

SCHOOL OF BUILDING AND ENVIRONMENT DEPARTMENT OF ARCHITECTURE SAR1502 – ARCHITECTURAL CONSERVATION

UNIT – I – INTRODUCTION TO CONSERVATION



Introduction to conservation

Conservation: What is conservation?

• The act or process of conserving, preserving or restoring from loss, damage, or neglect.

• The careful utilization of a resource in order to prevent depletion, also an act or process by which the durability is prolonged. What is architectural conservation?

• Architectural conservation describes the process through which the material, historical, and design integrity of any built heritage are prolonged through carefully planned interventions. It is the act of conserving or keeping from change, loss, injury, etc.

• It explores the background and current status of the efforts undertaken to ensure the survival of rich architectural legacy. Architectural conservator:

• The individual engaged in the pursuit of conservation is known as an architectural conservator – restorer.

Heritage

• Heritage is the full range of our inherited traditions, monuments, objects, and culture.

• Most importantly, it is the range of contemporary activities, meanings, and behaviour's that we draw from them.

Cultural Heritage:

• Cultural heritage is the legacy of physical artifacts and intangible attributes of a group or society that is inherited from past generations. Cultural heritage includes tangible culture, intangible culture.

Natural Heritage:

• It includes natural features of any area in a country which may consist of earthly physical or biological formation or group of such formations and delineated areas that constitute the habitat of threatened species of animals and plants and natural sites of value from the point of view of science, conservation or natural beauty.

• The term "natural heritage", is derived from "natural inheritance ".

• It means and includes any building of one or more premises or any part there of and/or structure and/or artefact which requires conservation and / or preservation for historical and / or architectural and / or artisanary and /or aesthetic and/or cultural and/or environmental



and/or ecological purpose and includes such portion of land adjoining such building or part thereof as may be required for fencing or covering.

Heritage Building



UNESCO world heritage sites in India Figure 1.1: UNESCO world heritage sites in India

Heritage Precincts

• It means and includes any space that requires conservation and /or preservation for historical and / or architectural and/or aesthetic and/or cultural and/or environmental and/or ecological Purpose. Walls or other boundaries of a particular area or place or building or may enclose such space by an imaginary line drawn around it.

Prohibited Area

• It means area of the protected monuments declared as of national importance and extending to a distance of 100 meters in all direction.

Regulated Area

• It means area in respect of every ancient monuments and archaeological sites and remains declared as of national importance and extending to a distance of 200 meters in all direction.



Place

• It means a geographically defined area. It may include elements, objects, spaces and views. Place may have tangible and intangible dimensions.

Cultural significance

• It means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Fabric

• It means all the physical material of the place including elements, fixtures, contents and objects. It includes building interiors and sub-surface remains, as well as excavated material. Natural elements of a place may also constitute fabric.

Need for Architectural conservation

Evolution of human consciousness is a continuous process - Historical and cultural continuity

• History serves as a laboratory and the past serves as a demarcation to understand the regional laws and social structures. This understanding helps in our progress towards an ideal society.

• Majority of historic buildings are unprotected- Eroded due modernization and urbanization. So there is a major need in protecting them and our history.

- Survival of sense of place and character in a globalizing environment.
- Embodies values relevant to contemporary.
- Conserve our past and define our future.
- Knowledge of traditional building skills.

• Alternate avenues for employment and parallel market for local building materials and technologies.

- Historic document. Defines culture- heritage- Tangible and intangible forms.
- Symbiotic Relationship with natural environments.
- Improve quality of environment by understanding the interdependent ecological network.

APPROACH OF ARCHITECTURAL CONSERVATION

Conservation

• It means all the processes of looking after a place so as to retain its historical and/or architectural and/or aesthetic and/or cultural significance and includes maintenance,



preservation, restoration, reconstruction and adoption or a combination of more than one of these.

Preservation

• It means and includes maintaining the fabric of a place in its existing state and retarding deterioration. • It is recognized that all places and their elements change over time at varying rates.

Restoration

It means and includes returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without introducing new materials.



Figure 1.2: Dilapidation survey project





Figure 1.3: Restoration

Reconstruction

• It means and includes returning a place as nearly as possible to a known earlier state and distinguished by the introduction of materials (new or old) into the fabric.

• New material may include recycled material salvaged from other places. This should not be to the detriment of any place of cultural significance.

• This shall not include either recreation or conjectural reconstruction.



Figure 1.3: The reconstructed Jamestown Church, Jamestown, Virginia Source https://historicjamestowne.org/archaeology/map-of-discoveries/jamestown-churches/



Revitalization

• A process of economic, social and cultural redevelopment of a civic area or neighbourhood.

• Heritage area revitalization concentrates on historic buildings and other heritage resources to achieve economic, social and cultural objectives.



Figure 1.4: The Revitalisation of Qutb Shahi Tombs, Golconda

Rehabilitation

• It is usually carried out in order to extend a building's life and/or its economic viability. It may involve more adaptation than conservation, but will still preserve most of the building's original features.

• It may involve upgrading, some modification, remodelling, rebuilding or retrofitting, and some repairs.





Source : <u>https://www.akdn.org/architecture/project/rehabilitation-nagaur-fort</u>

Figure 1.4: The Rehabilitation of Nagaur Fort, Rajasthan

Renovation

• Renovation is refurbishing and/or adding to the appearance of an original building or elements of a building in an attempt to "renew" its appearance in keeping with contemporary tastes and perceptions of conservation.

• Renovation means also to improve by repair, to revive, and thereby enhance the usefulness and appearance of the building. The basic character and significant features are respected and preserved, but some alterations may take place which are generally reversible.



Figure 1.5: Renovation of a palace

Maintenance

• It means the continuous protective care of a place, and its setting. Maintenance is to be distinguished from repair which involves restoration or reconstruction.

• Examples of protective care include: maintenance, regular inspection and cleaning of a place, e.g. mowing and pruning in a garden.



Adaptation

• It means changing a place to suit the existing use or a proposed use.



Temples at Khurda district, Orissa Figure 1.6: Adaptation

APPROACH OF ARCHITECTURAL CONSERVATION

Preservation





Maintenance





Principles of conservation

- 1. Retention or restoration of historical significance
- 2. Conservation process based on research
- 3. Minimum physical intervention
- 4. Maintenance of visual setting

Retention or restoration of historical significance







• The aim of conservation, as stated in the Burra Charter (ICOMOS), should be to retain, recover or reveal as much of the historical significance as is possible of the heritage object, whether building or artifact.

• Provision for its security, maintenance and future must be part of this aim. The end use of the restored or conserved building is therefore of vital importance, as any new use has to be compatible with the needs of the building.

Conservation process based on architectural conservation

• It is important to know and understand the history of the building, and its current physical condition, prior to the commencement of work.

• If this is not done, costly errors can be made and the completed project flawed.

Minimum physical intervention

• This means making the minimum change to an historic building or place, in order to retain wherever possible, the original fabric and character.

• For example, repairing windows or shop fronts instead of replacing them.

• It means the careful striking of a balance between carrying out necessary repairs and eliminating problems, and preserving the authentic sense of history that many buildings and places in Ireland still possess.

• Repair rather than replace, a logical outcome of the principle of minimum intervention is the concept of repair rather than replace.

• The result is a more authentic building which preserves the feeling of age and history, and respects the fabric and original craftsmanship.

• It must be emphasized that at first sight the appearances of decay and damage in a neglected building may be misleading to the inexperienced eye.

• For instance, if parts of window joinery, or a cornice, are damaged beyond repair, and replacement is deemed necessary, then the emphasis should be on accurate replacement. At this stage it is important

(1) to decide if the damaged or rotten portion is original,

(2) if so, a sample of any existing moulding should be kept and

(3) an exact copy should be made by a reputable craftsman.



It must be emphasized that very precise instructions, measurements and samples need to be given to craftsmen or builders to ensure that what is meant to be an exact copy does not turn out in the end to be a carelessly detailed imitation.

Maintenance of visual setting

• The setting of an historic building is integral with the whole and should be dealt with accordingly. This means that the lands of a country house, the original frame of a painting and the historic streetscape of a town are all elements which should be conserved or restored where possible.

• In some instances maintenance of the setting may prove difficult in practical terms, but respect for the setting is of paramount importance in conservation/restoration work.



Before and after conservation of Sunder nursery, Delhi (16th-century heritage park complex adjacent to the Humayun's Tomb)

Figure 1.6: before and after conservation of Sunder nursery, Delhi

Degrees of interventions

• The minimum degree of intervention necessary and the techniques used depend upon the conditions of climate to which cultural properly is likely to be subjected.



• Atmospheric pollution and traffic vibration must be considered, and earthquake and flood hazards should be assessed.

• Interventions practically always involve some loss of a 'value' in cultural property, but are justified in order to preserve the objects for the future.

• Conservation involves making interventions at various scales and levels of intensity which are determined by the physical condition, causes of deterioration and anticipated future environment of the cultural property under treatment.

• Each case must be considered as a whole, and individually, taking all factors into account.

• The final aim and the principles and rules of conservation, particularly that the minimum effective intervention is always the best, seven ascending degrees of intervention can be identified.

Seven degrees of intervention

1. Prevention of deterioration (or indirect conservation)

• Prevention entails protecting cultural property by controlling its environment, thus preventing agents of decay and damage from becoming active.

• Neglect must also be prevented by sound maintenance procedures based on regular inspections. Therefore, prevention includes control of internal humidity, temperature and light, as well as measures to prevent fire, arson, theft and vandalism, and to provide for cleaning and good overall housekeeping.

• In an industrial environment, prevention includes measures to reduce both atmospheric pollution and traffic vibrations. Ground subsidence must also be controlled; it is due to many causes, particularly abstraction of water.

• In summary, regular inspections of cultural property are the basis of prevention of deterioration. Maintenance, cleaning schedules, good housekeeping and proper management also aid prevention. Such inspections are the first step in preventive maintenance and repair.



Figure 1.6: Prevention of deterioration



2. Preservation

- Preservation deals directly with cultural property.
- Its objective is to keep it in its existing state.
- Repairs must be carried out when necessary to prevent further decay.
- Preservation deals directly with cultural property. Its object is to keep it in its existing state.

Repairs must be carried out when necessary to prevent further decay. Damage and destruction caused by water in all its forms, by chemical agents and by all types of pests and micro-organisms must be stopped in order to preserve the structure.



Figure 1.7: Preservation

3. Consolidation (or direct conservation)

- Consolidation is the physical addition or application of adhesive or supportive materials into the actual fabric of cultural property, in order to ensure its continued durability or structural integrity.
- In the case of immovable cultural property, consolidation may for example entail the injection of adhesives to secure a detached mural painting to the wall and likewise grouting of the structure.
- With historic buildings, when the strength of structural elements has been so reduced that it is no longer sufficient to meet future hazards, consolidation of the existing material may have to be carried out. However, the integrity of the structural system must be respected and its form preserved.
- No historical evidence should be destroyed. Only by first understanding how an historic building acts as a whole as a 'spatial environmental system' is it possible to introduce new techniques satisfactorily, or provide a suitable environment for objects of art, or make adjustments in favour of a new use.



- The utilization of traditional skills and materials is of essential importance. However, where traditional methods are inadequate the conservation of cultural property may be achieved by the use of modern techniques which should be reversible, proven by experience, and applicable to the scale of the project and its climatic environment.
- This sensible approach to conservation uses appropriate technology. With short-lived materials, including reeds, mud, rammed earth, unbaked bricks and wood, such materials and traditional skills should be used for the repair or restoration of worn or decayed parts.

•Preservation of the design is just as important a function of conservation as preservation of original materials.

•Finally, in many cases it is wise to buy time with temporary measures in the hope that some better technique will be evolved, especially if consolidation may prejudice future works of conservation.



Figure 1.8: Consolidation

4. Restoration

• Replacement of missing or decayed parts must integrate harmoniously with the whole, but must be distinguishable on close inspection from the original so that the restoration does not falsify archaeological or historical evidence.

• If taken too far, it can make an historic site look like a film set and devalue the message of the site.

• The objective of restoration is to revive the original concept or legibility of the object. Restoration and re-integration of details and features occurs frequently and is 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 must be distinguishable on close inspection from the original so that the restoration does not falsify archaeological or historical evidence.

Contributions from all periods must be respected. Any later addition that can be considered as an 'historic document', rather than just a previous restoration, must be preserved.

•When a building includes superimposed work of different periods, the revealing of the underlying state can only be justified in exceptional circumstances. That is, when the part to be removed is widely agreed to be of little interest or when it is certain that the material brought to light will be of great historical or archaeological value; and when it is probable also that the state of preservation of the building is good enough to justify the action. These are difficult conditions to satisfy





5. Rehabilitation

• The best way of preserving buildings as opposed to objects is to keep them in use. The original use is generally the best for conservation of the fabric, as it means fewer changes.

• To keep it in use which involve adaptive alteration and fewer changes.

• Rehabilitation is highly recommended for age-old buildings showing signs of decay and save human lives from failures.





6. Reproduction

• Reproduction entails copying an extant artifact, often in order to replace some missing or decayed parts, generally decorative, to maintain its aesthetic harmony.





- If valuable cultural property is being damaged irretrievably or is threatened by its environment, it may have to be moved to a more suitable environment and a reproduction substituted in order to maintain the unity of a site or building.
- For example, Michelangelo's 'David' was removed from the Piazza della Signoria, Florence, into a museum to protect it from the weather, and a good reproduction took its place.
- 7. Reconstruction

•Reconstruction of historic buildings and historic centers using new materials may be necessitated by disasters such as fire, earthquake or war.

• Reconstruction cannot have the patina of age.



• As in restoration, reconstruction must be based upon accurate documentation and evidence, never upon conjecture.

- The moving of entire buildings to new sites is another form of reconstruction.
- As in restoration, reconstruction must be based upon accurate documentation and evidence,

never upon conjecture.

The classic example is the temple complex of Abu Simbel (XIX Dynasty), Egypt, which was

moved to prevent its inundation following the construction of the Aswan High Dam, but is

now exposed to wind erosion.

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SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

SAR1502 – ARCHITECTURAL CONSERVATION

UNIT – II – CONSERVATION LEGISLATION



HISTORIC CONSERVATION AND PRESERVATION

- Preservation Goals
- Commemoration 1800s
- Recordation 1930s
- Evaluation 1970s
- Protection from Acquisition Deaccession

HISTORICAL MUSEUMS PRESERVATION

- Collection 1800s 1950s
- Description 1950s 1960s
- Analysis 1970s present

HISTORY OF CONSERVATION





What is a Charter?

• A statement of intent, guidance and vision of principles.

• They are 'high level' documents which need to be synthesized for everyday application.

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

IInd International Congress of Architects and Technicians of Historic Monuments, Venice,

1964

• 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 and regard ancient monuments as a common heritage. The common responsibility to safeguard them for future generations is recognized.

• 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.

• The Athens Charter of 1931 contributed towards the development of an international movement, 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 (ICCROM).





Accordingly, the IInd 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.

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.

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. 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. 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.



HISTORIC GARDENS (THE FLORENCE CHARTER 1981)

Adopted by ICOMOS in December 1982.



PREAMBLE

• The ICOMOS-IFLA International Committee for Historic Gardens, meeting in Florence on 21 May 1981, decided to draw up a charter on the preservation of historic gardens which would bear the name of that town.

DEFINITIONS AND OBJECTIVES

Article 1

"A historic garden is an architectural and horticultural composition of interest to the public from the historical or artistic point of view". As such, it is to be considered as a monument.

Article 2

"The historic garden is an architectural composition whose constituents are primarily vegetal and therefore living, which means that they are perishable and renewable." Thus its appearance reflects the perpetual balance between the cycle of the seasons, the growth and decay of nature and the desire of the artist and craftsman to keep it permanently unchanged.

Article 3



As a monument, the historic garden must be preserved in accordance with the spirit of the Venice Charter. However, since it is a living monument, its preservation must be governed by specific rules which are the subject of the Present charter.

HISTORIC GARDENS

Article 4

The architectural composition of the historic garden includes:

• Its plan and its topography.

• Its vegetation, including its species, proportions, colour schemes, spacing and respective heights.

- Its structural and decorative features.
- Its water, running or still, reflecting the sky.

Article 5

As the expression of the direct affinity between civilization and nature, and as a place of enjoyment suited to meditation or repose, the garden thus acquires the cosmic significance of an idealized image of the world, a "paradise" in the etymological sense of the term, and yet a testimony to a culture, a style, an age, and often to the originality of a creative artist.

Article 6

The term "historic garden" is equally applicable to small gardens and to large parks, whether formal or "landscape".

Article 7

Whether or not it is associated with a building in which case it is an inseparable complement, the historic garden cannot be isolated from its own particular environment, whether urban or rural, artificial or natural.

Article 8

A historic site is a specific landscape associated with a memorable act, as, for example, a major historic event; a well-known myth; an epic combat; or the subject of a famous picture.

Article 9

The preservation of historic gardens depends on their identification and listing. They require several kinds of action, namely maintenance, conservation and restoration. In certain cases, reconstruction may be recommended. The authenticity of a historic garden depends as much



on the design and scale of its various parts as on its decorative features and on the choice of plant or inorganic materials adopted for each of its parts.

MAINTENANCE, CONSERVATION, RESTORATION, RECONSTRUCTION

Article 10

In any work of maintenance, conservation, restoration or reconstruction of a historic garden, or of any part of it, all its constituent features must be dealt with simultaneously. To isolate the various operations would damage the unity of the whole.

MAINTENANCE AND CONSERVATION

Article 11

Continuous maintenance of historic gardens is of paramount importance. Since the principal material is vegetal, the preservation of the garden in an unchanged condition requires both prompt replacements when required and a long-term programme of periodic renewal (clear felling and replanting with mature specimens).

Article 12

Those species of trees, shrubs, plants and flowers to be replaced periodically must be selected with regard for established and recognized practice in each botanical and horticultural region, and with the aim to determine the species initially grown and to preserve them.

Article 13

The permanent or movable architectural, sculptural or decorative features which form an integral part of the historic garden must be removed or displaced only insofar as this is essential for their conservation or restoration.

Article 14

The historic garden must be preserved in appropriate surroundings. Any alteration to the physical environment which will endanger the ecological equilibrium must be prohibited.

RESTORATION AND RECONSTRUCTION

Article 15

No restoration work and, above all, no reconstruction work on a historic garden shall be undertaken without prior research to ensure that such work is scientifically executed and which will involve everything from excavation to the assembling of records relating to the garden in question and to similar gardens. Before any practical work starts, a project must be



prepared on the basis of said research and must be submitted to a group of experts for joint examination and approval.

Article 16

Restoration work must respect the successive stages of evolution of the garden concerned. In principle, no one period should be given precedence over any other, except in exceptional cases where the degree of damage or destruction affecting certain parts of a garden may be such that it is decided to reconstruct it on the basis of the traces that survive or of unimpeachable documentary evidence. Article 17

Where a garden has completely disappeared or there exists no more than conjectural evidence of its successive stages a reconstruction could not be considered a historic garden.

USE

Article 18

While any historic garden is designed to be seen and walked about in, access to it must be restricted to the extent demanded by its size and vulnerability, so that its physical fabric and cultural message may be preserved.

Article 19

By reason of its nature and purpose, a historic garden is a peaceful place conducive to human contacts, silence and awareness of nature. This conception of its everyday use must contrast with its role on those rare occasions when it accommodates a festivity. Thus, the conditions of such occasional use should be clearly defined, in order that any such festivity may itself serve to enhance the visual effect of the garden instead of perverting or damaging it.

Article 20

While historic gardens may be suitable for quiet games as a daily occurrence, separate areas appropriate for active and lively games and sports should also be laid out adjacent to the historic garden, so that the needs of the public may be satisfied.

Article 21

The work of maintenance and conservation, the timing of which is determined by season and brief operations which serve to restore the garden's authenticity, must always take precedence over the requirements of public use.

Article 22



If a garden is walled, its walls may not be removed without prior examination of all the possible consequences liable to lead to changes in its atmosphere and to affect its preservation.

LEGAL AND ADMINISTRATIVE PROTECTION

Article 23

It is the task of the responsible authorities to adopt, on the advice of qualified experts, the appropriate legal and administrative measures for the identification, listing and protection of historic gardens. The preservation of such gardens must be provided for within the framework of land-use plans and such provision must be duly mentioned in documents relating to regional and local planning.

Article 24

The historic garden is one of the features of the patrimony whose survival, by reason of its nature, requires intensive, continuous care by trained experts. Suitable provision should therefore be made for the training of such persons, whether historians, architects, landscape architects, gardeners or botanists. Care should also be taken to ensure that there is regular propagation of the plant varieties necessary for maintenance or restoration.

Article 25

Interest in historic gardens should be stimulated by every kind of activity capable of emphasizing their true value as part of the patrimony and making for improved knowledge and appreciation of them: promotion of scientific research; international exchange and circulation of information; publications, including works designed for the general public; the





encouragement of public access under suitable control and use of the media to develop awareness of the need for due respect for nature and the historic heritage. The most outstanding of the historic gardens shall be proposed for inclusion in the World Heritage List.

CHARTER FOR THE CONSERVATION OF HISTORIC TOWNS AND URBAN

AREAS (WASHINGTON CHARTER 1987)

Adopted by ICOMOS General Assembly in Washington, DC, October 1987

PREAMBLE AND DEFINITIONS

• All urban communities, whether they have developed gradually over time or have been created deliberately, are an expression of the diversity of societies throughout history.

• This charter concerns historic urban areas, large and small, including cities, towns and historic centre's or quarters, together with their natural and man-made environments.

• Today many such areas are being threatened, physically degraded, damaged or even destroyed, by the impact of the urban development that follows industrialization in societies everywhere.

International Council on Monuments and Sites (ICOMOS) deems it necessary to draw up an international charter for historic towns and urban areas that will complement the "International Charter for the Conservation and Restoration of Monuments and Sites," usually referred to as "The Venice Charter."

PRINCIPLES AND OBJECTIVES

- 1. In order to be most effective, the conservation of historic towns and other historic urban areas should be an integral part of coherent policies of economic and social development and of urban and regional planning at every level.
- 2. Qualities to be preserved include the historic character of the town or urban area and all those material and spiritual elements that express this character, especially:
 - a. Urban patterns as defined by lots and streets.
 - b. Relationships between buildings and green and open spaces.
 - c. The formal appearance, interior and exterior, of buildings as defined by scale, size,
 - d. style, construction, materials, colour and decoration.



- e. The relationship between the town or urban area and its surrounding setting, both
- f. natural and man-made.
- 3. The various functions that the town or urban area has acquired over time. Any threat to these qualities would compromise the authenticity of the historic town or urban area.
- 4. The participation and the involvement of the residents are essential for the success of the conservation programme and should be encouraged.
- 5. Conservation in a historic town or urban area demands prudence, a systematic approach and discipline
- 6. Planning for the conservation of historic towns and urban areas should be preceded by multidisciplinary studies. Conservation plans must address all relevant factors including archaeology, history, architecture, techniques, sociology and economics.
- 7. Until a conservation plan has been adopted, any necessary conservation activity should be carried out in accordance with the principles and the aims of this Charter and the Venice Charter.
- 8. Continuing maintenance is crucial to the effective conservation of a historic town or urban area.
- 9. New functions and activities should be compatible with the character of the historic town or urban area.
- 10. The improvement of housing should be one of the basic objectives of conservation.
- 11. When it is necessary to construct new buildings or adapt existing ones, the existing spatial layout should be respected, especially in terms of scale and lot size. The introduction of contemporary elements in harmony with the surroundings.

METHODS AND INSTRUMENTS

- 12. Knowledge of the history of a historic town or urban area should be expanded through archaeological investigation and appropriate preservation of archaeological findings.
- 13. Traffic inside a historic town or urban area must be controlled and parking areas must be planned so that they do not damage the historic fabric or its environment.



- 14. When urban or regional planning provides for the construction of major motorways, they must not penetrate a historic town or urban area, but they should improve access to them.
- 15. Historic towns should be protected against natural disasters and nuisances such as pollution and vibrations in order to safeguard the heritage and for the security and wellbeing of the residents. Whatever the nature of a disaster affecting a historic town or urban area, preventative and repair measures must be adapted to the specific character of the properties concerned.
- 16. In order to encourage their participation and involvement, a general information programme should be set up for all residents.



CHARTER FOR THE PROTECTION AND MANAGEMENT OF THE ARCHAEOLOGICAL HERITAGE (1990)

Prepared by the International Committee for the Management of Archaeological Heritage (ICAHM) an approved by the 9th General Assembly in Lausanne in 1990.

INTRODUCTION



• The archaeological heritage constitutes the basic record of past human activities.

• Elements of the archaeological heritage constitute part of the living traditions of indigenous peoples, and for such sites and monuments the participation of local cultural groups is essential for their protection and preservation.

• This charter lays down principles relating to the different aspects of archaeological heritage management. These include the responsibilities of public authorities and legislators, principles relating to the professional performance of the processes of inventorisation, survey, excavation, documentation, research, maintenance, conservation, preservation, reconstruction, information, presentation, public access and use of the heritage, and the qualification of professionals involved in the protection of the archaeological heritage.

DEFINITION AND INTRODUCTION

Article 1

The "archaeological heritage" is that part of the material heritage which comprises all vestiges of human existence and consists of places relating to all manifestations of human activity, abandoned structures, and remains of all kinds (including subterranean and underwater sites), together with all the portable cultural material associated with them.

INTEGRATED PROTECTION POLICIES

Article 2

The archaeological heritage is a fragile and non-renewable cultural resource. Land use must therefore be controlled and developed in order to minimize the destruction of the archaeological heritage. The protection of the archaeological heritage should be integrated into planning policies at international, national, regional and local levels. Active participation by the general public must form part of policies for the protection of the archaeological heritage. This is essential where the heritage of indigenous peoples is involved.

LEGISLATION AND ECONOMY

Article 3

The protection of the archaeological heritage should be considered as a moral obligation upon all human beings; it is also a collective public responsibility. Legislation should forbid the destruction, degradation or alteration through changes of any archaeological site or monument or to their surroundings without the consent of the relevant archaeological authority.



SURVEY

Article 4

The protection of the archaeological heritage must be based upon the fullest possible knowledge of its extent and nature. The compilation of inventories should therefore be regarded as a continuous, dynamic process.

INVESTIGATION

Article 5

Archaeological knowledge is based principally on the scientific investigation of the archaeological heritage. Non-destructive techniques, aerial and ground survey, and sampling should therefore be encouraged wherever possible, in preference to total excavation. Excavation should be carried out on sites and monuments threatened by development, land use change, looting, or natural deterioration.

MAINTENANCE AND CONSERVATION

Article 6

The overall objective of archaeological heritage management should be the preservation of monuments and sites in situ, including proper long-term conservation and curation of all related records and collections etc. Any transfer of elements of the heritage to new locations represents a violation of the principle of preserving the heritage in its original context. This principle stresses the need for proper maintenance, conservation and management.

PRESENTATION, INFORMATION, RECONSTRUCTION

Article 7

The presentation of the archaeological heritage to the general public is an essential method of promoting an understanding of the origins and development of modern societies. At the same time, it is the most important means of promoting an understanding of the need for its protection.

PROFESSIONAL QUALIFICATIONS

Article 8

High academic standards in many different disciplines are essential in the management of the archaeological heritage. The training of an adequate number of qualified professionals in the relevant fields of expertise should therefore be an important objective for the educational policies in every country.



INTERNATIONAL CO-OPERATION

Article 9

The archaeological heritage is the common heritage of all humanity. International cooperation is therefore essential in developing and maintaining standards in its management. This requires the organization of conferences, seminars, workshops, etc. at global as well as regional levels, and the establishment of regional canters for postgraduate studies.



CHARTER ON THE PROTECTION AND MANAGEMENT OF UNDERWATER CULTURAL HERITAGE (1996)

Ratified by the 11th ICOMOS General Assembly in Sofia, Bulgaria, October 1996.

INTRODUCTION

• This Charter is intended to encourage the protection and management of underwater cultural heritage in inland and inshore waters, in shallow seas and in the deep oceans.

• The charter defines the "archaeological heritage" as that part of the material heritage in respect of which archaeological methods provide primary information, comprising all vestiges of human existence and consisting of places relating to all manifestations of human activity, abandoned structures, and remains of all kinds, together with all the portable cultural material associated with them.



• It includes submerged sites and structures, wreck-sites and wreckage and their archaeological and natural context.

• A large part of the underwater cultural heritage is located in an international setting and derives from international trade and communication.

• Archaeology is concerned with environmental conservation; in the language of resource management, underwater cultural heritage is both finite and non-renewable

Fundamental Principles

Article 1

• The preservation of underwater cultural heritage in situ should be considered as a first option.

• Public access should be encouraged.

• Non-destructive techniques, non-intrusive survey and sampling should be encouraged in preference to excavation.

• Investigation must not adversely impact the underwater cultural heritage more than is necessary for the migratory or research objectives of the project.

- Investigation must avoid unnecessary disturbance of human remains or venerated sites.
- Investigation must be accompanied by adequate documentation.

Article 2

Project Design: Prior to investigation a project must be prepared, taking into account:

- the migratory or research objectives of the project;
- the methodology to be used and the techniques to be employed;
- anticipated funding; the time-table for completing the project;
- the composition, qualifications, responsibility and experience of the investigating team;
- material conservation;
- site management and maintenance, documentation; health and safety;

deposition of archives, including underwater heritage removed during investigation.

Article 3

Funding Adequate funds must be assured in advance of investigation to complete all stages of the project design including conservation, report preparation and dissemination.

Article 4



Time-table Adequate time must be assured in advance of investigation to complete all stages of the project design including conservation, report preparation and dissemination. The project design should include plans that will ensure conservation and supporting documentation in the event of any interruption in anticipated timings.

Article 5

Research objectives and the details of the methodology and techniques to be employed must be set down in the project design. Post-fieldwork analysis of artefacts and documentation is integral to all investigation; adequate provision for this analysis must be made in the project design.

Article 6

All persons on the investigating team must be suitably qualified and experienced for their project roles. All intrusive investigations of underwater cultural heritage will only be undertaken under the direction and control of a named underwater archaeologist with recognized qualifications and experience appropriate to the investigation.

Article 7

Preliminary investigation All intrusive investigations of underwater cultural heritage must be preceded and informed by a site assessment that evaluates the vulnerability, significance and potential of the site. The site assessment must encompass background studies of available historical and archaeological evidence, the archaeological and environmental characteristics of the site and the consequences of the intrusion.

Article 8

Documentation All investigation must be thoroughly documented in accordance with current professional standards of archaeological documentation. Documentation must provide a comprehensive record of the site, which includes the provenance of underwater cultural heritage moved or removed in the course of investigation, field notes, plans and drawings, photographs and records in other media.

Article 9

Material conservation The material conservation programme must provide for treatment of archaeological remains during investigation, in transit and in the long term.

Article 10


Site management and maintenance A programme of site management must be prepared, detailing measures for protecting and managing in situ underwater cultural heritage in the course of an upon termination of fieldwork.

Article 11

Health and safety The health and safety of the investigating team and third parties is paramount. All persons on the investigating team must work according to a safety policy.

Article 12

Reports should include:

- an account of the objectives;
- an account of the methodology and techniques employed;
- an account of the results achieved;

• recommendations concerning future research, site management and curation of underwater cultural heritage removed during the investigation.

Article 13

Curation The project archive, which includes underwater cultural heritage removed during investigation and a copy of all supporting documentation, must be deposited in an institution that can provide for public access and permanent Curation of the archive.

Article 14

Dissemination Public awareness of the results of investigations and the significance of underwater cultural heritage should be promoted through popular presentation in a range of media. It is desirable that investigations proceed with the consent and endorsement of local communities and groups.

Article 15

International co-operation International co-operation is essential for protection and management of underwater cultural heritage and should be promoted in the interests of high standards of investigation and research. Programmes for exchange of professionals should be considered as a means of disseminating best practice.





INTERNATIONAL CULTURAL TOURISM CHARTER

Managing Tourism at Places of Heritage Significance (1999) Adopted by ICOMOS at the 12th General Assembly in Mexico, October 1999.

INTRODUCTION

The Charter Ethos

• Heritage encompasses landscapes, historic places, sites and built environments, as well as biodiversity, collections, past and continuing cultural practices, knowledge and living experiences.

• It records and expresses the long processes of historic development, forming the essence of diverse national, regional, indigenous and local identities and is an integral part of modern life.

• Increasing globalization, the protection, conservation, interpretation and presentation of the heritage and cultural diversity of any particular place or region is an important challenge for people everywhere.



• A primary objective for managing heritage is to communicate its significance and need for its conservation to its host community and to visitors.

• The Dynamic Interaction between Tourism and Cultural Heritage Domestic and international tourism continues to be the foremost vehicles for cultural exchange, providing a personal experience, not only of that which has survived from the past, but of the contemporary life and society of others.

PRINCIPLES OF THE CULTURAL TOURISM CHARTER

- Since domestic and international tourism is among the foremost vehicles for cultural exchange, conservation should provide responsible and well managed opportunities for members of the host community and visitors to experience and understand that community's heritage and culture at first hand.
- The natural and cultural heritage is a material and spiritual resource, providing a narrative of historical development.
- Individual aspects of natural and cultural heritage have differing levels of significance, some with universal values, others of national, regional or local importance. Interpretation programmes should present that significance in a relevant and accessible manner to the host community and the visitor.
- Interpretation and presentation programmes should facilitate and encourage the high level of public awareness and support necessary for the long term survival of the natural and cultural heritage.
- The long term protection and conservation of living cultures, heritage places, collections, their physical and ecological integrity and their environmental context, should be a component of social, economic, political, legislative, cultural, tourism development policies.

PRINCIPLES OF THE CULTURAL TOURISM CHARTER

• The interaction between heritage resources or values and tourism is dynamic and ever changing, generating both opportunities and challenges, as well as potential conflicts. Tourism projects, activities and developments should achieve positive outcomes and minimize adverse impacts on the heritage and lifestyles of the host community, while responding to the needs and aspirations of the visitor.



- Tourism development and infrastructure projects should take account of the aesthetic, social and cultural dimensions, natural and cultural landscapes, bio-diversity characteristics and the broader visual context of heritage places. Preference should be given to using local materials and take account of local architectural styles or vernacular traditions.
- Before heritage places are promoted or developed for increased tourism, management plans should assess the natural and cultural values of the resource. They should then establish appropriate limits of acceptable change, particularly in relation to the impact of visitor numbers on the physical characteristics, integrity, ecology and biodiversity of the place, local access and transportation systems and the social, economic and cultural wellbeing of the host community.

PRINCIPLES OF THE CULTURAL TOURISM CHARTER

- Conservation and tourism programmes should present high quality information to optimize the visitor's understanding of the significant heritage characteristics and of the need for their protection, enabling the visitor to enjoy the place in an appropriate manner.
- Visitors should be able to experience the heritage place at their own pace, if they so choose. Specific circulation routes may be necessary to minimize impacts on the integrity and physical fabric of a place, its natural and cultural characteristics.
- Respect for the sanctity of spiritual places, practices and traditions is an important consideration for site managers, visitors, policy makers, planners and tourism operators.

Planning for tourism activities should provide appropriate facilities for the comfort, safety and well-being of the visitor, that enhance the enjoyment of the visit but do not adversely impact on the significant features or ecological characteristics.

• Host communities and indigenous peoples should be involved in planning for conservation and tourism

PRINCIPLES OF THE CULTURAL TOURISM CHARTER

• Conservation management and tourism activities should provide equitable economic, social and cultural benefits to the men and women of the host or local community, at



all levels, through education, training and the creation of full-time employment opportunities.

- A significant proportion of the revenue specifically derived from tourism programmes to heritage places should be allotted to the protection, conservation and presentation of those places, including their natural and cultural contexts.
- Places and collections of heritage significance should be promoted and managed in ways which protect their authenticity and enhance the visitor experience by minimizing fluctuations in arrivals and avoiding excessive numbers of visitors at any one time.
- The promotion, distribution and sale of local crafts and other products should provide a reasonable social and economic return to the host community, while ensuring that their cultural integrity is not degraded.

CHARTER ON THE BUILT VERNACULAR HERITAGE (1999)

Ratified by the ICOMOS 12th General Assembly, in Mexico, October 1999





• The built vernacular heritage occupies a central place in the affection and pride of all peoples.

• It is a focus of contemporary life and at the same time a record of the history of society.

• Although it is the work of man it is also the creation of time. It would be unworthy of the heritage of man if care were not taken to conserve these traditional harmonies which constitute the core of man's own existence.

• The built vernacular heritage is important; it is the fundamental expression of the culture of a community, of its relationship with its territory and, at the same time, the expression of the world's cultural diversity.

• The survival of this tradition is threatened world-wide by the forces of economic, cultural and architectural homogenization.

• It is necessary, therefore, in addition to the other charter, to establish principles for the care and protection of our built vernacular heritage.





PRINCIPLES FOR THE PRESERVATION OF HISTORIC TIMBER STRUCTURES

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.

PRINCIPLES

• Recognize the importance of timber structures from all periods as part of the heritage of the world and take into account the great diversity of historic timber structures;

- Take into account the various species and qualities of wood used to build them
 - Recognize 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;
 - Recognize the increasing scarcity of historic timber structures due to vulnerability, misuse and the loss of skills and knowledge of traditional design;

• Take into account the actions and treatments required for the preservation.





ICOMOS CHARTER- PRINCIPLES FOR THE ANALYSIS, CONSERVATION AND STRUCTURAL RESTORATION OF ARCHITECTURAL HERITAGE (2003)

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

•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.



ICOMOS PRINCIPLES FOR THE PRESERVATION AND CONSERVATION-RESTORATION OF WALL PAINTINGS (2003)

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



•Wall paintings have been cultural expressions of human creation throughout history, from the earliest beginnings, such as rock art, extending up to present day murals.

•Their deterioration, accidental or intentional destruction constitutes a loss affecting a significant part of the world's cultural heritage.

•The aim of this document is to provide more specific principles for the protection, preservation and the conservation and restoration of wall paintings.

•The richness of wall paintings is founded on the variety of cultural expressions, aesthetic achievements, and the diversity of materials and techniques used from ancient until present times.

•The articles are to paintings created on inorganic supports, such as plaster, brick, clay and stone, and do not include paintings executed on organic supports, such as wood, paper and canvas.

•Wall paintings are an integral part of monuments and sites and should be preserved in situ. Many of the problems affecting wall paintings are linked to the poor condition of the building or structure, its improper use, lack of maintenance, frequent repairs and alterations.

AGENCIES CONCERNED WITH HERITAGE CONSERVATION

International Heritage Organizations

HEREIN System – European Heritage Policies

The HEREIN System gathers and makes accessible a wide range of cultural heritage information from 42 countries in the Council of Europe, providing an overview of heritage policies pursued by European countries. The system exists to form a unique cooperative network between ministries responsible for heritage management, and between the States and the Council of Europe.

ICOMOS

ICOMOS (International Council on Monuments and Sites) is an international nongovernmental organization of professionals, dedicated to the conservation of the world's historic monuments and sites.

United Nations Educational, Scientific and Cultural Organization

The United Nations Educational, Scientific and Cultural Organization (UNESCO) - was founded on 16 November 1945, Paris. Its declared purpose is to contribute to peace and security by promoting international collaboration in education, sciences, and culture in order



to increase universal respect for justice, the rule of law, and human rights along with fundamental freedom proclaimed in the United Nations Charter

International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM)

The International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) is an intergovernmental organization dedicated to the preservation of cultural

heritage worldwide through training, information, research, cooperation and advocacy programmes.

Indian Heritage Organizations

Anthropological Survey of India (AnSI)

Anthropological Survey of India is a premier research institute for anthropological research in bio-cultural studies. It endeavour's to bring in a multi-disciplinary approach, with both social/cultural and physical/biological divisions.

National Archives of India

The National Archives of India is the custodian of the records of enduring value of the Government of India. It is the biggest archival repository in South Asia. It has a vast corpus of records viz., public records, private papers, oriental records, cartographic records and microfilms, which constitute an invaluable source of information for scholars-administrators and users of archives

National Research Laboratory for Conservation of Cultural Property

The National Research Laboratory for Conservation of Cultural Property (NRLC), established in 1976 under the Ministry of Culture, is the premier organization for the researches in conservation of the cultural property including monuments and sites, as well as museums, library and archive collections.

The Archaeological Survey of India (ASI)

The Archaeological Survey of India (ASI), under the Ministry of Culture, is the premier organization for the archaeological researches and protection of the cultural heritage of the nation. For the maintenance of ancient monuments and archaeological sites and remains of national importance the entire country is divided into 24 Circles.

Indian Heritage Cities Network (IHCN)



The Indian Heritage Cities Network was initially launched as a UNESCO programme in response to the fast changing urban context of Indian historic cities that threaten to destroy some of India's diverse heritage in cities.

Indian National Trust for Art and Cultural Heritage (INTACH)

The Indian National Trust for Art and Cultural Heritage is a non-profit charitable organization registered under the Societies Registration Act, 1860. INTACH has pioneered the conservation and protection of India's natural and cultural heritage.

INDIAN NATIONAL TRUST FOR ART AND CULTURAL HERITAGE (INTACH)

INTACH is the only non-governmental Indian non-profit society working for the awareness and conservation of Indian culture and heritage.

- The history of INTACH outlines the development made by it since its inception. A brief overview of the various significant development and events that led to the making and growth of INTACH over the years is outlined here:
- 1984 INTACH is established as a Registered Society On January 27, 1984 INTACH is establish as a Registered Society

Abbreviation	INTACH
Formation	1984
Туре	NGO
Purpose/focus	Art, Cultural, architectural heritage preservation/restoration
Headquarters	Delhi

• 1985 Chapters across the country INTACH set up 31 Chapters across the country

ROLE OF INTACH

- The role of INTACH is to institutionalize the conservation of the unprotected architectural heritage all over India. It should accomplish this objective by establishing Local Chapters.
- INTACH's local Chapters should promote the culture of conservation and make an inventory of architectural heritage. They should develop ways and means to conserve



local architectural heritage in consultation with INTACH's Regional and Central offices.

- Each Local Chapter should compile an annual "State of the Architectural Heritage Report" for its area and submit annual and plans for conservation works to be undertaken in its locality.
- INTACH should facilitate and coordinate its activities with the Government and other interest groups, local, national and international, which are concerned with the conservation of architectural heritage. INTACH should establish appropriate benchmarks for professional fees for conservation work and promote adherence to this scale in all conservation projects.
- INTACH should review Charter and if necessary, make amendments to it every five years

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SCHOOL OF BUILDING AND ENVIRONMENT DEPARTMENT OF ARCHITECTURE

SAR1502 - ARCHITECTURAL CONSERVATION

UNIT – III – CONSERVATION OF HISTORIC BUILDINGS



CRITERIA FOR LISTING HISTORIC / HERITAGE BUILDINGS Listing

- Listing and Documentation are the primary and the most important activity for the identification of historic structure and precincts.
- They undertake listing (inventory) of (i) Natural Heritage (ii) Built Heritage (iii)Art (Material) Heritage (iv)Intangible (Living) Heritage, in accordance with the guidelines. Why is listing necessary?
- The information thus collected can be effectively used for creating awareness about the local heritage.
- It can also facilitate action for providing legal protection to heritage assets.
- For record purpose.
- For wider dissemination in the form of reference books and guide books, etc.

CRITERIA FOR LISTING HISTORIC / HERITAGE BUILDINGS

The three key concepts that need to be understood to determine whether a property is worthy of listing. Criteria for identifying historic buildings

- Historic significance
- Historic integrity
- Historic context

CRITERIA FOR LISTING HISTORIC

Historic Significance: It is important to know the history, architecture, archaeology, engineering or culture of a property, community, region or nation. In selecting a building, particular attention should be paid to the following aspects that contribute to the historic significance

- Association with events, activities or patterns.
- Association with important persons.
- Distinctive physical characteristics of design, construction or form, representing work of a master.
 - Potential to yield important information such as illustrating social, economic history, such as railway stations, town halls, clubs, markets, water works, etc.



- Technological innovations such as dams, bridges, etc.
- Distinct town planning features like squares, streets, avenues, e.g. Raj path in Lutyen's New Delhi

Historic Integrity:

• It is the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic period.

- Historic integrity enables a property to illustrate significant aspects of its past.
- Not only must a property resemble the historic appearance but it must also retain physical

materials, design features and aspects of construction dating from the period when it attained significance.

Historic context:

- It is information about historic trends and properties grouped by an important theme in the history of a community, region or nation during a particular period of time.
- A knowledge of historic context enables listens to understand a historic property as a product of its time.



India Gate – Delhi (Town planning features)

Stonehenge – England (Association with events, activities or patterns)



Humayun's Tomb – Delhi (Physical materials, design features and aspects of construction)

Mahatma Gandhi's Residence at Porbandar (Association with important persons)

Examples to understand various criteria for listing historic structures





Kallanai Dam – Trichy (Technological innovations) Nilgiri Mountain Railway, Ooty (Grouped by an important theme in the history of region)

Examples to understand various criteria for listing historic structures

METHODOLOGY OF LISTING

Listing work comprises of two phases.

- 1. Background research
- 2. Field work Background Research
- Before commencing the actual fieldwork, the basic information is gathered from various sources including gazetteers, travel books, and several other specialized books on the history of the area to be listed through libraries and archives of various universities and other institutions of the central government, the state government and private individuals or trusts. In a given area, local experts, professionals and scholars could also provide the required guidance and help.
- Background research essentially helps in identifying historic areas, historic developments in the area, significance of the events that may have taken place at different times, important persons who have shaped historical developments, cultural developments, and similar features that may be unique to the area. In some well documented areas, distinctive physical characteristics of design, construction, materials, and forms of buildings can also be identified.

METHODOLOGY OF LISTING FIELD WORK



- Before moving into field work, a highly reliable map of the area should be collected and its various constituents. Survey of India maps and the state department of town and country planning maps at the field level, ward maps available with the municipal/ cantonment/ panchayat authorities can be the base.
- Field work requires work to scan the heritage properties and recording information for each property. This comprises of physically inspecting the property as well as meeting local people such as owners of the property, talking to other residents and local ward or panchayat members, and representatives of institutions.
- By physically inspecting the property the lister can gather facts such as physical characteristics of the property, the date of construction, style of construction, design characteristics, etc. that are relevant for recording in the format prescribed for listing.
- Photography is an important component of the listing. A photograph freezes the building and its setting to the time when it is taken. In this context, old photographs, if available, can constitute a very important record in the listing. A comparison would show the changes that have occurred over time to the building and, in particular, to its embellishments.

MAPPING OF HISTORICAL SETTLEMENTS

- The major short-coming of the current list of legally protected architectural heritage is that it does not recognize vernacular architecture and historic settlements as categories of heritage worthy of being conserved.
- The listing of unprotected architectural heritage and sites must, therefore, include this category
- Sacred sites must be dealt with due sensitivity and knowledge of the local, social and cultural imperatives governing their sanctity. Listing must record such characteristics associated with these sites

GRADING OF HERITAGE BUILDINGS

Primary objective

• To record extant architectural heritage and sites. But the outcome of this process should invariably be to grade the listed heritage into a hierarchical series.



- It recommends that buildings and sites be classified as Grade I, II and III in descending order of importance.
- Buildings and sites classified as Grade I and II should be conserved in accordance with the provisions of official and legal manuals of practice (ASI's Works Manual).
- Some Grade II buildings, however, and all other listed buildings and sites, i.e. Grade III, may be conserved in accordance with principles enunciated in the INTACH Charter (Article 2.6).

(A) Heritage Grade-I

• It comprises buildings and precincts of national or historic importance, embodying excellence in architectural style, design, technology and material usage and/or aesthetics; they may be associated with a great historic event, personality, movement or institution.

- They have been and are the prime landmarks of the region.
- All natural sites shall fall within Grade-I.

(B) Scope for Changes: Heritage Grade-I

• No interventions be permitted either on exterior or interior of the heritage building or natural features unless it is necessary in the interest of strengthening and prolonging the life of the buildings/or precincts or any part or features thereof. For this purpose, absolutely essential and minimum changes would be allowed and they must be in conformity with the original.

Heritage Grade -II (A&B)

• It comprises of buildings and precincts of regional or local importance possessing special architectural or aesthetic merit, or cultural or historical significance though of a lower scale than Heritage Grade-I.

- They are local landmarks, which contribute to the image and identity of the region.
- They may be the work of master craftsmen or may be models of proportion and ornamentation or designed to suit a particular climate.

(B) Scope for Changes: Heritage Grade-I

• No interventions be permitted either on exterior or interior of the heritage building or natural features unless it is necessary in the interest of strengthening and prolonging the life of the buildings/or precincts or any part or features thereof. For this purpose,



absolutely essential and minimum changes would be allowed and they must be in conformity with the original.

Heritage Grade-III

- It comprises building and precincts of importance for townscape; that evoke architectural, aesthetic, or sociological interest.
- These contribute to determine the character of the locality and can be representative of lifestyle of a particular community or region.
- It is distinguished by setting, or special character of the facade and uniformity of height, width and scale.

(C) Procedure:

• Development permission for the changes would be given on the advice of the Heritage Conservation Committee.

(D) Vistas / Surrounding Development:

• All development in areas surrounding Heritage Grade-I shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-I, II, III.

MODEL BUILDING BYE-LAWS

Responsibility of the owners of heritage buildings

• It shall be the duty of the owners of heritage buildings and buildings in heritage precincts or in heritage streets to carry out regular repairs and maintenance of the buildings. The State Government, the Municipal Corporation or the Local Bodies and Authorities concerned shall not be responsible for such repair and maintenance except for the buildings owned by the Government, the Municipal Corporation or the other local bodies. Restrictions on development / re-development / repairs etc.

• No development or redevelopment or engineering operation or additions / alterations, repairs, renovations including painting of the building, replacement of special features or plastering or demolition of any part thereof of the said listed buildings or listed precincts or listed natural feature areas shall be allowed except with the prior permission of Commissioner, Municipal Corporation /Vice Chairman, Development Authority. Before granting such permission, the agency concerned shall consult the



Heritage Conservation Committee to be appointed by the State Government and shall act in according with the advice of the Heritage Conservation Committee. Penalties

• Violation of the regulations shall be punishable under the provisions regarding unauthorized development. In case of proved deliberate neglect of and/or damage to Heritage Buildings and Heritage Precincts, or if the building is allowed to be damaged or destroyed due to neglect, in addition to penal action provided under the concerned Act, no permission to construct any new building shall be granted on the site if a Heritage Building or Building in a Heritage Precinct is damaged or pulled down without appropriate permission from Commissioner, Municipal Corporation/ Vice Chairman, Development Authority.

Preparation of list of heritage sites including heritage buildings, heritage precincts and listed natural feature areas

• The list of heritage sites including Heritage Buildings, Heritage Precincts and listed Natural Features Areas is to be prepared and supplemented. When a building or group of buildings or natural feature areas are listed it would automatically mean that the entire property including its entire compound / plot boundary along with all the subsidiary structures and artifacts, etc. within the compound/plot boundary, etc. shall form part of list.

Alteration / modification / relaxation in development norms

• On the advice of the said Heritage Conservation Committee, the Commissioner, Municipal Corporation / Vice Chairman, Development Authority shall follow the procedure as per Development Authority Act, to alter, modify or relax the Development Control Norms prescribed in the Master Plan, if required, for the conservation or preservation or retention of historic or aesthetic or cultural or architectural or environmental quality of any heritage site. Heritage precincts / natural feature areas

• In cases of streets, precincts, areas and natural feature areas notified, development permissions shall be granted in accordance with the special separate regulation prescribed for respective streets, precincts / natural feature areas which shall be framed



by the Development Authority on the advice of the Heritage Conservation Committee. Road widening

• Widening of the existing roads under the Master Plan of the City or Town / Zonal Development Plan or in the Layout Plan shall be carried out considering the existing heritage buildings or which may affect listed natural features areas.

Incentive uses for heritage buildings

• In cases of buildings located in non-commercial use zones included in the Heritage Conservation List, if the owner agrees to maintain the listed heritage building as it is in the existing state and to preserve its heritage state with due repairs lessees may be allowed with the approval of the Heritage Conservation Committee within permissible use zone to convert part or whole thereof of the non-commercial area within such a heritage building to commercial/office use/hotel.

• Provided that if the heritage building is not maintained suitably or if the heritage value of the building is spoiled in any manner, the commercial / office / hotel use shall be disallowed. Maintaining skyline and architectural harmony

• After the guidelines are framed, buildings within heritage precincts or in the vicinity of heritage sites shall maintain the skyline in the precinct and follow the architectural style (without any high-rise or multi-storeyed development) as may be existing in the surrounding area, so as not to diminish or destroy the value and beauty of or the view from the said heritage sites.

Opinion of the heritage conservation committee

• No laws should deem to confer a right on the owner / occupier of the plot to demolish or reconstruct or make alterations to his heritage building / buildings in a heritage precinct or on a natural heritage site if in the opinion of the Heritage Conservation Committee, such demolition / reconstruction /alteration is undesirable. Approval to preserve the beauty of the area

• The Heritage Conservation Committee shall have the power to direct, that the exterior design and height of buildings should have their approval to preserve the beauty of the area.

• Commissioner, Municipal Corporation/ Vice- Chairman, Development Authority on the advice of the Heritage Conservation Committee shall frame regulations or



guidelines to regulate signs, outdoor display structures and street furniture on heritage sites.

CONSERVATION PROCESS

• The practice of heritage building conservation requires careful attention from building owners, occupiers and the involvement and expertise of various professionals such as

- Town Planners,
- Conservation Architects,
- Building Surveyors,
- Landscape Architects,
- Quantity Surveyors,
- Specialized Engineers,
- Building Contractors,
- Archeologists,
- Art Historians And
- Antiquities.

CONSERVATION PROCESS

Introduction

• The correct diagnosis of building defects associated with the correct remedial action and obligations to the conservation principles is the only economic basis for successful conservation. The conservation practice involves three main stages.





Stage 1: Documentation / Record

Documentation is divided into 2 stages as follows.

1. Historical Research

Before embarking on any physical interventions in a design strategy for a potential conservation project, it is essential to assemble all the available evidence on the building and / or site that is to be conserved. Original documentation that may be of interest includes –

- Original design drawings
- Drawings from previous investigations
- Historical evidence such as old photographs, old maps and old paintings
- Reports from previous investigation or any historical reports

Historical research should be conducted well in advance of physical investigation. This allows time for important written and oral information to be located transcribed, organized, studied and used for planning the actual works.



Physical inspection of the building

Stage 1: Documentation / Record Measured drawing



Measured drawing or 'as-found' drawing means a set of line drawings that accurately and in some detail delineates the subject building in its existing condition.

The measured drawing will illustrate the interior and exterior of the building including the



structural detail. It will also illustrate the defect areas such as cracks in plaster and the missing elements.

Stage 2: Dilapidation and building Investigation

A dilapidation survey is a practice of identifying and recording building defects through the means of photographic and digital documentation prior to any conservation work. The core of dilapidation survey is the process of walking through a building to gather and record information based on observation of the finished surfaces and any exposed structure.



Dilapidation survey - process

Stage 2: Dilapidation and building Investigation

In the practice of building conservation, dilapidation surveys are generally instrumental in regard of the following aspects –

- Understanding the state of building defects
- Determining the causes of building defects



• Identifying appropriate method and techniques of building conservation

• Providing reference materials to clients, consultants and project contractors.

To be effective, the practice of dilapidation survey should involve a multi-disciplinary approach which requires in-depth knowledge in conservation as well as other related fields in order to correctly assess building defects, determine their causes and proposes restoration methods.

The historic building and its components should be carefully inventoried prior to taking action. There are 2 stages of investigation as follows.

- 1. Site Testing
- 2. Laboratory Testing

Site Testing

Site testing is an action to identify materials and their condition by using instruments. For instance, to monitor the temperature of environment, we may use a thermometer. The use of these instruments provides greater accuracy than merely feeling whether the room is warm or cool.

The site test is a non-destructive test, which is usually based on detection of the physical properties of the wall or exposed surface.

Example of Site test available are

- Moisture-Monitoring,
- Flat Jack,
- Crack Monitoring and
- Load Test

Flat jack testing method is used to determine the acting stresses or to evaluate the mechanical parameters of the masonry/concrete structures. The testing technique is based on the release of the stress in a small area of a structure by a plane cut perpendicular to its surface.







Figure 3.1 Double flat-jack test

Laboratory Test

The material, sometimes have changes from their original composition that cannot be analysed by using the naked eyes. Although the properties of the materials can be identified through the

- Texture
- Colour
- Moisture

we cannot guess what the original composition is because the material may be too old and they may have already combined with new elements. A sample of materials is taken from the defect area. Only the minimum amount required should be removed and a record of removal must be made.

There are several types of laboratory tests. It depends on the stage of conservation project such as to

• Identify the original material and



- The composition of materials
- If it is a mixture like mortar and plaster
- To find the hardness of bricks and
- To find the level of brick porosity.

Some other examples of laboratory test including

- Microbiological test to identify plant species,
- Dispersion agents and chemical fungicides,
- Timber test to identify timber species,
- Grading and group strength,
- Salt test to detect the salt levels
- Percentage of total irons,
- Paint test to classify paint types,
- Colour analysis

Building Condition Assessment (BCA)

A Building Condition Assessment (BCA) evaluates the condition of a building's envelope performance, structural foundation and superstructure, and mechanical systems, including heating and cooling.

A BCA may also include the exterior elements of the property including site grading and drainage, condition of roadway and servicing infrastructure and lighting.

A BCA is a common part of any property's maintenance strategy.

Generally, a BCA is requested by a property manager, owner, or board of directors when there are building or property issues which require improvements.



Note areas of loss since excavation (1959-60).

Building condition assessment

Stage 3: Conservation Works

After diagnosing the defect of heritage buildings, the conservator will prepare the proposal or method of statement on techniques of repair and conserve heritage buildings. Conservation works start with preliminary activity such as

- Cleaning the building surface from dirt and leech;
- Make clear to the surrounding area,
- Remove the unwanted vegetation,



- Poison it to prevent future root damage,
- Covering the buildings with temporary structure like tent to cover the leaking roof,
- Control the damp admitting to interior space.



The major conservation works will start after preliminary works finished. By doing this, the appearance of old historic building becomes clear and the conservation activities can be managed systematically such as dismantling, removing rotten timber and hack crumble plaster can be done earlier and followed by

- Preservation
- Restoration
- Repair and
- Reconstruction Activities

The building conservation process start with roof repair and continue with others part of buildings elements. The process is from top to the down of the building

Conservation Works - For example building conservation, works as follows:

- Removal of dirt, fungal and harmful growth on wall and column
- Dismantling roof tiles and storage the salvage
- Cover the roof structure before starting restoration works
- Removal of any rotten timber trusses and ceilings
- Reconstruct the central jack roof and lay new clay tiles
- Fixing water proofing membrane to roof
- Remove and replace the badly decayed timber floor
- Hack off the crumble plaster
- Re-plastering and painting the with lime wash



- Reconstruct the collapsed and damaged column to the original form
- Remove and re-pointing loose mortar on the exposed bricks
- Restoring any decayed door, windows and fans, lights
- Laying and fixing new timber floor

All those process and activities are guided and monitored by the guidelines and standards from department of National Heritage. Especially in choice of the materials and techniques, it should respect the traditional practice. The use of traditional material like

- Terracotta roof covering:
- Timber species and
- Grading;
- Mortar for plastering,
- Masonry and Brick layering; and

• Buildings colour scheme is main concern If there is no source of it, the new materials must be compatible with

- Expression,
- Appearance,
- Texture,
- Scale,
- Colour,
- Materials and
- Form of the Original

Stage 3: Conservation Works Final report

The final stage in conservation process is preparation of final report. The final report is very important document. It contains the whole process of building conservation.

The report becomes an important evidence for future reference on heritage conservation and maintenance. It's a valuable record of National Heritage property and serves as an essential archival resource for future reference.

CONSERVATION PROCESS

CARING FOR CULTURAL HERITAGE

1. Preventive Conservation



Some Cultural works must be protected in a controlled environment where variables such as temperature, humidity, exposure to light and UV rays are within damage limiting levels

• E.g.- Shielding from sunlight, artifacts such as water-colour paintings is necessary to prevent fading of pigments.

- Museum policy and collections care
- Maintain a protective environment in store, display or in transit.
- Closely monitor the condition of collections

2. Interventive Conservation

Direct interaction between conservator and the cultural material

• Treatments can involve cleaning, stabilizing, repairing, or even replacing parts of the original object or portion of building.

• Done for reasons such as aesthetic choices, structural integrity or intangible continuity.

• All interventions with the object must be reversible.

• All alterations should be well documented and should be clearly distinguishable from the original object.

FACTORS DETERIORATING HERITAGE BUILDINGS

Natural Factors

- Flood
- Biological Factors
- Moisture
- Rainstorm
- Ground salts and water
- Windstorm
- Air Pollutant
- Solar Radiation
- Temperature
- Vibration

Social Factors

- Fire
- Urban Development
- Vandalism

Floods

Floods can cause massive damage where heritage buildings are being destroyed by nature's water pressure. Though some heritage buildings might dry out, yet the moisture remaining within the floors, walls and roof may cause serious mold problems that will eventually wear the building away and create health dangers.



Figure 3.2 In July 2009 the world heritage site of Konark Sun temple was knee-deep in water as flash floods triggered by heavy rainfall in Orissa.

Biological Factors

• Biological agencies such as mosses, fungus, algae, and insects affect construction materials like timber, bricks, stucco etc.

• Biological agencies attack generally wet timber that has over 20% moisture contents.

•Wet timber decomposes in damp condition, and once germination occurred (at temperature 20-degree C and moisture content above 20%) it enters cracks and spreads fast making the timber to loose cellulose, thereby losing its strength and shape which results in cracks, shrinkages and loose fittings.



Figure 3.3 Conservation of Humayun's Tomb, Nizamuddin from biological factors

Moisture

- Moisture is regarded as a key agent causing gradual deterioration of heritage buildings.
- It can be in solid, liquid or vapour form and it is always present in the atmosphere.



• When the surface temperature falls, condensation occurs and this can cause severe damages to heritage buildings.

• Water frozen in the pores of building materials like timber, concrete and bricks can cause spalling of surface, cracking or even disintegration.



Figure 3.4 Moisture from Church Collegiate School, vines affecting the Scottish North Calcutta

Ground salts and water

• Soluble salts are a principal agent of decay in porous building materials.

• The behaviour of salts may seem unpredictable since they can remain dormant for long periods and then suddenly become active causing damage and disfiguring historic fabric.

• In other cases the action of salts is progressive, weakening surfaces on a microscopic level over decades and centuries, causing natural erosion of the kind that would occur to stone in a quarry face.



Figure 3.5 Exhibits shows decay typical of magnesium Limestone by salt crystallization in a polluted urban environment.

Windstorm

• Wind primarily causes loading and mechanical damage to structures and materials.

• Windstorm damaged roofs was quiet often recorded in the past at is still as a major threat to historical structures.



• Most of the damage caused by the strong winds concerned the roof covering. Wooden shingles were much more resistant than for example ceramic of slate tiles.



Figure 3.6 Destroyed minarets because of a storm at the royal gate to the Taj Mahal, Agra

Air Pollution

• One of the more destructive forms of pollution is acid rain.

• Acid rain occurs when fossil fuel emissions containing sulphur dioxide combine with moisture in the air to form acidic precipitation.

• When acid rain falls on historical monuments of limestone or marble, a chemical reaction takes place which has a corrosive effect on these structures.

• The reaction dissolves the material, leading to permanent damage.



Figure 3.7 Pollutants – sulphur dioxide, nitrogen dioxide and carbon-based particulates – have steadily weathered and eroded the Taj's white facade, giving it a yellow sheen. Establishment of a 4,000-square mile protective area around the site, (the Taj Trapezium Zone), within which emissions are strictly controlled, continuous

analysis shown a marked deterioration in the Taj's condition over the years.

Solar Radiation

• At an atomic level, when sunlight falls on an object, the high energy provided by this radiation excites electrons, in some cases causing them to be displaced from bonds between atoms, particularly in organic compounds. This process can cause material to deteriorate and colours to fade. • Objects also heat up causing their materials to expand and contract, often at different rates to each other.



• The differential movement can lead to stress resulting in damage to the structure of rigid materials. They can also dry out, again causing differential movement as well as cracking of some surfaces.



Figure 3.8 A staircase inlaid with marquetry (inlaid work of variously coloured woods or other materials) faded by sunlight.

Temperature

• Changes of the temperature are also relevant when assessing the consequences of thermal expansion and contraction – such as stresses within materials when changes of size are restrained and strains imposed on jointing materials when components are free to change size.



Figure 3.9 Moisture along with fluctuations in temperature leads to damages due to ascending moisture to disintegration of the façade

Vibrations

• Vibrations surround us, for nature provides its own vibration sources such as earthquakes, wind and ocean waves. With the advent of the technological era, vibration sources have multiplied and have become a concern to preserve historic structures.

Traffic Vibrations:



• Vibrations arising from road and rail traffic and its effect on historic buildings have become a subject of concern in recent decades.

Sonic Boom:

• Sonic boom are the results from supersonic travel of aircraft. This damages the historical structures especially to brittle components, such as plaster or glass, particularly at corners or cut-outs, where stress raisers exist.

Blasting Vibrations:

• Vibrations from blasting are a fairly common disturbance for historic buildings since blasting is often employed on excavations for neighbouring building foundations, roads, underground services and subways.

Seismic Effects on Historic Buildings

• In areas where seismic disturbances pose a potential threat, the vulnerability of historical buildings should not be overlooked.

• Historic buildings are frequently constructed of brickwork, stone or adobe, materials known to be vulnerable to seismic disturbances since they do not deform easily without rupturing.



Figure 3.10 Pratap Vilas, Jamnagar, Gujarat. Effect of Gujarat earthquake of 2001 has caused loss of some parapets and also the separation of some upper walls at the roof level of the palace

Fire :

• Uncontrolled fire can cause an entire destruction of heritage buildings and its contents in only a few hours and its major effect is the potential loss of authenticity.

• Although the destroyed parts of the buildings can be replicated, the loss of the original historic fabric takes away from the building the cultural significance which makes it unique and important.


figure 3.11 A fire broke out in a publishing house on the first floor of Agurchand Mansion, a heritage building on Anna Salai, Chennai

Urban Development

• Large urban scale development has continued to threaten the existence of heritage buildings in the region for a long time. Many heritage buildings are being demolished to pave way for the construction of wider roads, schools, hospitals, shopping malls and parking.

• Some of these buildings, especially those located in the central business district, have been under threats of demolition from the public and private developers seeking more lucrative ventures only.



Figure 3.12 Quila Mubarak, Bathinda, Punjab. Encroachments bane of Quila Mubarak.

Vandalism

• It is the behavior attributed originally to the Vandals, in respect of culture: ruthless destruction or spoiling of anything venerable.

• The term also includes criminal damage such as graffiti and defacement directed towards any property without permission of the owner.



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Figure 3.13 Tourist vandalizing a 14 th century Hindu Temple in the Hampi heritage complex in Karnataka

Conservation & Preservation Techniques Structural Conservation

• Although there have been references of conservation of structures way back in the early Historic Period as evidenced at Junagadh, Gujarat, it was done on structures that were beneficial to the contemporary society.

• The earlier attempts to give a legal framework for preventing vandalism were the two legislations namely the Bengal Regulation of 1810 and Madras Regulation of 1817.

• The monuments and sites that received nominal funds and attention way back in 19th century was Taj Mahal, Tomb at Sikandara, Qutb Minar, Sanchi and Mathura.

• Later the 'Ancient Monuments and Preservation Act, 1904' was passed with the prime objective to ensure the proper upkeep and repair of ancient buildings in private ownership excepting such as those used for religious purposes.

• From the first decade of the last century many monuments were taken up for conservation under one of the foremost conservators, J. Marshall who laid down the principles of conservation was also instrumental in preserving a number of monuments.



BEFORE

AFTER

Figure 3.14 Khajuraho Group of Monuments, Madhya Pradesh





BEFORE

Figure 3.15 Qutb Minar, New Delhi



Figure 3.16 Brihadeeshwara Temple, Thanjavur

Chemical Preservation

• The Archaeological Survey of India's (ASI) Science Branch is responsible mainly for the chemical conservation treatment and preservation of three thousand five hundred ninety-three



(3493) Protected monuments besides chemical preservation of museum and excavated objects countrywide.

- Activities in chemical preservation carries out the following study.
- 1. Material deterioration process.
- 2. Basic studies of intervention technologies.
- 3. Basic studies on materials.
- 4. Diagnostic technologies.

• For the eradication of plant, pre and post herbicide treatment is recommended. White salt formation on terracotta object should be clean with organic acid rather than inorganic acid, preservative coatings either on stone or terracotta should be done after testing. To control the insect deterioration, its suggested to use hard wood rather than soft wood, because of various bio deterioration problems.



BEFORE

AFTER





BEFORE AFTER Figure 3.17 Periodical chemical preservation of the Vimana (58.96 m tall)

Conservation of building elements – Material conservation



BRICKS AND STONES

Introduction

• Masonry consists of stone, brick or concrete blocks bonded with mortar. Mortar is a mixture of lime, sand, water and cement.



• Masonry, when properly constructed and well maintained, will last for centuries. Mortar joints will normally require repointing every 50 years.

• Brick is the most common masonry wall, usually with limestone or granite for foundations. Stone is also common in areas where there is a tradition of stone masonry and availability of the material.

• Key requirements are that a wall be strong, keep moisture out and allow the mortar to flex. Most masonry work involves re-pointing and occasional replacement of deteriorated brick or stone.

BRICKS AND STONES

Principle

- Conserve original brick and stone with periodic check-ups and maintenance.
- When re-pointing, use an appropriate lime-based mortar.
- Avoid cleaning. Conserve the patina of age that gives the building character.
- A patch test should be done to ensure there is no damage to the masonry surface.
- Never sandblast.

Problems

- Brick and stone can deteriorate for many reasons, the key ones being
- Excessive moisture in the masonry freezing and thawing in winter.
- Water in the walls rusting out masonry ties
- Improper cleaning, such as sandblasting
- Differential expansion, leading to cracking
- Airborne pollutants

BRICKS AND STONES

Some indications of masonry problems are-

- Bulging indicates the wall has moved.
- Cracking indicates movement within the wall.
- Straining indicates excessive dampness.
- Crumbling indicates moisture penetration due to poor brick or to sand-blasting.
- Paint Blistering indicates moisture trapped behind paint.

• Mortar Cracking - indicates cement mortar is too hard and is popping out in freeze-thaw cycles.

Repointing

• Repointing is the process of renewing the pointing, which is the external part of mortar joints, in masonry construction.

• Over time, weathering and decay cause voids in the joints between masonry units, usually in bricks, allowing the undesirable entrance of water



Figure 3.18 Repointing

Mortar bonds masonry together. As well as compressive strength, workability and flexural (bending) capacity are important. Mortar should be weaker than the masonry to accommodate movement in walls, or else cracks will occur.

• The earliest mortars were lime-based, being water resistant and flexible, but often weak and susceptible to frost action. Later cement mortars, with little or no lime, are strong and fast setting, but with poor and uncertain bonding.

• Masonry cement is a pre-blended mixture of lime, Portland cement and other ingredients that can vary to suit conditions. When repointing

• Duplicate the original mortar mix

• Match the original mortar joint In applying the mortar, ensure the adjacent bricks are wet and that the mortar dries slowly under the shade of a tarpaulin if it is sunny. Allow it to cure properly

Mortar mixes

• The right mortar mix for a masonry wall is very important, so that it moves with the wall. If the original mortar has fared well, the intent is to duplicate its mix.

Cleaning

• Cleaning masonry is one of the most difficult jobs there is, particularly, when trying to remove paint. In general, there is no way to remove paint that will not also damage the surface of the masonry. The only solutions are to let the paint wear off over many years or repaint.

• Cleaning dirt off masonry is a simpler and safer procedure, although dirt does not, generally harm masonry and also can provide attractive qualities of character and age.



Cleaning methods include the following Water

• Cleaning masonry with water is the simplest, safest and least expensive method. It softens the dirt and rinses deposits from the surface.

• When water-cleaning, ensure the wall is watertight and mortar and caulking joints are sound, the least amount of water is used, and there are two to five weeks of dry weather before frost.

The different techniques are as follows:

• **Hand-scrubbing** - using a mild detergent and hosing down when complete. This is simple and effective.

• **Spraying** - using regular water pressure to create a fine mist applied periodically over several hours and hosing down when complete.

• **Pressure Washing** - using mechanized pressure. Great care should be taken on soft masonry and mortar, which can be destroyed if the pressure is too high and spray duration too long.

Chemical

• Chemicals are usually used to remove paint. It can, and usually does, destroy the surface of masonry. If contemplated, a test patch should be done to determine the extent of the damage.

• The general approach to chemical cleaning involves wetting down the masonry, applying the chemical and rinsing off. The different cleaners are as follows:

• Acid - usually hydrofluoric (HFI), is mixed in a maximum concentration of 5%, preferably 1%-3%. Acid should not be used to clean limestone, marble or sandstone.

• Alkali - can be used on acid-sensitive masonry such as limestone, marble and glazed brick. It has a potassium hydroxide, ammonia or caustic soda base. Alkali should not be used on stone with a high iron content.

• **Paint removers** - are often the only means of removing paint. Reaction with the masonry can vary, therefore a test patch should be conducted first.

Sandblasting

• Abrasive cleaning, usually sandblasting, is not acceptable for old and historic masonry. It removes the hard exterior surface of brick in particular, which then taken on moisture and rapidly deteriorates.

• Many older brick buildings which were sandblasted have subsequently been re-plastered as the brick became porous and crumbled.

• On stone, it can destroy details and texture.

STUCCO Traditional Composition



• Stucco was originally a lime and sand mix and applied in three coats to the wood lath. The first "scratch" coat bound the mix to the lath, the second coat built up the strength and the finish coat provided texture and colour.

• Animal hair and straw can sometimes be found in old stucco and were used as binders. In the early 1900's, Portland cement was added to the mix for additional strength.

• In conserving and restoring traditional stucco, the traditional composition and application should be revived. Stucco is an ancient material going back many centuries.

• Architecturally, over the past two hundred years stucco has had an uneven history. In the early to mid-1800s, it was used in a number of ways. One was to cover over rough field stone on a building elevation. The stucco was incised with lines to make the elevation appear as cut stone. This same technique was used also with lath and stucco on wood frame buildings.

Repair

• The most common damage to traditional stucco is cracking or falling away at the sides or edges. These can be repaired by removing to the lath base.

• Wetting the area and applying new coats of a mix as close as possible to the original. This should be left to dry slowly.

• Bulging is a more serious problem and usually denotes the stucco has come away from the lath.

• The stucco in the area of the bulge or the entire wall, should be removed and redone.

• A very difficult task is to have the new repair patch stucco math the old, particularly the colour.

• Two alternatives are available, either re-plaster the entire elevation, which can be costly, or paint.

• A latex paint is recommended as it breathes and is less susceptible to peeling. Only latex paint formulated for stucco should be used.

Conservation Principles

• Conserve traditional stucco walls. It is a rare and little used finish.

• When repairing, use the traditional ingredients and techniques, particularly the lime and sand mix. • When repairing stucco walls, analyze the stucco ingredients which may be Portland cement.

• Retain skilled craftsmen to restore stucco wall or build a new

WOOD SIDING

Introduction



• Wood siding was one of the most common sidings for historic buildings. Wood is vulnerable to decay through moisture and damp and requires a finish of paint or stain.

• Every effort should be made therefore, to preserve original wood siding, not only because it is authentic to the building but also because it's quality cannot be found.

• It is the deterioration of the finish that has frequently caused wood siding to be covered by insulated brick in the early 1900's and, more recently, by vinyl or aluminum siding. Conservation Principles

- Conserve original wood siding.
- If replacing, match the original profile.

• For new additions, select a wood siding that complements the style of the original historic building.

• Paint in period heritage colours.

Different Types of Wood Siding

• Wood is a traditional siding widely used in historic buildings and most appropriate for new additions. Wood siding includes tongue and groove, bevel, board and batten and shingle. Some of their characteristics are as follows:

1. Tongue and Groove – • This is a horizontal pine board with a 6" to 8" face locked together by a tongue and groove joint. The joints may be flush or, more commonly, V-grooved. Nailing is through the tongue, thereby eliminating surface nail heads. Finish is with paint or stain.

2. Bevel – • This is a horizontal pine or cedar board with a 4" to 8" face, overlapped at the top. Nailing is surface. Finish is paint or stain.

3. Board and Batten – • This consists of vertical 10" to 12" wide rough sawn or planed pine boards with $\frac{1}{4}$ " spaces between and 1"x2" battens over. Traditionally, the batten edges were mitred. Paint is the traditional finish.

4. Shingle – • Shingle siding comes in various profiles, including straight, scalloped and angled. It is often used selectively and decoratively at roof gables and as veranda handrails, with a paint finish.



Figure 3.19 Traditional sidings

Maintenance

• **Painting** - Painting is the most important maintenance item with wood siding. Ensure the paint work is in sound condition. For further information, refer to the Paint & Colour Guideline.

• **Split Boards** - Pry split boards apart and coat the interior faces with an epoxy resin glue. When tacky, push the split together, sand and spot paint.

• **Replacing Boards** - Cut out deteriorated sections only between the nearest studs, with circular saw and chisel. Using the removed section as a template, insert a new piece, nail and caulk end joints. Choosing the Right Siding for an Addition

• A key consideration is to ensure the siding complements the architectural style of the main building. If the main building is wood, it is best to match the original siding. If it is masonry, the wood siding should be complementary.

• Wood sidings vary in scale and character and traditionally suit different situations.

Choosing the Right Siding for an Addition

• Tongue and groove has the most refined appearance and is suitable for most building additions.

• Bevel edge is also a refined style but best suited for additions to humbler house types.

• While board and batten may be found on some delightful early building, it is utilitarian in scale and should be chosen with care. It best suits additions to early stone and log houses that have a similar hand-crafted texture and scale.

• If it is selected, the batten edges should be mitred to provide a more finished appearance.

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SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

SAR1502 – ARCHITECTURAL CONSERVATION

UNIT – IV– CASE STUDIES



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	Session – I
	Deterioration of Monuments and their Preservation
	Dr. T. S. Sridhar, LAS
	and
	Thiru R.Narayanan, Asst. Executive Engineer, Department of Archaeology, GoTN
INTR	ODUCTION
٠	India is known for its rich, diversified, cultural properties
٠	Monuments - World heritage sites, National monuments, State monuments
٠	UNESCO, ICOMOS, ICCROM, ICOM etc.
٠	Tamil Nadu is famous for temples, historical monuments, artistic sculptures, antique properties
*	Increased Vandalism and destruction of monuments due to urbanization, implementation of development projects
4	Need for conservation for benefit of posterity
	22 1422
Centra	al Act
٠	Central Government enacted the Ancient Monuments and Archaeological Sites and Remains Act, 1958 (24/1958)
٠	Manual of the Archaeological Survey of India, Volume I & II
Tamil	nadu State Act
*	Tamilnadu State Enacted the Tamilnadu Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1966 (25 / 1966)
*	Tamilnadu State Enacted the Tamilnadu Ancient and Historical Monuments and Archaeological Sites and Remains Rules, 1971
MON	UMENTS
٠	Any Structure, Erection or any Tumulus or Place of Interment, or any Cave, Rock Sculptures, Inscriptions or Monolith, which is of Historical, Archaeological or Artistic Interest or any Remains there of Includes
*	The Site of an Ancient Monument
٠	Such Portion of Land Adjoining the Site of an Ancient Monument as may be Required for Fencing
172	





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Revitalization Strategy for Historic Core of Ahmedabad

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Abstract

In India, dense historic urban settlements were developed with the intention of provision of spaces for adequate engagement of the people. Public squares and streets became important places of interaction. 'Historic core,' especially had public spaces meant for various socioeconomic groups. Ahmedabad city is a blend of a harmonious past and a vivacious present. Number of historical and architecturally important buildings were built during Muslim and Moghul rules. One of the first built structures within the walled city is the Bhadra fort, a citadel founded by sultan Ahmed Shah in 1411 with a huge public square in front, developed for purpose of procession and gathering. This Bhadra precinct went through various layers of transformation in different eras and now have become vulnerable due to congestion and encroachment. Though, a need for intervention was felt to bring back the lost vitality of the Bhadra precinct, it was realized that a comprehensive approach would be the necessity. Conservation and sensitive development approach was taken to tackle this problem through pedestrianization of the Bhadra precinct, re-routing of traffic and restoration of Bhadra fort. Larger level traffic and parking issues were also considered bevond the site. Alternative use of Bhadra fort as tourist information center was considered. Urban design guidelines were proposed for harmonious development in the surrounding area. This proposal was considered for funding under Jawaharlal Nehru National Urban Renewal Mission (JnNURM) and was implemented. Many issues were faced during implementation of Bhadra project due to contextualization of informal commercial, religious and other cultural activities. Political, social and administrative factors also played immense role in implementation of proposal. Now since Ahmedabad has achieved the status of World Heritage City through UNESCO certification further implementation of this project will be relatively easy due to envisaged strong political and administrative support

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Keywords

Revitalization; Restoration; Historic core; Intervention; Public Square; Bhadra; World Heritage City

1. Historic core as a place for public interaction

There are key buildings and spaces around, which the city arranges itself - a temple or Grand Mosque, a fort or a palace with market squares, etc. This place and the buildings give rich feeling of sense of belonging -continuity and identity. Historic urban settlements have been an asset to the city since decades. Public squares and streets became important means of interactions. 'Historic core,' especially had a public square meant for various strata of

pg. 45



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PRESERVATION OF THE HERITAGE VALUES OF IRAQI TRADITIONAL HOUSES



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SAHC2014 – 9th International Conference on Structural Analysis of Historical Constructions F. Peña & M. Chávez (eds.) Mexico City, Mexico, 14–17 October 2014

HERITAGE CONSERVATION IN INDIA: CHALLGENGES AND NEW PARADIGMS

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Keywords: Heritage Conservation, India, Structural Conservation, Challenges.

Abstract. Conservation of heritage structures is an interdisciplinary effort, wherein traditional knowledge on building materials, techniques and specifications are brought to the realm of current practitioners of conservation engineering, with the intent of merging them with modern tools and practices. Internationally, it is established practice that structural safety cannot be compromised in any conservation effort. Formal systems that recognise conservation of heritage structures as an interdisciplinary engineering effort, with structural safety as a critical determinant, do not exist in India. With one of the largest stocks of heritage structures in the world, lack of adequate quality and quantity of manpower is a serious bottleneck in India in addressing the task of understanding and protecting heritage structures from natural hazards, ageing and weathering effects. More importantly, in a country with strong spiritual roots, the approach to conservation of built heritage has to explore the basis of the ancient building system, the centrality of the spirit in the building activity and the philosophy of non-permanence of the material. Such an approach may be in contrast to established, internationally accepted approaches to conservation.

Hence, capacity building in structural safety-centric conservation engineering is a major challenge for India, with an urgent need to identify the existing diffused expertise in relevant sub-areas within conservation and forming a consortium for a holistic approach to the national grand challenge of protecting heritage structures. To achieve the intended goal, a national knowledge pool has to be developed by initiating concerted research, education and outreach activities in safety of heritage structures, coordinated and organised through a single national level institute, that can provide the much needed nationally-coordinated technical forum for exchange of ideas and training of stakeholder groups, primarily from implementing agencies (e.g. Archaeological Survey of India, State Archaeology Departments, etc.) and faculty members of engineering and architecture institutes. As a step to address the national need, IIT Madras is leading an effort to begin a formal approach to address safety of heritage structures through the National Centre for Safety of Heritage Structures (NCSHS). The current paper dwells on the challenges and the need for developing new paradigms in the heritage conservation scenario in India.



SAHC2014 – 9th International Conference on Structural Analysis of Historical Constructions F. Peña & M. Chávez (eds.) Mexico City, Mexico, 14–17 October 2014

ADAPTIVE REUSE AND RESTORATION OF A CHETTINADU MANSION, PUDUKOTTAI, TAMILNADU, INDIA

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Keywords: Chettinadu Architecture, Adaptive reuse, Restoration

Abstract. The reuse of a historic building becomes necessary for its economic, social and cultural sustainability. One such historic building, 'Chidambara Vilas' at Chettinadu region, Pudukottai, Tamilnadu, India is a 110 year old palatial mansion once a residence of a Nattukottai Chettiars, today turned in to a heritage hotel. The paper aims to study the conservation practices and principles applied to 'Chidambaran Vilas' during its conversion from a mansion to a luxury hotel. This paper through the case study will highlight three stages in the conservation practice of adaptive re use and restoration. First, the spatial planning of the mansion will be studied to illustrate how the new functions have been accommodated with minimal intervention and with due respect to the ideologies of the traditional dwelling. Secondly, the paper studies material restoration, as some of the materials and techniques used in Chettinadu mansions are very unique and available only in that region. Lastly, it looks at solutions to incorporate modern services and restoration for its research study lies in the fact that these conservation practices and restoration techniques can be taken as a model for other similar projects in the district where these mansions are in abundance and will therefore enable a sustainable conservation practice.





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RESEARCH ARTICLE

Effects of urbanization on historical heritage buildings in Kumbakonam, Tamilnadu, India

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KEYWORDS Urbanization; Built heritage; Historic town; Kumbakonam

Abstract

Urbanization is a common and inevitable occurrence everywhere. While growth and expansion are beneficial for many people and businesses, there is a potential for loss of historical areas that are the heritage value to people. This paper investigates the effects of urbanization on the heritage buildings in the historical-heritage temple town of Kumbakonam in Tamlinadu, India. Heritage temple towns are frequent targets for the rapid transition to urbanization that is often accompanied by alteration of historical areas. The primary objective of this study was to identify how urbanization could change the heritage characteristics in a temple town. An ordinal regression model was used to analyze urbanization data from the heritage town of Kumbakonam. Our findings revealed specific physical, socioeconomic, and socioaciturual factors of urbanization that caused identifiable and significant changes in the heritage characteristics of Kumbakonam. These factors play a significant role and would aid in the implementation of the Local Development Ran (LDP) for sustainable urban growth and preservation of the heritage character of Kumbakonam. © 2019 Higher Education Press Limited Company. Production and hosting by Elsevier B.V. on behalf of KeAI. This is an open access article under the CC BY-NC-ND tiensee (http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licenses.http://creativecommons.org/licens

1. Introduction

A recent United Nations report (2017) said that by the year 2050, 6% of the population would be concentrated in urban areas. Development, growth, and urbanization are inevitable to provide jobs for a burgeoning population, but new

guidelines for planning, development, and implementation need to be created that include factors like cultural and architectural heritage. The recent project on Urban Conservation Planning in Southeast Asia (2017) of the Getty Conservation Institute, is a good example of progressive thinking in urban planning. The report emphasized the

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DOCUMENTATION & CONDITION MAPPING FOR RESTORATION & REVITALISATION OF HISTORIC SHEESH MAHAL & CHAR BAGH COMPLEX IN PATIALA (PUNJAB), INDIA

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KEY WORDS: Documentation, Haritage Inventories, Condition Mapping, Heritage Management, Conservation, Revitalisation

ABSTRACT:

Located in the Northarn State of Punjab, the historic city of Patiala has always been a cantre of culture in north India, and has teen the evolution of its own distinct style of architecture with Rajpet and Maghal influences. The city is reasouned for its rich architectural heirings, Music, Craft, Sport and Cuisian. Tas fourth Maharja in Narinder Singh was a great patron of ett architectural and music and it was during his time that several palaces like the Moti Bagh Palace, Sheech Mahal and Banasur Bagh wave dougned followed by Baradari Palace. Laure it was Maharja Bängunder Singh (1900-1936) who made Patials States famous with his luvial liketyis. This paper describes the process followed for Documanization and condition assessment of the historic Sheech Mahal & Cher Bagh Complex in order to restore and revitables the palace building and the Mughal gardee. The exercise included Archival research, Field surveys, Condition Magping, investories using radional mathods as well as ciffs and preparation of restorations de construction shong with post conservation management manal. The Major challenges encoursed were identifying the correct documentation methodology for mapping as well as managing the large database generated on sits. The Documentation and Mapping was used as a significant tool to guide towards the conservation and Management strategy of the complex.

1. INTRODUCTION

1. INTRODUCTION 1.1 Context The city of Patiala was founded in 1764 by Baba Ala Singh on an ancient mound, "Prasthala", referred to in the Mahabharata. A man of vition and courage, Ala Singh carved out an independent principality from a petty Zamindari of 30 villages and under his successors, it expanded into a big State, touching the Shivaliks in north, Rajasthan in the couch and upper courses of the Jamuna and the Suteij. After the third Battle of Panipat in 1761 in which the Marathan in the found Shah Abdali. He bestowed upon Ala Singh, the drum and baanser, and his grandoun Amar Singh reside the title of Raja-tRajas na had his own mint. Baba Ala Singh laid the foundation of the fort lanown as Quila Mubarak, around which the present city of Patiala is built, which was the capital of the princely state of Patiala.

Patiala has always been a centre of culture in north India, and has seen the evolution of its own distinct style of architecture with Rajpat and Mughal influences. With royal patronage, a well established style of Hindustani mutice called the Patiala Gharran' came into existence, many of whose proponent came to Patiala after the distingaristic of the Mughal Court at Delhi in the 18th century. The fourth Maharaja Narinder Singh was a great patron of art, architecture and music and it was thring hits time that toweral palaces like the Moti Bagh Palace. Sheeth Mahal and Bansour Bagh were designed followed by Bardari Palace. Later it was Maharaja Bhupinder Singh (1900-1938) who made Patials State famous expecially the traditioni crafts have always been famous especially the traditioni Phulkari" ambroidery, colourfal Parandas (hair ornament), Nalas (decorative corfd), Depatus and Juttis (hose)

embroidered in elaborate motifs with gold thread. The city has a rick tradition of sports dating back to Baba Ala Singh who encouraged horsennaship, markumanhip and hunting. Laur Cricket was introduced and Patiala stats haft the highest cricket ground in the world at Chail (now in Himachal Pradesh). During colonial times, the Patiala Poto and Hockey team were internationally famous. Patiala is now a national centre of sports with the establishmeant of the National Institute of Sports in the Sheeth Mahal complex.

1.2 Sheesh Mahal and Char Bagh

Maharaja Narasadra Singh was a great patron of literature, music and fine arts. He invited many painters from Kangra and Rajarthan to paint the walls of Shaeah Mahal. Their works depict the poorty of Keakay. Surds and Bahari and the themes of these paintings embrace mythology, legands, Rage-Ragai, Nayak-Nayik and Bar-mans in Rajarkhani sityle. The walls and calings are sembellikhed in floral motifs. The museum has a rich collection of miniature paintings of the 19th century based on the Geet Gobinda and Jayradov's pootry. The Kangra paintings depict the Krishan Lila and the Rag-mala paintings of the Rajasthan and Mughal schools give visual meaning to the Ragas of Hinghustani classical music.

There are also fine objects of Tibetan art especially different types of metal sculpture. Ivery carvings of Punjab, royal woodan carved furniture, and a large number of Burmese and Kashmit carved objects are also exhibited. One can use the huge portraits of the rulers of Patials adoming the walls of museum hall. There are rure Janamisskih and Jam mamorcipts and the most valuable poems, Gulistan and Bustam by the famous Suf, Sheah Sadi of Shima, acquired by the Emperor Shah Jahan for his personal library.

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Values and Heritage Conservation Research Report The Cetty Conservation Institute, Los Angeles





Chapter-8

CONSERVATION OF HERITAGE SITES INCLUDING HERITAGE BUILDINGS, HERITAGE PRECINCTS AND NATURAL FEATURE AREAS

Conservation of heritage sites shall include buildings, artifacts, structures, areas and precincts of historic, aesthetic, architectural, cultural or environmentally significant nature (heritage buildings and heritage precincts), natural feature areas of environmental significance or sites of scenic beauty.

8.1 APPLICABILITY

This regulation shall apply to heritage sites which shall include those buildings, artifacts, structures, streets, areas and precincts of historic, architectural, aesthetic, cultural or environmental value (hereinafter referred to as Listed Heritage Buildings / Listed Heritage Precincts) and those natural feature areas of environmental significance or of scenic beauty including, but not restricted to, sacred groves, hills, hillocks, water bodies (and the areas adjoining the same), open areas, wooded areas, points, walks, rides, bridle paths (hereinafter referred to as 'listed natural feature areas') which shall be listed in notification(s) to be issued by the State Government / identified in Master Plan.

8.1.1 Definitions

a) "Heritage building" means and includes any building of one or more premises or any part thereof and/or structure and/or artifact which requires conservation and / or preservation for historical and / or architectural and / or artisanary and /or aesthetic and/or cultural and/or environmental and/or ecological purpose and includes such portion of land adjoining such building or part thereof as may be required for fencing or covering or in





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Introduction

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The obligation to conserve the architectural heritage of our local communities is as important as our duty to conserve the significant built heritage and its values or traditions of previous eras. More than ever, architectural heritage everywhere is at risk from a lack of appreciation, experience and care.

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