

Conservation of Built Heritage and Concept of Anastylosis: Problems, Practices and Intended Mitigated Measures in Pakistan

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Abstract: *The land comprising on present areas of the Islamic Republic of Pakistan possesses the earliest archaeological and historical background that extends to the Paleolithic period (Old Stone Age) which has been calculated around two million years old from present. The sites of that specific period have been discovered by archaeologists in the Potohar (or Potohar) Plateau; presently comprising on districts of Attock, Chakwal, Jhelum, and Rawalpindi in the province of Punjab. This region was the human species' most ape-like habitat. Since remote antiquity, this area has actively contributed to the development of human history. In other words, from the prehistoric period up to the Muslim eras (19th century C.E), a variety of cultures, ancient civilizations, religious art, and architectural with vibrant styles as well as trends emerged in this part of the world (Allchin 1989: 148). Based on concrete evidences, it can be considered very correctly that Pakistan has been a homeland of an extraordinarily rich, dynamic, and diversified cultural heritage. The religious and secular buildings such as; archaeological sites, monuments, royal palaces, caravan serais (Inn), baolis (step well), forts, historic mounds, graveyards, gardens, and sacred ponds are a few of such examples which are scattered in the different areas of Pakistan (Dani 1967:25). However, due to ravages of time, human neglect, natural disasters and climatic catastrophes, the present state of preservation of the sites of both secular and religious historical monuments / sites is not entirely pleasing. In the first part of this paper conservation techniques and problems faced by the sites and historical monuments is discussed, while in the second part present practices and approaches have been described apart from the concept*

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of Anastylosis whereas in the third part a brief discussion has been provided on the mitigated measures intended in the light of national and international laws, regulations and guidelines to improve the present state of preservation of old age legacy of mankind for posterity.

Keywords: *Cultural Heritage, Legislation, Conservation Problems, Process of Anastylosis, Intended Mitigated Measures*

Introduction

The term “cultural property” includes; historical monuments, groups of structures, or places; historical lawn archaeological sites and structural remains; works of art. Historic areas in urban or rural settings with vernacular architecture that provide a physically beautiful environment also make up a portion of cultural assets. The historical artefacts left behind by previous human generations serve as living reminders of their long-standing customs (Khan 1990: 6). People today are more aware than ever before of the solidarity of human ideals and see historical sites as a shared history. The common obligation to protect them for coming generations is well identified by way of all countries with close cooperation and collaboration with UNESCO. This process of conserving the cultural heritage involves taking measures to stop it from further degradation. It encompasses all actions that help to preserve cultural heritage. If a simple possible action is possible, then it would be the best option in this regard among all interventions. The changes made are not to be reversed in any case and not preclude potential future innervations. Additionally, it implies that all procedures must guarantee the preservation of the specific value of a cultural property. It also comprises actions that are typically referred to as retrieval, maintenance, rehabilitation, revitalization, and relocation for adaptive or longer use (Mughal 2011:23, Peterson 1939:140).

The idea of conservation of cultural background means a systematic and aesthetic method closer to the repairs of an antiquity to save it from similarly decay and bring it a new life through which it could lengthen its existence. Therefore, the main goal and cause of the conservation of an ancient building is to preserve it from any damage and to increase its life span. The object of conservation is not to rebuild what is lost or defaced but to protect the existing structure to save it from further damage. It becomes more imperative for a conservator to make a precise study of the monument before its conservation is taken by the experts. It is however, pertinent to mention here that all the studies need to include the contemporary history of the socio- political, economic and geological conditions of the site or monument (Feilden 1989:3). In order to understand the monument properly, a conservationist need technical experience and understanding of the architecture related with the monument. Besides, a conservationist has to study the building material. Efforts are required be made to understand properly all the main causes of deterioration by carrying out analysis of the building material. Further, the causes of decay and other factors affecting the monument needs to be diagnosed and documented systematically with details. There are many techniques to meet the requirements for protection and conservation of monuments therefore best suitable measure need to be taken by the experts. The conservationist must follow the international standards and guidelines / techniques that in other way could, cause deterioration of the monument. Therefore, all professionals working in the same area must be able to understand its guiding principles and objectives. Because

without precise concepts, working together could be difficult, and effective conservation work and movement will no longer be successfully carried out. The natural calamities inclusive of; heavy rains, floods, catastrophes, and earthquakes cannot be avoided, but with the aid of forethought the damages can be substantially reduced (Kaliopi 2006: 60-65).

International Rules and Regulations for Conservation of Heritage

The International instruments concerning with conservation of the cultural heritage stress upon respect and provide guidelines for proper conservation of a monument / site. There are international Conventions, Charters and Recommendations which provides guidance for proper conservations of monuments for instance: -

- i) Conservation Manual by Sir John Marshall, 1928.
- ii) Athens Charter, 1932.
- iii) The Venice Charter, 1964.
- iv) UNESCO Convention, 1972.
- v) The European Charter of the Architectural Heritage, 1975.
- vi) Burra Charter, 1979.
- vii) Lahore Charter for Conservation, 1980.
- viii) Florence Charter, 1981.
- ix) Charter for Conservation of Historic Towns and Urban Areas (Washington Charter), 1987.
- x) Nara Document on authenticity, 1994.

Processes of Conservation Practices

The whole process of conservation is a completely new phenomenon. Due to complexity of the conservation work the experts are required to follow several principals to keep the authenticity and authenticity of the cultural heritage for posterity (Venice Charter1964:1). A few important principles which are necessary for proper protection, preservation and restoration of cultural heritage are mentioned as under:

1. Inventories and Records

The conservation methods constitute to begin with the instruction of a stock of all cultural assets. It includes putting in suitable classes of belongings related to culture and capturing them very well as viable, digitally, and explanatory. The computer assisted as well as the digital documentation has significance importance. An initial written document as “Conservation Note” of every item or building is essential that allows us to recognize and contextualize it in complete form. Similarly, the statistics and information need to be searched and consulted during the conservation work.

2. Documentation

A complete digital documented record before, during, and after of any intervention is very essential. All work relating to the protection, preservation, restoration and development need to be documented,

supplemented by photographs and drawings. For instance, general cleaning, and re-assembly works must be documented, along with the materials and techniques used. Further efforts are required to be made to ensure maximum persistence of cultural assets, so that the future conservators understand what has been done in the past.

3. *Interventions*

Intervention may be minimal when and where is needed. The methods used however, depends on the climate in which cultural properties exists. Interventions revolve around the loss of a certain degree of “value” of cultural heritage but are justified based on conservation for future. The maintenance process implies interventions at different levels and levels of intensity that are characterized by physical conditions, the causes of degradation and the possible subsequent environment of protection of cultural property. There are at least ten stages of intervention process as outlined below: -

- i) **Prevention of Deterioration:** The cultural wealth needs to be protected by environmental control. Prevention therefore includes measures to control moisture, temperature, and light, as well as to prevent it from any damage. Measures to reduce air pollution in the industry and the urban environment include traffic vibrations and soil extraction from ancient ruins.
- ii) **Preservation:** Proper protection is directly related to cultural wealth. To protect a monument or structure there is need to stop the damage and destruction caused by moisture, chemical factors, and microorganisms. Regular maintenance, cleaning schedule, good renovation, and good maintenance is important factor in this regard, when it’s necessary to keep cultural property from deteriorating and cultural property in the same state.
- iii) **Consolidation:** Standardization is a physical supplement or application of supporting materials to the actual structure of cultural property. There is need to secure its stability or structural integrity in case of non-transferable cultural property. But no historical evidence should be destroyed in the process. It’s very important to use the traditional skills and materials. The material parts such as wood, clay, brick or destroyed soil should be used to repair or repair damaged or decayed parts of structures and traditional materials and skills.
- iv) **Restoration:** The purpose of the restoration is to revive the initial understanding or clarity of an object. Replacing lost or broken parts should be mixed in harmony with the whole, but different from the original when studied more closely to ensure the recovery doesn’t falsify technical and historical facts.
- v) **Rehabilitation:** Adaptive renovation of buildings meant often; using a building as an art gallery or using structurally sound buildings as an institution, etc., are the only ways to be economically viable in historical and aesthetic values. It’s also often the only way that the historic buildings can rise above modern standards, creating modern conditions.
- vi) **Reproduction:** The reproduction refers to the replacement of existing objects, often some lost or destroyed parts, to preserve the aesthetic harmony of a historic building. If precious cultural values are irrevocably damaged or endangered reproduction is often replaced to maintain the harmony of a building.

- vii) **Reconstruction:** Reconstruction historic building by using new materials be based on sharp documents and evidence and never in “Assumptions”. For instance, Ziyarat Residences in Balochistan (which was built in 1892 during the British period), was collapsed in 2013. It was with reconstructing the elements of the monument was carried out which was based on available archival records/documentation.
- viii) **Reversibility:** The efforts should be made to prevent any work that can preclude the possibility of returning to the original State. However, significant interventions may be needed to survive, especially because of new uses. With all changes, the work should be minimized and thus as to cause as little damage to the building as possible and to preserve all the good architectural details. Any important element that cannot be avoided should be safely preserved for future work.
- ix) **Accurate Replacement:** If part of the structure is damaged beyond repair, then replacement is necessary. However, emphasis should be given on the right replacement. First, to determine if the damaged or rotten part is original, second, if so, the modelling and model must be maintained so that the respected master can copy accurately. It should be emphasized that very accurate instructions, measurements, and samples should be given to craftsmen so that the correct copy of the original work for the replacement of stones and bricks. For example, instead of imported stones or manufactured asphalt, the installation of damaged stones should be repaired by taking local stones if possible.

The Concept of Anastylosis

Anastylosis is a term applied to the process of reconstructing a building that has been demolished either by natural disaster, accidental causes, or collapsed due to neglect and abandonment by the ravages of time. However, it is used in the context of the preservation of ancient monuments. In other words, this process may include the minimum introduction of neutral elements to stabilize or integrate the shape. The anastylosis procedure is designed to restore the original as much as possible (Sharon 1998: 15). There are following principles which are required to carry out during this process which are mentioned as under:

- i) **Authenticity:** The basic principle is the rehabilitation of structures using their original architectural elements. Because the main elements are used in examination and the original location of these elements should also be determined accordingly based on detailed and established research. The goal in each application is not to ensure the structural integrity of the whole structure but focus only on parts of the structure where the main parts are unnecessary. The durability of construction technology and the structural authenticity of the building are as important and inseparable as its material authenticity.
- ii) **Integrity:** When modifying the structure, it is important to ensure both structural integrity and visual integrity. New materials can be used in small quantities to achieve appearance and structure, but new elements should not be added if the current original components cannot be well integrated. Application of the new material should not convey the key elements of the structure and should not be disturbed by the reporting of the facts.

- iii) **Reliability:** As with reconstruction and reconstruction, Research and experiments should calculate information such as the original volume, shape, and height, and the installation of the correctly distributed architectural elements should be determined. Research also reveals the values of authentic work that contribute to its history and construction period because it will increase reliability.
- iv) **Compatibility and Distinguishability:** When using new materials, it is important to consider that the material should not attract attention at first glance. However, it must be consistent with the key elements of the structure. The Excessive use of new material can lead to the creation of a new structure that violates the structure's clean and historical standards. According to key elements, not only physical but also structural. The most convenient materials should be determined after analysing the properties of the original material in the laboratory. The missing parts should be filled out because of structural requirements.
- v) **Reversibility:** The use of anastylosis can practically cause errors, whereas, the development of material technologies can enable later applications to be carried out. Even materials that were then considered modern could eventually be damaged. For this reason, abhorrent wavelengths must be the opposite. However, because return is an unrealistic concept and an impossible task that can be fully achieved without damaging the main elements, the term retreat is preferable. For example, the combination of architectural elements is done with broken rods that can be broken in the event of an earthquake, so these materials can later be modified without damaging the original components.
- vi) **Structure within Scale:** Anastylosis contributes to the exposure of structures in their original form. The integrity of the cavalry should also be evaluated by predicting the impact of the structure on the site after the cavalry. There should be understanding the structure from the beginning in the context should be parallel to the situation that occurs after the application. The structure's connection to the site should be treated as complete as the structure itself. However, in cases where most of the structures of the site are in ruins, the results of nasty in a certain structure may be important.

The impact of the reconstructed structure on the site should also be considered so that it does not disrupt other ruins on their landscape and create a harmonious picture of the site. which is used only in small quantities, is expected to provide material matching and not visual integrity when visible/ regardless of real material. The structure, together with its original structural system, should not harm pure properties and restore its structural integrity (Ozge 2021:1, Piero 1972:18). A good example of Anastylosis process was executed during 1980 by the federal Department of Archaeology and Museums, Islamabad when at the War Memorial Monument namely 'Nicolson Monument' which is located along the Grand Trunk (G.T), Road near Taxila Punjab, two Architectural Elements of Gandhara architectural style and design were shifted on the other side of the G.T Road with utmost care successfully. Besides, there are some other a number of small scales anastylosis.

Conservation Problems and Mitigated Measures Intended

A considerable number of sites and historical monuments are exposed in the open areas and are generally located in remote areas. Due to the tropical conditions such as; temperature, rainfall and

varying high and low humidity, an alteration in the composition of the building material is taken place. The agencies which cause deterioration and are mainly responsible for the destruction of a monument, can be immobilised into two main batches first as the intrinsic or internal causes and second as the extrinsic or external causes. The architectural heritage of Pakistan comprises mainly with brick and stone. As such, there are multiple number of structural and conservation issues. Besides proper management of ancient sites and monuments are also an important aspect to consider. An efficient management involves dealing with several interconnected matters such as; supervising of work and protection of the monument against natural and human disaster. Therefore, proper training to handle such type of issues relating to protection and preservation of cultural heritage is an important point to consider as conservation process requires specialized equipment along with constant observation and to take adopt preventive measures against any risks of deterioration. The proper conservation and restoration of Shish Mehal, Lahore Fort (16th century C.E) is an excellent example of this factor highlighted above which was carried out by applying all available both technical and financial as well as expertise (Rehman 2011: 61-62).

It is very important to examine the material used in a monument prior to start any conservation or preservation. A complete Management Plan, Conservation Plan, and Tourism Plan is needed to be properly integrated for carrying out any conservation work at a monument. The conservation, preservation, restoration and development of Rohtas Fort (16th century C.E) is another example where all research studies, plans and schemes have been executed successfully Saeed 2006: 171-188). The structural problems faced by the monuments are mainly as under: -

- i) **Temperature Variation:** The significant differences between day and night temperatures are very common which effects adversely to the surface and inside of the archaeological sites and historical monuments. As stone is a poor conductor of heat, therefore, the resulting forces are aggravated in shaded areas as well as between the surfaces of the inner layers of the structure. This causes peeling, for example we can examine the flaking of the historical monuments at Makli Hill Monuments, Thatta, a UNESCO world heritage site.
- ii) **Weather and Environmental Effects:** The air particles are very harmful to the surface of any historical building and these are very dangerous when they are in large quantity. For instance, the wind speed at historical monuments at Makli hill, Thatta is extremely high and this strong wind effects on the surface of the monuments. The limestone was used to build these monuments, and the iron in the limestone is rusted by moisture and then eroded by fierce winds, causing pitting problems. The high air speed alone is very dangerous for structures. Some stone canopies were found collapsed at Makli Hills Thatta due to high speed of wind and weather effects.
- iii) **Natural Light:** The Natural light is also very harmful for the ancient monuments. In fact, natural light is a fading pigment that cannot reflect light at the length of the wavelength. The sites/monuments in far flung and remote areas suffers a lot due to its adverse effect.
- iv) **Dampness:** The high temperatures and humidity conditions combined with light contribute a lot of for growth of bacteria, mushrooms, and algae or plants. A thick layer of black clothing can be seen in most of the monuments such as at Archaeological ruins and monuments at

Taxila, Takht-e-Bahi, Makli Hill Monuments, Thatta, all UNESCO world heritage sites, which is main problem caused by the growth of surface microorganisms and plants.

- v) **Pollution:** Sulfur dioxide is the most important contamination of stone erosion. A number of monuments in Makli Hill Monuments, Thatta, Fort and Shalamar Garden, Lahore, UNESCO world Heritage site, faces these problems which forms sulfur dioxide and limestone calcium because of carbonate reactions. Local coal fires and industrial reactors are the main sources of pollution. The concerned departments have undertaken appropriate measures to mitigate the problem by introducing new techniques and equipment to control on these multiple conservation problems.
- vi) **Rain:** Rainwater always causes considerable damages to the archaeological sites and historical monuments including the high prized UNESCO world heritage. The high density of acid and erosion removed by rain can be seen in historical sites such as Moenjodaro, Taxila, Buddhist ruins at Takht-e-Bahi, UNESCO World Heritage, as well as at the Mughal period Fort and Shalimar Gardens, Lahore. In fact, Rain is a natural weathered factor. The continuous and heavy rain can enter the architectural structure and link directly to fabric of the old age cultural heritage. The chemical reactions as a result damage the cultural heritage at very high speed. Here the capillarity action is another destructive form of water. Water can rise in porous materials such as; bricks, stone, masonry work and mortar. It is a critical issue because groundwater inevitably contains soluble salts and when water evaporates by material the salt occurs on the surface and damage the structure or component of the monument.
- vii) **Wild Growth and Vegetation:** The old tree roots, vegetation growth, grass and bushes cause severe destruction for the structural remains. The roots enter into the walls and other structures and these roots can cause major destruction to the foundations of archaeological remains. Although, it can be controlled in small sites / monuments, but at large sites it is very difficult to control completely. A number of monuments and sites located in hilly areas and mountainous regions are facing such problems frequently and at large scale rapidly. However, recently, special preventive treatment with pesticide (Roundup) have been introduced to control on the wild growth and vegetation at the different monuments of Taxila. The conventional methods for the removal and control of wild growth and vegetation are however, in practice side by side which are providing great helping hand in this regards which is one of the most important factor and cause for destruction of cultural heritage.

Conclusion

As the cultural heritage of this land is very rich, varied, and vibrant, therefore, it is very important to undertake special measures for proper protection of the cultural heritage which is mainly comprised on ancient remains and historical as well religious monuments. It is important to realize that with the ravages of time the cultural heritage of this land is facing many conservation problems. The conservation of ancient sites and monuments requires substantial funds and professional expertise to carry out proper conservation of sites and monuments. However, due to lack of proper conservation work, planning, dearth of trained staff, difficulty in acquiring appropriate material etc. are some of the

main problems which need immediate measures to save the cultural heritage for posterity. Pakistan has a great potential for promotion of cultural and religious tourism; therefore, proper protection of our cultural heritage can boost tourism sector as it will not only provide an immense help for the protection and preservation of cultural heritage but also to boost the socio-economic development of the country.

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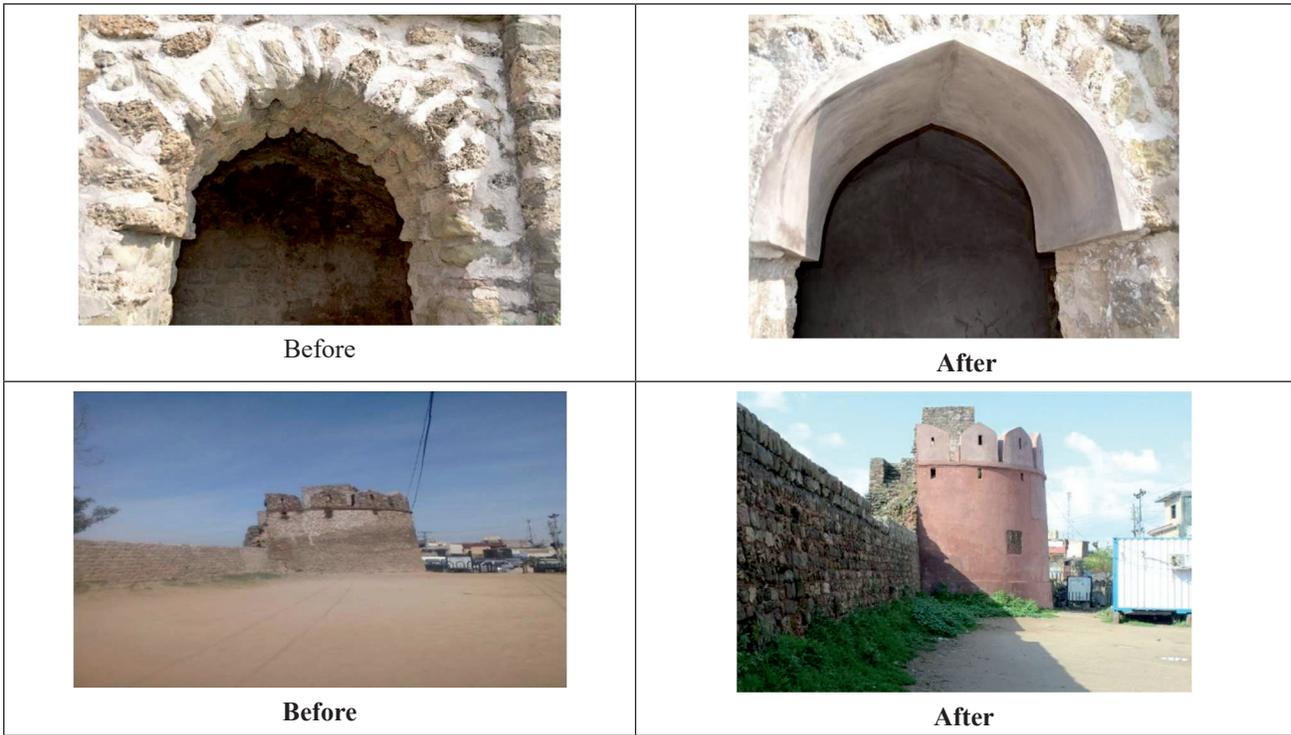
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Photographs Showing Before and After Conservation Work at Built Heritage in Pakistan

RAWAT FORT



RAWAT FORT



RAWAT FORT





MAI QAMRO MOSQUE





MUQARAB KHAN TOMB

Before

After

Before_____After

**Conservation / Preservation work of
Shinashah Stupa, Swat.**



Before

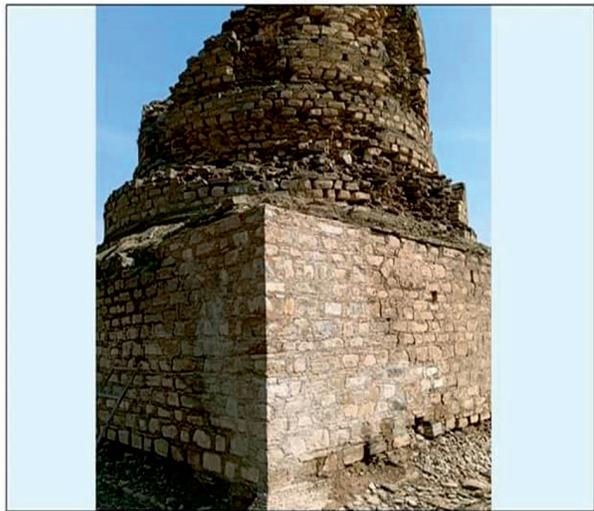


After

**Conservation / Preservation & Developmental work of
Gumbatona site, Swat.**



Before



After