

## Appendices

### **1. International Charter for the Conservation and Restoration of Monuments and Sites: VENICE CHARTER 1964**

*(2<sup>nd</sup> International Congress of Architects and Technicians of Historic Monuments, Venice, 1964 & Adopted by ICOMOS in 1965)*

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 II<sup>nd</sup> International Congress of Architects and Technicians of Historic Monuments, which met in Venice from May 25<sup>th</sup> to 31<sup>st</sup> 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 layout 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.

## **2. Principles for the Preservation of Historic Timber Structures (1999)**

*(Adopted by ICOMOS at the 12th General Assembly in Mexico, October 1999)*

The aim of this document is to define basic and universally applicable principles and practices for the protection and preservation of historic timber structures with due respect to their cultural significance. Historic timber structures refer here to all types of buildings or constructions wholly or partially in timber that have cultural significance or that are parts of a historic area.

For the purpose of the preservation of such structures, the Principles:

- recognise the importance of timber structures from all periods as part of the cultural heritage of the world;
- take into account the great diversity of historic timber structures;
- take into account the various species and qualities of wood used to build them;
- recognise the vulnerability of structures wholly or partially in timber due to material decay and degradation in varying environmental and climatic conditions, caused by

humidity fluctuations, light, fungal and insect attacks, wear and tear, fire and other disasters;

- recognise the increasing scarcity of historic timber structures due to vulnerability, misuse and the loss of skills and knowledge of traditional design and construction technology;
- take into account the great variety of actions and treatments required for the preservation and conservation of these heritage resources;
- note the Venice Charter, the Burra Charter and related UNESCO and ICOMOS doctrine, and seek to apply these general principles to the protection and preservation of historic timber structures;

And make the following recommendations:

### **INSPECTION, RECORDING AND DOCUMENTATION**

1. The condition of the structure and its components should be carefully recorded before any intervention, as well as all materials used in treatments, in accordance with Article 16 of the Venice Charter and the ICOMOS Principles for the Recording of Monuments, Groups of Buildings and Sites. All pertinent documentation, including characteristic samples of redundant materials or members removed from the structure, and information about relevant traditional skills and technologies, should be collected, catalogued, securely stored and made accessible as appropriate. The documentation should also include the specific reasons given for choice of materials and methods in the preservation work.

2. A thorough and accurate diagnosis of the condition and the causes of decay and structural failure of the timber structure should precede any intervention. The diagnosis should be based on documentary evidence, physical inspection and analysis, and, if necessary, measurements of physical conditions and non-destructive testing methods. This should not prevent necessary minor interventions and emergency measures.

### **MONITORING AND MAINTENANCE**

3. A coherent strategy of regular monitoring and maintenance is crucial for the protection of historic timber structures and their cultural significance.

### **INTERVENTIONS**

4. The primary aim of preservation and conservation is to maintain the historical authenticity and integrity of the cultural heritage. Each intervention should therefore be based on proper studies and assessments. Problems should be solved according to relevant conditions and needs with due respect for the aesthetic and historical values, and the physical integrity of the historic structure or site.

5. Any proposed intervention should for preference:

- a) follow traditional means;
- b) be reversible, if technically possible; or
- c) at least not prejudice or impede future preservation work whenever this may become necessary; and
- d) not hinder the possibility of later access to evidence incorporated in the structure.

6. The minimum intervention in the fabric of a historic timber structure is an ideal. In certain circumstances, minimum intervention can mean that their preservation and conservation may require the complete or partial dismantling and subsequent reassembly in order to allow for the repair of timber structures.

**7.** In the case of interventions, the historic structure should be considered as a whole; all material, including structural members, in-fill panels, weather-boarding, roofs, floors, doors and windows, etc., should be given equal attention. In principle, as much as possible of the existing material should be retained. The protection should also include surface finishes such as plaster, paint, coating, wall-paper, etc. If it is necessary to renew or replace surface finishes, the original materials, techniques and textures should be duplicated as far as possible.

**8.** The aim of restoration is to conserve the historic structure and its loadbearing function and to reveal its cultural values by improving the legibility of its historical integrity, its earlier state and design within the limits of existing historic material evidence, as indicated in articles 9 - 13 of the Venice Charter. Removed members and other components of the historic structure should be catalogued, and characteristic samples kept in permanent storage as part of the documentation.

#### **REPAIR AND REPLACEMENT**

**9.** In the repair of a historic structure, replacement timber can be used with due respect to relevant historical and aesthetical values, and where it is an appropriate response to the need to replace decayed or damaged members or their parts, or to the requirements of restoration.

New members or parts of members should be made of the same species of wood with the same, or, if appropriate, with better, grading as in the members being replaced.

Where possible, this should also include similar natural characteristics. The moisture content and other physical characteristics of the replacement timber should be compatible with the existing structure.

Craftsmanship and construction technology, including the use of dressing tools or machinery, should, where possible, correspond with those used originally. Nails and other secondary materials should, where appropriate, duplicate the originals.

If a part of a member is replaced, traditional woodwork joints should, if appropriate and compatible with structural requirements, be used to splice the new and the existing part.

**10.** It should be accepted that new members or parts of members will be distinguishable from the existing ones. To copy the natural decay or deformation of the replaced members or parts is not desirable. Appropriate traditional or well-tested modern methods may be used to match the colouring of the old and the new with due regard that this will not harm or degrade the surface of the wooden member.

**11.** New members or parts of members should be discretely marked, by carving, by marks burnt into the wood or by other methods, so that they can be identified later.

#### **HISTORIC FOREST RESERVES**

**12.** The establishment and protection of forest or woodland reserves where appropriate timber can be obtained for the preservation and repair of historic timber structures should be encouraged.

Institutions responsible for the preservation and conservation of historic structures and sites should establish or encourage the establishment of stores of timber appropriate for such work.

#### **CONTEMPORARY MATERIALS AND TECHNOLOGIES**

**13.** Contemporary materials, such as epoxy resins, and techniques, such as structural steel reinforcement, should be chosen and used with the greatest caution, and only in cases where the durability and structural behaviour of the materials and construction

techniques have been satisfactorily proven over a sufficiently long period of time. Utilities, such as heating, and fire detection and prevention systems, should be installed with due recognition of the historic and aesthetic significance of the structure or site.

**14.** The use of chemical preservatives should be carefully controlled and monitored, and should be used only where there is an assured benefit, where public and environmental safety will not be affected and where the likelihood of success over the long term is significant.

#### **EDUCATION AND TRAINING**

**15.** Regeneration of values related to the cultural significance of historic timber structures through educational programmes is an essential requisite of a sustainable preservation and development policy. The establishment and further development of training programmes on the protection, preservation and conservation of historic timber structures are encouraged.

Such training should be based on a comprehensive strategy integrated within the needs of sustainable production and consumption, and include programmes at the local, national, regional and international levels. The programmes should address all relevant professions and trades involved in such work, and, in particular, architects, conservators, engineers, craftspersons and site managers.

### **3. ICOMOS Charter – Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritages (2003)**

*(Ratified by the ICOMOS 14th General Assembly in Victoria Falls, Zimbabwe, in 2003)*

#### **PURPOSE OF THE DOCUMENT**

Structures of architectural heritage, by their very nature and history (material and assembly), present a number of challenges in diagnosis and restoration that limit the application of modern legal codes and building standards. Recommendations are desirable and necessary to both ensure rational methods of analysis and repair methods appropriate to the cultural context.

These Recommendations are intended to be useful to all those involved in conservation and restoration problems, but cannot in anyway replace specific knowledge acquired from cultural and scientific texts.

The Recommendations presented in the complete document are in two sections:

Principles, where the basic concepts of conservation are presented; Guidelines, where the rules and methodology that a designer should follow are discussed. Only the Principles have the status of an approved/ratified ICOMOS document.

The guidelines are available in English in a separate document.

#### **PRINCIPLES**

##### **1 General criteria**

1.1 Conservation, reinforcement and restoration of architectural heritage requires a multi-disciplinary approach.

1.2 Value and authenticity of architectural heritage cannot be based on fixed criteria because the respect due to all cultures also requires that its physical heritage be considered within the cultural context to which it belongs.

1.3 The value of architectural heritage is not only in its appearance, but also in the integrity of all its components as a unique product of the specific building technology

of its time. In particular the removal of the inner structures maintaining only the façades does not fit the conservation criteria.

1.4 When any change of use or function is proposed, all the conservation requirements and safety conditions have to be carefully taken into account.

1.5 Restoration of the structure in Architecture Heritage is not an end in itself but a means to an end, which is the building as a whole.

1.6 The peculiarity of heritage structures, with their complex history, requires the organisation of studies and proposals in precise steps that are similar to those used in medicine. Anamnesis, diagnosis, therapy and controls, corresponding respectively to the searches for significant data and information, individuation of the causes of damage and decay, choice of the remedial measures and control of the efficiency of the interventions. In order to achieve cost effectiveness and minimal impact on architectural heritage using funds available in a rational way; it is usually necessary that the study repeats these steps in an iterative process.

1.7 No action should be undertaken without having ascertained the achievable benefit and harm to the architectural heritage, except in cases where urgent safeguard measures are necessary to avoid the imminent collapse of the structures (e.g. after seismic damages); those urgent measures, however, should when possible avoid modifying the fabric in an irreversible way.

## **2 Researches and diagnosis**

2.1 Usually a multidisciplinary team, to be determined in relation to the type and the scale of the problem, should work together from the first steps of a study - as in the initial survey of the site and the preparation of the investigation programme.

2.2 Data and information should first be processed approximately, to establish a more comprehensive plan of activities in proportion to the real problems of the structures.

2.3 A full understanding of the structural and material characteristics is required in conservation practice. Information is essential on the structure in its original and earlier states, on the techniques that were used in the construction, on the alterations and their effects, on the phenomena that have occurred, and, finally, on its present state.

2.4 In archaeological sites specific problems may be posed because structures have to be stabilised during excavation when knowledge is not yet complete. The structural responses to a “rediscovered” building may be completely different from those to an “exposed” building. Urgent site-structural-solutions, required to stabilise the structure as it is being excavated, should not compromise the complete building’s concept form and use.

2.5 Diagnosis is based on historical, qualitative and quantitative approaches; the qualitative approach being mainly based on direct observation of the structural damage and material decay as well as historical and archaeological research, and the quantitative approach mainly on material and structural tests, monitoring and structural analysis.

2.6 Before making a decision on structural intervention it is indispensable to determine first the causes of damage and decay, and then to evaluate the safety level of the structure.

2.7 The safety evaluation, which is the last step in the diagnosis, where the need for treatment measures is determined, should reconcile qualitative with quantitative

analysis: direct observation, historical research, structural analysis and, if it is the case, experiments and tests.

2.8 Often the application of the same safety levels as in the design of new buildings requires excessive, if not impossible, measures. In these cases specific analyses and appropriate considerations may justify different approaches to safety.

2.9 All aspects related to the acquired information, the diagnosis including the safety evaluation, and the decision to intervene should be described in an “EXPLANATORY REPORT”.

### **3 Remedial measures and controls**

3.1 Therapy should address root causes rather than symptoms.

3.2 The best therapy is preventive maintenance

3.3 Safety evaluation and an understanding of the significance of the structure should be the basis for conservation and reinforcement measures.

3.4 No actions should be undertaken without demonstrating that they are indispensable.

3.5 Each intervention should be in proportion to the safety objectives set, thus keeping intervention to the minimum to guarantee safety and durability with the least harm to heritage values.

3.6 The design of intervention should be based on a clear understanding of the kinds of actions that were the cause of the damage and decay as well as those that are taken into account for the analysis of the structure after intervention; because the design will be dependent upon them.

3.7 The choice between “traditional” and “innovative” techniques should be weighed up on a case-by-case basis and preference given to those that are least invasive and most compatible with heritage values, bearing in mind safety and durability requirements.

3.8 At times the difficulty of evaluating the real safety levels and the possible benefits of interventions may suggest “an observational method”, i.e. an incremental approach, starting from a minimum level of intervention, with the possible subsequent adoption of a series of supplementary or corrective measures.

3.9 Where possible, any measures adopted should be “reversible” so that they can be removed and replaced with more suitable measures when new knowledge is acquired. Where they are not completely reversible, interventions should not limit further interventions.

3.10 The characteristics of materials used in restoration work (in particular new materials) and their compatibility with existing materials should be fully established. This must include long-term impacts, so that undesirable side-effects are avoided.

3.11 The distinguishing qualities of the structure and its environment, in their original or earlier states, should not be destroyed.

3.12 Each intervention should, as far as possible, respect the concept, techniques and historical value of the original or earlier states of the structure and leaves evidence that can be recognised in the future.

3.13 Intervention should be the result of an overall integrated plan that gives due weight to the different aspects of architecture, structure, installations and functionality.

3.14 The removal or alteration of any historic material or distinctive architectural features should be avoided whenever possible.



3.15 Deteriorated structures whenever possible should be repaired rather than replaced.

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3.16 Imperfections and alterations, when they have become part of the history of the structure, should be maintained so far so they do not compromise the safety requirements.

3.17 Dismantling and reassembly should only be undertaken as an optional measure required by the very nature of the materials and structure when conservation by other means impossible, or harmful.

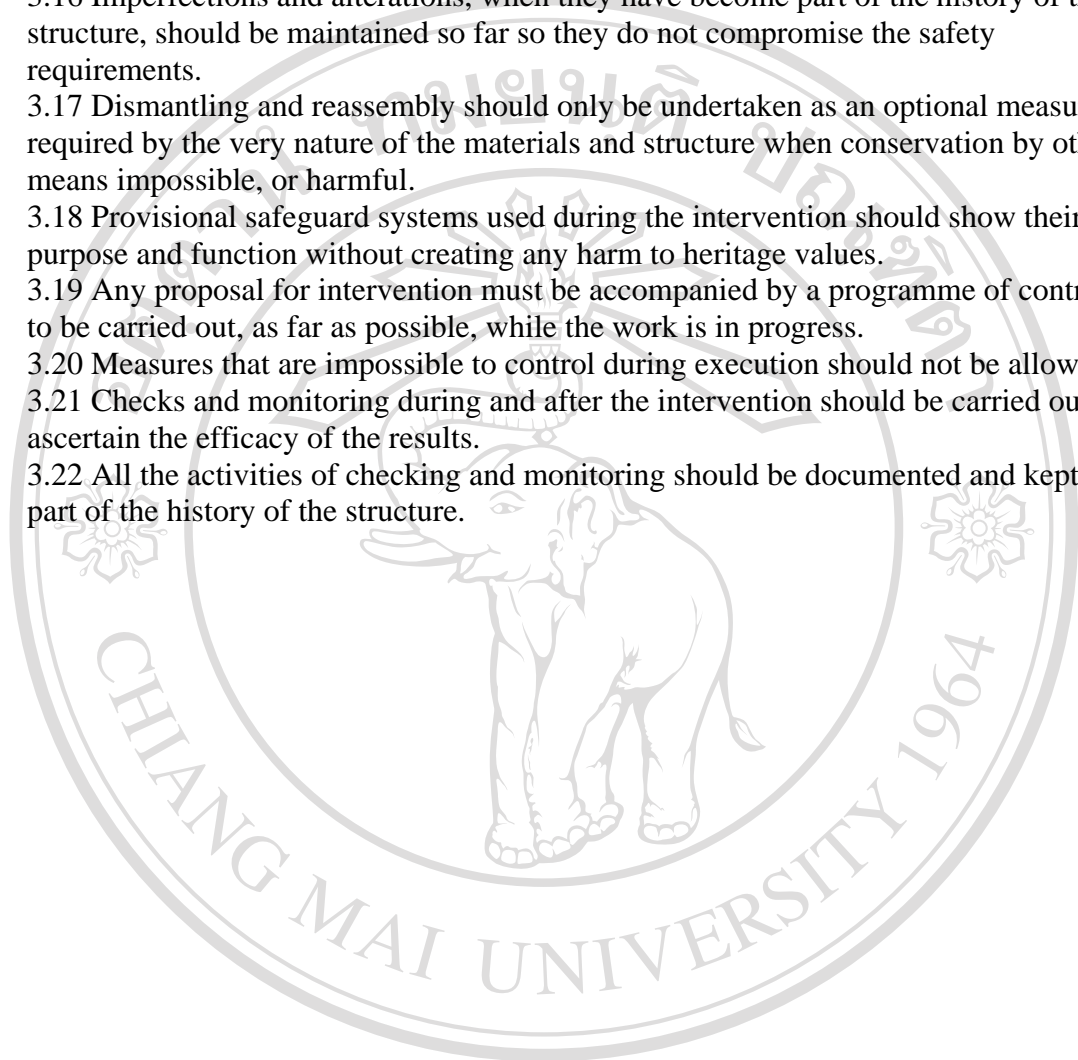
3.18 Provisional safeguard systems used during the intervention should show their purpose and function without creating any harm to heritage values.

3.19 Any proposal for intervention must be accompanied by a programme of control to be carried out, as far as possible, while the work is in progress.

3.20 Measures that are impossible to control during execution should not be allowed.

3.21 Checks and monitoring during and after the intervention should be carried out to ascertain the efficacy of the results.

3.22 All the activities of checking and monitoring should be documented and kept as part of the history of the structure.



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- ❖ December 2007, **Vietnamese Architecture – the latent beauty in the tropical characteristics**. Hanoi City: The Vietnamese Architecture Magazine
- ❖ February 2008, **Lanna Style – the hot and humid architectural style**. Hanoi City: The Vietnamese Architecture Magazine
- ❖ February 2008, **Culture – Invaluable Asset of Development**. Hanoi City: UNESCO Horizon Magazine
- ❖ April 2008, **Brick Town in Northern Thailand**. Ho Chi Minh City: Weekend-Youth Weekly Newspaper