

---

## **ENVIRONMENTAL MANAGEMENT AND URBAN PLANNING: THE HALLANGE OF RESTORING TAIWAN'S FAMOUS LIN HOUSE WITH MINIMAL EFFECT ON THE SURROUNDING COMMUNITY**

*Wen-Chen Lin / China*

Associate Professor, Department of Architecture, College of Construction and Development, Feng Chia University

*Long-Sher Yang & Jin-Chen Lin & Chung-Shin Kang*

Graduate Student, Department of Architecture, College of Design, National Taipei University of Technology, Taipei

---

### **Study range**

---

The range of this case study is the Lin House complex (Lin House) in Wu-Feng, central Taiwan. It comprises two areas of about 3.5 hectare and 2.5 hectare and is situated east of Ming-Sheng Rd. While the larger part is to the west of Cheng-Gong Rd., to the south of Xin-Kai Street., and to the north of Wen-Hua street, the smaller part is situated to the east of Cheng-Gong Rd. (see fig. 1). The Lin-House, a class historical relic, is one of the most famous building sites in Taiwan.

The whole complex consists of three parts: Ding-Cuo is situated at Jin-Rong District, Xia-Cuo at Ben-Tang District and Lai-Yuan at Lai-Yuan District. The main building sites of Din-Cuo and Xia-Cuo can be seen in fig. 2. Lai-Yuan is the smaller area A in fig. 1. The main building sites of each part are summarized below:

Ding-Cuo:

Jing-Xun-Lou (fig. 4 and fig. 5), Rong-Jing-Zai (fig. 6), Yi-Pu (fig. 7), Xin-Cuo, the Old Learning Hall (not existing), Da-Shi-Liao (not existing).

Xia-Cuo:

Gong-Bao-Di (fig. 8), Da-Hua-Ting (fig. 9), Er-Fang-Cuo (fig. 10), Cao-Cuo, 28-Jian (fig. 11), the training horse yard (not existing).

Lai-Yuan:

Wu-Gui-Lou (fig.12), Xiao-Xi Pond, Li-Zui Island, Fei-Shang-Zui-Yue (platform),

Kao-Ji-Xuan (not existing), Wang-Yue-Bi (not existing), Ling-Yun-Deng (not existing), ancestral grave of the

---

Associate Professor, Department of Architecture, College of Construction and Development, Feng Chia University, Taichung, R.o.C.

Professor, Director of the College of Construction and Development, Feng Chia University, Taichung, R.o.C.

Graduate Student, ditto.

Graduate Student, Department of Architecture, College of Design, National Taipei University of Technology, Taipei, R.o.C.

Lin-Family (fig.13), Li-She 20 Memorial Stone, Dao-Yi-Jian, the Outside Garden (not existing), Ta-Wa Garden (not existing), Guan-Jia Bridge (not existing), Liu Bridge, dormitory of the opera singers (not existing), Housekeeper House (not existing). Many buildings and installations have been changed during the Lin-Xian-Tang era, and part of the area has become part of Ming Tai Private High School. The photos of fig. 14 ~ fig. 16 showing details of the interior were downloaded from the internet (see list of references).

### **Content and Purpose**

---

In accordance with Taiwan's laws concerning publicly funded restorations, a private cultural heritage can be rehabilitated with government assistance as long as public access is provided thereafter. The area and time can be agreed upon by the owners. However, the opening of the complex to the public will influence the privacy of the Lin House residents and bring inconveniences for them in its wake. In addition, the local residents and their environment will also be affected.

Different management models will have to be used for the complete complex and part of the entrance fee will be needed to cover maintenance expenses. On the other hand, the opening of this private monument to the public will bring business opportunities. In particular, the visitor's rout will become a key point for future urban landscape planning. Thus the purpose of the study is to investigate how the restoration can help to improve the living standard and the economy of the area. The main purpose of the study is to find a balance between the demand for privacy of the Lin House residents and the inconveniences of opening their residence to the public, while maintaining a good environment for the visitors. Thus when planning the urban design both conservation of the site and development of the area should go hand in hand so that a win-win situation results for all parties involved.

## Assessment of the complex

This chapter discusses the environmental conditions of the Lin House investigating the following parameters:

- I. Damage assessment of the buildings
- II. Working schedule
- III. Construction environment.
- IV. Environmental conditions of abutting areas

### I. Damage assessment:

The conditions of the main buildings which are supported by the government are as follows:

#### 1. Jing-Xun-Lou Group:

The structure is good, but has to be rid of weeds.

The first main hall and the worship part have been ruined, but the main beam did not collapse.

The walls of the left Fu-Long have collapsed so the front of the house has collapsed, too. The structure in the back of the house is alright but the walls have cracks and show collapse phenomenon.

The walls of the right Fu-Long show cracks, flake phenomenon, but only a small part of the main structure and the roof have collapsed.

The door between the first section and the second section of the right Fu-Long have collapsed.

The second section's main hall and worship hall have collapsed, and only the foundation of the walls remains.

The back building has totally collapsed.

#### 2. Rong-Jing-Zhai [ruin rate 80%]:

The front door has collapsed.

The first section's main hall and the left Fu-Long have collapsed.

The railing and the wall of the pond (Hundred Turtles) of the front garden have been completely ruined.

The structure of the right Fu-Long is good, but the walls have cracks and have partly collapsed.

#### 3. Xin-Cuo [Almost completely ruined]:

Only the foundations of the walls are left.

#### 4. Yi-Pu [ruin rate 70%]:

The main hall's worship place and the left Fu-Long have been completely ruined.

The structure of the main hall and right Fu-Long are lopsided and deformed, but the roof structure is alright.

The first section of the left and the right Fu-Long have both been completely ruined.

#### 5. Cao-Cuo:

Completely ruined, only traces of the right Fu-Long left.

#### 6. Gong-Bao-Di ( ruin rate 80% ) :

The first section's main hall is completely destroyed.

The porch of the left Fu-Long's second section is ruined, but the structures of the main hall and the roof are alright.

The second section of the right Fu-Long is completely ruined.

From the main hall of the second section only the wooden structure and the color painting are left while the roof and the walls are completely ruined.

Due to an emergency the main hall and the worship place of the third section have been temporarily supported, so that the structure, although lopsided, did not collapse yet.

The right and the left Fu-Long of the third section are completely ruined.

The main hall and the right Fu-Long of the fifth section are completely ruined.

#### 7..Da-Hua-Ting [completely ruined]

#### H.Er-Fang-Cuo [ruin rate 65%]:

The walls of the right and the left Fu-Long and the main hall of the third section have cracks and are lopsided, but the main structure and the roof are good enough.

Kou-Suei-Rang (the forth section) is good enough.

The main hall of the fifth section and the left Fu-Long are completely ruined.

The back part of the right Fu-Long of the fifth section is seriously damaged, the front part is alright.

Historic site district shoes at fig. 17, fig.18 ~ fig.19 show after the earthquake.

### (II)Working Schedule

The restoration work begun at the end of 2004, the rate of progress is shown in table 1. The working schedule has been delayed a little due to excessive rains which affected the work on the site. Restoration work on Er-Fang-Cuo was suspended and will influence the opening date. Another problem is the delay of the moving out of the habitants, which influences the restoration works.

Information source : Cultural Bureau of Taichung Country government.

#### ( ). Construction environment

Some of the building sites are quite narrow, which makes access more difficult. But

generally speaking, the construction environment of each site is good. However, as the old buildings consist of many sections, much more time is spend to move the materials into the buildings. The moving routes will also be the future routs for visitors.

## ( ). Environmental conditions of abutting areas

The area around the Lin House is mostly residential (yellow parts in fig. 1). However, there is a business section between Chung-Cheng Rd. and Min-Sheng Rd. (area B in fig. 1) It is a mixed area with stores on the first floor and residential premises on the upper floors (fig. 20). Public facilities can be found in area C.

The Lin House can be reached from the No. 3 free highway via Chung-Cheng Rd. to either Ming- Sheng Rd., Cheng-Gong Rd., Lai-Yuan Rd., Ren-Yi Rd., De-Tai Rd., Guang-Ming Rd., Ming-Quan Rd. or Ta-Tong Rd. The shortest ways, however, are via Chung-Cheng Rd. and either Lai-Yuan Rd. or Ren-Yi Rd. Chung-Cheng Rd. is already the most important business street and the first business area with uniform advertisement boards on house walls.

### **Property Rights and Operation Authority**

#### Property Rights

The Lin Family is a large family with many descendants. If the property rights belonged to everyone of its members it would take a lot of time to discuss the property rights problem. Fortunately, the land and the houses of the Xia-Cuo are jointly managed by the Lin-Ben-Tang Property Company. But the property rights of the Ding-Cuo are shared by eight persons. Negotiations are underway to transfer the management of Ding-Cuo to the Jing-Shan Public Memorial Ceremony Labor Union.

#### Operation management

While Lai-Yuan is operated by Ming Tai Private High School, for operation of the restored Ding-Cuo and Xia-Cuo two are conceivable: a foundation in form of a juridical association or a volunteer system. The volunteer system has the disadvantage that nobody will take responsibility in case of problems. The committee members of a foundation should come from both Ding-Cuo and Xia-Cuo. They could draw salaries as well as labor and health insurances. The foundation could have the following divisions: director-general, director, supervisor, administration (general administration, budget and accounting), management (personnel, accounting, public relations, treasure, business matters), information, conservation, restoration, etc. The number of persons working in each division and the content of each job should be agreed upon by the Lin family.

As the government will not subsidize running costs once the restoration work is completed, the Lin House will have to raise the money for maintenance. Computations have revealed that a fee of NT 50 to NT 100 will have to be charged from each visitor.

### **Alternatives for the reuse of the Lin House**

To avoid the problems that might occur when a site is “reused” the relationship between every layer has to be considered. The highest principle is to not obstruct the conservation of the monument, to balance the benefits between the owner’s rights and the cultural monument, and to minimize the effects caused by the reuse.

The dilemma hereby is that injecting new life into a monument by reusing it will hinder its conservation, therefore, the following principles have to be observed:

#### Conservation Principle:

The conservation principle is to keep the original style and material, and to use traditional skills.Considering the earthquake that destroyed the original Lin House, safety and endurance have to be considered as well in this case. Other materials and skills could be used in an appropriate way, but the appearance should neither be changed nor damaged.

#### Revive Principle:

In order to obtain a conserved but as well “living” monument which brightens its historic value and its traditional culture while cohering the Lin family, it is important to interact with the residents when creating a high quality life space, and to bring a “living together, glory together” effect.

#### Operation forever Principle:

The principle of sustainable management is comparable to the management of a company. The management should be kept “flexible” and “open” as a basic requirement for reuse and conservation of a site. If it is out of date, it should be revised to adopt future requirements.

Below is the reuse design plan for the Lin House which shows the space, visitor routes, monument safety routes, and the desire of open spaces. The main building complexes of this plan are: Jing-Xun-Lou, Yi-Pu, Gong-Bao-Di, Da-Hua-Ting, and Er-Fang-Chou. ( see fig. 21 ~ fig. 25 ) :

The colors of the illustrations represent the following spaces:

- blue: exhibition space, for showing the history and objects of the Lin family
- red: place for worshipping ancestors. Every branch of the family has its own space -yellow: business space, restaurants, souvenir shops, etc.
- purple: administration offices
- dark green: residential premises, not open to the public
- light green: landscape

- pink: public lavatories

The dark green lines enclose areas that are normally open to the public but will be off limits when the Lin family performs a worship ceremony. The red lines point out the routes to the emergency exits. The blue lines show the routes of the visitors.

### **Environmental management after restoration of the monument**

Concerning the environmental management after restoration of the monument, the following points have to be observed:

#### **Buildings:**

A conservation and maintenance proposal has to be presented to the chief of the government before restoration is completed. If later there is any problem, the head of the chief of the government can help with the conservation. The proposal has to contain the following points:

Keep the building clean to prevent damage. . Observe any tiny change at the buildings to prevent deterioration. . Unauthorized restorations or changes are prohibited. . Use nondestructive ways for examination works. . Implement and review a guard system and take out insurance. . Propose a plan of action in case of a disaster such as earthquake, fire, or war. . Do the daily maintenance and conservation work and record them. 8. Any deliberate destructive behavior should be restrained.

#### **Environment:**

The following items should be observed to protect the landscape:

(1)A permission of the chief government must be applied for in case of:

- a)rebuilding, moving, modification, demolitions or alteration of the relations of colors or shapes
  - b) changes to roads, landscapes and new building
- (2)Cutting wood or digging earth is prohibited.
  - (3)Advertisements cannot be set up at will.
  - (4)The area has to be kept clean.

(5)Growth of plants be observed and plants trimmed or transplanted accordingly.

### **The urban landscape planning design**

During the Ching dynasty, the Lin House was eminent because many members of the Lin family have were military or civil officers. This contributed to the development of Wu-Feng into a prosperous area. However, neither the government nor the Lin family took care to use the historical

monument. Consequently, the Lin House has been surrounded by high buildings which cover the elegance of this beautiful house.

The main purpose of our urban design and conservation project is to represent the cultural character of the Lin House and to rebuild the great historic buildings of the Lin House such as the Lai-Yuan. Apart from the beautiful Lin House the local cultural character and the natural environment should also be introduced to the public. The whole area could melt into a monumental, cultural property in combination with the sightseeing spots around the Lin House. such as the Taiwan Council, the Wang-Fou Temple, A-Zau-Wu Cultural Area, the Agriculture Research Institute, the Poison Research Institute, the Taiwan Mushroom Cultural Museum, etc. An ideal plan would comprise the following:

#### **Establishing a landscape art pedestrian street**

The nearest road to get to the Lin House area is via Chung-Cheng Rd. to Lai-Yuan Rd. or Ren-Yi Rd. The streets are designed for both people and transport. During weekdays people and vehicles could use them together, but on holidays the access for cars should be limited (between 10:00 AM and 5:00 PM). The sight of the streets should also be improved, i.e. signposts should be added and the appearance of the front of the stores should be improved. Placards and the design of entrance signs will introduce cultural life and history of Wu-Feng. This will result in an improved business street image, where stores and residential premises are combined. When the number of visitors is high enough, an action roof could be considered to promote shopping by tourists.

#### **Establishing a cultural place**

On that part of the sidewalk of Lai-Yuan Rd. which passes through the Lin House (fig. 2 ) placards should be set up that state the history of the Lin House and changes to customs and traditions. When people pass by, they will feel like entering a time tunnel and sense the life of earlier times.

#### **Landscape improvement around the Lin House**

The view of the surrounding area should be restored to an image of the old times. At the same time the historical landscape should be considered. Thus, the altitude of the surrounding buildings and the shape of advertising boards should be limited in order to preserve the unique, artistic, and unusual appearance of the site. During a limited period an tax exemption should be implemented. An example for such a landscape restoration is shown in fig. 27 ~ fig. 34.

#### **Embellishment of connecting streets**

Improving the street design by planting trees and embellishing public facilities as well as designing an

urban plan to connect the neighborhood with the access  
roads will change the site into a unique cultural area:

### **Abstract**

The Lin house in Wu-feng, a class II historical relic in central Taiwan, has been widely recognized as one of the country's foremost examples of group architecture. The Lin house in Wu-feng (located at 1. Gong-Bao-Di. 2. Jing-Xun-Lou. 3. Rong-Jing-Zhai. 4. Da-Hua-Ting. 5.Er-Fan-Chou. 6. Xin-Chou. 7. Cao-Chou. 8. Yi-Pu. 9. 28-Jian. 10. auxiliary space.) was seriously damaged by the 7.3 Richter scale earthquake that struck Taiwan on Sept. 21th 1999.

In accord with Taiwan's laws concerning publicly funded restorations, a private cultural heritage can be rehabilitated with government assistance so long as public access is provided thereafter. Such a project can pose a problem, however, for the surrounding residential and commercial community. Every effort must be taken to ensure that visitors do not disturb the tranquility and convenience of normal community life. Careful planning must be given not only to the restoration itself, but to logistical details such as parking, noise control, and the route visitors will take in accessing the Lin House.

Restoring the Lin House is a vital conservation priority, but its sensitive location also raises complex questions of community relations. Our task, at the crossroads of cultural restoration and urban planning, is to balance these concerns to the benefit of both. In short, the objectives of historical preservation must be wedded to those of urban planning, so as to create a win-win situation in terms of both conservation and community.

---

### **References**

1. Reuse plan for the Lin House in Wu-Feng, a class II historical relic in Taiwan.
2. Authors: Wen-Chen Lin, Long-Sher Yang, Mei-Rong Lai, Zao-Shi Ho, etc. (unpublished)
3. Websites of photos retrieved from the Internet July, 28, 2005.

### **Conclusion**

---

after the earthquake on sept. 21st in 1999, the lin house in wu-feng is being revived from the fire, because conservation and restoration have been combined with urban design and nature landscape architecture. rehabilitation and opening the lin house to the public will bring a lot of business opportunities and new aspects to the surroundings. a good neighborhood relationship will create a win-win situation in terms of both conservation and communityenvironmental management and urban planning:the hallenge of restoring taiwan's famous lin housewith minimal effect on the surrounding community

# ENVIRONMENTAL MANAGEMENT AND URBAN PLANNING: THE HALLENGE OF RESTORING TAIWAN'S FAMOUS LIN HOUSE WITH MINIMAL EFFECT ON THE SURROUNDING COMMUNITY

*Wen-Chen Lin / China*

Associate Professor, Department of Architecture, College of Construction and Development, Feng Chia University

*Long-Sher Yang &Jin-Chen Lin &Chung- Shin Kang*

Graduate Student, Department of Architecture, College of Design, National Taipei University of Technology, Taipei

Table 1. Restoration work schedule

Name of the building	Jing-Xun-Lou	Yi-Pu	Gong-Bao-Di	Da-Hua-Ting	Er-Fang-Chou
Working Progress until Jun. 2005	1. Temporary construction. 2. Recording conditions of the whole complex. 3. Investigation of brick material and arrangement. 4. Sending planning program and material to expert.	1. Temporary construction 2. Painting of right Fu-Long wall. 3. Foundation work of front of left and right Fu-Long. 4. Reinforcement work of the main hall's stainless steel	1. Temporary steel construction of the first section. 2. Restoration of old wood piece. 3. Drawing original lay out line of wood structure. 4. Move big wooden structures into fifth section	1. Restoration of wood piece of third section. 2. Drawing of structure lay out line of first and second section wood.	1. Review of arrangement design on May 25 <sup>th</sup> at Ministry of Interior 2. Review of arrangement design and negotiation of price. 3. Contractor hand in moving out plan.
Working Progress until July. 2005	1. Temporary construction and revision of structural timbers. 2. Demolition of Left and right Fu-Long's walls. 3. Collection of design item, which need changes.	1. Application of termite protection at main hall. 2. Demolition of left Fu-Long's wall. 3. Imitation sculpture work of main hall. 4. Restoration of wood material of main hall.	1. Temporary steel construction of first section. 2. Separation of wood structure. 3. Review of arrangement design.	1. Checking of wood structure original lay out line. 2. Restoration of sculptures. 3. Examination and registration of wood structure. 4. Lay out of wood structures.	1. Moving the objects of the habitants before 20 <sup>th</sup> July.
Actual Working Progress	Schedule rate: 7.37% Actual rate: 5.78% Behind rate: 1.59% Behind reason: The evaluation time of the expert was too long, excessive rain.	Schedule rate: 10.96% Actual rate: 6.04% Behind rate: 4.92%	Schedule rate: 2.03% Actual rate: 1.68% Behind rate: 0.35%	Schedule rate: 9.50% Actual rate: 9.42% Behind rate: 0.08%	Work suspended.

Information source: Cultural Bureau of Taichung Country government.

## **ENVIRONMENTAL MANAGEMENT AND URBAN PLANNING: THE HALLANGE OF RESTORING TAIWAN'S FAMOUS LIN HOUSE WITH MINIMAL EFFECT ON THE SURROUNDING COMMUNITY**

*Wen-Chen Lin / China*

Associate Professor, Department of Architecture, College of Construction and Development, Feng Chia University

*Long-Sher Yang & Jin-Chen Lin & Chung- Shin Kang*

Graduate Student, Department of Architecture, College of Design, National Taipei University of Technology, Taipei

---



Fig.1 Wu-Feng city map  
(A = conservation area)



Fig. 2 Conservation area  
(Main conservation area is green)



Fig. 3 Famous buildings of the Lin House



Fig.4 Jing- Xun-Lou



Fig.5 Jing- Xun-Lou buildings



Fig.6 Rong-Jing-Zhai



Fig.7 Yi-Pu buildings



Fig. 8 Gong-Bao-Di buildings



Fig. 9 Da-Hua-Ting



Fig.10 Er-Fan-Cuo



Fig. 11 28-Jiang buildings



Fig.12 Wu-Kei-Lou



Fig. 13 Grave yard



Fig.14 Interior



Fig.15 Window



Fig.16 Door



Fig.17 Historic site district



Fig.18 After the earthquake



Fig.19 After the earthquake



Fig.20 Mixed business area



Fig. 21 Jing-Xun-Lou reuse plan



Fig.22 Yi-Pu reuse plan



Fig.23 Gong-Bao-Di reuse plan

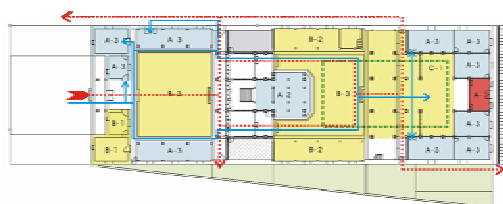


Fig. 24 Da-Hua-Ting reuse plan

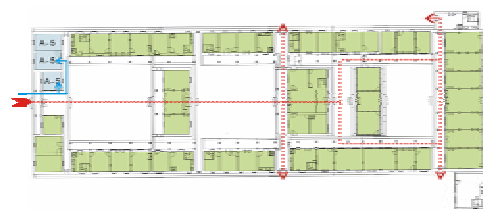


Fig.25 Er-Fang-Cuo reuse plan



Fig. 26 Conservation area,



Fig.27 Image of future street

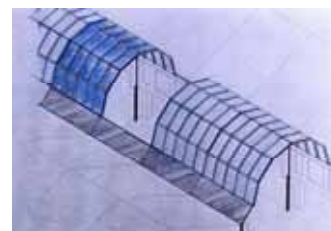


Fig.28 Image of retractable roof



Fig.29 Image of inside garden



Fig. 30 Image of coffee shop



Fig.31 Image of outside garden



Fig.32 Image of road design



Fig.33 First class area cultural landscape



Fig.34 Second class area cultural landscape