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Handbook of Conservation of Heritage Buildings



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Conservation of Heritage Buildings - A Guide

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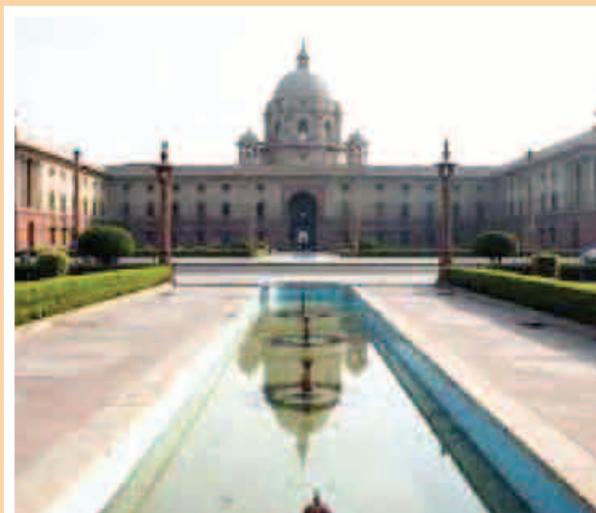
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Conservation of Heritage Buildings

- A Guide



Central Public Works Department

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सचिव भासा सरकार
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Foreword

Our heritage is diverse and includes buildings, monuments, gardens, cemeteries, landscapes and archaeological sites. Each one of these places contain elements that help tell its own individual story. It may be the design of a building, the material it was built from, the interior features like woodwork and cornicing, the paint colours or even the landscaping that are physical reminders of the place's story. For this reason, it is important that any changes to a heritage place respect its significant elements. Additions and alterations and any new development should complement the building's original scale, form and massing. The original or significant elements should be identifiable so that future generations can understand the story of the place.

I complement the Central Public Works Department on bringing out this Handbook on Conservation of Heritage Buildings. It will go a long way in creating awareness about conserving our rich Heritage and help the professionals in this field as a ready reckoner.

(Sudhir Krishna) 08.7.1

वी. के. गुप्ता
महानिदेशक
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Director General



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About the Book

The past is all around us. We live our lives against a rich backdrop formed by historic buildings, landscapes and other physical survivals of our past. But the historic environment is more than just a matter of material remains. It is central to how we see ourselves and to our identity as individuals, communities and as a nation. It is a physical record of what our country is and how it came to be. Building materials and styles can define region's localities and communities. Historic landscapes or iconic buildings can become a focus of community identity and pride. At a more local level a historic church or park can help define a neighborhood and create a sense of local cohesion.

As development pressures increase in our cities, more heritage buildings are being reused. The adaptation of heritage buildings presents a genuine challenge to architects and designers to find innovative solutions to produce some excellent examples of creative designs that retain heritage significance.

Over the past several years CPWD is maintaining the Heritage buildings like President Estate, Hyderabad House New Delhi, Parliament House New Delhi, Victoria Memorial Kolkatta, Mayo College Ajmer etc. Our Training Institute at Ghaziabad is imparting training on "Conservation of Heritage Buildings precincts and Environment" at regional level to bring awareness among the Architects and Engineers of CPWD about the conservation & restoration of the Heritage Buildings. A cell under the control of ADG (Arch) with CA (NDR) as Chairman has also been constituted to render advice to the Ministry Of Urban Development, other ministries and the field units within CPWD on Heritage issues.

The creation of this manual brings an overview about the conservation of Heritage buildings of to the Architects & Engineers. Architects and would be a very useful ready reckoner for them.

We look forward to your feedback and experiences on using this handbook.

July 2013

V.K. Gupta
Director General
Central Public Works Department
Minister of Urban Development





भारत सरकार
GOVT OF INDIA
केन्द्रीय लोक निर्माण विभाग
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तिथि /Dated :

ACKNOWLEDGEMENT

The idea to have a booklet namely "**Conservation Of Heritage Buildings**", originated during the discussions held with DG, CPWD, Shri V.K.Gupta, based on the vision and approach of Hon'ble MoUD Shri Kamal Nath and Secretary, MoUD, Dr. Sudhir Krishna. The work on first edition of the booklet was started by Architecture wing of CPWD in June 2013.

I would like to thank the Hon'ble MoUD Cabinet Minister Shri Kamal Nath for agreeing to release this booklet so that the "**Conservation of Heritage Buildings**" may benefit the professionals, practitioners and the common man in this country. We are also thankful to the Secretary, MoUD, Dr. Sudhir Krishna for his vision, support and endorsement of the booklet for its widespread usage across the country. We are also thankful to Shri V.K.Gupta, Director General, CPWD, for his keen interest in the subject and to release the book from an appropriate forum so that the benefits of this booklet reach beyond CPWD.

I would also like to acknowledge the sincere efforts and hard work put in by the technical advisory team comprising of Architect Shri Anil Kumar Grover, Asst. Architect Shri Rajesh Singh. The Team members closely interacted with each other and helped to bring out this booklet to be used by professionals like Architects & Engineers.

Over and above, our thanks are due to all individuals who helped to get this booklet published.

I wish that the book reaches the masses and enlighten the professionals and common man about the value and integrity of the Heritage Sites.

Sipra Mitra
(SIPRA MITRA)
ADG (Arch.) CPWD

Introduction

Heritage is deemed to mean those buildings, artefacts, structures, areas and precincts that are of historic, aesthetic, architectural or cultural significance and should include natural features within such areas or precincts of environmental significance or scenic beauty such as sacred groves, hills, hillocks, water bodies (and the areas adjoining the same), open areas, wooded areas, etc. It must be recognized that the 'cultural landscape' around a heritage site is critical for the interpretation of the site and its built heritage and thus is very much its integral part.

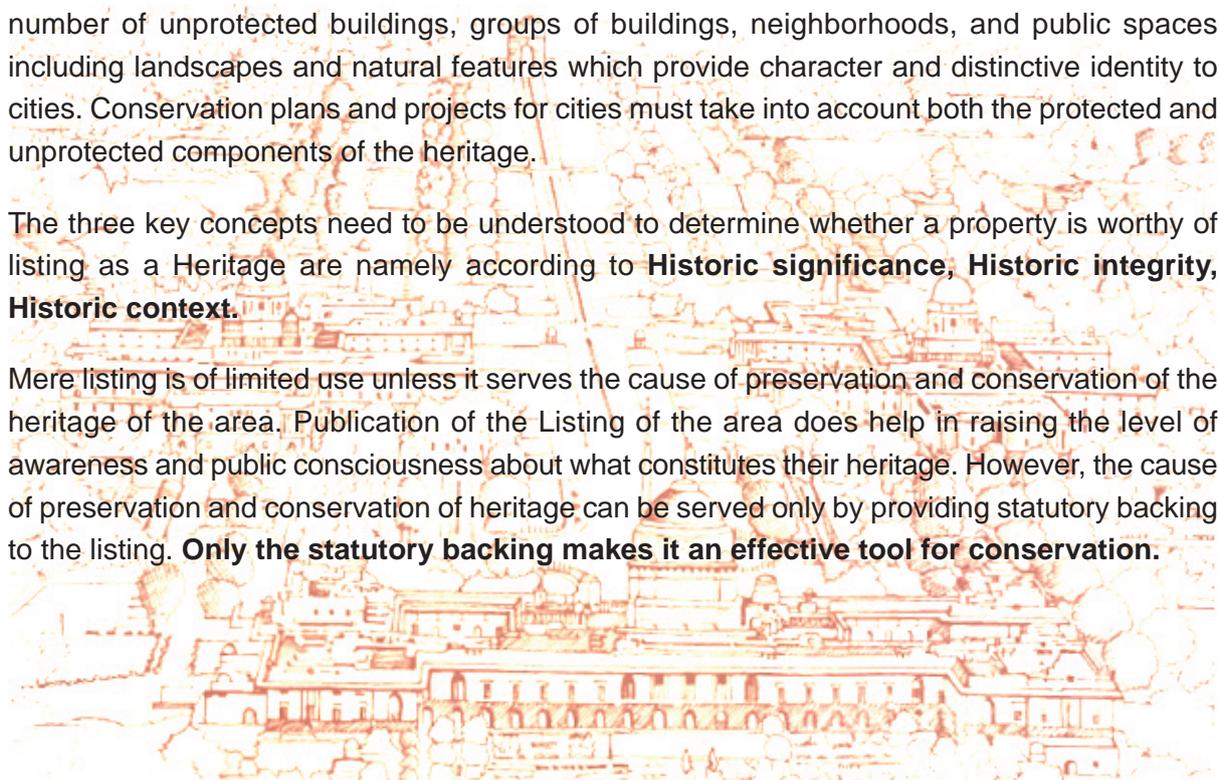
The conservation of built heritage is generally perceived to be in the long term interest of society. This can be better understood if categorized under 'economic', 'cultural', and 'environmental', although they are not mutually exclusive and, indeed, they are often interlocked.

Most buildings are capable of beneficial use, whether for their original purpose or for some other use. Buildings and their precincts need to be used in order to survive and such use can be made into an economically viable enterprise.

Heritage comprises archaeological sites, remains, ruins, and monuments protected by the Archaeological Survey of India (ASI) and their counterparts in the States, and also a large number of unprotected buildings, groups of buildings, neighborhoods, and public spaces including landscapes and natural features which provide character and distinctive identity to cities. Conservation plans and projects for cities must take into account both the protected and unprotected components of the heritage.

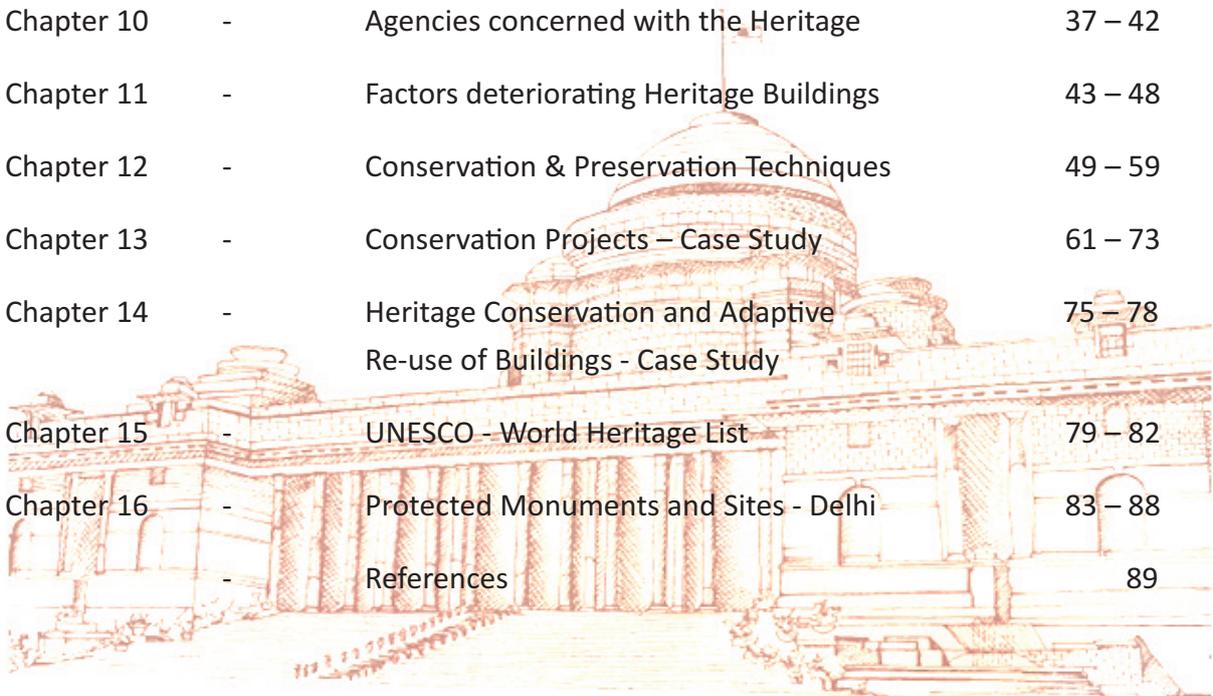
The three key concepts need to be understood to determine whether a property is worthy of listing as a Heritage are namely according to **Historic significance, Historic integrity, Historic context.**

Mere listing is of limited use unless it serves the cause of preservation and conservation of the heritage of the area. Publication of the Listing of the area does help in raising the level of awareness and public consciousness about what constitutes their heritage. However, the cause of preservation and conservation of heritage can be served only by providing statutory backing to the listing. **Only the statutory backing makes it an effective tool for conservation.**



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Definitions

“Heritage building” means and includes any building of one or more premises or any part thereof 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 or in any manner preserving the historical and/or architectural and/or aesthetic and/or cultural value of such building.

“Heritage Precincts” 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.

“Conservation” 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” means and includes maintaining the fabric of a place in its existing state and retarding deterioration.

“Restoration” 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.

“Reconstruction” 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. This shall not include either recreation or conjectural reconstruction.

“Authority” means National Monuments Authority

“Competent Authority” means an officer not below the rank of Director of archaeology or Commissioner of archaeology of Central or State government or equivalent rank.

“Construction” means any erection or a building, including any addition or extension thereto either vertically or horizontally.

“Prohibited Area” means area of the protected monuments declared as of national importance and extending to a distance of 100 meters in all direction.

“Regulated Area” 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.

Brief History of Conservation



In India, the first instance of conservation was when Emperor Ashoka ordered to conserve wildlife in the 3rd century BC. Then in the 14th century AD, Firuz Shah Tughlaq ordered to protect ancient buildings. Later, during the British Rule, the “Bengal Regulation (XIX)” was passed in 1810, and the “Madras Regulation (VII)” was passed in 1817. These regulations vested the government with the power to intervene whenever the public buildings were under threat of misuse.

Then in 1863, Act XX was passed which authorised the government to “prevent injury to and preserve buildings remarkable for their antiquity or for their historical or architectural value”. However, many historic structures were destroyed by the government (pre independence) itself in Shahjahanabad. The Archaeological Survey of India (ASI) was established in 1861 to initiate legal provision to protect the historical structures all over India. The “Ancient Monuments Preservation Act (VII)” was passed in 1904 which provided effective preservation and authority over the monuments, and in 1905 for the first time, 20 historic structures in Delhi were ordered to be protected.

At the time of independence, 151 buildings and complexes in Delhi were protected by the central ASI. The State Department of Archaeology was set up in 1978 in Delhi, but it lacks the power to acquire or protect buildings, and merely looks after some monuments de-notified by ASI. In 1984, Indian National Trust for Art and Cultural Heritage (INTACH) was founded to stimulate awareness for conservation of cultural heritage among the people.



Criteria for Listing Heritage Building

The three key concepts need to be understood to determine whether a property is worthy of listing.

- Historic significance
- Historic integrity
- Historic context

Historic significance is the importance of a property to the history, architecture, archaeology, engineering or culture of a community, region or nation.

In selecting a building, particular attention should be paid to the following :

- 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. Rajpath in Lutyen's New Delhi

Historic integrity 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 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 listers to understand a historic property as a product of its time.

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. This work could be done in the libraries and archives of various universities and other institutions of the central government, the state government and private individuals or trusts. Many of the museums established by the central government or state governments or even private museums can provide interesting information. In a given area, local experts, professionals and scholars could also provide the required guidance and help.

This would ensure that no important structure or representative style of building is left out. 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 may 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.

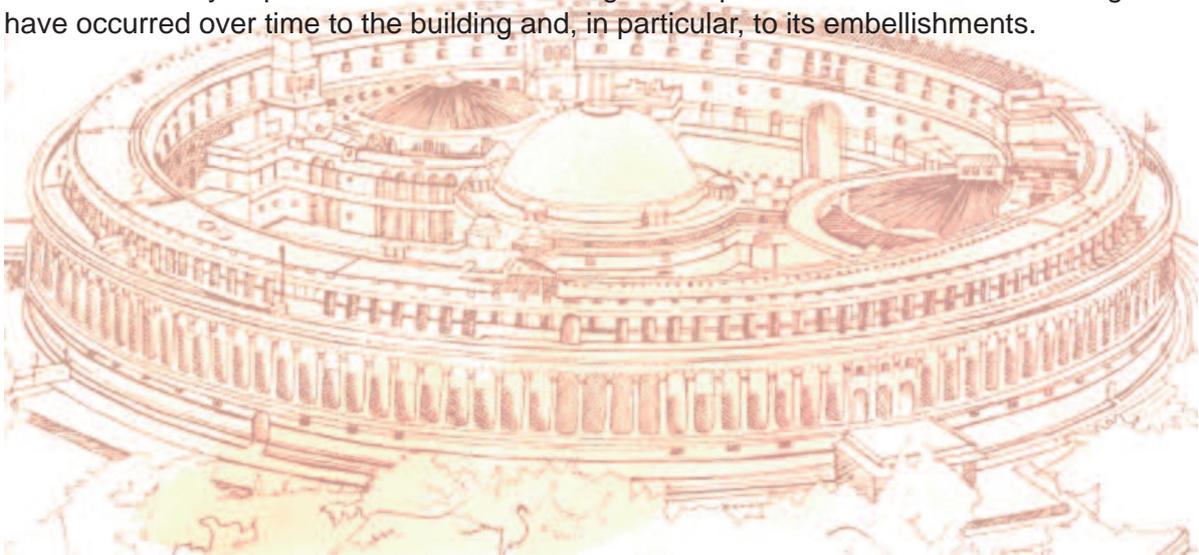
Field Work

Before launching into field work, a reliable map of the area should be collected and its various constituents. Survey of India maps and those available with the state department of town and country planning should prove useful. However, at the field level, ward maps available with the municipal/ cantonment/ panchayat authorities may be of greater help. In some cities, transport network maps (such as by Eicher in Delhi) may be equally useful.

Field work requires lot of work to scan the heritage properties and recording information for each property in the prescribed format. 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 knowledgeable residents 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. By conducting a dialogue with the residents, one can determine the changes to the property over time, ownership details, historic function and activities, association with events and persons, and the role of the property in local, regional or national history.

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.



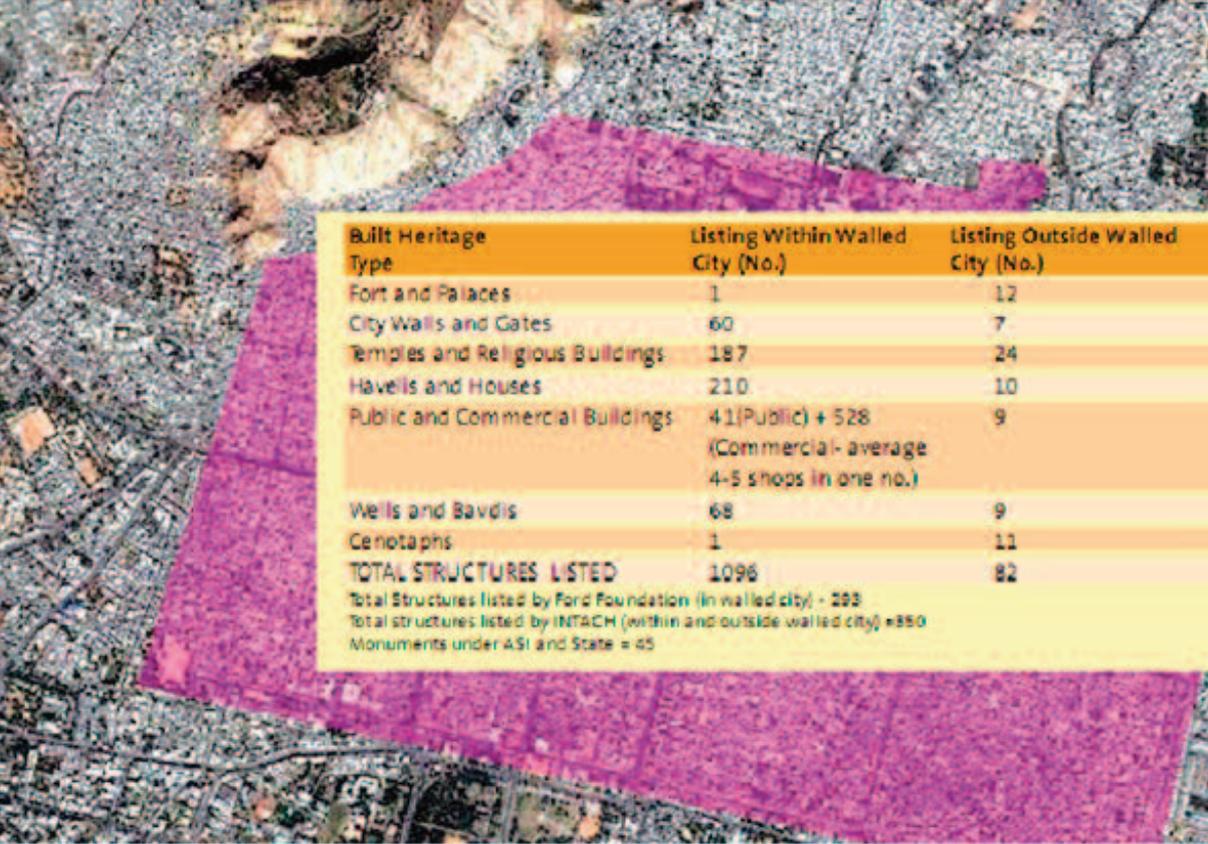
Mapping of Historical Settlements

The major short-coming of the current list of legally protected architectural heritage is that it does not recognise 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.

Case Study of Udaipur, Rajasthan

EXAMPLES OF MAPPING - HERITAGE TYPES

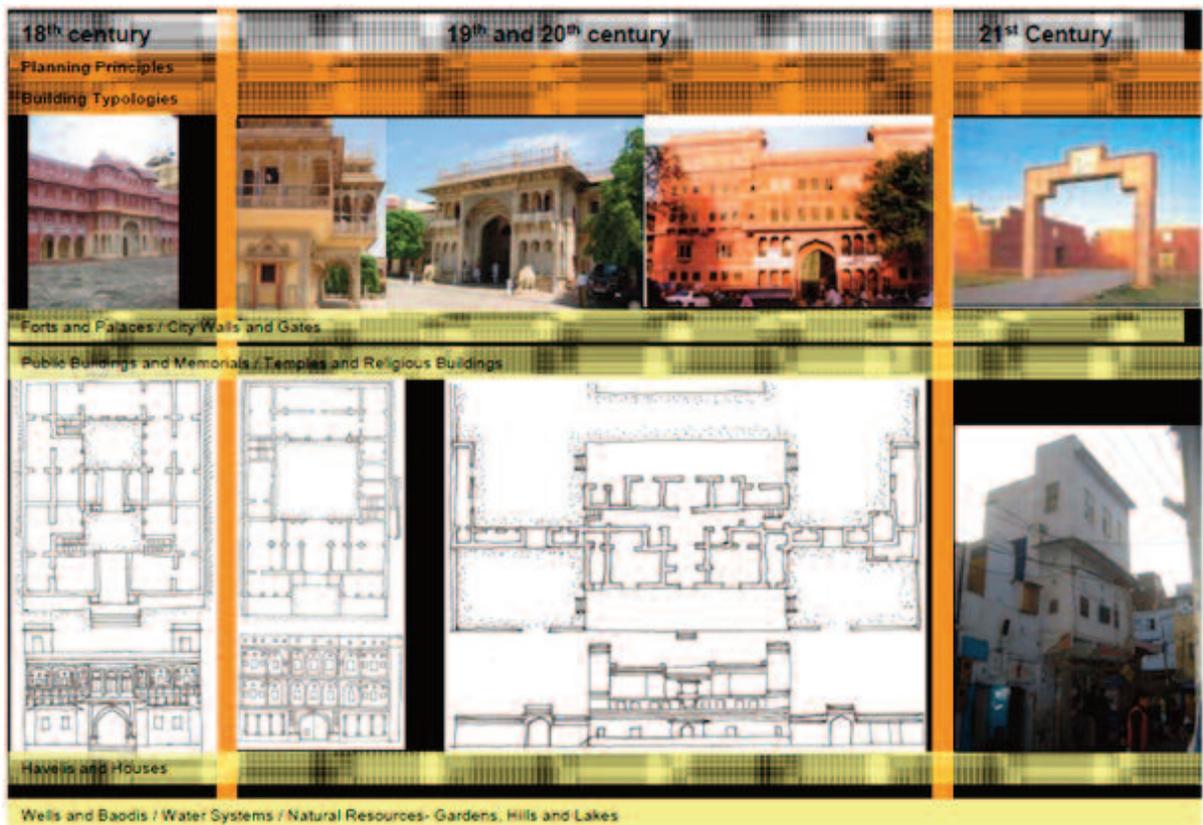


Built Heritage Type	Listing Within Walled City (No.)	Listing Outside Walled City (No.)
Fort and Palaces	1	12
City Walls and Gates	60	7
Temples and Religious Buildings	187	24
Havelis and Houses	210	10
Public and Commercial Buildings	41(Public) + 528 (Commercial- average 4-5 shops in one no.)	9
Wells and Bavdis	68	9
Cenotaphs	1	11
TOTAL STRUCTURES LISTED	1096	82
*Total Structures listed by Ford Foundation (in walled city) - 293		
*Total structures listed by INTACH (within and outside walled city) = 850		
*Monuments under ASI and State = 45		

MAPPING SUBTYPES



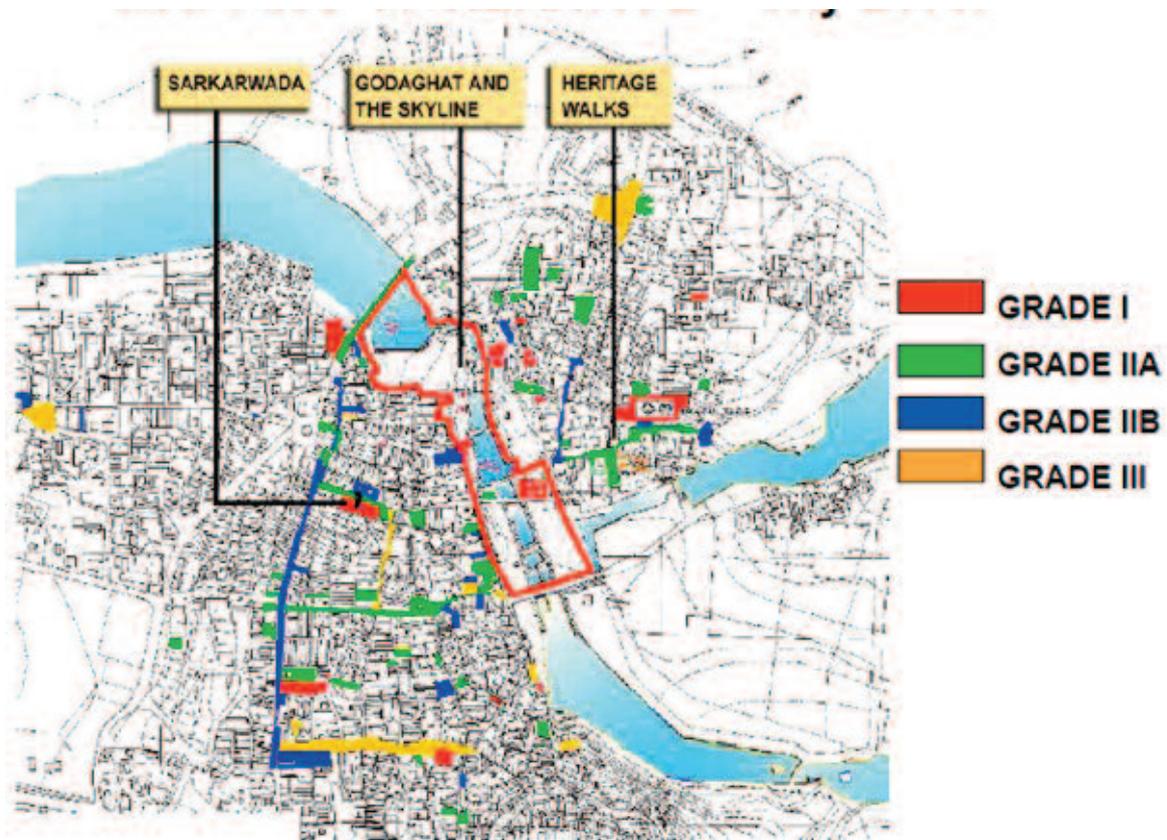
DOCUMENTING CHANGES THROUGH TIME



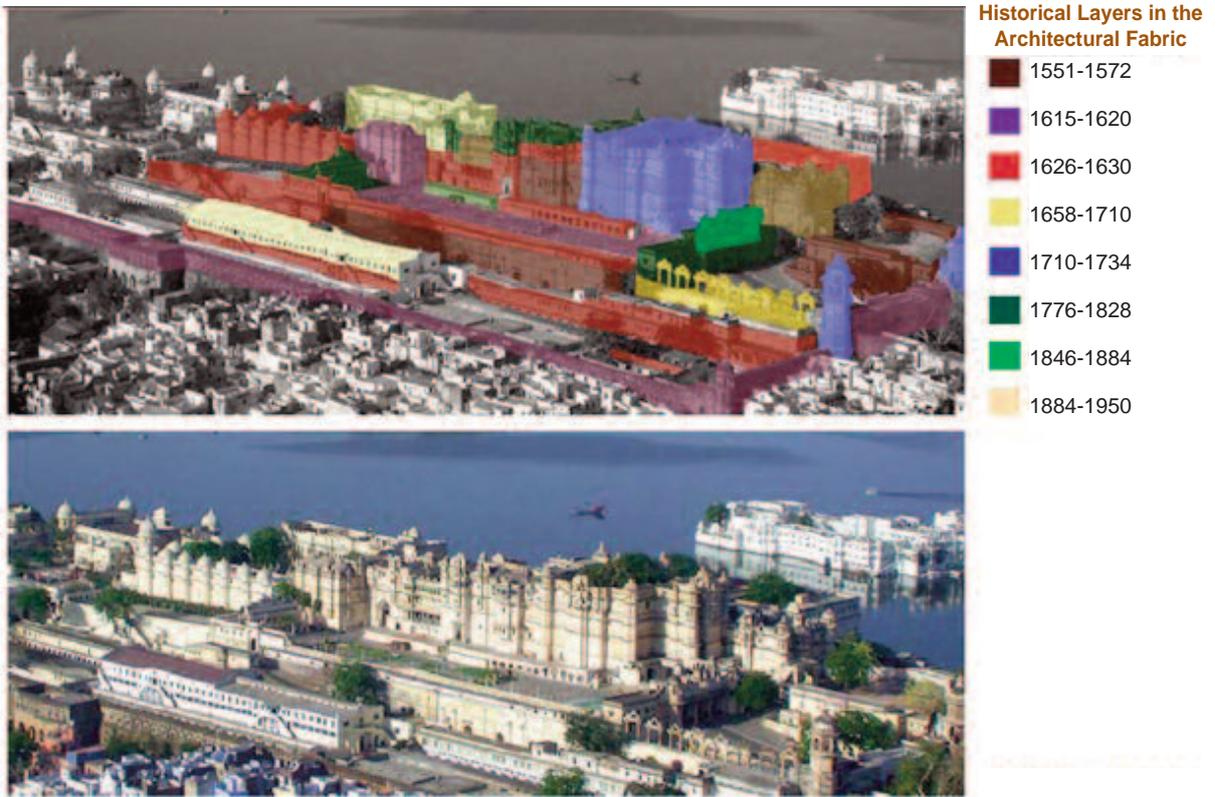
EVALUATION - GRADING OF LISTED HERITAGE

GRADE	TYPOLOGIES									Total
	State and Central protected	Wadas	Religious	Maths Dharmas shalas Lodges	Public Bldgs.	Water Bodies, Natural Features	Bridges Chowks / Lanes	Memorial	Neigh- borhoods	
Grade - I	2	1	19	Nil	3	4	Nil	2	Nil	31
Grade - II A	Nil	36	19	8	11	4	5	1	1	85
Grade - II B	Nil	29	12	6	4	1	4	Nil	1	57
Grade - III	Nil	6	15	1	4	1	7	Nil	Nil	34
Total	2	72	65	15	22	10	16	3	2	207

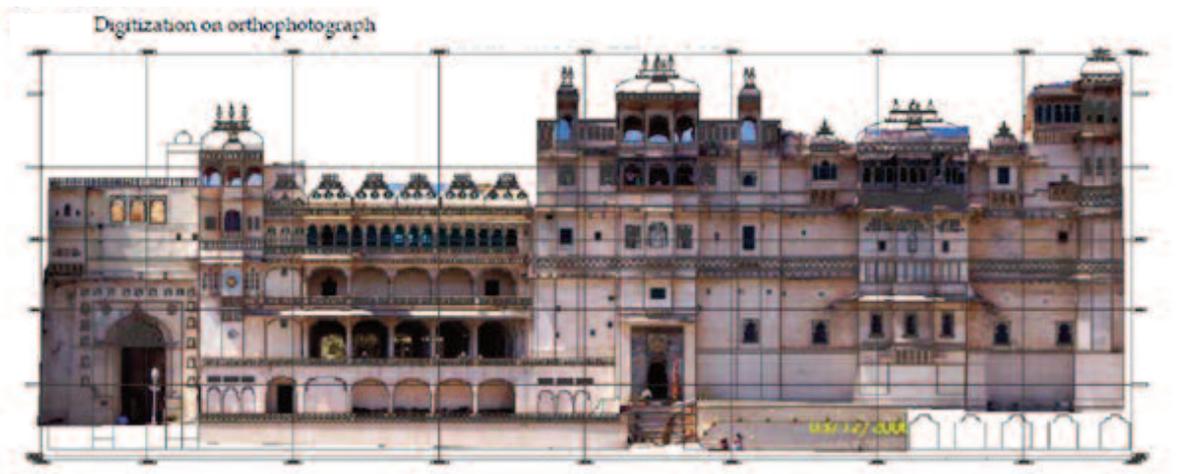
MAPPING OF HERITAGE - City Level



MAPPING OF HERITAGE - Precinct Level



MAPPING OF HERITAGE - Precinct Level



Grading of Heritage Buildings

The primary objective of listing is 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. This process must be undertaken in a rigorous and transparent manner by a multi-disciplinary team of experts whose recommendations should be available for public scrutiny. The importance of this process cannot be underestimated because its results determine subsequent conservation decisions. Such hierarchical categorisation facilitates the prioritisation of decisions relating to the future of architectural heritage and sites.

This Charter 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 (for example, 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). The decision to apply the principles enunciated in this Charter to Grade II buildings must invariably be based on the concurrence of the Advisory Committees of INTACH (Article 7.2.5).

Article 2.6

While the Western ideology of conservation advocates minimal intervention, India's indigenous traditions idealise the opposite. Western ideology underpins official and legal conservation practice in India and is appropriate for conserving protected monuments. However, conserving unprotected architectural heritage offers the opportunity to use indigenous practices. This does not imply a hierarchy of either practice or site, but provides a rationale for encouraging indigenous practices and thus keeping them alive. Before undertaking conservation, therefore, it is necessary to identify where one system should be applied and where the other. For this purpose, it is necessary at the outset to make a comprehensive inventory of extant heritage, both tangible and intangible, and separate it into two categories:

A.i Buildings and sites protected by ASI, SDA and other government or non-government agencies. Only the official and legal instruments of conservation and internationally accepted principles should be adopted here;

A.ii Other listed buildings and sites which, though not protected by ASI, SDA and other government or non-government agencies, possessing heritage value or significance equivalent to that of protected monuments. Here too, the official and legal instruments should be adopted for their conservation;

B. The remaining listed buildings and sites both modern and historic, including those produced within the last hundred years. Here, the conservation strategy may adopt either the official and legal instruments of conservation or those rooted in indigenous building traditions. Hybrid strategies, inventively combining indigenous and official practices, can also be employed to conserve this heritage category. The decision to adopt indigenous practices should be based on the availability of skilled and knowledgeable raj mistris. In all cases a rationale for the

decision taken to adopt one or another system of conservation must be recorded.

The process of listing should be constantly upgraded and the list updated in keeping with the availability of fresh information, financial and material resources, advances in technology and developments in the understanding of architectural heritage and its constituents.

Article 7.2.5

To further facilitate its goal of protecting architectural heritage, INTACH should establish inter-disciplinary Advisory Committees at the regional and national level. These Committees should act as clearing-houses for awarding grading for listed buildings and sites, conservation plans, assessment reports, scientific studies, funding proposals, legal and administrative measures for conserving the unprotected architectural heritage.

Listed Heritage Buildings / Listed Heritage Precincts may be graded into three categories. The definition of these and basic guidelines for development permissions are as follows:

Listing does not prevent change of ownership or usage. However, change of use of such Listed Heritage Building / Listed Precincts is not permitted without the prior approval of the Heritage Conservation Committee. Use should be in harmony with the said listed heritage site.

Grade-I	Grade-II	Grade-III
<p>(A) Definition :</p> <p>Heritage Grade-I 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.</p>	<p>Heritage Grade-II (A&B) 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.</p>	<p>Heritage Grade-III comprises building and precincts of importance for townscape; that evoke architectural, aesthetic, or sociological interest through not as much as in Heritage Grade-II. These contribute to determine the character of the locality and can be representative of lifestyle of a particular community or region and may also be distinguished by setting , or special character of the façade and uniformity of height, width and scale.</p>
<p>(B) Objective:</p> <p>Heritage Grade-I richly deserves careful preservation.</p>	<p>Heritage Grade-II deserves intelligent conservation</p>	<p>Heritage Grade-III deserves intelligent conservation (though on a lesser scale than Grade-II and special protection to unique features and attributes).</p>

<p>(C) Scope for Changes:</p> <p>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.</p>	<p>Grade-II(A) : Internal changes and adaptive re-use may by and large be allowed but subject to strict scrutiny. Care would be taken to ensure the conservation of all special aspects for which it is included in Heritage Grade-II.</p> <p>Grade-II (B) : In addition to the above, extension or additional building in the same plot or compound could in certain circumstances, be allowed provided that the extension / additional building is in harmony with (and does not detract from) the existing heritage building(s) or precincts especially in terms of height and façade.</p>	
<p>(D) Procedure:</p> <p>Development permission for the changes would be given on the advice of the Heritage Conservation Committee.</p>	<p>Development permission for the changes would be given on the advice of the Heritage Conservation Committee.</p>	<p>Development permission for changes would be given on the advice of the Heritage Conservation Committee.</p>
<p>(E) Vistas / Surrounding Development :</p> <p>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.</p>	<p>All development in areas surrounding Heritage Grade-II shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-II</p>	<p>All development in areas surrounding Heritage Grade-III shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-III.</p>

Model Building Bye-laws

*(Conservation of Heritage Sites including Heritage Buildings, Heritage precincts and Natural feature areas:
Town & Country Planning Organisation Ministry of
Urban Development, Govt. of India)*

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.

- (i) 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.
- (ii) Provided that, before granting any permission for demolition or major alterations / additions to listed buildings (or buildings within listed streets or precincts), or construction at any listed natural features, or alteration of boundaries of any listed natural feature areas, objections and suggestions from the public shall be invited and shall be considered by the Heritage Conservation Committee.
- (iii) Provided that, only in exceptional cases, for reasons to be recorded in writing, the Commissioner, Municipal Corporation/ Vice Chairman, Development Authority may refer the matter back to the Heritage Conservation Committee for reconsideration. However, the decision of the Heritage Conservation Committee after such reconsideration shall be final and binding.

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 or any other reason, 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.

It shall be open to the Heritage Conservation Committee to consider a request for re-building/reconstruction of a Heritage Building that was unauthorisedly demolished or damaged, provided that the total built-up area in all floors put together in such new construction is not in excess of the total built-up area in all floors put together in the original Heritage Building in the same form and style in addition to other controls that may be specified.

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 by the Commissioner, Municipal Corporation / Vice- Chairman, Development Authority on the advice of the Heritage Conservation Committee. Before being finalized, objections and suggestions of the public are to be invited and considered. The said list to which the regulation applies shall not form part of this regulation for the purpose of Building Bye-laws. The list may be supplemented from time to time by Government on receipt of proposal from the agency concerned or by Government suo motto provided that before the list is supplemented, objections and suggestions from the public be invited and duly considered by the Commissioner, Municipal Corporation/Vice-Chairman Development Authority/and/or State Government and / or the Heritage Conservation Committee.

When a building or group of buildings or natural feature areas are listed it would automatically mean (unless otherwise indicated) that the entire property including its entire compound / plot boundary along with all the subsidiary structures and artefacts, 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 to be appointed by the Government and for reasons to be recorded in writing, 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 (where deemed necessary by the Heritage Conservation Committee) 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 Commissioner Municipal Corporation/ Vice- Chairman, Development Authority on the advice of the Heritage Conservation Committee.

Before finalizing the special separate regulations for precincts, streets, natural features, areas, the draft of the same shall be published in the official gazette and in leading newspapers for the purpose of inviting objections and suggestions from the public. All objections and suggestions received within a period of 30 days from the date of publication in the official gazette shall be considered by the Commissioner, Municipal Corporation / Vice- Chairman, Development Authority / Heritage Conservation Committee.

After consideration of the above suggestions and objections, the agency concerned, acting

on the advice of the Heritage Conservation Committee shall modify (if necessary) the aforesaid draft separate regulations for streets, precincts, areas and natural features and forward the same to Government for notification.

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 (even if they are not included in a Heritage Precinct) 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 / owners agree to maintain the listed heritage building as it is in the existing state and to preserve its heritage state with due repairs and the owner / owners / lessees give a written undertaking to that effect, the owner / owners / 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. The development within the precinct or in the vicinity of heritage sites shall be in accordance with the guidelines framed by the Commissioner, Municipal Corporation / Vice- Chairman, Development Authority on the advice of the Heritage Conservation Committee or separate regulations / guidelines, if any, prescribed for respective zones by Municipal Corporation / Development Authority.

Restrictive covenants

Restrictions existing as imposed under covenants, terms and conditions on the leasehold plots either by the State Government or by Municipal Corporation of the city/town or by Development Authority shall continue to be imposed in addition to Development Control Regulations. However, in case of any conflict with the heritage preservation interest/environmental conservation, this Heritage Regulation shall prevail.

Grading of the listed buildings / listed precincts (As mentioned in chapter-6)

Opinion of the heritage conservation committee

Nothing mentioned above should be deemed 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, especially in areas

designated by them, that the exterior design and height of buildings should have their approval to preserve the beauty of the area.

Signs and outdoor display structures / including street furniture on heritage sites

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.

Composition of heritage conservation committee

The Heritage Conservation Committee shall be appointed by the State Government comprising of :

- | | |
|---|------------------|
| (i) Secretary (UD) | Chairman |
| (ii) In charge Architecture, State PWD | Member |
| (iii) Structural Engineer having experience of ten years in the field and membership of the Institution of Engineers, India | Member |
| Architect having 10 years experience | |
| A) Urban Designer | Member |
| B) Conservation Architect | Member |
| (iv) Environmentalist having in-depth knowledge and experience of 10 years of the subject . | Member |
| (v) Historian having knowledge of the region having 10 years experience in the field | Member |
| (vi) Natural historian having 10 years experience in the field | Member |
| (vii) Chief Town Planner, Municipal Corporation | Member |
| (viii) Chief Town Planner, Development Authority | Member |
| (ix) Chief Architect, Development Authority | Member |
| (x) Representative of State Archeological Department | Member |
| (xi) Chief Town Planner, State Town & Country Planning Department | Member-Secretary |
| (a) The Committee shall have the powers to co-opt upto three additional members who may have related experience. | |
| (b) The tenure of the Chairman and Members of other than Government Department / Local Bodies shall be three years. | |

The terms of reference of the Committee shall inter alia be:

- (i) to advice the Commissioner, Municipal Corporation/ Vice- Chairman, Development Authority whether development permission is to be granted under Building Bye-Laws No.8.3 and the conditions of permission (vide BBL No. 8);
- (ii) to prepare a supplementary list of heritage sites, which include buildings artifacts, structures, streets, areas, precincts of historic, aesthetic, architectural, cultural, or environmental significance and a supplementary list of natural feature areas of

environmental significance, 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 etc. to which this Building Bye-Law would apply.

- (iii) To advise whether any relaxation, modification, alteration, or variance of any of the Building Bye-laws;
- (iv) To frame special regulations / guidelines for precincts and if necessary for natural feature areas to advise the Commissioner, Municipal Corporation/ Vice- Chairman, Development Authority regarding the same;
- (v) To advise whether to allow commercial / office/ hotel use in the (name the areas) and when to terminate the same;
- (vi) To advise the Commissioner, Municipal Corporation/ Vice- Chairman, Development Authority in the operation of this Building Bye-law to regulate or eliminate/erection of outside advertisements/bill boards/street furniture;
- (vii) To recommend to the Commissioner, Municipal Corporation/ Vice- Chairman Development Authority guidelines to be adopted by those private parties or public / government agencies who sponsor beautification schemes at heritage sites;
- (viii) To prepare special designs and guidelines / publications for listed buildings, control of height and essential façade characteristics such as maintenance of special types of balconies and other heritage items of the buildings and to suggest suitable designs adopting appropriate materials for replacement keeping the old form intact to the extent possible.
- (ix) To prepare guidelines relating to design elements and conservation principles to be adhered to and to prepare other guidelines for the purposes of this Regulation;
- (x) To advise the Commissioner, Municipal Corporation / Vice- Chairman, Development Authority/ on any other issues as may be required from time to time during course of scrutiny of development permissions and in overall interest of heritage / conservation;
- (xi) To appear before the Government either independently or through or on behalf of the Commissioner, Municipal Corporation / Vice-Chairman, Development Authority in cases of Appeals under Development Authority/Municipal Corporation Act in cases of listed buildings / heritage buildings and listed precincts / heritage precincts and listed natural feature areas.

Implications of listing as heritage buildings

The Regulations do not amount to any blanket prevention of demolition or of changes to Heritage Buildings. The only requirement is to obtain clearance from Commissioner, Municipal Corporation/ Vice- Chairman Development, Authority and Heritage Conservation Committee from heritage point of view.

Ownership not affected

Sale and purchase of Heritage Buildings does not require any permission from Municipal Corporation of the city/town/ Development Authority/or Heritage Conservation Committee. The Regulations do not affect the ownership or usage. However, such usage should be in harmony with the said listed precincts / buildings. Care will be taken to ensure that the development permission relating to these buildings is given within 60 days.

Ancient Monuments and Archaeological Sites and Remains Act – 2010

(Salient Features)

1. The Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010 hereinafter referred to as the Amendment Act has been enacted to amend the Ancient monuments and Archaeological Sites and Remains Act, 1958 and to make provision for validation of certain actions taken by the Central Government under the said Act.
2. The limits of prohibited area and regulated area around the monuments, archaeological sites and remains declared by the Central Government as protected have been specified in the principal Act as 100 m and 200 m, respectively. The limits so fixed may be further extended on the basis of gradation and classification of the monuments, archaeological sites and remains to be done by the National Monument Authority, which is to be constituted by the Central Government by virtue of the Amendment in the principal Act.
3. The Authority shall have a full time Chairperson and five full time and five part-time members having proven experience and expertise from the fields of archaeology, town and country planning, architecture, heritage, conservation architecture or law with a tenure of three years.
4. Henceforth, **no permission for construction of any public projects or any other nature shall be granted in the prohibited areas of the protected monument and protected area.** However, permission for repair and renovation could be granted by the Competent Authority, to be specified by the Central Government, on the recommendation of the National Monument Authority, subject to condition that the building or structure is pre-1992 or permission for construction or reconstruction of such building or structure had been granted by the Archaeological Survey of India.
5. The Amendment Act defines ‘construction’ which means any erection of a structure or a building, including any addition or extension thereto either vertically or horizontally, but does not include, any re-construction, repair and renovation of any existing structure or building, or construction, maintenance and cleansing of drains and drainage works and of public latrines, urinals and similar conveniences, or the construction and maintenance of works meant for providing supply of water for public, or the construction or maintenance, extension, management for supply and distribution of electricity to the public; or provision for similar faculties for publicity. **[Section 2(dc)]**

Similarly, ‘reconstruction’ has also been defined as any erection of a structure or building to its pre-existing structure, having the same horizontal or vertical limits. **[Section 2 (k)]**

To avoid any ambiguity in interpretation, the Act has defined the term ‘repair’ and ‘renovation’ which means alteration to a pre-existing structure or building, but shall not include ‘construction’ or ‘reconstruction’. **[Section 2 (m)]**

6. There is also a provision in the Act to further **extend the prohibited area beyond 100 meters** having regard to the classification of any protected monument or protected area on the recommendation of 'National Monument Authority' by the Central Government. **[Section 2 (ha) and 20A]**

With this definition, the prohibited area has extent not only horizontally but also vertically and covers even below the surface.

7. The regulated area, according to the Amendment Act means every area, beginning at the limit of prohibited area in respect of every ancient monument and archaeological site and remains, extending to a distance of 200 hundred meters in all directions. **This 200 meters regulated area could further be extended** having regard to the classification of any protected monument or protected area on the recommendation of 'National Monument Authority' by the Central Government. **[Section 2(l) and 20B]**

With this definition, the regulated area has extent not only horizontally but also vertically and covers even below the surface.

8. The Act provides for undertaking survey of all prohibited areas and regulated areas by the ASI for the purpose of preparing detailed site plans within a time limit to be specified by the Central Government. Responsibility has also been given to the ASI to identify all construction of whatever nature made on and after 16th June, 1992 in all prohibited and regulated areas and to submit a report from time to time to the Central Government. **The ASI has been given authority under the Act to call for information from the local bodies and other authorities.**
9. **The Amendment Act provides that none other than an archaeological officer can carry out any construction in any prohibited area.** This provision means that no construction activity can be taken up in the prohibited areas of the protected monuments and protected areas. The authority for undertaking construction activities in the prohibited area has been given to the archaeological officer keeping in view the requirements to enhance the visitors experience, which may require erection of structures like toilets, sculpture shed, museum, interpretations centre, publication counter, ticket book office, water kiosk, small cafeteria, etc.
10. The Act provides that no permission, including carrying out any public work or project essential to the public or other constructions, shall be granted in any prohibited area on and after the date on which the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act 2010 comes into force. After the enforcement of the Act, 2010, public work or project essential to the public or other constructions cannot be carried out in the prohibited area. This provision, however, does not include cleansing of drains and drainage works and of public latrines, urinals and similar conveniences, or, the construction and maintenance of works meant for providing for supply of water for public, or the construction or the maintenance, extension, management for supply and distribution of electricity to the public or provision for similar facilities for public **[Section 2(l) and 20B]. This provision has barred all construction activities in the prohibited area to be taken up by all public bodies even if the purpose is related to public works or project essential to the public. There is no provision for grant of any relaxation in this regard by any authority.**
11. Any person, who owns any building or structure, which existed in a prohibited area before the 16th day of June, 1992, or, which had been subsequently constructed with the approval

of Director General and desires to carry out any repair or renovation of such building or structure, may make an application to the Competent Authority for carrying out such repair or renovation, as the case may be **[Section 20C(1)]**

After the enforcement of the Amendment Act, no owner or possessor of any building or structure or land falling in the prohibited area could be permitted for undertaking any construction or reconstruction. He may, however, undertake repair or renovation of the building or structure which existed prior to 16th June, 1992 or which had been constructed on the basis of permission granted by the Director General.

12. The Act provides for carrying out construction or re-construction or repair or renovation of such building or structure on such land, as the case may be, by any person, who owns or possesses any building or structure or land in any regulated area. **The owner or possessor of any building or structure or land may make an application to the Competent Authority for carrying out construction or re-construction or repair or renovation, as the case may be. [Section 20C(2)]**
13. The permission for construction granted by the ASI after the 16th day of June, 1992 but ending before the date on which the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act 2010 has come into force, in the regulated area in respect of such protected monument, shall be deemed to have been validly granted in accordance with the provision of this Act **[Section 20B]** . **As per this provision the constructions carried out by any person in the regulated area without obtaining prior permission from the Director General is illegal and not valid.**
14. The permissions for construction granted by the ASI after the 16th day of June, 1992 but ending before the date on which the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010, in the prohibited area on the basis of the recommendation of the Expert Advisory Committee, **shall be deemed to have been validly granted in accordance with the provisions of this Act [Section 20A(3)].**
15. The Act, however, provides that the permission for construction or re-construction of any building or structure granted in any prohibited area subsequent to the completion of construction or re-construction of any building or structure. **[Section 20A(3)].** This provision has not validated the permissions granted by the Director General ex-post-facto, which means **that the buildings and structures so constructed un-authorizedly but regularized later would be treated as unauthorized and illegal.**
16. The Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010 provides that the Central Government may specify, by notification in the official Gazette, **an officer not below the rank of Director of the Competent Authority to perform functions under the Act.** The Central Government has the powers to specify different Competent Authorities for the purpose of Sections 20C, 20D and 20E. **[Section 2(db)]**
17. Henceforth, **the authority to receive application for grant of permission** for construction, reconstruction, repair or renovation in the prohibited areas or regulated areas has been **vested with the Competent Authority**, who shall be specified by the Central Government through a Gazette notification to discharge his functions as defined in the Act.
18. The applications for grant of permission for repair or renovation of buildings or structures which **existed in a prohibited area before 16th of June 1992**, or which had been

- subsequently constructed with the approval of Director General **may be made to the Competent Authority by the owner or the possessor** in such manner as may be prescribed (as per the rule to be notified). **[Section 20D(1)]**
19. The applications for grant of permission for construction or reconstruction or repair or renovation of any building or structure or land **in a regulated area my be made to the Competent Authority by the owner or the possessor** in such manner as may be prescribed (as per the rules to be notified). **[Section 20D(1)]**
 20. **The Competent Authority shall forward the applications so received within 15 days the National Monument Authority** to consider and intimate impact of such construction (including the impact of large scale development project, public project and project essential to the public) in accordance with heritage bye-laws to be framed for the concerned protected monument or protected area. **[Section 20D (2)]**
 21. **The Central Government may prescribe the category of applications in respect of which the permission may be granted** under sub section 20D(2) and the applications which shall be referred to the National Monument Authority for recommendations. **[Section 20D (2)]**
 22. **The National Monument Authority shall intimate within two months after the receipt of the application to the Competent Authority impact of such construction** (including the large scale development project, public project and project essential to the public). **[[Section 20D (3)]**
 23. The Competent Authority shall **either grant permission or convey refusal to the applicant within one month** of receipt of the recommendation of the National Monument Authority. **[Section 20D (4)]**
 24. **The recommendation of the National Monument Authority shall be final.** **[Section 20D(5)]**
 25. In case of refusal of the permission, the Competent Authority shall by order in writing and after giving an opportunity to the concerned person intimate such refusal **within three months from the date of receipt of application to the applicant**, the Central Government and the National Monument Authority. **[Section 20D (6)]**
 26. The Competent Authority is empowered **to refer the permission so granted for carrying out of repair or renovation work or reconstruction of building or construction of National Monument Authority**, in case, it is found that such repair or renovation or reconstruction or construction is likely to cause an adverse impact on the preservation, safety, security or access to the monument considerably for recommendation, and if so, recommended by the Authority, the Competent Authority may withdraw the permission granted. **[Section 20D (7)]**
 27. The proviso to Section 20D (7) authorizes the Competent Authority, in exceptional circumstances and with the approval of the National Monument Authority, to consider grant of permission for repair/renovation/construction/reconstruction, etc., even before the heritage bye-laws are approved /notified. **[Section 20D (7)]**
 28. **The Central Government or the Director General shall have to exhibit on website all the permissions granted or refused** **[Section 20D(8)]**
 29. The Competent Authority in consultation with the Indian National Trust For Art and Cultural Heritage or such other expert heritage bodies, as may be notified by the Central

Government, shall prepare heritage bye-laws in respect of each protected monument and protected area. **[Section 20E(1)]**

30. The heritage bye-laws shall specify heritage controls such as elevation, façade, drainage system, road and service infrastructure (including electric poles, water and sewer pipelines) in addition to such matters as may be prescribed (to be detailed out in the rules to be framed). **[Section 20E (2)]**
31. The Central Government shall specify, by rules (to be framed), the manner of preparation of detailed site plans in respect of each protected monument or protected area, or prohibited area or regulated area, the time within which such heritage bye-laws shall be prepared and particulars to be included in each such heritage bye-laws. **[Section 20E (3)]**
32. The preparation of heritage bye-laws in respect of each protected monument or protected area shall be governed by the ground conditions and nature of the monument for which it has been found essential to undertake detailed documentation of the protected area, prohibited area and regulated area in each case.
33. The Competent Authority has been authorized to appoint experts or consultants for preparation of detailed site plans and heritage bye-laws. **[Section 20E (4)]**
34. The heritage bye-laws which shall eventually be prepared by the Competent Authority with the help of outside experts and consultants shall be got approved by the National Monument Authority, which is proposed to have the Chairperson and members of excellence in the relevant areas like archaeology, country and town planning, architecture, conservation architecture or law. **[Section 20E (5)]**
35. The heritage bye-laws in respect of each protected monument or protected area shall be laid on the table of each House of Parliament. **[Section 20E (6)]**
The heritage bye-laws therefore shall have to be published in the Official Gazette to make them available to public.
36. The heritage bye-laws shall be exhibited by the Competent Authority on the website after tabling the same in each House of Parliament. **[Section 20E (7)]**
This provision has been made to make the system transparent and to avoid any undue inconvenience or harassment to the public.
37. Penalty under section 30 of the Principal Act has been enhanced from three months to two years and fine of rupees five thousand to one lakh or with both in respect of violation sub-section (1).

(1) WHOEVER –

- (i) Destroys, removes, inquires, alters, defaces, imperils or misuse a protected monument, or
- (ii) Being the owner or occupier of a protected monument, contravenes an order made under sub-section (1) of section 9 or under sub-section (1) of section 10, or
- (iii) Removes from a protected monument any sculpture, carving, image, bas-relief, inscription, or other like object, or
- (iv) Does any act in contravention of sub-section(1) of section 19, shall be punishable with imprisonment which may extend to two years, or with fine which may extend to one lakh rupees, or with both,

Similar to sub-section (1) the penalty for violation of sub-section (2) of section 30 has also been enhanced.

- (2) Any person who moves any antiquity in contravention of a notification issued under sub-section (1) of section 25 shall be punishable with imprisonment which may extend to two years or with fine which may extend to one lakh rupees or with both; and the court conviction a person of any such contravention may by order direct such person to restore the antiquity to the place from which it was moved.
38. In respect of unauthorized constructions in the prohibited and regulated area of the protected monument and protected area, the penalty has been incorporated now by the Amendment Act. The penalty provision is as under –
- (i) Whoever raises, on and after the date on which the Ancient Monuments and Archaeological sites and Remains (Amendment and Validation) Act 2010, any construction in the prohibited area, shall be punishable with imprisonment not exceeding two years or with fine which may extend to one lakh rupees or with both. **[Section 30A]**
 - (ii) Whoever raises, on and after the date on which the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010, any construction in the regulated area without previous permission of the competent authority or in contravention of the permission granted by the competent authority, shall be punishable with imprisonment not exceeding two years or with fine which may extend to one lakh rupees or with both. **[Section 30B]**
 - (iii) If any officer of the central Government enters into or acquiesces in any agreement to do, abstains from doing, permits, conceals or connives at any act or thing whereby any construction or reconstruction takes place in a prohibited area or regulated area, shall be punishable with imprisonment for a term which may extend to three years or with fine, or both **[Section 30C]**
39. The penalty has been enhanced to ensure that it acts a deterrent and none dares to indulge in unauthorized and illegal activities as per the Act. Provision for severe punishment has also been made for the officers of the Central Government who are found indulged in any act which is illegal or unauthorized as per the Act. This will make sure that the Central Government officers discharge their functions with utmost sincerity and as per the Act.
40. The Director General of the Archaeological Survey of India has been made responsible to conduct a survey or cause survey to be conducted in respect of all prohibited area regulated areas of the protected monuments and protected areas for the purpose of preparing detailed site plans within a period which may be specified by the central government. A report on the survey to be conducted shall be submitted by the Director General to the Central Government and the Authority. **[Section 35A(1) and (2)]**

This exercise is essential to document the existing ground conditions in the prohibited areas and regulated areas so that it is easy to find out if some one has undertaken construction activities without obtaining permission from the Competent Authority. The preparation of detailed site plans in respect of each protected monument or protected area is also essential for preparation of heritage bye-laws. The Director General has to complete exercise within a time to be specified by the Central Government.

41. Responsibility has been entrusted upon the Director General of the Archaeological Survey of India to identify or cause to be identified, all construction (of whatever nature) made on and after the 16th day of June, 1992 in **all prohibited areas and regulated areas and, thereafter, submit from time to time a report in respect thereof to the Central Government. [Section 35B(1)]**

Although, the Circles of the ASI may have some data on unauthorized constructions carried out in the prohibited and regulated areas of protected monuments and sites, this may not be correct and many omissions could be there because of lack of proper mechanism and manpower infrastructure. This is a major exercise which may involve a lot of interaction with Panchayats, Municipalities, Development authorities, revenue authorities and various Central and State Government departments to find out the details of constructions carried out in the prohibited and regulated areas of the protected monuments and protected areas without approval of the Director General.

42. The Director General, Archaeological Survey of India has been given powers to call for information from the local bodies and other authorities for identification on of all constructions made on and after 16th June, 1992 in all prohibited areas and regulated areas. **[Section 35B(2)]** This provision makes it mandatory for the local bodies and other authorities to share the details on un-authorize constructions carried out by the individuals and public bodies in the prohibited and regulated areas of the monuments and sites after the issue of the notification dated 16th June, 1992 in the Official Gazette.
43. As per section 12 of the Amendment Act, the permissions granted by the Archaeological Survey of India between 16th June, 1992 and the enforcement of the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010 for construction or re-construction or repair or renovation except those granted ex-post-facto after the completion of the structure or building in the prohibited areas and regulated areas of the protected of the protected monuments and protected areas have been held as valid and not challengeable in any court, tribunal or other authority. Any rule, order or notification made under the Ancient monuments and Archaeological Sites and Remains Act, 1958 for carrying out any repair, renovation or construction work or undertaking any public work or public project before the commencement of the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010 shall also not be challengeable in any court, tribunal or other authority.

Permissions in Prohibited and Regulated Areas (With reference to Delhi)

Permissions are granted by Competent Authority as per Ancient Monuments and Archaeological Sites & Remains (Validation and Amendment) Act 2010 and Rules made there under, for any repair, renovation, construction and reconstruction. Within 100 metres of prohibited area around any centrally protected monument or site, permissions for repair and renovation are granted for buildings/structures constructed before 1992 or constructed after 1992 with approval from Director-General of ASI. Within 100-300 metres of Regulated area around any centrally protected monument or site, permissions for repair, renovation, construction and reconstruction are granted for buildings/structures.

Procedure for Application

Any application for repair and renovation in prohibited area and repair, renovation, construction and reconstruction can be submitted to the Competent Authority in Form-I and Check list (Given below) with following attachments:

1. Ownership documents
2. Authorisation letter in case of organisations
3. Two photographs of nearest centrally protected monument and four photographs of modern construction in its vicinity.
4. Two photographs of the proposed site for repair, renovation, construction and/or reconstruction and four photographs of modern construction in its vicinity.
5. Google image showing the location of nearest centrally protected monument and the proposed site for repair, renovation, construction and/or reconstruction.

The applicant should first fill up the Form-I given under section "Submit your application" and then upload the attachments in three files as mentioned at the end of Form-I. A sample application can be downloaded in word document format to make attachments and to fill up Form-I. In the downloaded format, photographs can be hanged and text can be edited giving details of the concerned protected monument and the proposed site. The photographs should be 5" x 7" size with resolution of 72 dpi. These attachments should be uploaded as their respective points and thereafter application should be submitted on-line. In case of any difficulty in submission or uploading, telephone call can be made between 11 pm and 1 pm and between 3 pm and 5 pm on all working days from Monday to Friday at landline number: 011-23814026, 23814027 Or mail your query to competentauthority.asidelhi@gmail.com with your contact number.

After submission, the applicant should print the submitted form I. The attachments which have been uploaded should also be printed. The printed Form I and attachments (in colour) with signature(s) of the applicant(s) should be then be submitted to the Office of Competent

Authority either personally (between 3 and 4 pm from Monday to Friday) or sent through courier or post at the following at the following address:

To,
The Competent Authority
Archaeological Survey of India,
2nd Floor, Block-B,
Vikas Bhawan-II,
Bela Road, Civil Lines,
Delhi-110054

After on-line submission, the applicant should note his application UID No. which should be mentioned for any future references. The UID No. will be applicant's file number in the Office of Competent Authority. Any application not properly filled up or without proper attachments shall not be accepted and treated as incomplete.

Procedure after Submission

After an application is submitted, it is scrutinized to find whether the information and attachments have been duly provided. Thereafter site inspection is conducted by an officer authorised by Competent Authority and the proposal is forwarded to the Secretary, National Monuments Authority at 24, Tilak Marg, New Delhi. On approval from the National Monuments Authority (NMA), the Competent Authority, as the case may be, issues a permission or refusal to the owner.

The status of application after its submission can be known under "Know status of applications" whether the file is incomplete or complete; site inspection has been conducted; the proposal had been forwarded to NMA; approval has been received from NMA; permission or refusal has been issued.

Form I

Application for grant of permission for undertaking repair/renovation in the prohibited area and construction/reconstruction/repair/renovation in the regulated area of protected monument of archaeological site & remains declared as of national importance under the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

1. Name of the Applicant :
2. Address of the applicant :
 - (a) Present :
 - (b) Permanent :
3. Name of the owner(s) (if applicant is other than owner) :
4. Address of the owner(s) :
 - (a) Present –
 - (b) Permanent-
5. Whether the property is owned by individual or jointly (furnish documents):
6. Whether the property is owned by Government / Public Sector Undertaking / Private Sector Undertaking / Firm (if so details to be furnished with complete address and phone numbers)
7. Locality of the proposed construction (with full details of plot numbers etc.):
8. Name of the nearest monument or site :
 - (a) Locality :
 - (b) Taluk :
 - (c) District :
 - (d) State :

(Enclosed area map showing the monument and the site of repair / renovation construction/reconstruction)
9. Distance of the site of construction related activities from the protected boundary of the monument:
 - (a) Distance from the main monument:
 - (b) Distance from the protected boundary wall of the monument:
10. Nature of the work proposed (Repair/renovation/construction/reconstruction etc):
11. Details of work proposed (furnish complete details with drawing of building/ structure):
 - (i) Number of storey's :
 - (ii) Floor Area (storey-wise)

Basement Area	:
Stilt Area	:
Ground Floor Area	:

First Floor Area :

Second Floor Area :

Third Floor Area :

(iii) Height (excluding mummy, parapet, water-storage tank etc.) :

(iv) Height (including mummy, parapet, water-storage tank etc.) :

(v) Basement, if any proposed, with details:

Depth :

Area :

(Enclose Plan, section and elevation drawings of the existing building duly approved by the building plan sanctioning authority and proposed building plan with section and elevation in case of reconstruction. Enclose building plan with section and elevation in case of reconstruction.) Enclose building plan, section and elevation of the proposed building in case of construction / reconstruction).

12. Purpose of the proposed work:

(Residential / commercial / institutional / public / community)

13. Approximate date of the commencement of the proposed work:

14. Approximate duration for completion of the proposed work:

15. Maximum height of the existing modern buildings in the close vicinity of:

(a) Near the Monument :

(b) Near the site of construction related activity :

16. Whether the monument is located within the limits of Municipal Corporation / Municipalities / Nagar Panchayat / Village Panchayat:

17. Does any Master Plan / Zonal Development Plan / Layout Plan approved by A concerned local authority exists for the city/town/village:

18. Status of modern constructions in the vicinity of the monument and the Proposed site of construction / reconstruction:

19. Open space / park / green area close to the protected monument/ protected area:

20. Remarks / additional information, if any:

I _____ declare that the above information is correct. I also undertake to observe the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958 as amended by the Ancient Monuments and Archaeological Sites and Remains Act and remains (Amendment and Validation) Act ,2010 and the rules made there under.

Place : New Delhi

Seal of firm (if any)

Date :

Signature of the Applicant

Note :

1. If the application is on the behalf of the organization/ firm, the signature should be of the head of that organization/firm.
2. Enclose photographs showing the monument and the existing modern constructions.
3. Enclose Google Earth's images of the area under reference showing the monument and the site of construction related activities.
4. Enclose ownership documents duly attested by an authorized officer of the Government.
5. In case of repairs / renovation, a report from duly authorized / licensed architect to be submitted by the applicant.
6. Applications are to be sent to Competent Authority at the following address-

Competent Authority

Archaeological Survey of India,

2nd Floor, Block-B,

Vikas Bhawan-II,

Bela Road, Civil Lines,

Delhi-110054

**OFFICE OF THE COMPETENT AUTHORITY
(NCT OF DELHI)**

Archaeological Survey of India
2nd Floor, Block-B, Vikas Bhawan-II, Bela Road,
Civil Lines, Delhi-110054

CHECK LIST FOR APPLICATION FOR PERMISSION

Following documents should be submitted in duplicate in separate folders:

S.No.	Details	Yes	No
1	Form-I (duly filled up and signed on each page)		
2	Google Map (Showing the monument and the proposed site as well as distance from the nearest monument) coloured in A4.		
3	Photographs of Proposed Site of construction from front and sides		
4	Photographs of Vicinity of Proposed Site showing modern constructions.		
5	Photographs of the nearest Monument.		
6	Photographs of modern constructions if any around the nearest Monument.		
7	A-Ownership Documents duly attested by an authorized officer of the Govt. as well as owner/ owners. B-Ownership Tree (Chain) in separate paper, duly signed by owner/owners		
8	Proposed Site Plan in A2 size (Attested by Architect with Registration No., Address, Contact No. etc.) in Triplicate showing floor-wise proposed construction area in legend in six copies, five with red outlined and one without red outline.		
9	ID Proof (Duly Attested)		
10	Signature of the head of the organization, if applicant is an organization/firm		
11	Scanned copy of Form 1 and all documents, photographs etc in PDF Format in CD		

- Note :**
1. All documents/photographs/site plan submitted with Form I should be duly signed by owner.
 2. Photographs should be in colour of size 7 inch x 5 inch or above.

Agencies concerned with the Heritage (With reference to Delhi)

The agencies concerned with the heritage are:

1. Heritage Conservation Committee (HCC) under Ministry of Urban Development
2. Archaeological Survey of India (ASI)
3. State Archaeological Department, Govt. of NCT of Delhi
4. Delhi Development Authority (DDA)
5. MCD (EDMC, SDMC, NDMC)
6. Cantonment Board, Delhi
7. INTACH
8. Aga Khan Trust

The primary agencies which are involved with conservation and management of the built heritage in Delhi are the following :

No.	Name of Agency & Relevant Regulatory Framework	Responsibilities	Reporting Structure
1.	Archaeological Survey of India – Delhi Circle Ancient Monuments, Archaeological Sites and Remains Act, 1959 Notification issued in 1997 under Rule 32 of the Ancient Monuments, Archaeological Sites and Remains Rules, 1959 UNESCO World Heritage Convention	Designation & protection of 151+4 monuments, archaeological sites and remains of National significance, (reduced from 175/ 163 designated in the original list)as well as the management of designated World Heritage Sites. ¹ The ASI also coordinates with local governments to prohibit, restrict and regulate development in the areas (100+200m buffer zones) demarcated around the protected area of each national monument. Two major heritage sites, the Qutab Complex and Humayun’s Tomb Complex have been designated as World Heritage Sites by UNESCO.	Central Government organization under the Union Ministry of Culture Nodal officer: Superintending Archaeologist, Delhi Circle. Overall Responsibility : Director General of the ASI, reporting to the Secretary, Culture (Gol)
2.	GNCT Delhi Department of Archaeology & Museums – 'Delhi Ancient and Historical Monuments and Sites and Remains Act' 2005	Conservation, preservation and 'beautification' of monuments other than those maintained by the Archaeological Survey of India; Survey, listing, documentation, Acquisition and protection of monuments; Archaeological explorations and excavations;	The Deputy Director of Archaeology is the Nodal Officer under the Director of Archaeology, reporting to the Secretary (Art & Culture), Delhi Government.

No.	Name of Agency & Relevant Regulatory Framework	Responsibilities	Reporting Structure
		<p>Educational activities and bringing out departmental publications.</p> <p>Only 20 of more than 1300 historical monuments of different periods identified in Delhi, at present protected by Dept. of Archaeology(Website)</p> <p>Manages Museums of Archaeology and Delhi City, and has undertaken restoration works on privately owned monuments and historic buildings.</p> <p>Coordinates with local authorities to prohibit, restrict and regulate development in the areas (50 + 100m buffer zones) demarcated around the protected area of each state monument.</p>	<p>Advisory committee under the chairmanship of Secretary (Art & Culture) proposed by the GNCTD Department of Archaeology, to advise and oversee the activities of conservation of monuments and other related activities of the department.</p>
3.	<p>DDA - Heritage Cell (Delhi Urban Heritage Foundation notified in 1999 under a sub-section of the DDAAct)</p> <p>Number of provisions for conservation of the built heritage in its 15 Planning Zones 5 in the Draft MPD 2021 as well as the Zonal Development Plan for the Walled City (Part Zone A and C – approved 1999)</p> <p>Draft MPD 2021 mentions development plans / schemes to conform to the amended Building Byelaws 1993, vide Clause 23 according to the chapter inserted on Conservation of Heritage Sites including Heritage Building, Heritage Precincts and Natural Feature Areas'</p>	<p>Preparation of Master Plans, Zonal & Sub-Zonal Plans which take heritage conservation into account Draft MPD-2021 contains a conservation strategy that identifies six key Heritage Zones and three Archaeological Parks and also stipulates that while preparing layout plans, 170 (sic) ASI protected monuments as well as heritage buildings listed by the GNCTD Department of Archaeology, MCD and NDMC 'should be suitably incorporated'.</p> <p>In case of major monuments it is necessary that surrounding areas should be identified in the layout/detail plan, and should have building controls in relation to height, material and 'spread' of the monuments.</p> <p>Suggests that with the aim of framing policies and strategies for conservation, appropriate action plans and 'Special Development Plans' may be prepared by all the agencies concerned with the protection of Delhi's built heritage such as the ASI, GNCTD Department of Archaeology, MCD, NDMC, Cantonment Board and DDA. The DDA has formulated and financed the implementation of proposals for designated heritage resources with the assistance of INTACH and other organizations (MCD, DJB, DTTDC)</p>	<p>Delhi Urban Heritage Foundation under the Director (--) who should be a qualified Architect, Conservation Architect or Landscape Architect.</p>
4.	<p>MCD –</p> <p>MCD Heritage Cell and MCD Heritage Society</p> <p>MCD Heritage Society set up under an Office Order as a specialist advisory body</p>	<p>Almost 75% of the built heritage listed by INTACH in 2000 is situated in the Municipal Corporation of Delhi area, (which constitutes an urban area of 599.6 kms and rural area of 797.70 sq. kms subdivided into different zones6) It includes the Walled City of Shahjehanabad and extensions, a number of historic urban and rural villages as well as historic buildings and complexes.</p>	<p>The MCD reports to the Ministry of Home Affairs (Gol)</p>

No.	Name of Agency & Relevant Regulatory Framework	Responsibilities	Reporting Structure
		<p>The Municipal Commissioner is Chairman of the MCD Heritage Society, heritage advisory board has been appointed, including the Chief Town Planner and conservation experts for the heritage programme which is to be taken up for the Walled City area.</p> <p>List of heritage resources under the purview of the MCD compiled with the assistance of INTACH Delhi Chapter & Wilson's survey drawings of Shahjehanabad being updated to have an accurate base for formulation of re-recommendations for the conservation and revitalization of the Walled City.</p> <p>MCD, in association with the ASI, Delhi Circle, and the GNCTD Department of Archaeology is demarcating the properties located within the 100 (50m) m 'prohibited area' and the 200 (100m) m 'regulated area' surrounding or contiguous with protected monuments of National (State) Importance in MCD areas.</p>	
5.	NDMC	<p>The 42.74 sq. km area under the New Delhi Municipal Council includes the planned city of New Delhi established in 1911. The NDMC area or New Delhi Zone has a total of 304 heritage buildings and complexes identified by the INTACH 2000 (Appendix 2 & 3) List of Historic Buildings of Delhi, as well the Connaught Place area, the Central Vista, New Delhi Bungalow Zone and also the Lodhi Gardens and the Delhi Golf Club which have been identified as Conservation Areas in the INTACH 2000 List.</p>	<p>NDMC reports to the Ministry of Home Affairs, GoI NDMC Chief Architect is responsible for heritage conservation activities of NDMC</p>
6.	<p>Delhi Urban Arts Commission - DUAC Set up by an Act of Parliament, under the Delhi Urban Arts Commission Act of 1973</p>	<p>DUAC advises on 'preserving and developing the aesthetic quality of urban and environmental design within Delhi'.</p> <p>Guides the local body on any project or development proposal which affects the skyline or the aesthetic quality of the surroundings and redevelopment in the vicinity of historical areas and 'conservation, preservation and beautification' of monumental buildings, public parks and public gardens.</p> <p>The DUAC had a restricted advisory role with powers of rejection of non-conforming projects.</p>	<p>The Delhi Urban Arts Commission consists of a body of experts and reports to the Ministry of Urban Development.</p>
7.	CPWD	<p>Responsible for the upkeep and maintenance of government owned historic buildings in Delhi. Heritage resources of great significance such as the Rashtrapati Bavan, Secretariat Buildings, Parliament</p>	<p>The Central Public Works Department reports to the Ministry of Urban Development</p>

No.	Name of Agency & Relevant Regulatory Framework	Responsibilities	Reporting Structure
		House and Central Vista as well as the architecturally significant historic bungalows and other buildings located within the New Delhi zone. Responsible for over 72,000 original drawings prepared by Lutyens and other architects for buildings within the New Delhi area.	
8.	Delhi Cantonment Board	DCB regulates development in the Cantonment Area, an area of 42.97 sq.kms. located between the airport and the NDMC area, within which features such as the Cantonment low density bungalow layout with extensive gardens, heritage buildings associated with the Armed Forces, and components such as Gopinath Bazaar and St. Martins Garrison church are considered to be of significance. The Cantonment Area has been proposed as a Conservation Area by INTACH in the 2000 List.	Delhi Cantonment Board reports to the Ministry of Defence. The Military Engineering Services is concerned with the upkeep and maintenance of historic buildings in this area.
9.	Heritage Conservation Committee – HCC Established by an order of the High Court to ensure implementation of Clause 23.16 of the Unified Building Byelaws	HCC to be consulted by the Commissioner, MCD; Vice-Chairman, DDA; Chairman, NDMC before granting permission for any development, redevelopment, engineering operations, additions, alterations, repairs, renovations, demolition of any part of any listed building, listed precincts or listed natural areas.	HCC reports to the MoUD under the High Court order. Associated with the DUAC.
10.	DTTDC – Incorporated in 1979 (name changed to DTTDC in 1989)	The DTTDC has sponsored and undertaken proposals for tourism development in various heritage sites and urban villages in collaboration with the ASI, INTACH, MCD & DDA, including conservation and restoration works in the Mehrauli Archaeological Park.	An undertaking of GNCTD
11.	Delhi Waqf Board – Established under the Waqf Act, 1954, is governed by the more comprehensive 1995 Waqf Act.	The Waqf Board is one of the most important property owners in the historically significant areas such as Shahjehanabad and various villages. In Delhi, the Waqf properties included 774 mosques, 19 Idgahs, 246 Dargahs, tombs and Khanqahs, Karbala, extensive historic graveyards associated with large open, green areas, and numerous commercial and residential properties with some commercial properties rented out for generating revenue (totaling approx.1900 properties determined through a careful resurvey process according to the legal counsel for the Waqf Board).	Seven members, three of whom are elected representatives and four who are appointed by the GNCTD.

Other agencies which are involved with sectors which are intrinsically linked with the heritage resources in the case of Delhi are the following:

No.	Name of Agency & Regulatory Framework	Responsibilities	Reporting Structure
1.	Forest Department	Responsible for the ridge forest associated with the extension of the Aravalli Hills known as the Ridge, within which are located significant historic resources of Delhi. - 6200 ha. of the Southern Ridge, 626 ha. of the Southcentral ridge where Mehrauli is located, 864 ha. of the Central or New Delhi ridge within which historic shikargah, gardens and bunds are located and the 87 ha. of the Northern or Old Delhi Ridge associated with Delhi University, Civil Lines and numerous heritage resources from the Tughlaq and later British period .	The GNCTD Forest Department, DDA, NDMC, CPWD, L&DO (Land and Development Office) of the Ministry of Urban Development control different parts, or different functions, on the Ridge. This has lead to construction and encroachment on the Ridge.
2.	Delhi Metro Rail Transit System	Likely impact on both the unexcavated archaeological heritage and significant heritage sites in South Delhi. Final route decided in consultation with the ASI Also likely to provide improved access to certain heritage sites, beneficial for viability of certain cultural tourism circuits.	
3.	National Capital Region Planning Board –	'Special emphasis on integrated tourism development and heritage conservation and management in the Region. Proposes to employ the instrument of the Town & Country Planning Legislation to protect the area around identified heritage resources.'	NCR Planning Board under the Ministry of Urban Development

Non-Governmental organizations and Citizen's organizations which have been engaged with conservation initiatives, either independently or in coordination with other Government agencies are the following:

No.	Name of Organisation & Regulatory Framework	Responsibilities	Reporting Structure
1.	Pani Morcha	Concerned with water resource management in Delhi - actively working in close coordination with INTACH & Tapas in identification of the traditional components of the historic water harvesting and storage system in Delhi, - identified numerous historic tanks, baolis, village ponds and water bodies, bunds, sluice gates with a potential for revival and reintegration into the contemporary city.	NGO
2.	INTACH	Involved with identification and conservation of heritage components not in the purview of the ASI and not formally protected by the Delhi Department of Archaeology.	Nodal quasi-autonomous NGO

No.	Name of Organisation & Regulatory Framework	Responsibilities	Reporting Structure
		<p>INTACH has prepared a List of Heritage Buildings in Delhi, published in 2000, and, while functioning as an active pressure group, has also worked on conservation and restoration of many heritage resources in the city, especially in the Mehrauli Archaeological Park and the Walled City in coordination with the DDA, MCD & DTTDC.</p> <p>Consultants associated with INTACH have formulated guidelines for integration of heritage within the JNNURM City Development Plans.</p>	
3.	The Church of North India	<p>Responsible for the upkeep and maintenance of numerous significant historic properties, primarily including important Church complexes, gardens and historic educational institutions and schools which have been identified in the INTACH 2000 Listing of Delhi.</p>	
4.	Delhi University	<p>Many of the colleges in the North Campus of Delhi University, which were established on the site of the old Cantonment, have been designated as significant heritage resources including the old Viceregal Lodge (Currently the DU Office), Gwyer Hall, St Stephens College campus etc.</p>	<p>Recently undertaken conservation and up gradation works through grants from the GNCTD.</p>
5.	Aga Khan Foundation for Culture	<p>The Aga Khan Foundation for Culture, as a part of the Aga Khan Development Network, is concerned with contemporary design, social housing, community improvement and development, restoration, reuse and area conservation as well as landscape design and improvement of the environment.</p>	<p>This organization recently completed a regeneration project for the Gardens of Humayun's Tomb – a World Heritage Site, and is currently interested in sponsoring ongoing initiatives for the Humayun's Tomb – Hazrat Nizamuddin Conservation Area, in conjunction with the ASI and other agencies.</p>
6.	Resident Welfare Associations in heritage areas	<p>Local Residents Associations in areas such as Hauz Khas, Mehrauli, Nizamuddin, Aliganj etc. which have a high concentration of significant heritage resources, have an important role to play in the routine maintenance and upkeep of the areas around the protected areas of monuments, as well as unprotected heritage resources in their localities.</p>	

Factors Deteriorating Heritage Buildings

The existence of heritage in our environment has indeed provoked the belief that people came from somewhere and this offers the people the self-confidence to face the future.

Heritage largely defines the identity of a society and it is passed down from one generation to another. In order to pass on to future generations what is currently identified as being of cultural significance today, we must imbibe good conservation practices especially for the heritage buildings in order to prevent them from deterioration and extend the life and basic functions of these buildings.

The heritage buildings constructed in the past that have high historical, architectural, spiritual, social, political and economical values. Similarly heritage buildings are highly valuable and informative in terms of socio-cultural, socio-political, socio-economical and even technological activities of a specific society or group of individual

Heritage buildings differ from modern buildings in the sense that they are anticipated to last permanently. Also heritage buildings are buildings that for various factors society has decided that they shall be preserved for as long as possible.

Heritage buildings are seriously threatened by environmental agencies such as moisture, intense solar radiation and prevailing winds which change their physical attributes. The major effects of these environmental agencies include discoloration, abrasion, cracks, stains and fungal growth.

Apart from exposure to weather, biochemical agencies also hasten the deterioration of heritage buildings tremendously.

The two major factors responsible for the deterioration of 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.

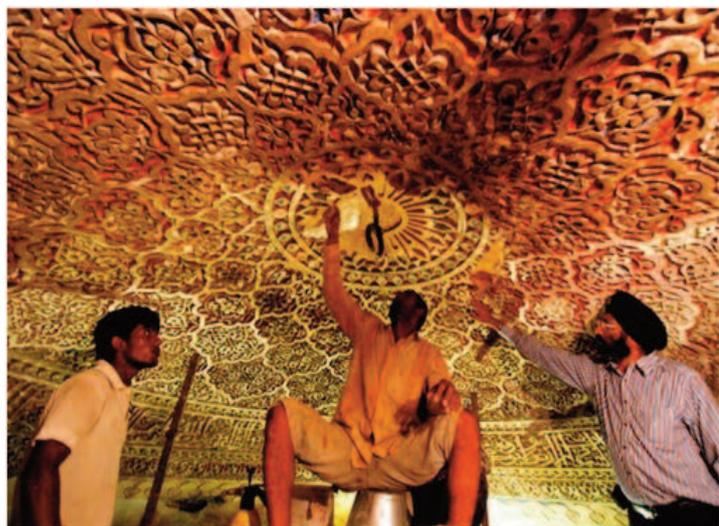
Example : In July 2009 the world heritage site of Konark Sun temple was knee-deep in water as flash floods triggered by heavy rainfall in Orissa.



Parts of the temple at Thailand's Wat Chaiwatthanaram, a UNESCO World Heritage Site

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 loosing its strength and shape which results in cracks, shrinkages and loose fittings.



Conservation of Humayun's Tomb, Nizamuddin

Moisture

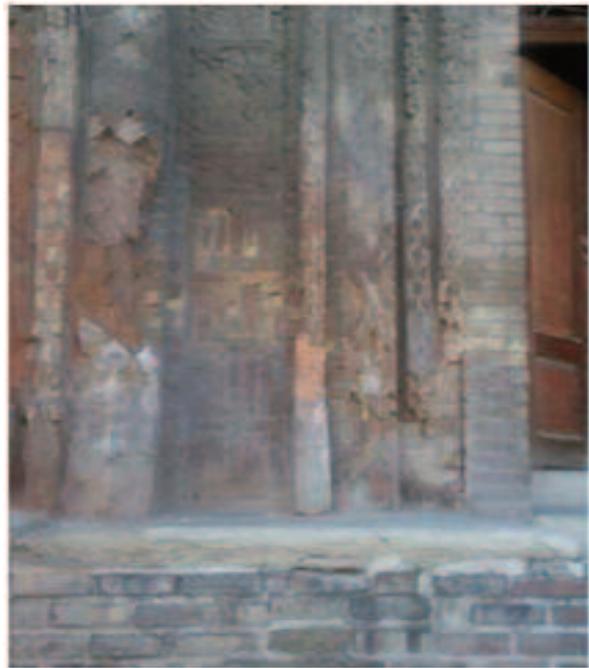
Moisture is regarded as a key agent causing gradual deterioration of heritage buildings. It can be in solid, liquid or vapour form and it is always present in the atmosphere. When the surface temperature falls, condensation occurs and this can cause severe damages to heritage buildings. Water frozen in the pores of building materials like timber, concrete and bricks can cause spalling of surface, cracking or even disintegration.

Ground salts and water

Soluble salts are a principal agent of decay in porous building materials and a source of great frustration to those involved in the conservation of historic buildings. 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. In 1932 Schaffer described the problem in his authoritative work *The Weathering of Natural Building Stones* and his description remains the most comprehensive source on the subject, outlining all the essential facts, the salts typically found and the mechanisms of crystallisation and decay.



Exhibits shows decay typical of magnesian limestone by salt crystallisation in a polluted urban environment.



Penetration of moisture into the pores of the buildings and freezing between the bricks which shatters them in cold region

Ground water table and salinity i.e. higher salt loads on building materials, for example due to capillary rising damp from the soil. The higher salt load may lead to faster decay of heritage building materials.

Longer dry periods and penetration of salt water via rivers and groundwater

- Both increasing and decreasing ground water tables.
- Increasing salt concentration in ground water.

Windstorm

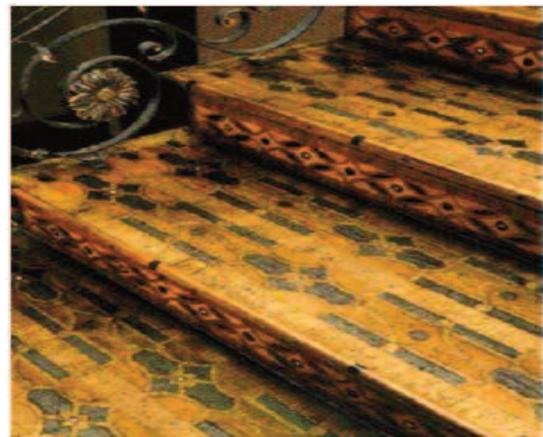
Wind primarily causes loading and mechanical damage to structures and materials. Windstorm damaged roofs was quiet often recorded in the past at is still as a major threat to historical structures. Most of the damage caused by the strong winds concerned the roof covering. Wooden shingles were much more resistant than for example ceramic of slate tiles.

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.

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.



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

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 and crazing of some surfaces.

Temperature

Changes of the temperature are also relevant when assessing the consequences of



Moisture along with fluctuations in temperature leads to disintegration of the façade



Damages due to ascending moisture

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.

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. A number of common vibration sources (including road and rail traffic, sonic boom, construction vibrations, blasting and earthquakes).

Traffic Vibrations : Vibrations arising from road and rail traffic and its effect on historic buildings have become a subject of concern in recent decades. The effects of traffic vibrations on buildings, can be conveniently divided into three components: source, transmission path and receiver.

Source : Rolling wheels on an elastic or imperfect contact material generate waves that then propagate downward and outward. The principal variables that effect vibration amplitudes are vehicle speed and weight, type of vehicle suspension, roughness of the rolling surface, and the stiffness of the wearing surface and sub-base.

Transmission : Waves generated at the source propagate outward through the ground. They are attenuated in the soil over distance and by material damping effect. Soft and saturated soils transmit vibrations more readily than sandy, dry ones. While rock readily transmits vibrations, the small amplitudes generated and the high frequencies of the propagated waves usually pose little danger to a building's integrity.

Receiver : After vibrations enter the building through the foundations, they may amplify by factors of from 2 to 5 in propagating to higher storeys.

- **Sonic Boom** : Sonic boom (or sonic bang as it is called) 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. (Stress raisers: A mechanical defect, such as a hole in materials which concentrates stress in the area and increases the risk of failure of material at that site.)
- **Blasting Vibrations**: Generally of higher magnitude, of short duration, of higher frequency and of rapidly decaying amplitude. Vibrations from blasting are a fairly common disturbance for historic buildings since blasting is often employed on excavations for neighboring 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

Fire

Fire has long been enemy of heritage buildings. 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.



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.



Rudra Kund located on parikrama Path of Goverdhan in the village Jatipura



Encroachments bane of Quila Mubarak of Patiala

Vandalism

It is the behaviour attributed originally to the Vandals, in respect of culture: ruthless destruction or spoiling of anything beautiful or venerable. The term also includes criminal damage such as graffiti and defacement directed towards any property without permission of the owner.

Conservation & Preservation Techniques

The Archaeological Survey of India (ASI), as an attached office under the Department of Culture, Ministry of Tourism and Culture, is the premier organization for the archaeological researches and protection of the cultural heritage of the nation. Maintenance of ancient monuments and archaeological sites and remains of national importance is the prime concern of the ASI. Besides it regulate all archaeological activities in the country as per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958. It also regulates Antiquities and Art Treasure Act, 1972.

For the maintenance of ancient monuments and archaeological sites and remains of national importance the entire country is divided into 24 Circles. The organization has a large work force of trained archaeologists, conservators, epigraphist, architects and scientists for conducting archaeological research projects through its Excavation Branches, Prehistory Branch, Epigraphy Branches, Science Branch, Horticulture Branch, Building Survey Project, Temple Survey Projects and Underwater Archaeology Wing.

Structural Conservation



BEFORE



AFTER

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. Even the dawn of vision for the need to preserve monuments for its worth as a monument, mainly credited to the British was not less haphazard in the earlier times. 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. Based on the proposal submitted in 1898, 5 Circles were constituted to do the Archaeological work in India. These Circles were required to devote themselves entirely to conservation work.

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 therefore many monuments could be taken up for conservation.

One of the foremost conservators, J. Marshall who laid down the principles of conservation was also instrumental in preserving a number of monuments some of which are now under the World Heritage List. The conservation work of stupas at Sanchi earlier lying in a maze of ruins gave the site its pristine looks. The conservation processes had now become quite formalized and the later workers in the field were acquiring cumulative knowledge of several generations. Even before Independence, thus, the Archaeological Survey of India had developed significant expertise so much as that it was invited for conservation work in other countries. Some of the outstanding examples of such works are that of Bamiyan in Afghanistan and later in the Angkor Vat of Cambodia.

Chemical Preservation

The Archaeological Survey of India's Science Branch is responsible mainly for the chemical conservation treatment and preservation of some three thousand five hundred ninety three Protected monuments besides chemical preservation of museum and excavated objects countrywide.



BEFORE



AFTER



BEFORE



AFTER

The real challenge before us is to plan the necessary measures of conservation with a view to assure the survival of these built cultural heritage and unique symbols of our civilizations for centuries to come, with as little intervention as possible but without altering or modifying in any way the authenticity of their original character. To ensure the stability as well as proper conservation of our cultural heritage, there is a need to give more thrust to the scientific research in conservation options must be based on a preliminary investigation which includes

the knowledge of physical nature of the object (constituent materials, architectural characteristics, production techniques, state of decay) and of the factors which induce or could induced its decay. In other words, as in the case of medical study the field of conservation therapy to be based on a correct diagnosis



BEFORE



AFTER



BEFORE



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BEFORE

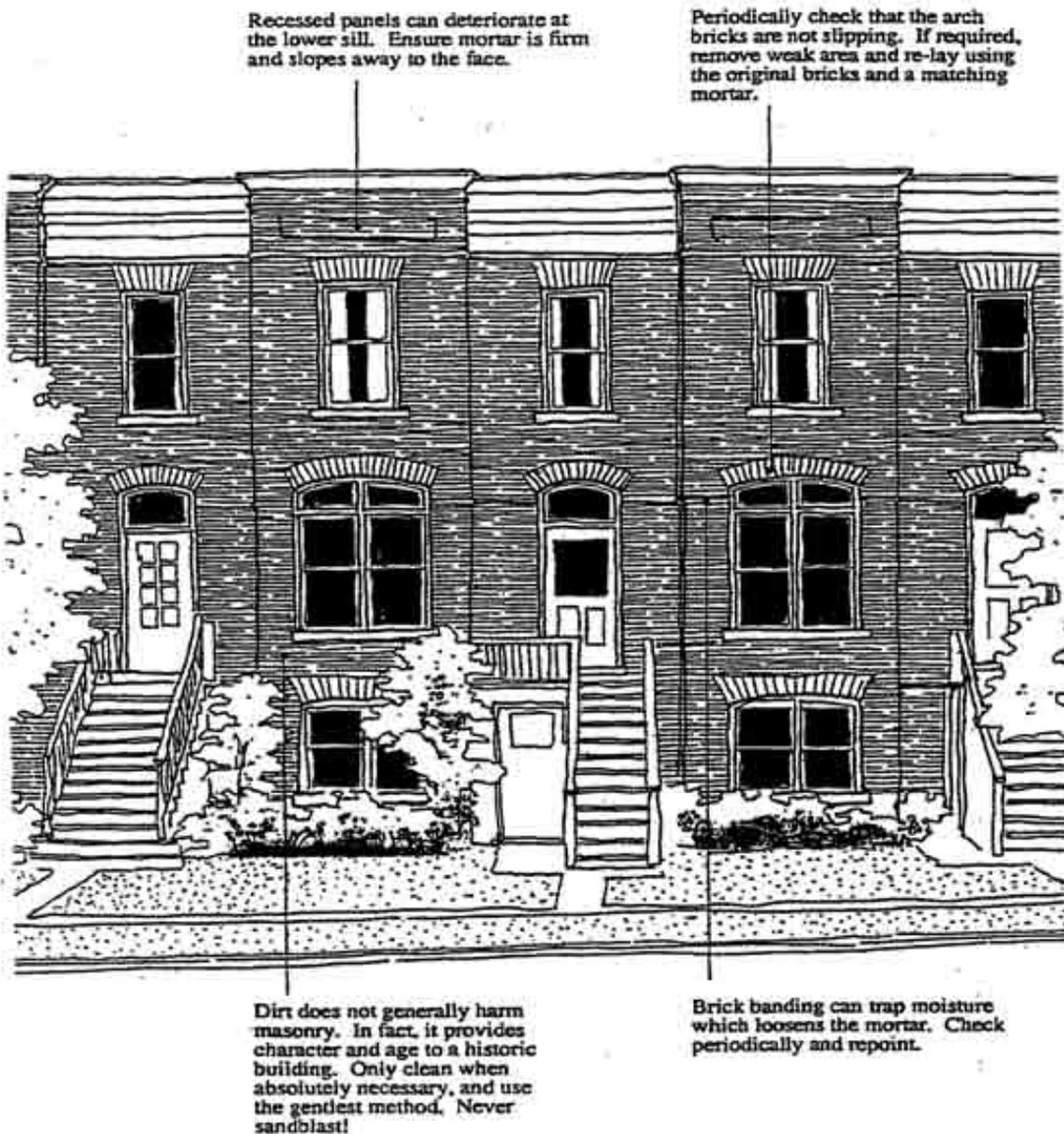
AFTER

Periodical chemical preservation of the vimana (58.96 m tall)

CONSERVATION OF BUILDING ELEMENTS

- Bricks and Stones
- Stucco
- Wood Siding

Bricks and Stones



Introduction

Masonry consists of stone, brick or concrete blocks bonded with mortar. Mortar is a mixture of lime, sand, water and, more recently, 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. The performance of a masonry wall depends on proper design, materials, workmanship and maintenance. 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.

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.
- If cleaning is necessary, carry out with great care. Do a test patch first 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

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.

Re-pointing

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. The following is a rough guide of mortars for different types of brick and stone.

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, in fact, 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 (HF), 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. One source suggests the word might be derived from an old German work “stucchi” which means crust. Initially, stucco was applied directly over masonry and later applied onto a wood or metal lath. When applied correctly, it will last indefinitely. 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 match 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 anew.

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 insulbrick in the early



1900's and, more recently, by vinyl or aluminium siding. The main challenges of wood siding are, therefore, maintenance or choosing the right replacement.

Conservation Principles

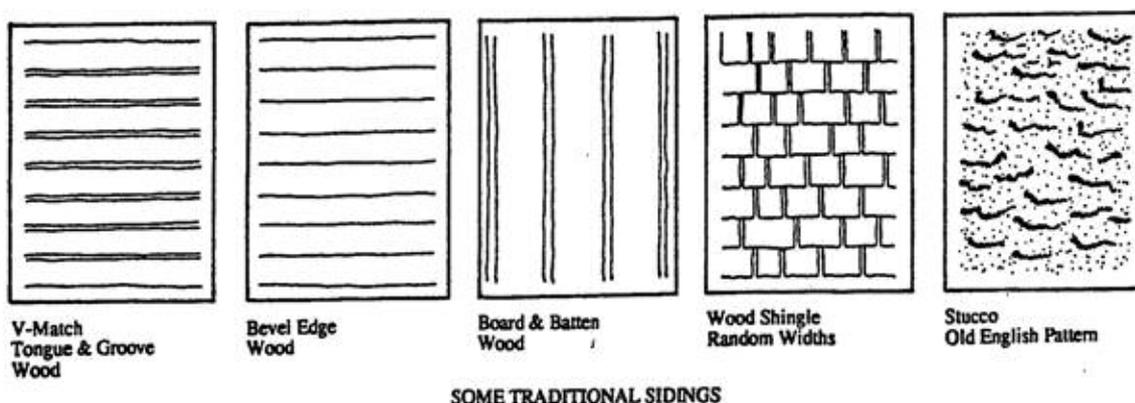
- Conserve original wood siding.
- If replacing, match the original profile.
- For new additions, select a wood siding that complements the style of the original historic building.
- Paint in period heritage colours.

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:

- | | | |
|-------------------|---|--|
| 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. |
| 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. |

- Board and Batten - This consists of vertical 10" to 12" wide rough sawn or planed pine boards with ¼" spaces between and 1"x2" battens over. Traditionally, the batten edges were mitred. Paint is the traditional finish.
- 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.



Maintenance

Original wood siding should be conserved whenever possible. With periodic maintenance and painting, it will last indefinitely. Some maintenance guidelines are as follows:

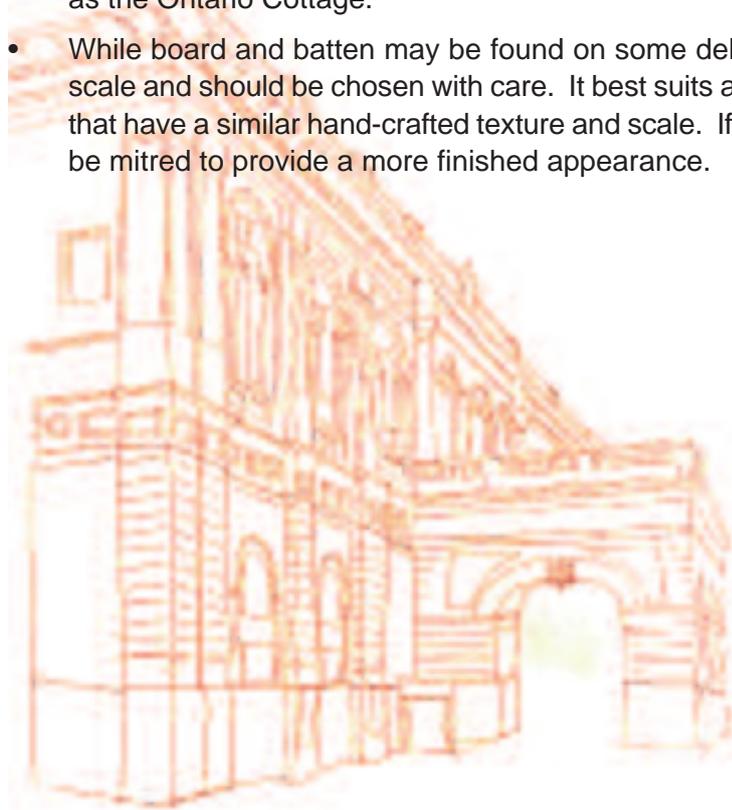
- Painting - Painting is the most important maintenance item with wood siding. Ensure the paint work is in sound condition. For further information, refer to the Paint & Colour Guideline.
- Split Boards - Pry split boards apart and coat the interior faces with an epoxy resin glue. When tacky, push the 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

The choice of siding for a new addition will be governed by many factors including quality, cost and ease of application. 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.

- 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 type such as the Ontario Cottage.
- 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.



Conservation Projects

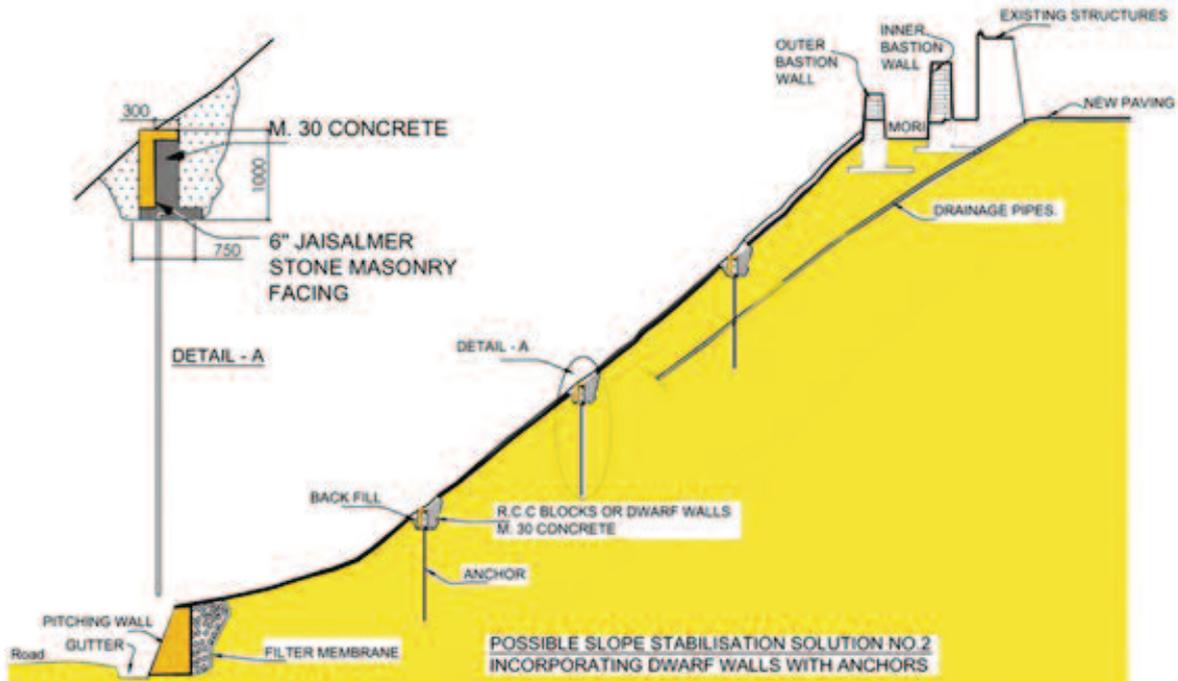
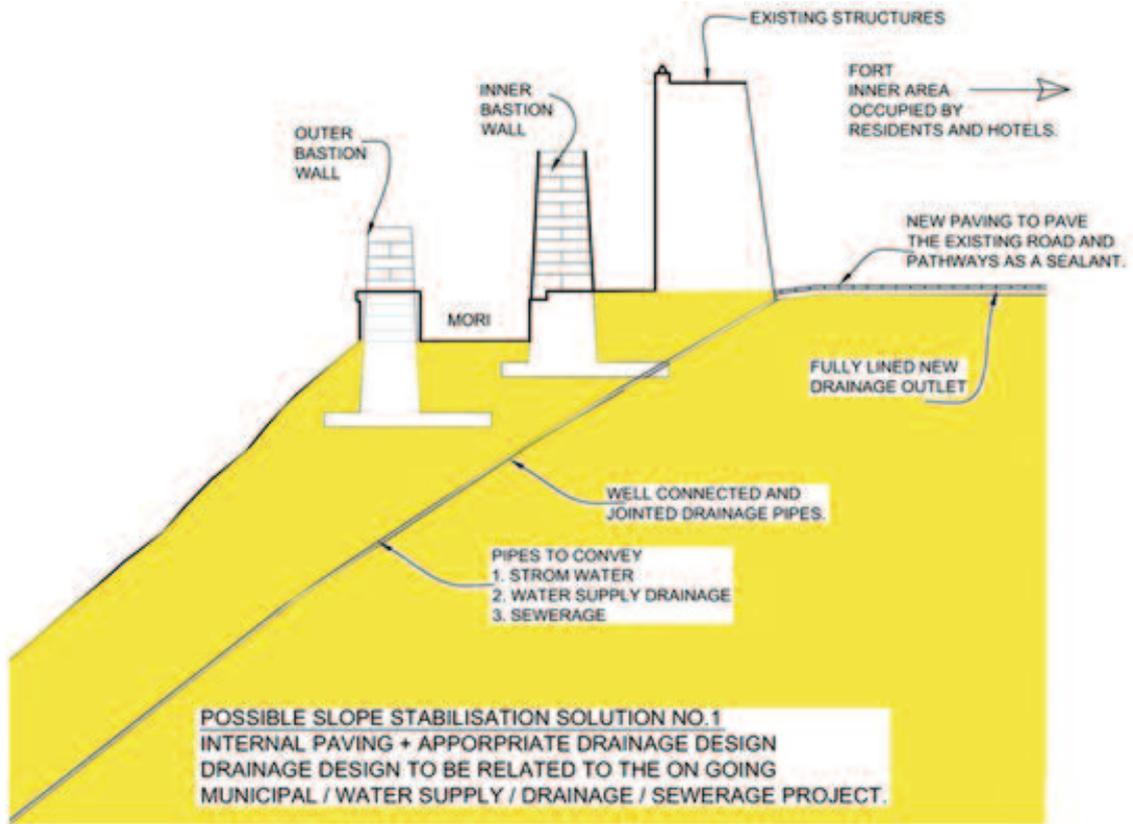
Jaisalmer Fort Conservation Initiative – A Case Study

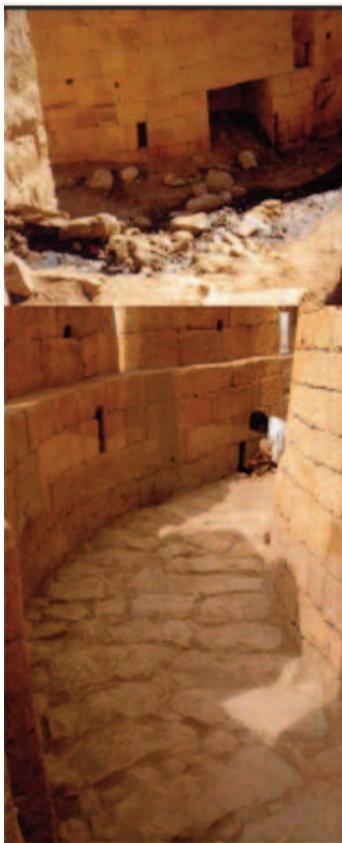
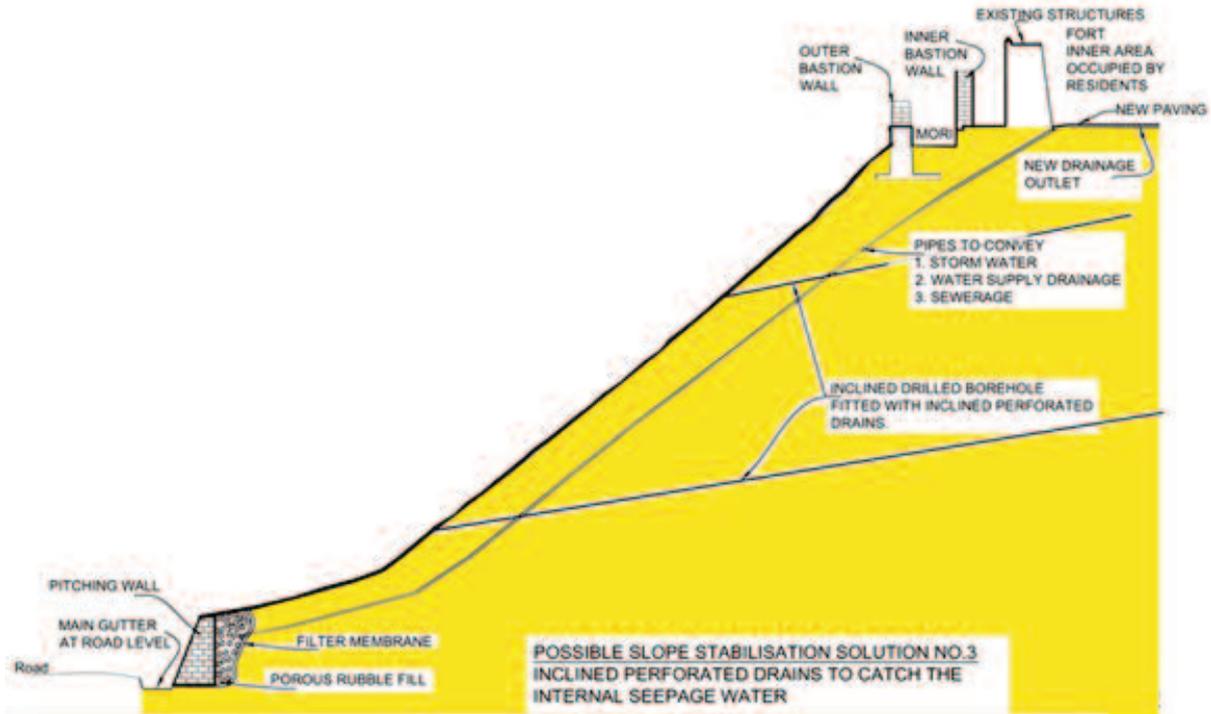


Jaisalmer Fort a UNESCO world heritage monument is on a hill about 30m above the surrounding plain, received piped water only in 1991, Since then, there have been several collapses of the bastion walls.

The conservation team found that a layer of mudstone in the hill was the main culprit. This is a soil that is very sensitive to water ingress, and virtually dissolves in the presence of water. This led to the collapse in parts of the fort, also new hotels within the fort and an imperfect sewage and rainwater drainage system enhanced the problem within the compound.

The team suggested and successfully implemented a method called 'Inclinometer Testing' to find out whether there are sub-surface movement in the soil. This is done by drilling vertical boreholes into the hill slopes at critical locations, mainly the corners of the triangular-shaped fort. Flexible plastic tubing is installed in these boreholes. A very sensitive probe is sent down the boreholes every 6 months or so and exact profile of the boreholes is mapped. A comparison of the profiles of a borehole over time will give a clear picture of the direction, location and magnitude of any subsoil movement.





AFTER RESTORATION

Restoration and Re-use of the - Mori

The Mori is a circuitous passage running between the living areas and the outer bastions of the fort. Originally used by guards to protect the Fort, this had become an open garbage dump.

INTACH has completely cleaned the Mori, which enables tourists and residents to walk around the fort and enjoy beautiful views of the city. The first task was to clear the entire passage of accumulated debris

Work in the Mori



BEFORE RESTORATION



The 850 year old Jaisalmer Fort was in a state of decay, with many of its beautiful palaces on the verge of collapse. The arrival of tourists put a spotlight on these heritage buildings leading to a major conservation initiative by INTACH

The restoration of Rani – Ka – Mahal

A major portion of the Rani Ka Mahal had collapsed in 1995 and the building was lying unused.



Rani ka mahal - before restoration



After restoration



Today - Various cultural, educational and philanthropic activities make it a living monument.

Hawa Prol - Gateway of winds

Hawa Prol is the gate through which all tourists enter the main square of the Jaisalmer Fort. During the earthquake in 2001, this important landmark suffered extensive damage and was under danger of being demolished due to its weak structure.

INTACH has now restored this beautiful and historic gate it is now being used re-used as a museum and portrait gallery.



BEFORE



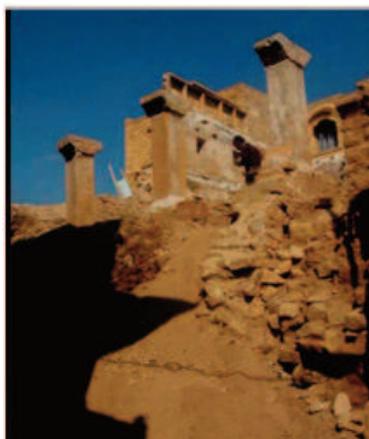
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Har Raj ji ka Mahal

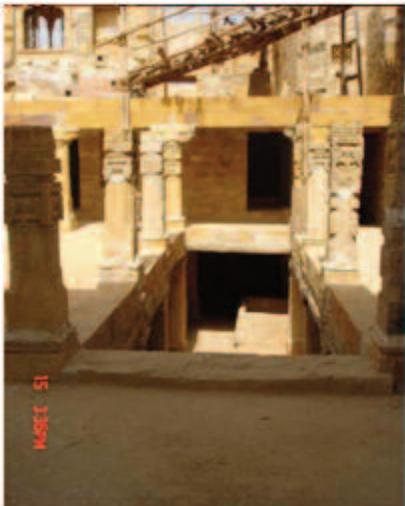
The oldest palace in Jaisalmer Fort was in a state of complete ruin. Its collapse could have caused extensive damage to the entire architectural fabric of the Fort.



BEFORE RESTORATION



INTACH completed emergency stabilisation of this building and is now in the process of restoring it.



AFTER RESTORATION



Objects found from Rani Ka Mahal

Isa Khan's Tomb: Conservation & Garden Restoration – A Case Study

Isa Khan's tomb not only pre-dates Humayun's Tomb by two decades, it is also the culmination of an architectural style used for royal tombs in Delhi during the Sayyid and Lodi dynasties from the early fifteenth to the early sixteenth centuries.

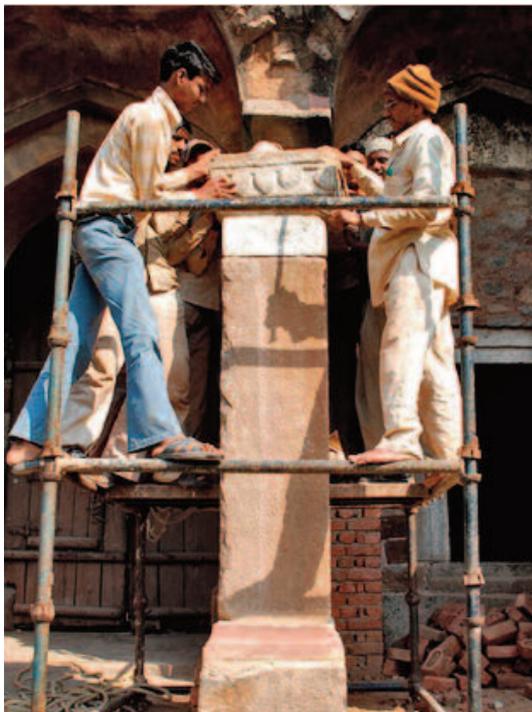


Physical work for the conservation commenced in January 2011 following extensive documentation, including 3D high-definition surveying, condition assessment, archival research, and a peer review of the conservation plan involving WMF staff and its advisors. The studies and discussions leading up to the commencement of work revealed that the Isa Khan Tomb complex is possibly the densest ensemble of medieval Islamic buildings in India. The architectural significance of the ornamentation on the tomb building—the ceramic tiles, ornamental stone finials, lattice screens, and incised lime plasterwork—sets it apart from its predecessors. Finally, the discovery that the outer half of the tomb enclosure was sunk at least 2 meters below the inner enclosure, makes this the earliest known sunken garden in the country.

An enormous amount of work was required to remove some 325,000 cubic feet of earth from the site in order to restore the landscape to its original level while being careful not to destroy any archaeology. During the earth removal, terracotta toys as well as stone fragments of finials and columns from the building were discovered. In the process of earth removal the full extent of the arched niches of the enclosure walls has also been revealed allowing future visitors to understand the intention of the original builders.



It has long been believed that the Mughals introduced the "sunken garden" form, the most prominent example of which is Sikandra, Emperor Akbar's tomb-garden near Agra. The discovery of the sunken garden at Isa Khan's Tomb—with which Emperor Akbar would have been familiar—is thus extremely significant, as it predates Akbar's tomb by over half a century.



Reinstalling capitals collected from the site



Glazed tiles in kiln after firing



Excavated terra cotta toys

One component of the Isa Khan Tomb project is the replacement of missing ceramic tiles from the roof of the tomb building. Since the craft of making ceramic tiles matching the sixteenth-century versions has been lost in India, four skilled craftsmen from Uzbekistan were invited to spend six months working alongside the AKTC team to experiment and produce tiles that match the originals.

Stone carvers, masons, plasterers, tile makers, carpenters, and gardeners have worked alongside engineers and landscape and conservation architects to restore the glory of these sixteenth-century monuments. Removal of inappropriate twentieth-century repairs using materials such as cement concrete have also been undertaken as these were causing severe deterioration and disfiguring the historic character these elements of this World Heritage Site.

YARROWS – A Case Study

Yarrows is a 19th Century building which was owned by Government of India for either housing Government houses or for residential purposes for the Government employees. It is believed that the building was used as a residence of Mohd Ali Jinnah who is regarded as founder of Pakistan in the British regime. Yarrows was designed in 1913 by Sir Herbert Baker who is renowned for having designed the North & South Blocks of Delhi's Secretariat buildings.



Project Background

After detailed studies on the structure, its material, its techniques of construction and the need of continual use of the building as hostel for probationers.

A meeting with CAG regarding renovation of Yarrows, Shimla was held on 13.07.2010 with INTACH and various decisions were taken about different aspects of the building. Window to be finished neat by the replacement of mullions whereas window sills be made as of Gaeity building at Shimla and CAG agreed that the existing sill stones be restored to its original finish.

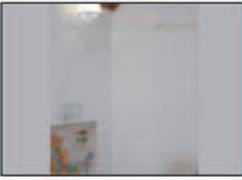
Eave boards to be replaced to give better look, more height to hide end of slates on roof and colour of eave boards would also be changed from green to slate colour. Droma windows over roof to be rebuilt like fan light in gaiety. All exposed pipes to be concealed.

All the joints in pavement should be in straight lines and gravels filled in the joints of paving stones should be levelled and not come out.

Renovation Methodology

S.No.	Room Name or No.	Past Condition	Photograph	Work undertaken	Photograph
1.	GF-Verandah	A semi-circular arched door show the later addition in the building.		It is now a part of the kitchen and the change is irreversible. Hence change in flooring material and pattern is done to enhance the visual aesthetic of the place.	
		Wooden beams and board deteriorated due to the water leak / drip from terrace.		The deteriorated wooden beams were replaced.	
2.	GF-Courtyard	Original rectangular columns and later added circular columns.		Circular columns were removed after checking the stability of the structure. Water fountain was removed and the area was treated with suitable tiles and distinct patterns.	
		Loosening of wooden boards in ceiling and water leakage from the terrace due to improper alterations		Wooden boards were replaced from the ceiling and decayed wooden beams were also replaced.	
		Flaking of lime wash along acrylic dome due to water leakage.		Cement plaster patches were removed. Decayed lime wash layers were scrapped to apply new coats of lime wash.	
		Acrylic dome is the later addition		Acrylic dome was removed and square glass skylight was constructed in place of the existing one.	
		Loosened wooden boards of ceiling		Loosened wooden boards used for the ceiling	
3.	GF-Billiards room	Lighting in billiards room is not according to standards		As per standards of billiards room, electric layout and illumination sources were re-designed.	

S.No.	Room Name or No.	Past Condition	Photograph	Work undertaken	Photograph
		Detaching wooden skirting.		Removal of the skirting and providing with appropriate techniques	
		Improper false ceiling provided for ceiling		New false ceiling as per the new design layout was provided	
		Wooden panelling on walls are not in original pattern.		Wooden panelling were removed and re-laid in original pattern.	
4.	Staircase	Panelling adjoining to the staircase is not in the original pattern		Removal of panels and repainting the surface with pattern matching the panels in the lounge was done.	
5.	TV Room	Inappropriate interiors and arrangement of furniture.		The toilet attached to the room is a later addition but it is proposed not to demolish it. Interiors of the TV room as well as for the toilet were undertaken as per the design	
		Wooden beams are used in ceiling		Decayed wooden beams were replaced.	
6.	Lounge	The interiors and arrangement of furniture is inappropriate			
		Wooden beams are used in ceiling		Damaged wooden beams were replaced and interior of the room was re-designed.	

S.No.	Room Name or No.	Past Condition	Photograph	Work undertaken	Photograph
7.	Dining Hall	Improper layout of furniture and interiors		The room will continue to function as dining hall. Hence, layout of the room was re-arranged.	
8	GF-rear Veranda	Rear view showing the colonnaded verandah.		Removal of the plaster layer from the first floor and circular columns.	
		Hard paving around the structure makes the immediate surrounding impermeable.		Hard paving was removed to create soft spaces and make surroundings of the building permeable.	
		Wooden bracket concealed by plastering.		Wooden brackets were exposed by scrapping the plaster.	
9.	First Floor	This wall is a later addition for toilet. Cracks on new wall and bulging of plaster on wall can be seen.		Room to be converted to three seater. Demolition of the wall to convert into three seater room	
		Entire floor area is covered with carpets		Carpets were provided below the furniture to expose the wooden flooring.	
		Perforated false ceiling provided in the room and inappropriate fixing of false ceiling.		Removal of perforated false ceiling and providing new false ceiling as per the approval of design.	
10.	Attic-Room 9, 10 and 44	There are two rooms at the attic level. Larger room is either used as store or converted to single seater room. Smaller room is used as server room.		The room was converted to three seater room.	
		Windows are also used as storing places.		Stacked material from the window was removed to use the space for other purposes like study table at the same place can be seen in the picture which shows that the space is now used as reading/study space.	

S.No.	Room Name or No.	Past Condition	Photograph	Work undertaken	Photograph
11.	Terrace	Parapet wall showing the division of terrace into two parts and Kota stone used for flooring in the extension part.		Re-flooring on both sections to be done. Removal of flooring tiles and providing the tiles as per the design	
		Railing at the extended terrace.		Intermediate columns between railings in line with the circular columns in the ground floor were provided. Railing was re-designed.	
		Acrylic dome on terrace does not match the building		Acrylic dome was replaced by glass skylight.	
12.	Roof	Slate tiles have loosened		Damaged slate tiles were replaced with new tiles and loose slate tiles were re-fixed.	
		A wooden ladder is placed at terrace level to access the platform. Wooden members of the ladder are damaged due to age and effect of water on it.		Rotten and damaged wooden members were replaced.	
		Deposition of soil in the gutters resulting in clogging. Improper direction of slope of gutter.		Gutter was cleaned re-alignment of gutter was done by maintaining a proper directional slope.	
13.	Site surroundings	Access - Main entrance to the complex		It remains as the primary access to the building. This area was augmented through proper paving, street furniture, lampposts and landscape.	
		Parking - The iron screens installed for lawn tennis obstruct front view of the structure and iron screens will be installed behind the parking.		Iron screens were removed and replaced at the peripheral edge behind parking.	

Heritage Conservation and Adaptive Re-use of Buildings

Adaptive reuse of buildings has a major role to play in the sustainable development. When adaptive reuse involves historic buildings, environmental benefits are more significant, as these buildings offer so much to the environment, landscape, identity and amenity to the communities to which they belong.

One of the main environmental benefits of reusing buildings is the retention of the original building's "embodied energy". By reusing buildings, their embodied energy is retained, making the project much more environmentally sustainable than entirely new construction. When done well, adaptive reuse can restore and maintain the heritage significance of a building and help to ensure its survival, rather than falling into disrepair through neglect or being rendered unrecognisable. Heritage buildings that are sympathetically recycled can continue to be used and appreciated.

Renovation of Room No. 203, 204, 205A at South Block, New Delhi – A Case Study

South Block is a grade-1 heritage building which has been maintained excellent condition by CPWD. A number of restoration and few renovation works have been taken up in recent past.



Renovation Work

In view of frequent visits of foreign delegates and other VVIP's, the Defence Secretary desired that Ministry of Defence should have an excellent committee room.

The Architect's Office of CPWD made a 3D presentation and special empowered committee on heritage conservation approved the proposal.

Scope of Work

It included dismantling the old partition, jalties, flooring and other items and to make the area vacant for converting room No. 204 to a sophisticated committee room by natural hardwood flooring, POP ceiling with AC ducts, wall panelling with teak veneered board and finishing walls with texture paint.

Also attaching toilet and pantry with modular kitchen by making a partition in room No. 205A. Converting room No. 203 to a conference room after dismantling existing partition, floorings etc. with attached audio room with a large display window with fixed glass. Restoring of existing door and windows to its original design.



Planning

Since any heritage proposal needs approval from special empowered committee on heritage conservation by members from CPWD, DUAC & ASI.

Constrains in Execution of Work

Since this is a grade –I heritage building, there were restrictions in using various items such as the use of tiles only in the wet areas and restrictions in using aluminium work etc.

The location of the site was above one of the VVIP's office hence the work used to get stalled randomly any time. During the normal working hours the work which did not create much noise was allowed. Rest of the work was executed during night or on holidays.



Items of Work Executed

- Flooring done with natural hard wood.
- POP Ceiling in two levels with cove lighting and cornice.
- Air conditioning through vertical ducts.
- Walls finished with lacquered polished teak wood panelling upto one meter, top finished with moulding and beading.
- Rest of the walls finished with white textured paint.
- Toilet flooring in vitrified floor tiles and doors in toughened glass.
- Pantry flooring in vitrified floor tiles and walls in ceramic tiles. Working platform of solid acrylic surface.

The above work was completed well within the time frame and the target set was achieved.

Restoration of Town Hall in Kolkatta for Adaptive Reuse – A Case Study

Practical conservation of heritage buildings in Kolkatta started in the 1990's and the first project was the Town Hall, a public building built by the British in 1813 C.E., in the central district by a public – private partnership.

This was pilot project for the state administration and the people of Kolkatta. After this project, the conservation of historical buildings became an agenda of government and civil society as this was the first building for adaptive reuse in Kolkatta.



Town Hall – Front view

Adaptive reuse of Tijara Fort-Palace as Heritage Hotel – A Case Study

The foundation stone for the Tijara Fort Palace was laid in 1835 C.E. by Rao Raja Balwant Singh. This fort – palace was built by craftsmen and masons from imperial Delhi and Kabul over a period of 13 years before the Maharaja died mysteriously in 1845 C.E. the construction remained incomplete until now.

Since these buildings were never designed as hotels the job became even more challenging. The old structure is made liveable with modern conveniences – water, electricity, security, and other aspects.



BEFORE



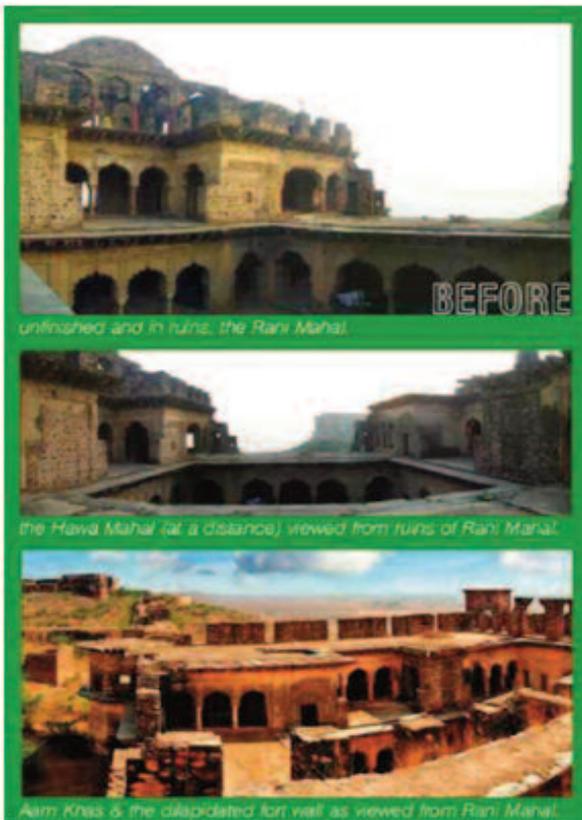
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The newer structures are built using modern materials and technologies and a lot of care is taken in the design and detailing to weave it together with the existing structure. RCC construction with glass is used but practically underground in a way that it does not stand out from the old building

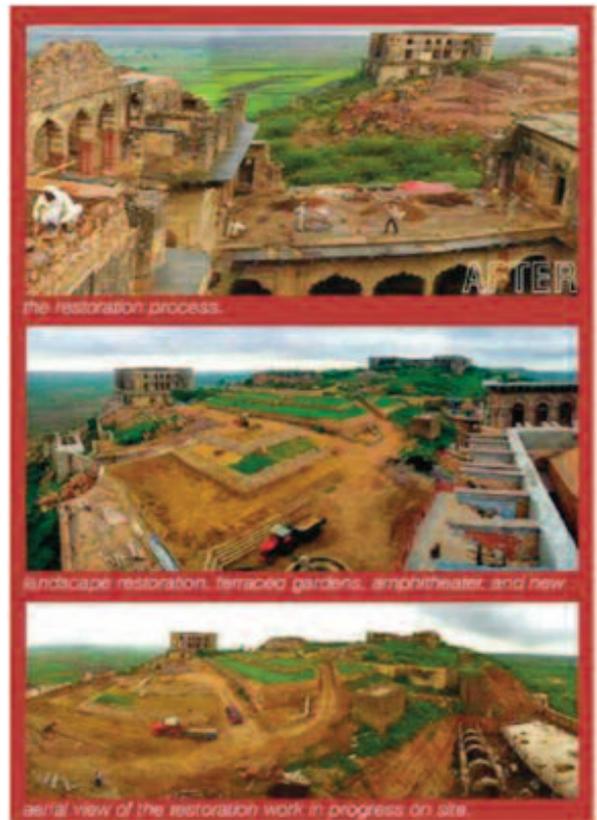
A lot of attention has been given to the detailing and the décor. The idea is not to contemporise it rather to evoke the feeling of entering and being transformed back to the past.



One of the fort, the Rani Maha, which is predominantly the residential unit with eighteen rooms has been named after leading lady painters – Amrita Sher-Gil, Anjolie Ela Menon, Arpita Singh, Nilima Sheikh and so on.



BEFORE



AFTER

UNESCO - World Heritage List

The World Heritage Committee

The World Heritage Committee meets once a year, and consists of representatives from 21 of the States Parties to the Convention elected by their General Assembly.

The Committee is responsible for the implementation of the World Heritage Convention, defines the use of the World Heritage Fund and allocates financial assistance upon requests from States Parties. It has the final say on whether a property is inscribed on the World Heritage List. The Committee can also defer its decision and request further information on properties from the States Parties. It examines reports on the state of conservation of inscribed properties and asks States Parties to take action when properties are not being properly managed. It also decides on the inscription or deletion of properties on the List of World Heritage in Danger.

India has 29 World Heritage Sites out of which 23 are Cultural Sites as follows -



Agra Fort



Ajanta Caves



Ellora Caves



Taj Mahal



Group of Monuments at Mahabalipuram



Sun Temple, Konarak



Churches and Convents of Goa



Fatehpur Sikri



Group of Monuments at Hampi



Khajuraho Group of Monuments



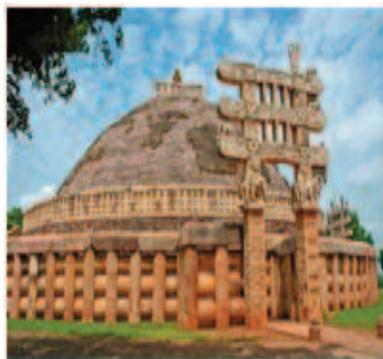
Elephanta Caves



Great Living Chola Temples



Group of Monuments at Pattadakal



Buddhist Monuments at Sanchi



Humayun's Tomb, Delhi



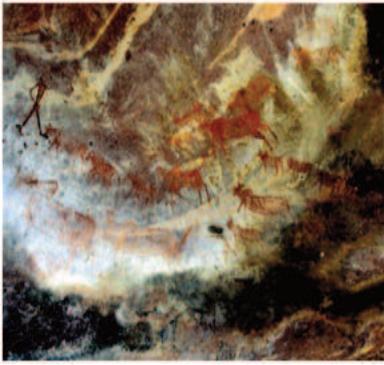
Qutb Minar and its Monuments



Mountain Railways of India



Mahabodhi Temple Complex at Bodh Gaya



Rock Shelters of Bhimbetka



*Champaner - Pavagadh
Archaeological Park*



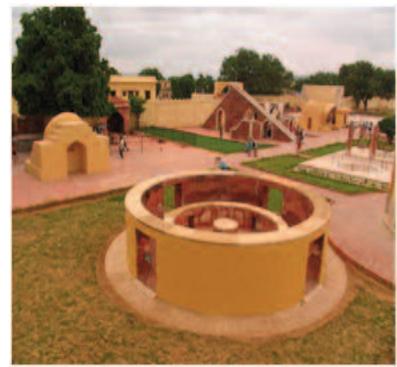
*Chhatrapati Shivaji Terminus,
Mumbai*



Red Fort Complex, Delhi



The Jantar Mantar, Jaipur



The Jantar Mantar, Jaipur



The Taj Mahal, also one of the seven wonders

Location of World Heritage Sites:



Latest Inclusions :

In the 37th Committee Session held at Phnom Penh, Cambodia, the UNESCO 'World Heritage Committee' on 21st June 2013 included six majestic forts of Rajasthan -Chittorgarh; Kumbhalgarh; Sawai Madhopur; Jhalawar; Jaipur, and Jaisalmer in the list of world heritage sites.

Protected Monuments and Sites - Delhi

This section introduces you to all centrally protected ancient monuments & sites of Delhi. The Archaeological Survey of India is trying best to restore and preserve them.



Adilabad, Tughluqabad, S. Delhi



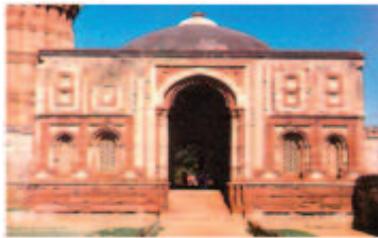
Afsarwala Mosque, Nizamuddin



Afsarwala Tomb, Nizamuddin



Ajmeri Gate, Old Delhi



Alai Gate, Mehrauli



Alai Minar, Mehrauli



Allaudin Khilji's Tomb, Mehrauli



Amir Khusro's Tomb, Nizamuddin



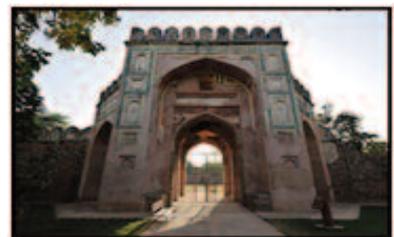
Ancient Mosque, Palam



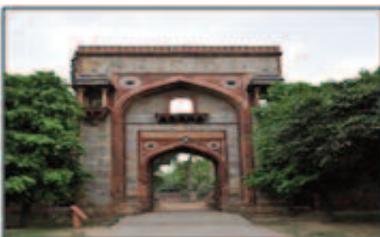
Arab Ki Sarai, Nizamuddin



Arab Sarai & Abadi Bagh, S. Delhi



Arab Sarai -Gateway East



Arab Sarai -Gateway North



Ashokan Pillar, Feroz Shah Kotla



Ashokan Pillar, Delhi Ridge



Ataga Khan's Tomb, Nizamuddin



Athpula, Lodhi Garden



Azim Khan's Tomb, Delhi-Ggn Rd.



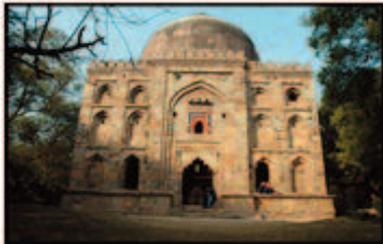
Bada Gumbad, Lodhi Garden



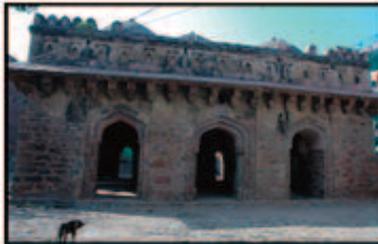
Bade Khan ka Gumbad, Kotla, S. Delhi



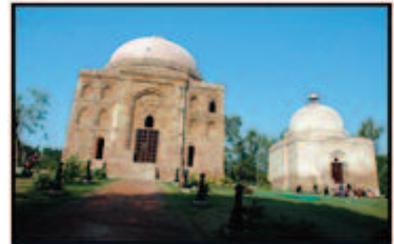
Badli ki Sarai, Pipalthala



Bagh-e-Alam, Deer Park, Hauz Khas



Bahlol Lodhi's Tomb, Civil Lines



Bandi or Poti ka Gumbad,



Baoli, Nizamuddin



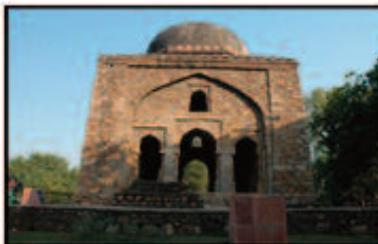
Baoli, Munirka



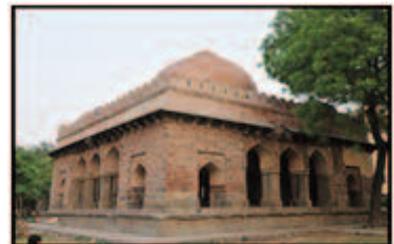
Bara Batasha, Nizamuddin



Baradari



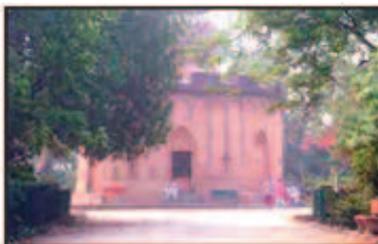
Bara Khamba, Green Park



Bara Khamba, Nizamuddin



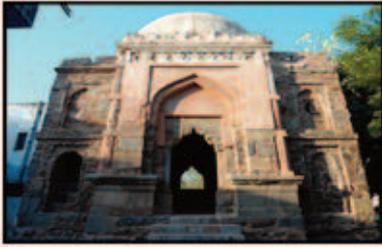
Bara Pullah, Nizamuddin



Baunta Flag Staff Tower, DU, N Delhi



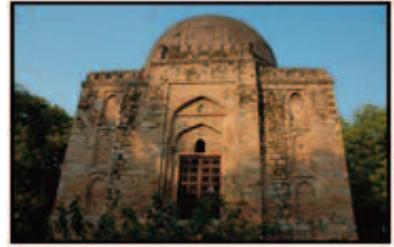
Begumpur Mosque, Begumpur



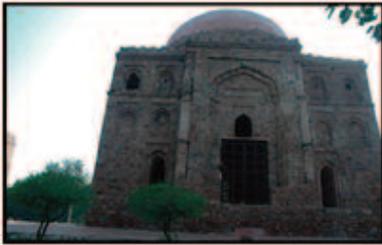
Bhure Khan's Tomb, Kotla, S. Delhi



Bijay Mandal, Kalu Sarai



Biran ka gumbad, Green Park



Birji Khan's Tomb, R K Puram



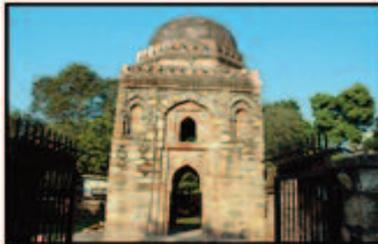
Chauburja, Delhi Ridge



Chausath Khamba, Nizamuddin



Chhota Batashewala, Nizamuddin



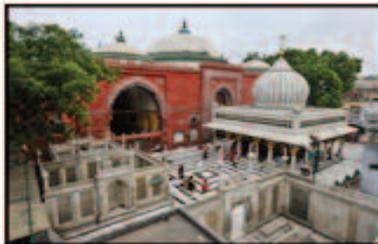
Chhoti Gumti, Green Park



Chhotte Khan ka Gumbad, S. Extn 1



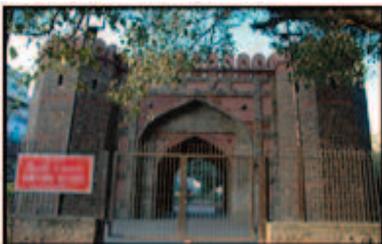
Chor Minar, Hauz Khas



Dargah, Hazrat Nizamuddin



Darya Khan's Tomb, East Kidwai Nagar



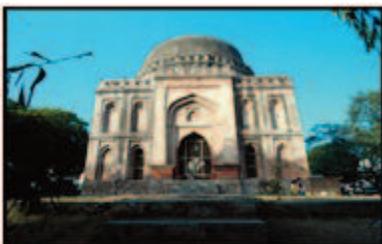
Delhi Gate, Daryaganj



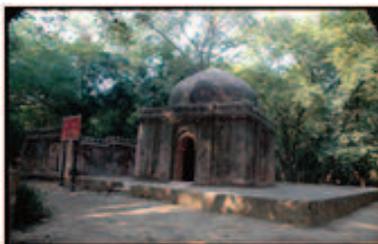
Grave in Balban Tomb, Mehrauli



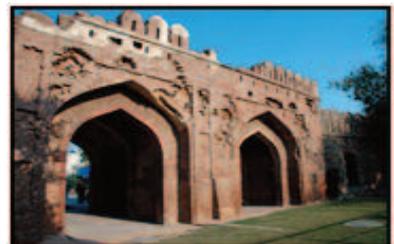
Jantar Mantar, Connaught Place



Kale Khan's Tomb Gumbad, Kotla



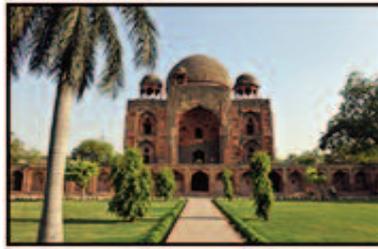
Kale Khan's Tomb Gumbad, Kotla



Kashmere Gate, Old Delhi



Khairul-Manazil Mosque, Old Fort, Mathura Rd.



Khan-i-Khana's Tomb, Nizamuddin



Khirki Masjid, Khirki Village



Kos Minar, Delhi Zoo, Mathura Road



Kotla Feroz Shah, B S Z Marg



Kushk Mahal, Inside Teen Murti House



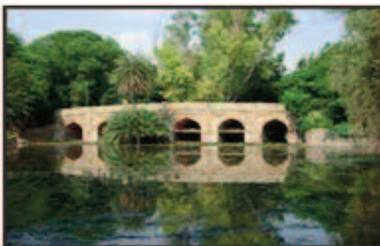
Lakkar Wala Gumbad, Nizamuddin



Lal Bangla, Golf Link



Lal Darwaza, Kotla Feroz Shah



Lodhi Bridge, Khairpur



Madhi Masjid, Mehrauli



Makhdum Sabzwari's Mosque, H Khas



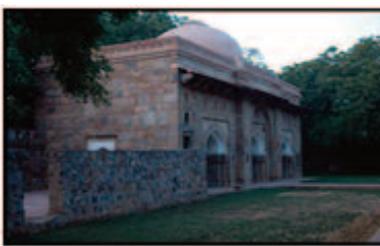
Metcalf's Canopy, Mehrauli



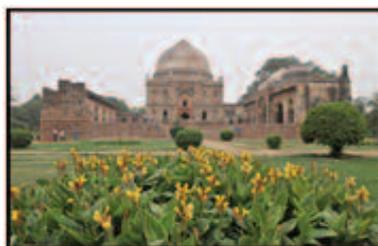
Mirza Ghalib's Tomb, Nizamuddin



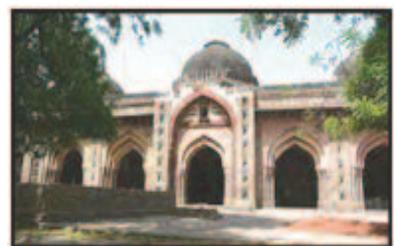
Mirza Jahangir's Tomb, Nizamuddin



Mohamadiwali Mosque, Mayfair Garden



Mosque and Bara Gumbad, Lodhi Garden



Moth ki Masjid, South Extn. 2



Moti Masjid, Masjid Moth



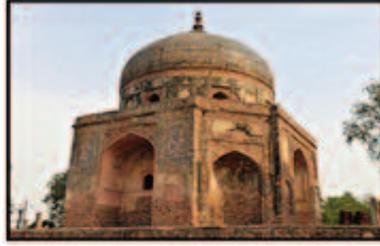
Mubarak Shah Sayyid's Mosque, S. Extn. 1



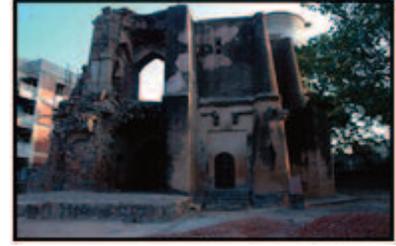
Munda Gumbad, Hauz Khas



Najaf Khan's Tomb, Safdarjung Airport



Nila Gumbad, Nizamuddin



Pir Ghaib, Inside Hindu Rao Hospital



Punjabi Gate, Subzi Mandi



Purana Qila, Mathura Road



Qudsia Gateway, Qudsia Garden



Qudsia Mosque, Qudsia Garden



Rajon Ki Baoli, Mehrauli



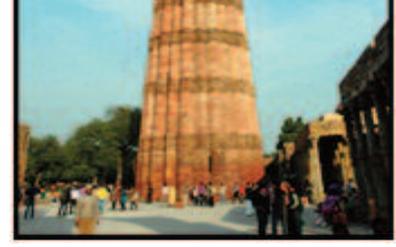
Qutab Minar, Mehrauli



Rakabwala Gumbad, Malviya Nagar



Red Fort, Old Delhi



Qutab Minar, Mehrauli



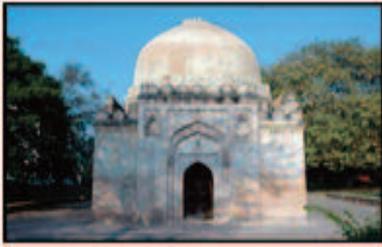
Gateways - Magazine, Kashmiri Gate



Roshnara Bagh and Tomb, Subzi Mandi



Safdarjang's Tomb, Jor Bagh



Sakri Gumti, Green Park



Salim Garh (fort), Old Delhi



Sarai Shahji, Malviya Nagar



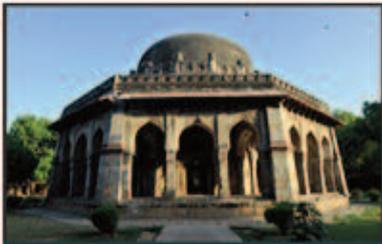
Shah Alam's Tomb, Wazirabad



Sheesh Mahal, Shalimar Bagh



Shish Gumbad, Lodhi Road



Sikandar Lodhi's Tomb, Lodhi Road



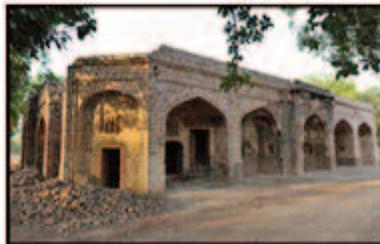
Subz Burj, Lodhi Road



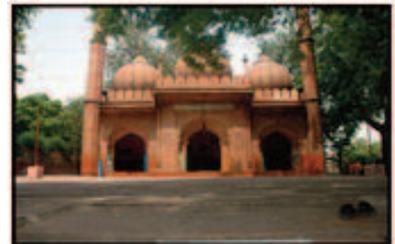
Sultan Garhi, Vasant Kunj



Sundarwala Burj, Nizamuddin



Sunderwala Mahal, Sunder Nursery



Sunehri Masjid, Old Delhi



Telegraph Memorial, Kashmere Gate



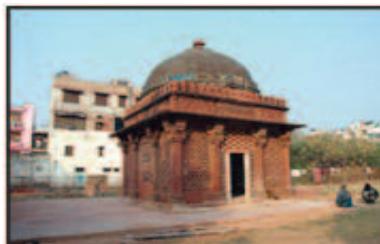
Thane wala Gumbad, Siri Fort



Tripolia Gateway, Delhi Karnal Rd.



Yusuf Qattal's Tomb, Khirki Village



Zafar Mahal, Mehrauli

References

1. INTACH; <http://www.intach.org/chapters-structure.asp?links=chapt1>
2. Mapping and Evaluating Heritage, Shikha Jain, DRONAH
3. Conservation of Heritage Buildings in Delhi submitted to Centre for Civil Society by Ujjwal Gaur
4. City Development Plan Delhi, Dept. of Urban Development, Govt. of Delhi
5. Archaeological Survey of India; http://asi.nic.in/asi_cons_prev.asp
6. Environmental Factors Threatening the Survival of Heritage Buildings By Mahamoud Sodangi, Arazi Idrus, Faris Khamidi and Adam Dahiru Adam
7. Effect of Vibrations on Historic Buildings: An Overview By J H Rainer
8. Intach Activities in Urban Heritage Conservation, INTACH, 71 Lodhi Estate, New Delhi
9. Building Conservation Guidelines By: Nicholas Hill, Architect
10. SDM Architects, Mumbai; <http://www.sdmarchitects.com/jaisalmer-fort-conservation-project-ragasthan.html>
11. World Monument Fund; <http://www.wmf.org/field/isa-khan%E2%80%99s-tomb-conservation-garden-restoration>
12. Project Completion Report, Conservation Plan – Yarrows; Shimla, Himachal Pradesh, INTACH, 71 Lodhi Estate, New Delhi
13. Maintenance and Restoration of Heritage Building – South Block, Nirman Bharti, October 2012, CPWD
14. Department of Architecture, Jadavpur University, Kolkatta; <http://www.deepdyve.com/lp/emerald-publishing/restoration-of-town-hall-in-kolkata-for-adaptive-reuse-a-case-study-XRKpaWmpXT/7>
15. Text and Photographs, courtesy Neemrana Hotels; <http://issuu.com/vanibahl/docs/tijara?e=1218513/2717667>
16. <http://whc.unesco.org/en/statesparties/in>; <http://whc.unesco.org/en/list/247>.
17. Competent Authority Delhi; <http://www.competentauthoritydelhi.co.in/Monuments.aspx>

Central Public Works Department (CPWD)

In the service of the nation since 159 years

Under the Ministry of Urban Development, Government of India, CPWD provides single window services for all facets of the government built environment in India and abroad.

With its huge resource of skilled and competent engineers, architects and horticulturists, CPWD's strength is its country wide presence, with proven ability to undertake a whole range of complex constructions under difficult terrains. The department has the capacity to undertake construction varying from the smallest works in the remotest of places to mega projects in metro cities. These works include the construction and maintenance of government structures such as residential complexes, offices, schools, laboratories, hospitals, sport facilities, stadia, gymnasias, auditoria, storages, highways, flyovers, tunnels, bridges, jetties, airports, runways and border fencing. Intra-campus facilities such as water and electric supply, sewerage and treatment plants are also provided.

CPWD also performs other functions such as the custody of estates, valuation, rent assessment, technical advice to government, consultancy services, standardisation and benchmarking, State Ceremonies (Republic Day, Samadhis, etc.), processing of DPRs for development of urban infrastructure under JNNURM and works of other Ministries for centrally funded works. CPWD also assists in organising public and ceremonial functions, and upkeep of historical and important monuments and structures.

Handbook of Conservation of Heritage Buildings

CPWD also publishes various documents to help the construction industry. This publication is a further step forward in the department's effort to sensitize the community to share the responsibility to respect and conserve the heritage places and pass on these places to our future generations, so that they will understand and keep themselves attached to their heritage and culture.



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July, 2013.