

Principles for the Preservation of Historic Timber Structures

Written by Gaëtan Juillard

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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.

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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,

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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.