Modern Chinese Architectural Restoration

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MODERN CHINESE ARCHITECTURAL RESTORATION

Tengkui Xie
ABSTRACT

All over the world, there are always buildings to be built and buildings that become old. Should buildings that catered to older needs but are now obsolete be torn down and replaced with new buildings or can we do something to balance the value of the present and the past? All buildings have historic and aesthetic values of their own times, so it is not wise to wipe them out of history completely. It would be better to preserve, restore and reuse them. Restoration has a long history in the West and since the beginning of the 20th century there have been many conferences and discussions on the subject; as a result, there are many well-known theories that influence contemporary architects. But in China, restoration theory and practice are not very mature and the conditions of different kinds of buildings vary a lot, leaving challenging problems to be addressed.

Methods of restoration vary across countries, even in different regions within the countries. Whether and how to restore a historic building properly has been and continues to be an important debate. Especially in China, many valuable historic buildings, including traditional wooden buildings and modern buildings constructed since 1840, have been torn down for different reasons, such as economical needs, cultural movements, or political sacrifices. Compared to traditional wooden buildings, which enjoy a more mature system of restoration theory and techniques, modern buildings still face a problem for two reasons: the lack of standards for evaluating the historic value of the building, and immature unity of theory and advanced techniques.

The thesis project mainly focuses on what restoration standards might be like for historic buildings during the period of 1840-1949, when architecture was called “modern architecture”. Since research in this field started at the end of the 20th century, there was a lot of damage to those historic buildings with historical and aesthetic value. No mature system of modern architectural restoration has been set up, so I refer to western theories and standards/codes to generate standards for modern Chinese architectural restoration. In particular, I have identified the writings of Cesare Brandi [8 Apr. 1906-19 Jan. 1988, Italy], as particularly relevant to his theory of critical restoration. After generating a sample standard using these theories, I explore some design implications using the Swatch Art Peace Hotel [Walter Scott, 1908].
MODERN CHINESE ARCHITECTURAL RESTORATION

Tengkui Xie

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Date of Graduation: May 2019
Syracuse University School of Architecture
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It is a widespread phenomenon that lots of historic buildings in China are torn down without any conservation, wiped out of history completely.

For example, the photo above shows the removal of historic buildings in one historic district in Shanghai, China which started in 2013. It was intended for urban development. Great value of history was lost.
## History of Chinese Architecture

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Chinese architecture can be divided into three categories. The first one is traditional Chinese architecture, but the other two are both called modern architecture when they are translated into English, although they have different Chinese characters.
Modern architecture ranged from 1840 after the first Opium War to 1949 before the foundation of the People's Republic of China. Chinese society of modern history went through significant events with a great influence on architecture. Western architecture was introduced into China, after combining traditional culture, working as a connection between the preceding and the following eras.

But also, it was challenging for architects to address changes of modern buildings during this period. Many historic buildings should have been given proper interventions with so many historic memories.
Internationally, there are seven degrees of intervention of conservation treatment. They are displayed from the minimum intervention to maximum intervention.

Seven Degrees of Intervention for Conservation Treatment

- Prevention of deterioration
- Preservation
- Consolidation
- **Restoration**
- Rehabilitation
- Reproduction
- Reconstruction

**Restoration**

The object of restoration is to revive the original concept or legibility of the object. Restoration and reintegration of details and features occur frequently and are based upon respect for original material, archaeological evidence, original design, and authentic documents. Replacement of missing or decayed parts must integrate harmoniously with the whole, but on close inspection must be distinguishable from the original so that the restoration does not falsify artistic or historical evidence.

Contributions from all periods must be respected. All later additions that can be considered as historical documents, rather than merely previous restorations, must be preserved. When a building includes superimposed work of different periods, revealing the underlying state can be justified only in exceptional circumstances: when the part removed is widely agreed to be of little interest, when it is certain that the material brought to light will be of great historical or archaeological value, and when it is clear that its state of preservation is good enough to justify the action. Restoration also superficial cleaning, but with full respect for the patina of age.

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For traditional architecture, the system of conservation and restoration is mature, and the most famous theory is from Liang Sicheng, considering the characteristics of traditional buildings. Due to wood and other unenduring materials, the traditional building is basically repaired as old and its life is prolonged, including its flaws.
Modern buildings were often constructed with enduring materials with western techniques and styles. So many changes happened and buildings went through renovation for several times.

The Astor House Hotel in Shanghai was built in 1846, was renovated and restored many times, containing the value throughout the history.

History of Astor House Hotel in Shanghai

1846 Established as Richards' Hotel and Restaurant, built in the Baroque style
1859 Renamed the Astor House Hotel
1876 Enlarged with fifty new rooms.
   “Four large neo-Renaissance brick buildings linked together by stone passageways.”
1892 Renovations to the Astor Hall were completed in time for the annual St. Andrew's Ball
   “The Astor-House Hotel at Shanghai, it might be called European with a few Chinese characteristics.”
1901 Chinese shops demolished to allow the construction of a new three-storied wing
1907 The company decided to embark on a completely new hotel
   “fitting of Shanghai's growth and importance” and “better than any in the Far East.”
   “to be restored to a neo-classical Baroque structure”
1910 Restoration completed
1923 Renovation
1937 Damaged during the Battle of Shanghai
1954 Confiscated and control of the hotel passed to the Land and House Bureau of the Shanghai people's government
1966-1976 (Cultural Revolution) Declined substantially
1995 Faced destruction
2002 “Our aim is to turn it into a classic five-star hotel”
2018 Closed for further use of office space

Wikipedia. Astor House Hotel (Shanghai). Https://en.wikipedia.org/wiki/Astor_House_Hotel_(Shanghai)
Modern Chinese Architectural Restoration

History of Modern Chinese Architectural Restoration

At the beginning of 1980s
● Introduction of *International Charter for the Conservation and Restoration of Monuments and Sites* into China

1985
● Joint Convention Concerning the Protection of the World Cultural and Natural Heritage

1986
● First seminar on modern architectural history

1988
● *Notice on Key Investigations and Protection of Modern Historic Buildings*

2000
● Extension on the urban and architectural investigation of mid and west China

2005
● *Xian Declaration*

2007
● *Beijing Document on Authenticity and Integrity*

● International collaborations

The conservation of modern buildings is just on a beginning phase in China. At the beginning of 1980s, *International Charter for the Conservation and Restoration of Monuments and Sites* was introduced into China. Study and investigation on modern buildings began, and many practices worked as the attempts in this field such as joining Convention Concerning the Protection of the World Cultural and Natural Heritage and many important delarations and documents appeared. But still a lot of issues remain till now.
1. Conflict of value of development and conservation

Many historic buildings were sacrificed for urban construction. People pursued their own interests regardless of the historical, aesthetic and cultural value of buildings.

For example, the photo above shows the Metropol Cinema in Shanghai, built in 1932, torn down for real estate projects in 1996. It was a great pity even there was a new cinema built later.
2. Deviation of value cognition - Destructive Conservation

Many practitioners don't go through a thorough archaeological and historical study of historic buildings with authentic documents before they start their work.

The photo above shows the interior of the DaHua Cinema in Nanjing after restoration in 2013. The interior was painted with brand new materials, making it look like a totally new one. Restorers mistook the concept of authenticity with being brand new. Significant historicity of the building was erased.
Restoration started earliest in Europe since 19th century, and American practice was a little bit affected, so basically Chinese practices were influenced by western precedence. Definitions and theories vary in different regions because of various background. Since modern architecture was much influenced by western culture, it is important to know about western theories and their history of development.

Western Theory

![Figure 6: Eugene-Emmanuel Viollet-Le-Duc (Source: Martin H., 2010)](image)

![Figure 7: John Ruskin (Source: Henry Sigismund Uhlrich, 1860)](image)

![Figure 8: Camillo Boito (Source: Studio Artico, Monza, 1880)](image)

![Figure 9: Cesare Brandi (Source: Paola Severi Michelangeli, 2009)](image)

Restoration theory develops since Violet-Le-Duc with stylistic restoration to Cesare Brandi with critical restoration and it will not stop.
Viollet-Le-Duc thought that we could stylistically restore a building to a new state so it might not look like it used to be in history after restoration.

Eugene-Emmanuel Viollet-Le-Duc  
(27 January 1814-17 September 1879)

Stylistic Restoration

“To restore an edifice means neither to maintain it, nor to repair it, nor to rebuild it; it means to reestablish it in a finished state, which may in fact never have actually existed at any given time.”

Modern Chinese Architectural Restoration

John Ruskin was against the theory of Viollet-Le-Duc, saying we should only conserve the building. The building is a kind of memory of passing time, and in different times, the old building will be given a new spirit, so the greatness or beauty cannot be restored.

Romantic Restoration

“\[That which I have above insisted upon as the life of the whole, that spirit which is given only by the hand and eye of the workman, can never be recalled. Another spirit may be given by another time, and it is then a new building\].”

John Ruskin
(8 February 1819 – 20 January 1900)

Camillo Boito reconciled the conflicting views of Viollet-Le-Duc and Ruskin, coming up with the concept of recognizable intervention and authenticity. Reconciliation was presented at the III Conference of Architects and Civil Engineers of Rome in 1883 in a document which was known as the Charter of Restoration. This charter develops eight points to be taken into consideration in the restoration of historical monuments.

1-2 Camillo Boito reconciled the conflicting views of Viollet-Le-Duc and Ruskin, coming up with the concept of recognizable intervention and authenticity. Reconciliation was presented at the III Conference of Architects and Civil Engineers of Rome in 1883 in a document which was known as the Charter of Restoration. This charter develops eight points to be taken into consideration in the restoration of historical monuments.

Philological Restoration
Cesare Brandi believed the operation of conservation and restoration must be considered a critical action, and a view based on the recognition and respect for the work of art, both in its historicity and aesthetic values is affirmed.

"Restoration consists of the methodological moment in which the work of art is recognised, in its physical being, and in its dual aesthetic and historical nature, in view of its transmission to the future.")

Cesare Brandi
(8 April 1906 – 19 January 1988)

Critical Restoration
Conservation-Restoration

Brandi’s book offer a rigorous and cohesive writing, fundamental for those who are interested in preserving cultural assets and restoring heritage. It results from Cesare Brandi’s vast experience as director of the Istituto Centrale del Restauro in Rome. In his book, there are many concepts that still exert fascination in conservation debates under discussion.

The book contains the important concept and ideas with powerful examples, helping readers understand the context and his claims. The book helps me clarify the Brandi’s idea in restoration not only in architecture at the beginning, and understand his concerns on historical and aesthetic value in restoring heritage, giving me a strong standing point of my design process.

"Restoration is generally understood to mean any intervention that permits a product of human activity to recover its function."

- Principle of reversibility of a treatment
- Integration of lacunae
- Respect for the effects of time on an object
- Idea of patina
- Concept of falsification
- Scope for reconstruction of incomplete works of art

**Two principles of Restoration**

"Only the material form of the work of art is restored."

"Restoration should aim to re-establish the potential oneness of the work of art, as long as this is possible without committing artistic or historical forgery, and without erasing every trace of the passage through time of the work of art."

Important Standards/Codes

Outside China, there are many mature standards and codes for international practice or regional works and they exist for older historic buildings, but in China, there are no such standards for modern architectural restoration.

Below are some standards/codes that I can refer to when I need the guideline for modern Chinese architectural restoration.

**INTERNATIONAL CHARTER FOR THE CONSERVATION AND RESTORATION OF MONUMENTS AND SITES**
*(THE VENICE CHARTER 1964) - International*

_IIInd International Congress of Architects and Technicians of Historic Monuments, Venice, 1964._

The Venice Charter 1964 contains **Authenticity** as the core value and other like minimum intervention, recognizability, full Information and reversibility.

**ITALIAN RESTORATION CHART OF 1972 - Italy**

**THE SECRETARY OF THE INTERIOR’S STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES: WITH GUIDELINES FOR PRESERVING, REHABILITATING, RESTORING & RECONSTRUCTING HISTORIC BUILDINGS - America**
QUESTION

What might standards based on Cesare Brandi’s concept of critical restoration be like for modern Chinese practice?
I will firstly pick out the Cesare Brandi’s concepts and ideas of critical restoration as the core of every standard. Then I will refer to those standards/codes and Chinese laws/regulations I have studied to enrich the standard.

To illustrate the methodology, I will present five of them to show the process.
METHODOLOGY

TECHNICAL STANDARD FOR RESTORATION OF HISTORIC BUILDINGS

3.1.3 The restoration of historic buildings should not change the original state, ensure its authenticity and integrity, and inherit the repair process.

THE SECRETARY OF THE INTERIOR’S STANDARDS

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period.

CESARE BRANDI

“Given that the very concept that a work of art is a unique object because of the unrepeatable singularity of historic events, each case of restoration will be a case in itself and not just an element in a collective series.”

THE VENICE CHARTER 1964

Article 9. 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.

Article 11. 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.

Modern Chinese Architectural Restoration
METHODOLOGY

THE VENICE CHARTER 1964

Article 9.
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.

Article 11.
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.

CULTURAL RELICS PROTECTION LAW OF PRC

Article 14
The principle of keeping the cultural relics in their original state must be adhered to in the repairs and maintenance at the sites designated as the ones to be protected for their **historical and cultural value** and in any removal involving these sites, such as sites related to revolutionary history, memorial buildings, ancient tombs, ancient architectural structures, cave temples, stone carvings, etc. (including attachments to the structures).

ITALIAN RESTORATION CHART OF 1972

Art. 8
Any work done on the art or to its surroundings as defined in Art. 4 must be executed in such way and with such techniques and materials that **will not obstruct or prevent preservation or restoration work in the future**.

THE SECRETARY OF THE INTERIOR’S STANDARDS

1. A property will be used as it was **historically** or be given a **new use** that interprets the property and its restoration period.

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METHODOLOGY

THE VENICE CHARTER 1964

Article 10. Where traditional techniques prove inadequate, the consolidation of a monument can be achieved by the use of any modern technique for conservation and construction, the efficacy of which has been shown by scientific data and proved by experience.

CESARE BRANDI

“That is, one does not simply focus on its current condition but on its past, which informs its current presence (of little or no value in itself) and on the future for which it should be preserved as a vestige or evidence of human activity and as a departure point for conservation treatment."

THE SECRETARY OF THE INTERIOR’S STANDARDS

3. Each property will be recognized as a physical record of its time, place and use. Work needed to stabilize, consolidate and conserve materials and features from the restoration period will be physically and visually compatible, identifiable upon close inspection and properly documented for future research.

5. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize the restoration period will be preserved.

ITALIAN RESTORATION CHART OF 1972

Art.7
3) anastilosis*, only when carefully documented and by reconstructing missing sections with techniques clearly discernible to the naked eye such as using lighter or neutral materials, setting them at a different level from the original parts, or leaving in sight the original support.

Art.8
Moreover, every intervention on the artwork must be preceded by a written report that documents the artwork and explains the motivations for the work to be done (last section Art. 5). During the course of the work a journal must be kept and will be followed by a final report. This will contain photographic documentation showing the conditions before, during and after the work was completed.

METHODOLOGY

THE VENICE CHARTER 1964

Article 6.
The conservation of a monument implies preserving a setting which is not out of scale. Wherever the traditional setting exists, it must be kept. No new construction, demolition or modification which would alter the relations of mass and colour must be allowed.

Article 7.
A monument is inseparable from the history to which it bears witness and from the setting in which it occurs. The moving of all or part of a monument cannot be allowed except where the safeguarding of that monument demands it or where it is justified by national or international interest of paramount importance.

CESARE BRANDI

Respect for the effects of time on an object

“Nonetheless, it should be pointed out that even the worst reconstruction does, in fact, document human activity, albeit mistakenly, and that it is still part of human history. Therefore, it should not be removed - at the most it may be isolated. This position would seem unassailable historically, were it not for the fact that it leads to a conviction of non-authenticity or falsification for the entire work of art.”

THE SECRETARY OF THE INTERIOR’S STANDARDS

2. Materials and features from the restoration period will be retained and preserved. The removal of materials or alteration of features, spaces and spatial relationships that characterize the period will not be undertaken.

ITALIAN RESTORATION CHART OF 1972

Art. 6
Regarding the preservation and restoration procedures set by Art. 4 on artwork as defined per Art. 1, 2 and 3 the following actions will be forbidden without exception:

2) removals or demolitions that erase from the artwork traces left by its passage through time, unless these features are of limited scope and incongruous or disfiguring in relation to the historical values of the work or if they are past completions in style that counterfeit the nature of the work;

1 Brandi and Giuseppe. Theory of Restoration. p.69.
THE VENICE CHARTER 1964

Article 9.
**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.

Article 13.
**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.

ITALIAN RESTORATION CHART OF 1972

Art. 6
Regarding the preservation and restoration procedures set by Art. 4 on artwork as defined per Art. 1, 2 and 3 the following actions will be **forbidden without exception**:

Art. 7
To the same ends as of Art. 6 and for all works to which Art. 1, 2, and 3 applies, the following practices are **acceptable**:

CESARE BRANDI

**Principle of reversibility of a treatment**

THE SECRETARY OF THE INTERIOR’S STANDARDS

The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

8. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. **Treatments that cause damage** to historic materials will not be used.

TECHNICAL STANDARD FOR RESTORATION OF HISTORIC BUILDINGS

3.1.4
The restoration of historic buildings should abide by the principle of recognizability and **minimum intervention**. Priority should be given to the protection of key preserved sites as required. The restoration of non-key preserved sites should be coordinated with them.

MANAGEMENT MEASURES FOR PROJECTS OF CULTURAL RELICS PROTECTION

Article 5
(1) Maintenance projects are daily and seasonal maintenance of **minor damage** to cultural relics.

(2) Consolidation projects refer to the project of **reversible** temporary rescue and reinforcement measures for cultural relics due to time, technical and financial constraints, due to time, technical and financial constraints.
After how I illustrate the process, I list here twelve general standards for modern Chinese architectural restoration. Five highlighted standards below are just mentioned, and the rest seven come out in the same way.

**GENERAL STANDARDS FOR MODERN CHINESE ARCHITECTURAL RESTORATION**

1. Any restoration work must be based on authenticity and integrity, going through an archaeological and historical study of the historic building with authentic documents, including the original style and materials, indicating all changes that have occurred.

2. A critical evaluation must provide the basis with a judgment of what is important as history or as art to be conserved and revealed, and what can be removed without any damage to the importance of the historic building. There should be understanding in its dual aesthetic, historical and cultural aspects, in the view of future transmission.

3. If necessary, the help and supervision of architects or other specialists for artistic advice should be provided.

4. Materials, features, spaces and finishes that characterize other historical periods will be documented prior to the work and so will the intervention during or after the work. The documentary work can be accomplished with modern techniques to better fit the requirements.

5. Restoration of historic buildings should not wipe away traces and memories on the buildings, breaking the continuity in history.

6. Restoration should be based on the rule of minimum intervention and reversibility. Treatments that cause damage to historic materials will not be used.

7. Structural restoration can be aided with modern techniques if previous ones have difficulty in further supporting.

8. Replacement of missing features from the restoration period will be substantiated by documentary and physical evidence.

9. Any inevitable additions due to future daily functional use must be obviously recognizable and differentiated from the historic building with modern elements but keep harmony with the entity.

10. New procedures and materials should be authorized and given advise by the authority. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible.

11. For detailed technical standards, the work should refer to the local technical specifications.

12. Designs that were never executed historically will not be constructed but should be documented when they were researched out.
SHANGHAI

It was one of the earliest cities opening to the west after 1840.

THE BUND

Since 1844, the Bund was in the Shanghai French Concession where foreigners lived and worked and it became the starting point of the modern Shanghai. Western culture was introduced and spreaded.

Fifty-two unique buildings were constructed in a variety of styles including Gothic, Romanesque, Baroque, Neoclassical, and Renaissance influences, along the Bund.

*Figure 11: The night view of the Bund, Shanghai (Source: manfrottoschoolofexcellence)*
The Fairmont Peace Hotel, Shanghai, China

The Fairmont Peace Hotel is separated by Nanjing Road.

Figure 12: Location of the Fairmont Peace Hotel (Source: ArcGIS)

- The Fairmont Peace Hotel, Shanghai, China
- The Bund
South Building: Swatch Art Peace Hotel

1850s  Central Hotel
1908   Palace Hotel
2010   Swatch Art Peace Hotel

The heritage facade and public rooms of the building have been restored.

The South Building dates back to the 1850s, when it was known as the Central Hotel. In 1903, the hotel was restructured and renamed the Palace Hotel. It was completed in 1908, and was the first building in Shanghai to have elevators. Its exterior is in a Renaissance style. During the whole 20th century, the building went through many significant historic events and was repaired and restored many times.
Palace Hotel opened in 1908.

The hotel caught a fire on the 6th floor and the roof was ruined and restored flat.

The hotel as a wing of the Peace Hotel, was renovated and two roof towers were reconstructed.

Two old roof towers were removed and two new ones were constructed to look like they were originally.
RESTORATION I

Two roof towers were reconstructed.

1912

1998
Two roof towers were reconstructed.

RESTORATION II

Two old roof towers were removed and two new ones were constructed.

1998

2007
• •

度与现存女儿墙进行比较，并调整二维图形，用调整后的二维图形再次建立模型，反贴于历史照片进行比对修整，使塔楼最大限度地接近历史原貌。

塔楼各部分材质和颜色依据历史照片中的明度对比，以及参照上海同时期建筑塔楼的材料来选定。

原塔楼结构分析及结构设计
在塔楼复原施工前，对原塔楼边拆除边勘测，力建和大修时，将东侧屋面改为钢筋混凝土现浇屋面，恢复了大楼屋面临南京路的东南角和东北角，但不知何故没有恢复西北角塔楼，也没有按照历史原样原汁原味地复原。

见图

铜皮屋面制作
用镀锌铁皮封死，中间用保温棉进行保温隔热处理，外层镀锌铁板上满铺防水层，防水层由自粘性防水卷材和一道防水涂膜组成。

防水层的铺设由下而上，每层之间的搭接宽度为。

外层铜饰面层采用粘结的方式，在纵向装饰条的部位采用特有的加固方式进行加固，以防止铜饰面由于热胀冷缩而翘曲脱落。

最后在所有接缝处用接近铜坡屋面表色的

结语
和平饭店南楼屋面塔楼在设计优化的基础上完成了塔楼复原施工，并取得了成功。见图

由此可见，在老建筑改造项目中，掌握一手信息是首要的。由于经常缺乏系统完整的资料，或设计单位本身的局限性，或没有施工单位的配合等而无法全面掌握老建筑的所有信息。

因此，在此类工程项目实施过程中，设计单位与施工单位应共同协作，经全面勘察老建筑后，对设计进行优化或进一步深化，才能正确有效地指导实际施工。
AUTHENTIC DOCUMENT

1. Any restoration work must be based on authenticity and integrity, going through an archaeological and historical study of the historic building with authentic documents, including the original style and materials, indicating all changes that have occurred.

4. Materials, features, spaces and finishes that characterize other historical periods will be documented prior to the work and so will the intervention during or after the work. The documentary work can be accomplished with modern techniques to better fit the requirements.

Augmented Reality

Notes:
1. Open Augment Sales.
2. Scan Codes.
3. Aim your device to find a surface.
4. Tap on the screen to place the model.
5. Move around and explore.

There should be a thorough investigation on the hotel about material, style and all changes during the history. I try to document the previous roof towers with modern technique, providing easy access to the public for better public education.
5. Restoration of historic buildings should not wipe away traces and memories on the buildings, breaking the continuity in history.

I wonder that two roof towers should not have been reconstructed and restoration work should have used the baseline of previous roof towers.
MINIMUM INTERVENTION

Addition of Decoration
(Baroque Style)

Some simple and clear decoration of Baroque style is added to the baseline.
6. Restoration should be based on the rule of minimum intervention and reversibility. Treatments that cause damage to historic materials will not be used.

Anchored GFRC (Glass Fiber Reinforced Concrete)

These additions can be easily removed, and they will not cause much damage to the roof towers.
9. Any inevitable additions due to future daily functional use must be obviously recognizable and differentiated from the historic building with modern elements but keep harmony with the entity.

Previously, the roof was only used for resting and viewing. I would like to give it additional function such as dining and entertaining.
Width of entrance of one tower needs to be adjusted for accessibility.
The roof used to be a rest area and for viewing. Sometimes, people would hold their wedding ceremonies here. There is much space that can be utilized.
The elevation difference needs to be addressed with ramps, and the lifted platform should be provided with an elevator. Modern elements are added to the baseline.
ROOF VIEW RENDERING
APPENDIX

DEFINITIONS

ENGLISH

Restoration
The accurate reestablishment of the form and details of a building, its artifacts, and the site on which it is located, usually as it appeared.

DICTIONARY OF ARCHITECTURE AND CONSTRUCTION

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period.

ITALIAN

The restoration is an activity linked to the maintenance, recovery, revival and conservation of works of art, cultural heritage, monuments and in general of historical artefacts, such as architecture, a manuscript, a painting, an object, whatever it is, to which a particular value is recognized.

(Il restauro è un'attività legata alla manutenzione, al recupero, al ripristino e alla conservazione delle opere d'arte, dei beni culturali, dei monumenti ed in generale dei manufatti storici, quali ad esempio un'architettura, un manoscritto, un dipinto, un oggetto, qualsiasi esso sia, al quale venga riconosciuto un particolare valore.)

CHINESE

修复：（1）修整使恢复原样；（2）恢复
STANDARDS / CODES

INTERNATIONAL CHARTER FOR THE CONSERVATION AND RESTORATION OF MONUMENTS AND SITES (THE VENICE CHARTER 1964) - INTERNATIONAL

Imbued with a message from the past, the historic monuments of generations of people remain to the present day as living witnesses of their age-old traditions. People are becoming more and more conscious of the unity of human values and regard ancient monuments as a common heritage. The common responsibility to safeguard them for future generations is recognized. It is our duty to hand them on in the full richness of their authenticity.

It is essential that the principles guiding the preservation and restoration of ancient buildings should be agreed and be laid down on an international basis, with each country being responsible for applying the plan within the framework of its own culture and traditions.

By defining these basic principles for the first time, the Athens Charter of 1931 contributed towards the development of an extensive international movement which has assumed concrete form in national documents, in the work of ICOM and UNESCO and in the establishment by the latter of the International Centre for the Study of the Preservation and the Restoration of Cultural Property. Increasing awareness and critical study have been brought to bear on problems which have continually become more complex and varied; now the time has come to examine the Charter afresh in order to make a thorough study of the principles involved and to enlarge its scope in a new document.

Accordingly, the IIInd International Congress of Architects and Technicians of Historic Monuments, which met in Venice from May 25th to 31st 1964, approved the following text:

DEFINITIONS

Article 1.
The concept of a historic monument embraces not only the single architectural work but also the urban or rural setting in which is found the evidence of a particular civilization, a significant development or a historic event. This applies not only to great works of art but also to more modest works of the past which have acquired cultural significance with the passing of time.

Article 2.
The conservation and restoration of monuments must have recourse to all the sciences and techniques which can contribute to the study and safeguarding of the architectural heritage.

Article 3.
The intention in conserving and restoring monuments is to safeguard them no less as works of art than as historical evidence.

CONSERVATION

Article 4.
It is essential to the conservation of monuments that they be maintained on a permanent basis.

Article 5.
The conservation of monuments is always facilitated by making use of them for some socially useful purpose. Such use is therefore desirable but it must not change the lay-out or decoration of the building. It is within these limits only that modifications demanded by a change of function should be envisaged and may be permitted.
Article 6.
The conservation of a monument implies preserving a setting which is not out of scale. Wherever the traditional setting exists, it must be kept. **No new construction, demolition or modification which would alter the relations of mass and colour must be allowed.**

Article 7.
A monument is inseparable from the history to which it bears witness and from the setting in which it occurs. **The moving of all or part of a monument cannot be allowed except where the safeguarding of that monument demands it or where it is justified by national or international interest of paramount importance.**

Article 8.
Items of sculpture, painting or decoration which form an integral part of a monument may only be removed from it if this is the sole means of ensuring their preservation.

RESTORATION

Article 9.
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.

Article 10.
**Where traditional techniques prove inadequate,** the consolidation of a monument can be achieved by the use of any **modern technique** for conservation and construction, the efficacy of which has been shown by scientific data and proved by experience.

Article 11.
**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.

Article 12.
**Replacements of missing parts must integrate harmoniously with the whole,** but at the same time must be **distinguishable** from the original so that restoration does not falsify the artistic or historic evidence.

Article 13.
**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.**

HISTORIC SITES

Article 14.
The sites of monuments must be the object of special care in order to safeguard their integrity.
and ensure that they are cleared and presented in a seemly manner. The work of conservation and restoration carried out in such places should be inspired by the principles set forth in the foregoing articles.

EXCAVATIONS

Article 15.
Excavations should be carried out in accordance with scientific standards and the recommendation defining international principles to be applied in the case of archaeological excavation adopted by UNESCO in 1956.
Ruins must be maintained and measures necessary for the permanent conservation and protection of architectural features and of objects discovered must be taken. Furthermore, every means must be taken to facilitate the understanding of the monument and to reveal it *without ever distorting its meaning.*
All reconstruction work should however be ruled out “a priori”. Only anastylosis, that is to say, the reassembling of existing but dismembered parts can be permitted. The material used for integration should always be recognizable and its use should be the least that will ensure the conservation of a monument and the reinstatement of its form.

PUBLICATION

Article 16.
In all works of preservation, restoration or excavation, there should always be **precise documentation in the form of analytical and critical reports, illustrated with drawings and photographs.** Every stage of the work of clearing, consolidation, rearrangement and integration, as well as technical and formal features identified during the course of the work, should be included. This record should be placed in the archives of a public institution and made available to research workers. It is recommended that the report should be published.
ITALIAN RESTORATION CHART OF 1972 - ITALY

Art. 1, - All the works of art of every age, in the widest meaning of the word, ranging from: architectural monuments to painting and sculpture (even if in fragments), to Paleolithic artifacts, figurative expressions of the popular cultures, and to contemporary art, whether owned by individual persons or institutions, in matter of preservation and restoration—all will be subject to the present guidelines taking the name of “Restoration Chart of 1972.”

Art. 2, - In addition to items listed in Art. 1, the present guidelines will apply to the following categories of objects to assure their preservation and restoration: building complexes of monumental, historical, or environmental interest, in particular historical urban areas; art collections; historic furnishings and interior decors preserved in their traditional arrangement; gardens and parks of particular importance.

Art. 3, - In addition to items listed in Art. 1 and 2, the present guidelines will also apply to the following items to assure their preservation and the restoration: ancient ruins and archaeological finds whether found on land or underwater.

Art. 4, - It is meant by “preservation” any conservative provision that does not involve any direct action on the material of the artwork. It is meant by “restoration” any action on the material of artwork in order to maintain its material integrity and facilitate the reading and the transmission to the future in their entirety. This applies to artworks and other objects defined in the previous articles.

Art. 5, - All overseeing government agencies and responsible Institutions in the matter of conservation of the historical-artistic and cultural heritage must prepare a yearly program listing all work of preservation, restoration, underground or under water archaeology, to be done on behalf of the State, other institutions or private individuals. It must be presented to and approved by the Ministry of Education with the approval by High Council of the Antiquities and Fine Arts. As part of this program, any restoration works done to items defined by Article 1 will be described and justified in a technical report and proposal which will describe the conservative history, the existing conditions, the planed restoration work and the budget necessary to complete the work. The technical report and proposal must be approved beforehand by the Ministry of Education. In special cases of very important works, or ones where questions have arisen, it must be approved by High Council of the Antiquities and Fine Arts.

Art. 6, - Regarding the preservation and restoration procedures set by Art. 4 on artwork as defined per Art. 1, 2 and 3 the following actions will be forbidden without exception:

1) completions of unfinished work in style, analogical, in simplified form, or even if there are graphic or plastic documentation illustrating the intended form of the completed work;
2) removals or demolitions that erase from the artwork traces left by its passage through time, unless these features are of limited scope and incongruous or disfiguring in relation to the historical values of the work or if they are past completions in style that counterfeit the nature of the work;
3) removal, reconstruction or transferal to locations other than the original one, unless it is deemed necessary for conservation reasons;
4) alteration of the surrounding accessories or environmental conditions in which the artwork has arrived to our time, such as the monumental or environment settings, the furnishings, the gardens, the parks, etc.;
5) alteration or removal of patinas.

Art. 7, - To the same ends as of Art. 6 and for all works to which Art. 1, 2, and 3 applies, the following
practices are **acceptable**: 

1) **addition of accessory parts that have a structural function and reintegration** of small historically verified portions. Such interventions must be done in a way that differentiates clearly the original portion of the artwork from the new addition either by clearly marking the outline of the reintegration or by using material that is concordant yet sufficiently different to be clearly distinguishable by the naked eye, in particular at the points of connection between the old and the new. Moreover, where possible, all reintegration should be dated and signed; 

2) **Cleanings of paintings and polychrome sculptures**, as long as it does not reach the surface of the color and respects the patina and ancient varnishes and, as with all other types of work, should never reach the raw material that makes up the art; 

3) **Anastilosis**, only when **carefully documented** and by reconstructing missing sections with techniques clearly discernible to the naked eye such as using lighter or neutral materials, setting them at a different level from the original parts, or leaving in sight the original support, however never reconstructing ex novo missing “figurative” sections and inserting important features that will alter the figurative nature of the work; 

4) **modifications and new insertions in the inner structure, underlayment’s or structural supports** with the purpose of conservation and static consolidations, provided that at the completion of the restoration work, there are no chromatic alterations or other changes in the appearance of surface mater; 

5) **construction of a new setting or relocation of artwork when the original or traditional setting no longer exists**, or when the conservation conditions demand the relocation. 

Art. 8, - Any work done on the art or to its surroundings as defined in Art. 4 must be executed in such way and with such techniques and materials that will **not obstruct or prevent preservation or restoration work in the future**. Moreover, every intervention on the artwork must be preceded by a **written report** that documents the artwork and explains the motivations for the work to be done (last section Art. 5). During the course of the work a journal must be kept and will be followed by a final report. This will contain photographic documentation showing the conditions before, during and after the work was completed. They will include documentation of all scientific tests and research done with the aid of such disciplines as chemistry, physics, microbiology and other sciences. A copy of these reports will be kept in the archives of the competent Soprintendenza and one will be sent to the Instituto Centrale Per il Restauro. In the case of cleanings, a small sample area at the margins of the work will be kept in the original condition, while in the case of removal of additions, the parts removed will have to be conserved or be documented in a special archives-warehouse of the competent Soprintendenza. 

Art. 9, - The use of **new procedures and materials** for restoration, instead of those currently used or permitted, will have **to be authorized** by the Ministry of Education, with the explained consensus of Istituto Centrale del Restauro. This institution's role will be to actively **advise** the same Ministry and to discourage the use of antiquated, damaging or untested materials and procedures, to suggest new ones, or to determine the need of outside resources in terms equipment and specialists not available with in their organizations. 

Art. 10, - **Measures taken to prevent damage** to the artworks (as per Art.1, 2, and 3) from pollution and atmospheric, thermal and hygrometric variations, will be done in a manner not to alter considerably the visual perception of the material surfaces and the colors, nor require substantial and permanent modifications to the environment in which the artworks historically has been transmitted. In cases where modifications of the sort are **indispensable** for the conservation, they
must be made in a manner to **avoid any doubt on the time when they were executed and be the least conspicuous**.

Art. 11, - The specific methods of the restoration procedure to be used on architectural monuments, paintings, sculptures, historical areas and archaeological excavations, are specified in the addenda A, B, C, and D of this document.

Art. 12, - In cases were conflicting opinions arise regarding regulating authority or technical matters, the Ministry will make a decision after having received reports by the Sovraintendente or the heads of relevant institutes, and having consulted the Consiglio Superiore delle Antichità e Belle Arti.
Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

Standards for Restoration
1. A property will be used as it was historically or be given a new use that interprets the property and its restoration period.
2. Materials and features from the restoration period will be retained and preserved. The removal of materials or alteration of features, spaces and spatial relationships that characterize the period will not be undertaken.
3. Each property will be recognized as a physical record of its time, place and use. Work needed to stabilize, consolidate and conserve materials and features from the restoration period will be physically and visually compatible, identifiable upon close inspection and properly documented for future research.
4. Materials, features, spaces and finishes that characterize other historical periods will be documented prior to their alteration or removal.
5. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize the restoration period will be preserved.
6. Deteriorated features from the restoration period will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and, where possible, materials.
7. Replacement of missing features from the restoration period will be substantiated by documentary and physical evidence. A false sense of history will not be created by adding
conjectural features, features from other properties, or by combining features that never existed together historically.

8. **Chemical or physical treatments**, if appropriate, will be undertaken using the **gentlest means** possible. Treatments that cause damage to historic materials will not be used.

9. Archeological resources affected by a project will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

10. **Designs that were never executed historically will not be constructed.**
LAWS/REGULATIONS OF PEOPLE’S REPUBLIC OF CHINA

National

CULTURAL RELICS PRESERVATION LAW OF THE PEOPLE’S REPUBLIC OF CHINA, ED. 2017.11.05, 1982.11.19

Article 7
Cultural relics, such as sites related to revolutionary history, memorial buildings, sites of ancient culture, ancient tombs, ancient architectural structures, cave temples, stone carvings, etc., shall be designated as sites to be protected for their historical and cultural value at different levels according to their historical, artistic or scientific value.

Article 14
The principle of keeping the cultural relics in their original state must be adhered to in the repairs and maintenance at the sites designated as the ones to be protected for their historical and cultural value and in any removal involving these sites, such as sites related to revolutionary history, memorial buildings, ancient tombs, ancient architectural structures, cave temples, stone carvings, etc. (including attachments to the structures).

If it is necessary to use for other purposes a major site to be protected for its historical and cultural value at the national level, the matter shall be agreed to by the people’s government of a province, an autonomous region, or a municipality directly under the Central Government and shall be reported to the State Council for approval. The units in charge of these sites as well as specially established organs, such as museums, must strictly abide by the principle of keeping the cultural relics in their original state, and must be responsible for the safety of the buildings and of the affiliated cultural relics, and may not damage, rebuild, extend or dismantle them. Units which use memorial buildings or ancient architectural structures shall be responsible for the maintenance and repair of these buildings or structures.

CONSTRUCTION LAW OF THE PEOPLE’S REPUBLIC OF CHINA, ED. 2011.07.01, 1998.03.01

Renovation of memorials and ancient buildings certified by law as cultural relics for protection shall be carried out in accordance with relevant laws of protection of cultural relics.

MANAGEMENT MEASURES FOR PROJECTS OF CULTURAL RELICS PRESERVATION, 2003.05.01

Article 3
Conservation project must comply with the principle of not changing the status quo of cultural relics and comprehensive preservation, continuation of the real value of cultural relics and historical information; in accordance with international and nationally recognized standards, heritage bodies
and related historical, cultural and natural environment.

Article 5
Cultural relics protection projects are divided into maintenance projects, consolidation projects, repairment projects, protective facilities construction projects, and relocation projects.
(1) Maintenance projects are daily and seasonal maintenance of minor damage to cultural relics.
(2) Consolidation projects refer to the project of reversible temporary rescue and reinforcement measures for cultural relics due to time, technical and financial constraints, due to time, technical and financial constraints.
(3) Repairment works refer to the structural reinforcement treatment and maintenance necessary for the protection of cultural relics, including partial restoration works carried out in combination with structural reinforcement.
(4) Protective facilities construction projects refer to the construction of safety protection facilities for the protection of cultural relics.
(5) Relocation projects refer to the project of relocating cultural relics in whole or in part and protecting them in different places when there is no other more effective means for special protection work.

REGULATION ON THE PRESERVATION OF FAMOUS HISTORICAL AND CULTURAL CITIES, TOWNS AND VILLAGES, ED. 2017.10.07, 2008.04.22

Article 27
For buildings and structures within the core protection scope of historical and cultural blocks, famous towns and villages, different situations should be distinguished, and corresponding measures should be taken to implement classified protection.
Historic buildings within the core protection of historical and cultural blocks, famous towns and villages shall maintain their original height, volume, appearance and color.

Article 35
For the external repairment and decoration, the addition of facilities and the change of the structure or the function of historic buildings, it shall be approved by the competent department of urban and rural planning of the people's government of the city or county, and the competent department of cultural relics at the same level, and in accordance with the relevant laws and regulations.

TECHNICAL STANDARD FOR RESTORATION OF HISTORIC BUILDINGS (DRAFT IN 2015, BEING REVISED AND TO BE PUBLISHED IN THE FUTURE)

3.1.1 The restoration of historic buildings should follow the concept of preservation priority, safety and application, as-it-is and rational use.
3.1.2 The restoration of historic buildings should protect the overall layout of the building, maintain the safety of the building, rationally improve the building use function, and promote the sustainable use of the building.
3.1.3 The restoration of historic buildings should not change the original state, ensure its **authenticity and integrity**, and inherit the repair process.

3.1.4 The restoration of historic buildings should abide by the principle of **recognizability and minimum intervention**. Priority should be given to the protection of key preserved sites as required. The restoration of non-key preserved sites should be coordinated with them.

3.1.5 Historic buildings should be distinguished according to their historical, artistic, scientific and social and cultural values, and should be classified.

3.1.6 The restoration of historic buildings should use **materials of historical value** and traditional craftsmanship.

3.1.7 The restoration of historic buildings includes five stages: restoration preparation, survey and inspection and identification, design, construction, and check.

3.1.8 Engineering materials of projects of the preservation and restoration of historic buildings **should be archived**.

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**Local - Shanghai**

**MANAGEMENT MEASURES FOR MODERN BUILDINGS PRESERVATION IN SHANGHAI, 1992.01.01**

Article 8
The preservation requirements for outstanding modern buildings are divided into the following four categories:

1. **The original appearance, structural system, layout and interior decoration** of the building shall not be changed.
2. The original appearance, structural system, basic layout and distinctive interior decoration of the building shall not be changed; other parts of the building are allowed to make appropriate changes.
3. The original appearance of the building shall not be altered; the interior of the building shall be allowed to make appropriate changes while **maintaining the original structural system**.
4. Under the premise of **maintaining the integrity and style** of the original building, it is allowed to make appropriate local changes to the exterior of the building, allowing appropriate changes to the interior of the building.

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**REGULATIONS ON THE PRESERVATION OF AREAS WITH HISTORICAL CULTURAL FEATURES AND HISTORIC BUILDINGS, 2003.01.01**
Article 5.1.3
The design of preservation and restoration of historic buildings should focus on the preservation of the following spatial patterns and characteristics with important historical features:
1 Responding to the historic and cultural characteristics of buildings in Shanghai.
2 Representative features of building's function.
3 Architectural style, craftsmanship and engineering techniques embodying the characteristics of the times.
4 Reflecting the design techniques and characteristics of the famous architects.
5 Responsive historical figures, historical events and activities.

Article 5.1.4
The restoration of key preserved areas of historic buildings shall be based on the results of historical building value assessment:
1 Original restoration: When the historical documents are mastered, the damaged part of the historical building will be restored as it is; or when the existing historic restoration has undermined the value of the historic building, the historic building will be restored as it is.
2 Status restoration: The status quo of historical buildings is preserved and repaired according to the existing appearance, and the damaged parts that do not affect the structural safety are not restored. Historical materials are completely retained, and measures are taken to improve the durability of historical materials.

Article 5.1.6
The design of the scheme should meet the following requirements:
1 Clear objectives and scope of restoration should be provided.
2 Conduct accurate, complete and comprehensive investigation and analysis of the history, value, basic conditions (original state and present state), and the degree of damage of historic buildings.
3 Restoration methods and techniques are consistent with the restoration principles, and targeted and operable.
4 To achieve the purpose of improving the function and comfort of original building.
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