club Construction Document, 1958.

Another rendering was about the entrance of the bar. In the article on the *Journal of Tongji University*, the author introduced this part as a continuous turning and smooth transferring space. The two angles on the floor and the ceiling indicated their flat and continuous surfaces. In the section of the construction drawings, there was a line in the

bar entrance, showing that there was a short piece of wall hanging there. However, in the same section of the journal, this line disappeared (see fig. 5-15). According to the intention of the architects, this wall would cut off the connection between the corridor and the bar, thus the continuous and smooth turning would be sabotaged. In this case, the rendering can be a reference of restoration.

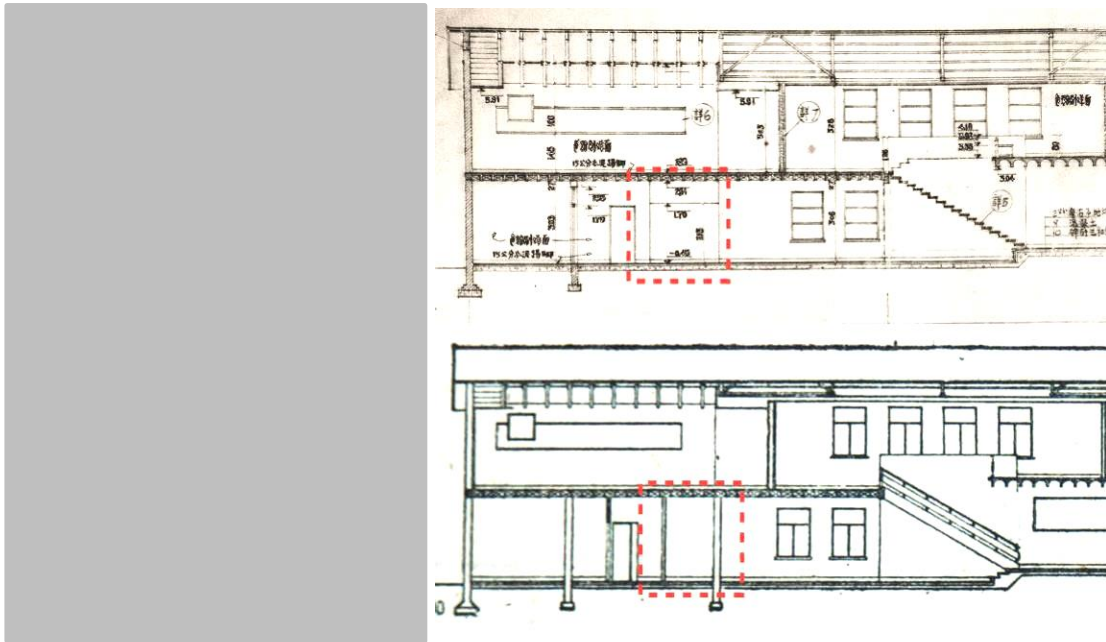


Figure 5-15: The Bar Entrance and Building Section.

Source: Wang, Ji-zhong, and De-hua Li. "Tongji Jiao Gong Ju Le Bu, [Tongji Faculty Club]." *Journal of Tongji University*, Vol. 3, No. 1 (1958): 9.

The differences among the construction drawings, the renderings and the photos may be caused by the time difference. When moving from the drawings to construction, it was very possible that the architects changed their minds on some details. They were improvement to the original drawings. As far as the author concern, the constructed model of the building would be a more reasonable condition to restore.



## **5.2 The Restoration Priorities**

The ideal state of a restoration project is that each part of the important character defining features are revealed or rebuilt. In reality, this is hard to realize because of reasons other than architecture itself. The removal of additional structures may jeopardize people private property. The rebuilding of missed parts may violate regulations. The restoration may also meet founding problems. In this section, the character defining features will be listed by priorities in case there is not enough money for all of them.

### **Removal of the Additional Structures**

The current condition of the Tongji Faculty Club is that it has added constructions all around it. They are blocking the entrance, taking part of the gardens, and cutting off the transporting areas. Removal of the constructions is very important to the restoration of the building exterior appearance (see fig. 5-16).

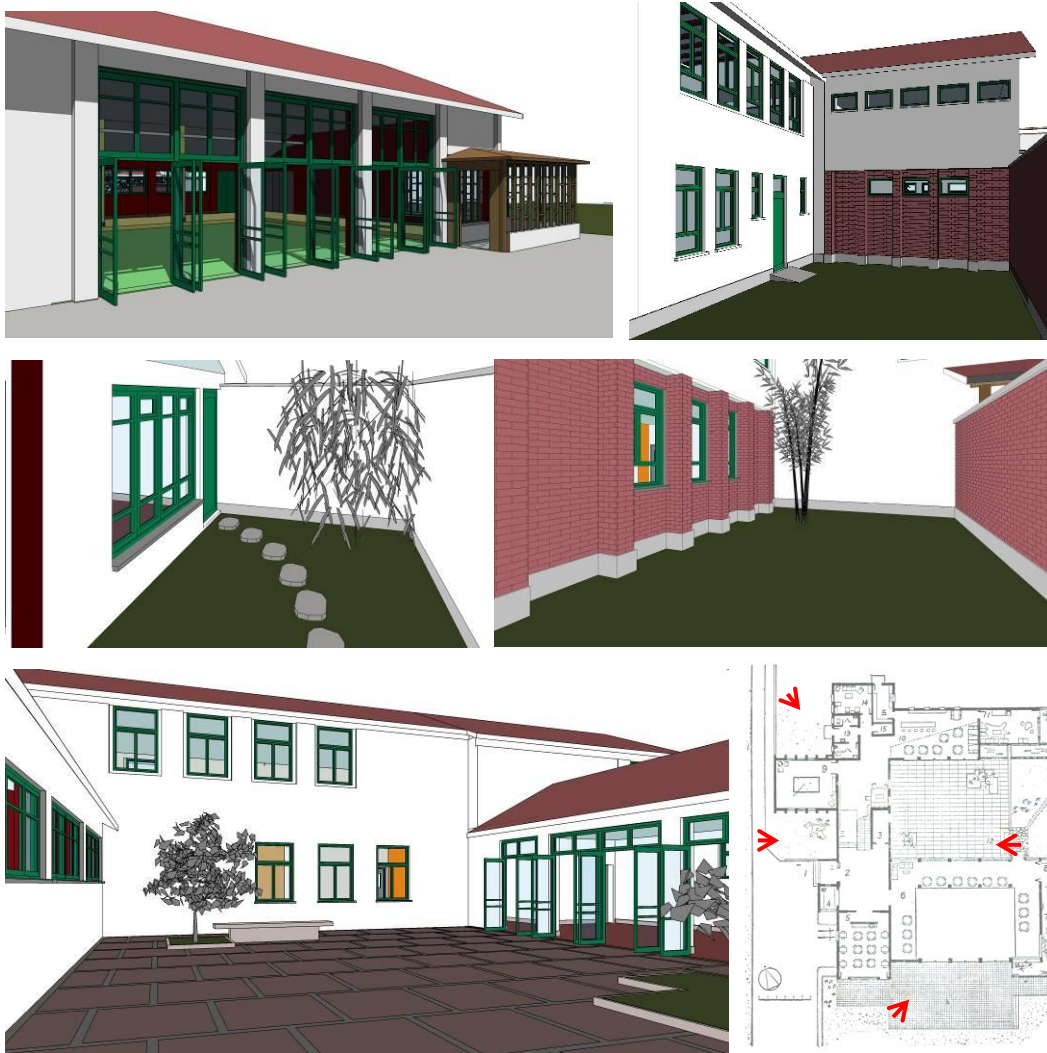


Figure 5-16: The Restoration Images of Five Gardens.  
Source: Drawn by the Author.

### Removal of Added Doors and Windows

One of the dominant features in this building is the flowing space. A good space design can add more layer of depth in a limited area just by making blocks and openings. Once where should be a door was turned into a solid wall or where should be wall was removed or added a door, the feelings in the space would be distracted.

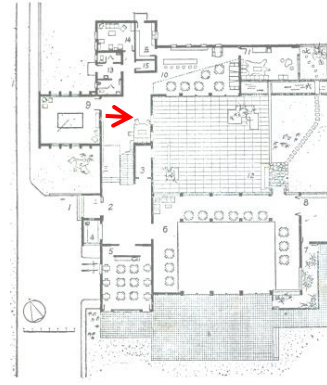


Figure 5-17: The Corridor to the East,  
Current.

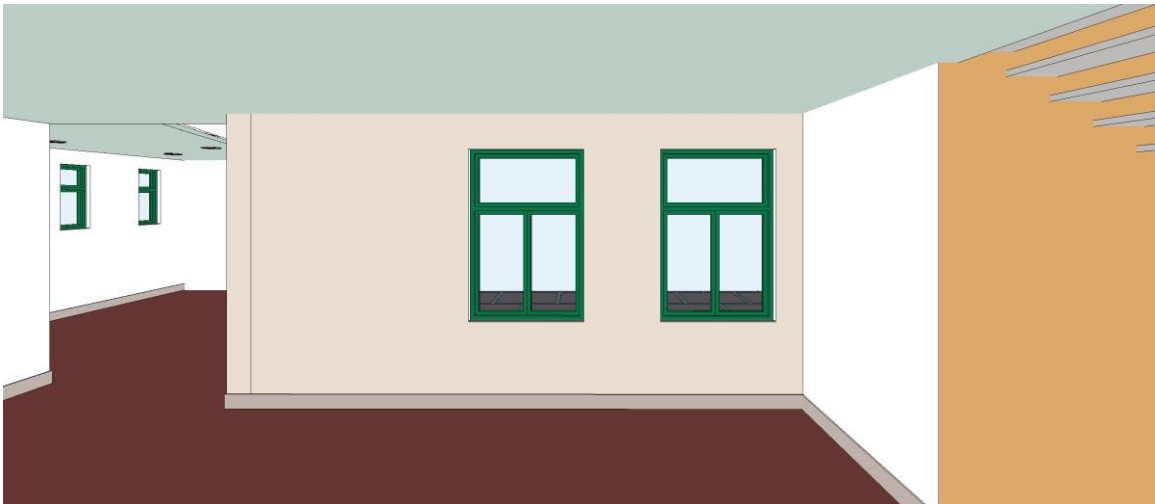


Figure 5-18: The Corridor to the East.  
*Source: Drawn by the Author.*

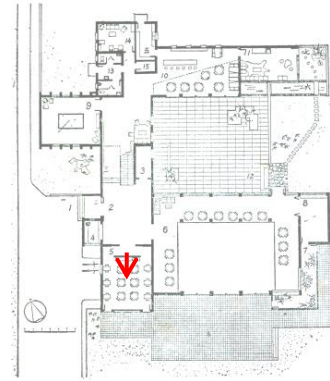


Figure 5-19: The Activity Room to the South, Current.  
*Source:* Taken by the Author.



Figure 5-20: The Activity Room to the South.  
*Source:* Drawn by the Author.

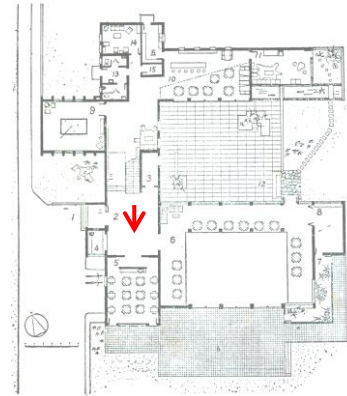


Figure 5-21: The Activity Room Entrance,  
Current.

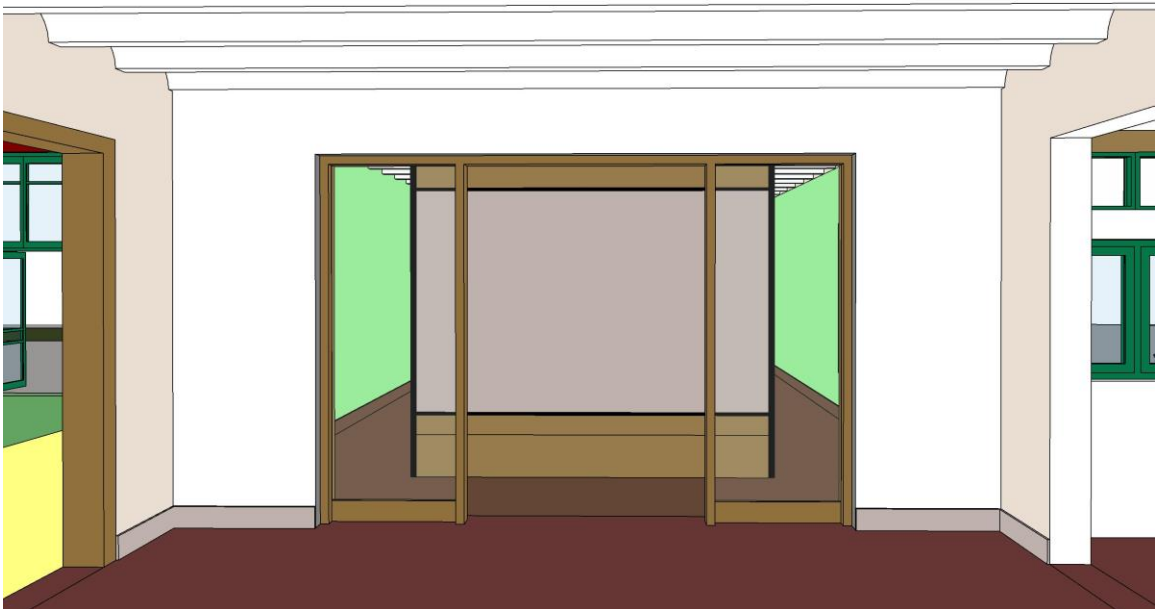


Figure 5-22: The Activity Room Entrance.  
Source: Drawn by the Author.



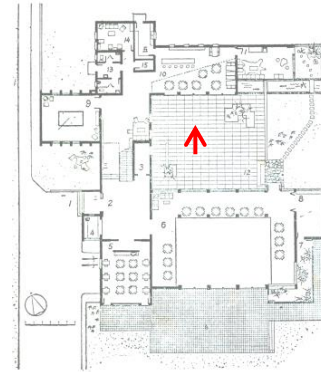


Figure 5-23: The Connection between Bar and Patio, Current.  
*Source:* Taken by the Author.



Figure 5-24: The Connection between Bar and Patio.  
*Source:* Drawn by the Author.

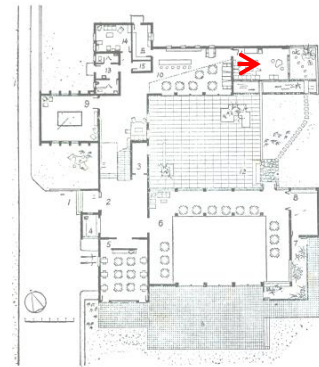


Figure 5-25: The Lounge to the East, Current.  
*Source:* Taken by the Author.



Figure 5-26: The Lounge to the East.  
*Source:* Drawn by the Author.

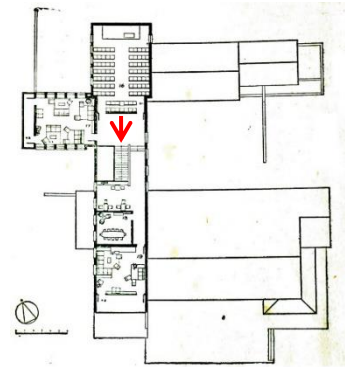


Figure 5-27: The Second Floor to the Stairway, Current.  
*Source:* Taken by the Author.



Figure 5-28: The Second Floor to the Stairway.  
*Source:* Drawn by the Author.

## Colors

Interior colors is another important feature of the building. Contrast colors would inspire



the tension of a space. Cold and warm colors were also used according to room functions. The current interior wall color is all white. So it will not cost much to paint the rooms.



Figure 5-29: The Bar Entrance, Current.  
*Source:* Drawn by the Author.

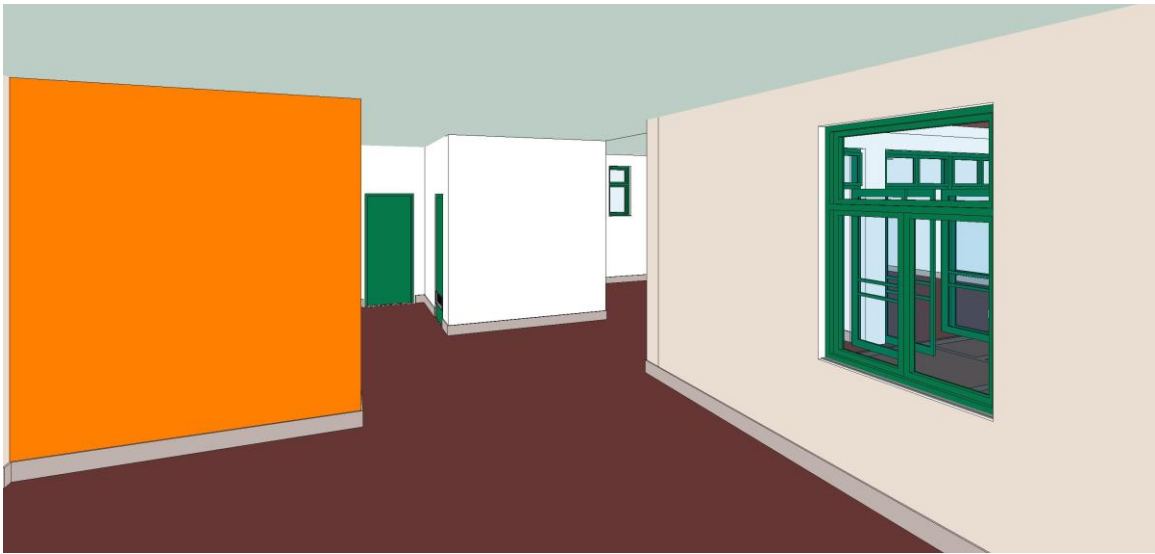


Figure 5-30: The Bar Entrance.  
*Source:* Drawn by the Author.

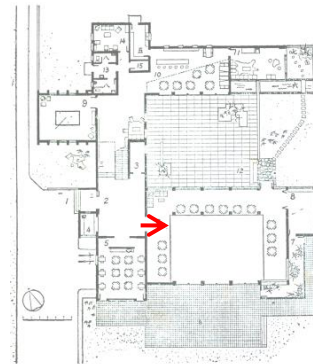


Figure 5-31: The Ball Room, Current.  
Source: Drawn by the Author.



Figure 5-32: The Ball Room.  
Source: Drawn by the Author.

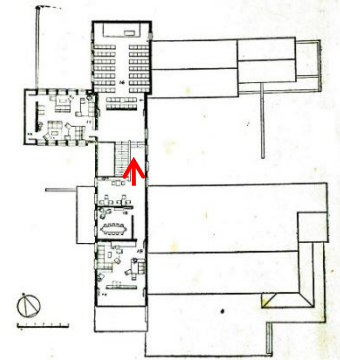


Figure 5-33: The Second Floor Meeting Room, Current.  
Source: Taken by the Author.

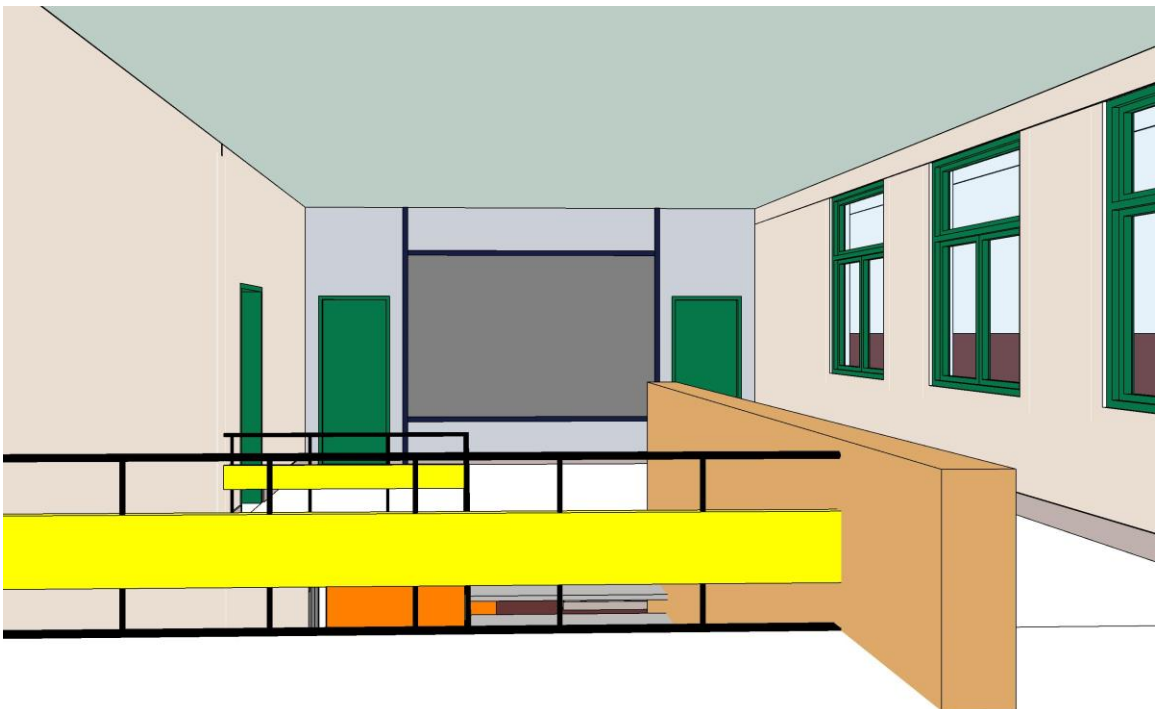


Figure 5-34: The Second Floor Meeting Room.  
Source: Drawn by the Author.



Figure 5-35: The Second Floor to the South.  
*Source: Drawn by the Author.*



Figure 5-36: The Entrance.  
*Source: Drawn by the Author.*

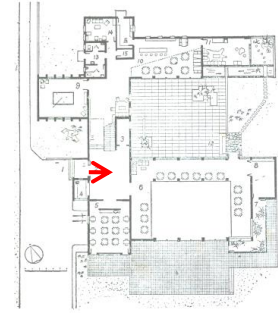


Figure 5-37: The lobby, Current.  
Source: Taken by the Author.

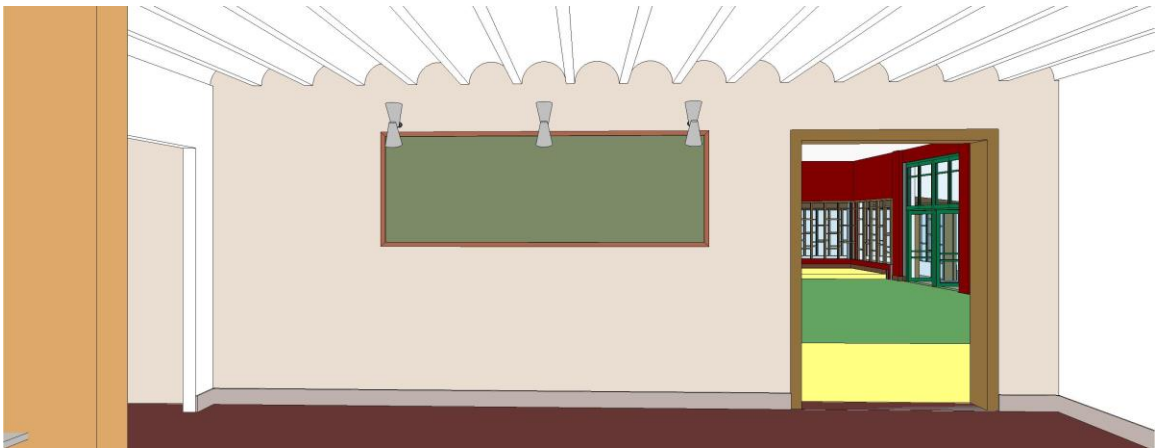


Figure 5-38: The lobby.  
Source: Drawn by the Author.



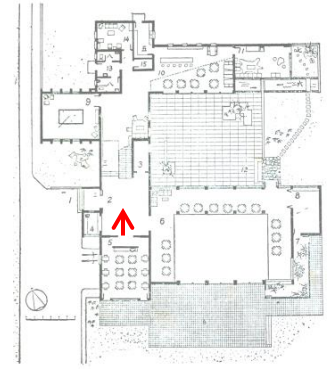


Figure 5-39: The Stairway,  
Current.



Figure 5-40: The Stairway.  
Source: Drawn by the Author.

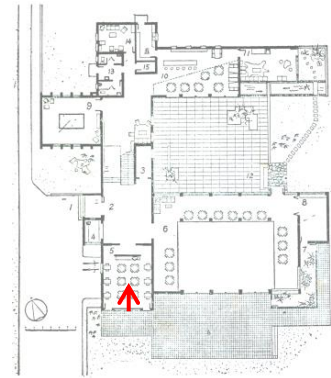


Figure 5-41: The Activity Room to the North, Current.  
*Source: Taken by the Author.*

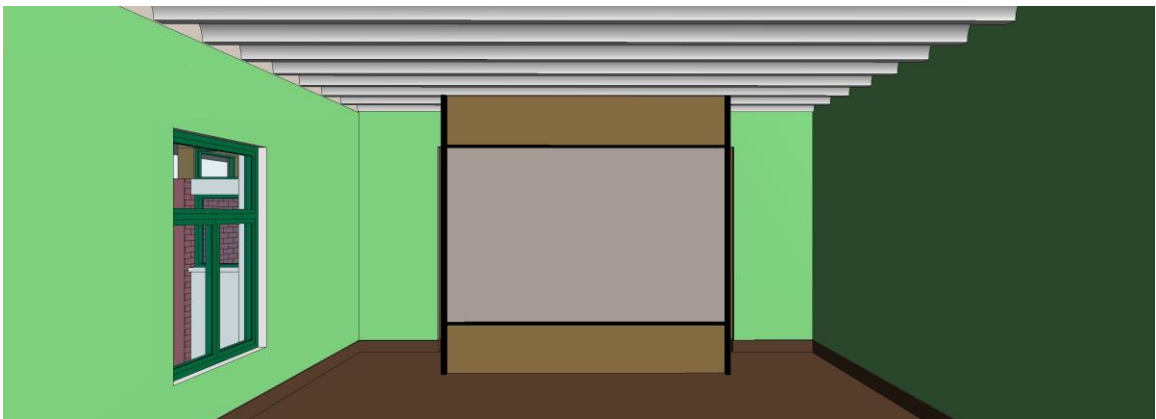


Figure 5-42: The Activity Room to the North.  
*Source: Drawn by the Author.*

## Decoration Details

The detail design in this building was really simple but comfortable. Adding those details would subtly change the spatial feeling of the room. Since they do not affect the character of the building as strongly as the open spaces and colors, so their restoration is optional.



Figure 5-43: The Railings on the Balcony, Current.

Source: Taken by the Author.

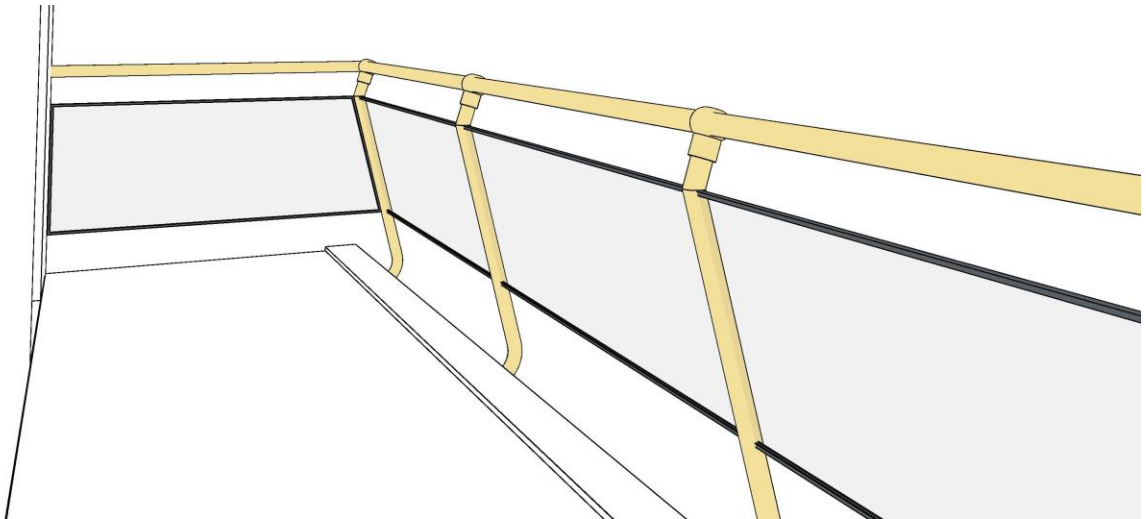


Figure 5-44: The Railings on the Balcony.

Source: Drawn by the Author.



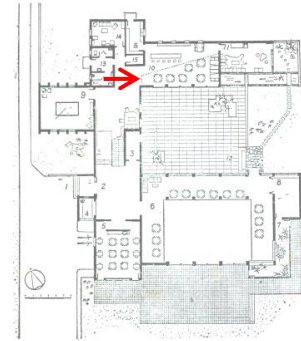


Figure 5-45: The Drop Lights in the Bar, Current.  
*Source:* Taken by the Author.

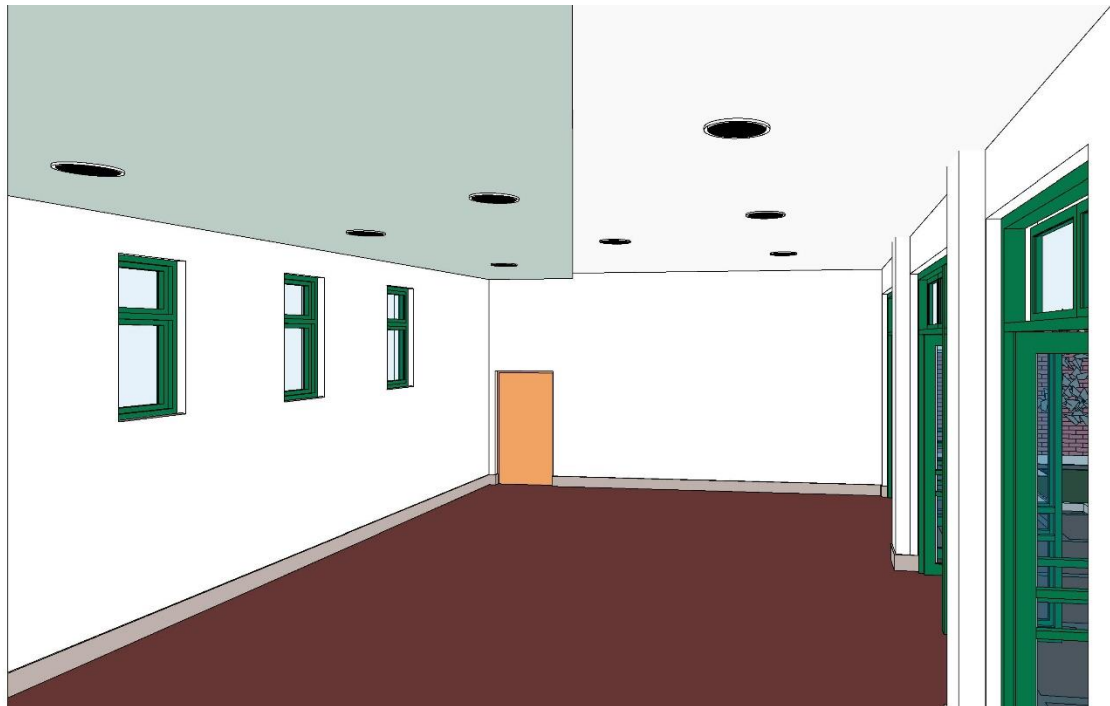


Figure 5-46: The Drop Lights in the Bar.  
*Source:* Drawn by the Author.

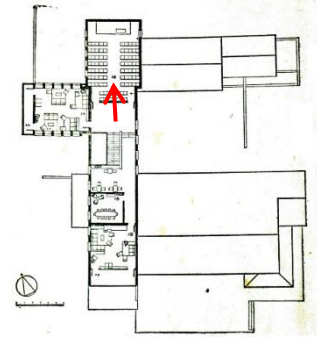


Figure 5-47: The Ceiling in the Meeting Room, Current.  
Source: Taken by the Author.



Figure 5-48: The Ceiling in the Meeting Room.  
Source: Drawn by the Author.

## Removed Functions

The removed functions such as the green house is not used any more. Adding this room is only to add a decoration on the building. The removed parts as the flagging and pool in the eastern garden were only built to add some interests to the building in the first place. So the rebuilding of these removed parts is not necessary, and can only be done when there is enough founding and confliction to the regulations.



Figure 5-49: The Green House.

Source: Drawn by the Author.

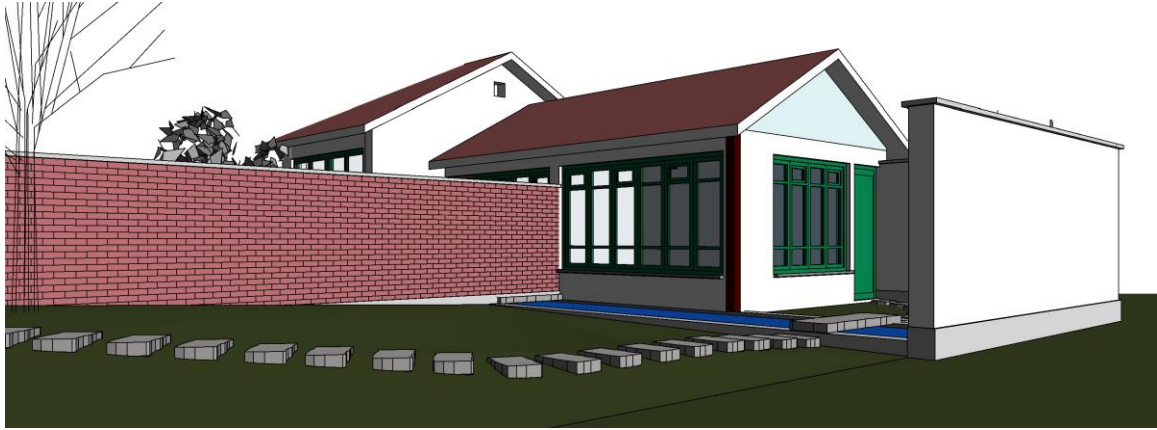


Figure 5-50: The Eastern Garden.

Source: Drawn by the Author.

### Restoration Check List

1. Remove the Ping-pang room on the southern garden (see fig. 2-50, 5-16).
2. Remove the storage on the east of the ball room (see fig. 2-50, 5-16).
3. Remove the meeting room on the east of the lounge (see fig. 2-50, 5-16).
4. Remove the barbershop on the northern garden (see fig. 2-50, 5-16).
5. Replace the door on the east wall of the corridor opening to the patio with a window (see fig. 5-17, 5-18).
6. Dismantle the closet in the south end of the activity room and replace it with a window and two side doors (see fig. 5-19, 5-20).
7. Replace the entrance of the activity room with a bigger opening and set up a screen behind it (see fig. 5-21, 5-22).
8. Replace the southern windows of the bar with doors (see fig. 5-23, 5-24).
9. Dismantle the north and east partitions of the second floor office (see fig. 5-25, 5-26).
10. Remove the partition in the bar entrance (see fig. 5-27, 5-28).
11. Dismantle the granite panels on the ball room floor and around the indoor pillars, and

- paint the side walls with dark red, the pillars with dark red and yellow, and reveal the light green and yellow terrazzo floor (see fig. 5-31, 5-32).
12. Paint the building interior into designed color (see fig. 5-30, 5-34, 5-35).
  13. Remove the plaster and stucco coating on the brick walls (see fig. 5-36).
  14. Replace the railings on the balcony (see fig. 5-44).
  15. Replace the droplights in the current gym with dot lights (see fig. 5-46).
  16. Replace the droplights in the second floor meeting room with tube lights (see fig. 5-48).
  17. Reconstruct the green house (see fig. 5-49, 5-50).

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