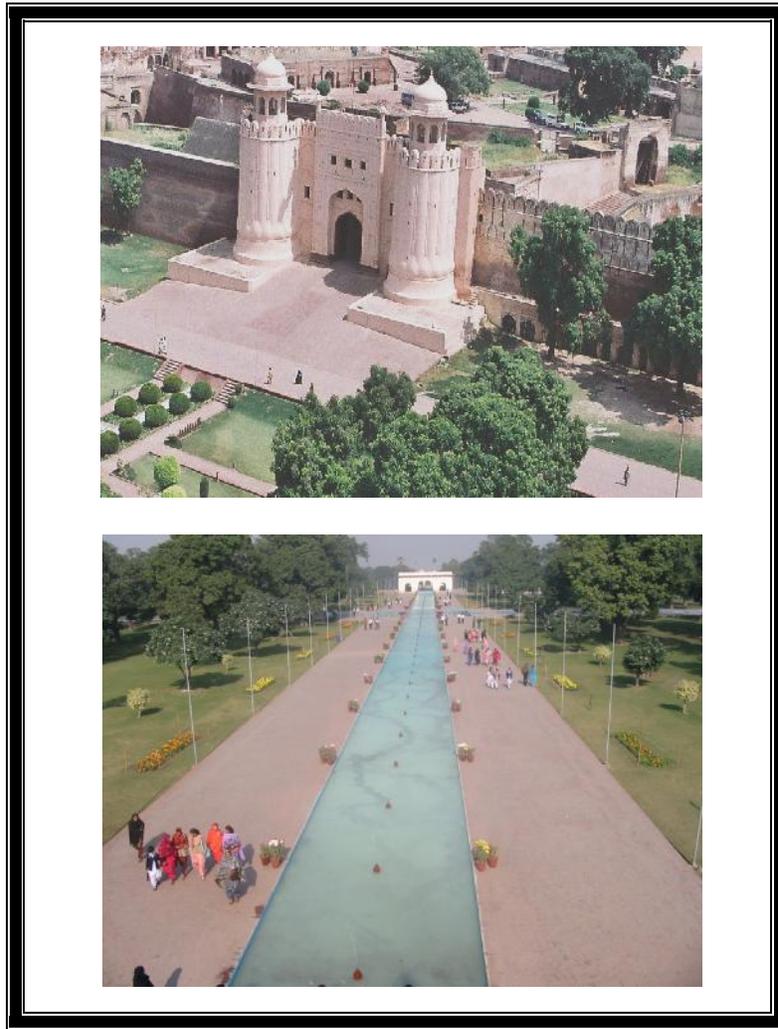


Report
on
State of Conservation of
World Heritage Property
Lahore Fort & Shalamar Gardens
Lahore, Pakistan



GOVERNMENT OF THE PUNJAB
Directorate General of Archaeology
Youth Affairs, Sports, Archaeology and Tourism
Department

**STATE OF CONSERVATION OF WORLD HERITAGE PROPERTY
FORT AND SHALAMAR GARDENS IN LAHORE, PAKISTAN**

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EXECUTIVE SUMMARY

Lahore Fort & Shalamar Gardens were inscribed on the World Heritage List of monuments in 1981. These properties were placed on World Heritage in Danger list in year 2000. However, with concerted efforts of the Government of the Punjab these monuments were removed from World Heritage in Danger List.

The state of Conservation of the Shalamar Gardens and Lahore Fort were discussed in the 40th Session of the World Heritage Committee in July 2016 at Istanbul, Turkey. In that particular session the Committee took various decision and requested the State Party to implement them and submit a State of Conservation report to the World Heritage Centre for its review in the 41st Session of the World Heritage Committee.

The present State of Conservation Report consists of two parts. In the first part, progress on the decision of the 40th Session of the World Heritage Committee has been elaborated such as preparation of a comprehensive Plan for the revitalization of Pakistan Institute of Archaeological Training and Research. Government of the Punjab has also constituted a high power Committee to work out the modalities for the minor boundary modifications and its possible impact on the stakeholders, especially in case of displacement of local residents. Similarly in the light of the Decision of the Committee a Visual impact Study is being conducted through in internationally renowned firm. The report of the study would be shared World Heritage Centre. The Government has also decided to invite the Reactive monitoring Mission after the Completion of VIS which is expected in the middle of March 2017.

The second part of the report deals with the conservation efforts of the government of the Punjab for Shalamar Garden and Lahore fort. Comprehensive conservation plans for the preservation and restoration of Lahore Fort and Shalamar garden of the cost of Rs. 300 million (\$2.89 million) each were chalked out in 2006. These conservation projects have been implemented in the past years. Major parts of the both monuments have been consolidated and preserved from further deterioration. Public facilities and security arrangements have also been improved without introducing any permanent element or disfiguring any part of these

properties. At present these monument are more tourists attractive than ever before. Details efforts made by the Punjab Government that have been reflected in the state of the conservation report.

Lahore Fort has been given under administrative control Walled City of Lahore (WCLA) Authority which is now responsible to look after conservation affairs of monuments falling within the old walled of the city of Lahore. The WCLA has reviewed the previous conservation plan (of Rs. 300 million) and reframed a comprehensive revised project at a cost of more than Rs. 1.000 billion. This project is under the process of approval from the competent forum. Conservation plan of the Shalamar garden has also been revised and presented to the relevant forum for the approval which is expected to be approved shortly.

STATE OF CONSERVATION OF WORLD HERITAGE PROPERTY FORT AND SHALAMAR GARDENS, LAHORE

INTRODUCTION

Lahore has a long history starting from 2nd century BC to present day. It is the provincial capital of Punjab province of Pakistan with population approaching to 10.00 million today. In Mughal period that had started in 1526 and ended at Lahore in 1763, this city turned into jewel of architecture. A number of historic buildings were built by Mughal emperors and among them most famous were Lahore Fort and Shalamar Gardens. Considering their historical significance and architectural value, Shalamer Gardens and Lahore Fort were placed on the World Heritage List in 1981. Since their inscription on the World Heritage List, these monuments have become major tourist attraction for the tourists from homeland and abroad. However, in the year 2000, these monuments were placed on the World Heritage in Danger List as their condition had deteriorated. The Directorate General of Archaeology, Punjab had made concerted efforts to revive the glory of these monuments in accordance with the decisions of the World Heritage Committee.

Soon after assigning the responsibility of their maintenance, the Punjab Government had started 2 conservation and development schemes prepared under the guidelines given in the UNESCO's Master Plans prepared in 2004-5. Govt. of the Punjab had approved Rs.300.00 million each for Lahore Fort & Shalamar Gardens for their conservation, preservation and provision of tourist facilities. These schemes are still ongoing and at presently being revised to meet the requirement of the latest requirements for preservation and restoration of these particular monuments.

It is pertinent to mention here that with the strenuous efforts of the Directorate General of Archaeology, Punjab the World Heritage Committee decided to remove the property from the World Heritage in Danger List under Decision **36 COM 7A.28** in its 36th Session held in, 2012 at Saint-Petersburg. It was a great achievement not only for the Directorate General of Archaeology but also for Government of the Punjab. Although these monuments have been removed from the World Heritage in Danger List but still Government of the Punjab has not let up its efforts and is working hard for the betterment of these monuments with the same enthusiasm as it was done before their removal from World Heritage in Danger List.

As a result of continuous efforts the present State of Conservation of these monuments has further been improved much and more pleasing than what it was in 2012 when it was removed from the World Heritage in Danger List.

Part-1

RESPONSE TO THE DECISION OF THE WORLD HERITAGE COMMITTEE

DECISION -1 Having examined Document WHC/16/40.COM/7B.Add.

RESPONSE No response required.

DECISION-2 Recalling Decision **38 COM7B.19**, adopted at its 38th Session (Doha, 2014).

RESPONSE No response required.

DECISION -3 Notes the efforts made by the State Party to address the conservation of the property and the steps taken to revise the conservation plan, including the revitalization of the training institute, although no further details as to the organogram and timeline for its establishment have been provided;

RESPONSE

The Government of Pakistan and the Government of Punjab are aware of their responsibilities and revising the conservation plan for Lahore Fort and Shalamar Gardens in accordance with the international standard and guidelines for the World Heritage monuments. The conservation plan would be shared with the World Heritage Centre once they are approved by the relevant authorities of the Government of the Punjab.

A consultant firm was hired to prepare a plan for the capacity building of the Directorate General of Archaeology and revitalization of Pakistan Institute of Archaeological Training & Research (PIATR). The consultant firm has also prepared modules of training in the field of archaeology, architectural conservation and management of heritage as well as determined the requirement of human resources for the proper management of the heritage sites including World Heritage properties. The Directorate General of Archaeology, Government of the Punjab has prepared the revitalization plan of PIATR with a cost of Rs.137.79 million which is in the process of approval from the government authorities. Once the project is approved by the Government its implementation will start taking place in July, 2017 and by December, 2017 the PIATR would become fully functional. The Organogram of the PIATR as proposed in the aforesaid plan is placed at *Annexure-A*.

DECISION -4. Also notes that, to date, the State Party has not formally submitted a proposal for a minor boundary modification, which would include an enlarged buffer zone for the property as well as the adopted regulatory measures.

RESPONSE

In accordance with the decision of the World Heritage Committee, the Government of the Punjab has constituted a High Power Committee to work on the boundary modification of Lahore Fort and Shalamar Gardens, (*Annexure-B*). As displacement of people is involved while modifying the boundaries of core zone and buffer zone, the committee also includes stakeholders and public representative so that issue could be handled amicably.

DECISION-5. Express its serious concern about the development of the Orange Line Metro and requests the State Party to prepare a visual impact study of the project to be presented to the World Heritage Centre and the Advisory Bodies before pursuing the works of the Orange Line Metro Train Project associated with the Shalamar Gardens.

RESPONSE

In accordance with the decision of the World Heritage Committee the Government of the Punjab is working on the preparation of a Visual Impact Study in relation to Lahore Orange Line Metro Train Project near Shalamar Gardens. A contract has been awarded to renowned international firm having vast experience of such studies. The findings of the study would be shared with the World Heritage Centre shortly.

DECISION-6. Reminds the State Party to submit to the World Heritage Centre, in conformity with Paragraph 172 of the Operational Guidelines, technical details, including Heritage Impact Assessments(HIA), for all proposed projects that may have an impact on the Outstanding Universal Value (OUV) of the property prior to their approval, for review by the Advisory Bodies;

RESPONSE

The Government of Pakistan and the Government of the Punjab assure the World Heritage Committee that technical details including Heritage Impact Assessment of all proposed projects, that may have an impact on outstanding universal value of the properties, will be furnished for a review by the advisory bodies of the World Heritage Committee.

DECISION-7. Request the State Party to invite a joint World Heritage Centre/ICOMOS Reactive Monitoring mission to the property at its earliest convenience, to examine the Orange Line Metro Project and to discuss the same with the relevant Government authorities and to review the management and protection arrangements of the property:

RESPONSE

The Government of Pakistan and the Government of Punjab understand that the joint World Heritage Centre/ICOMOS Reactive Monitoring Mission would be helpful to the managers of the properties in preservation of the monuments in a better way. The State Party will extend an invitation to the mission shortly.

DECISION-8. Also requests the State Party to submit to the World Heritage Centre, by 1st February, 2017 an updated report on the state of conservation of the property and the implementation of the above, for examination by the World Heritage Committee at its 41st session in 2017, with a view to considering whether there is an ascertained or potential danger to the Outstanding Universal Value of the property.

RESPONSE

The state of conservation report has been prepared in accordance with the advice and decision of the World Heritage Committee and being submitted herewith to the World Heritage Centre for its review and assessment.

Part-2

STATE OF CONSERVATION

LAHORE FORT

Lahore Fort is the only monument in Pakistan that represents a complete history of the Mughal architecture. The architecture of Akbar's period in the fort is characterized mainly by the use of red sandstone and cut brick work. The use of animal figures such as lion, elephant, and peacock as well as sculptured gargoyle, as brackets to support the *chajja* shows the Hindu elements in the Mughal architecture of Akbar's period. More or less the same style continued in the buildings of Jahangir. The buildings of the period of Shah Jahan and Aurangzeb provide a striking contrast with the former. The use of marble in place of sandstone and exuberance of the Persian motifs, *pietra-dura* and tile mosaic work are the chief characteristics of the buildings added by Shah Jahan known as prince architect of South Asia. The fort is situated north east corner of the city. It contains irregular shape in surroundings and very symmetrical Mughal foot prints in garden and balance geometry can be seen in the monuments. Acknowledging the pinnacle of Mughal aesthetic, design and artistry and masterpiece of human genius, in 1981, the fort was added to the UNESCO World Heritage List along with the Shalimar Garden. The administrative, operational and functional responsibilities were shifted from the Directorate General of Archeology, Punjab to Walled City Lahore Authority (WCLA) on 20th October, 2014.

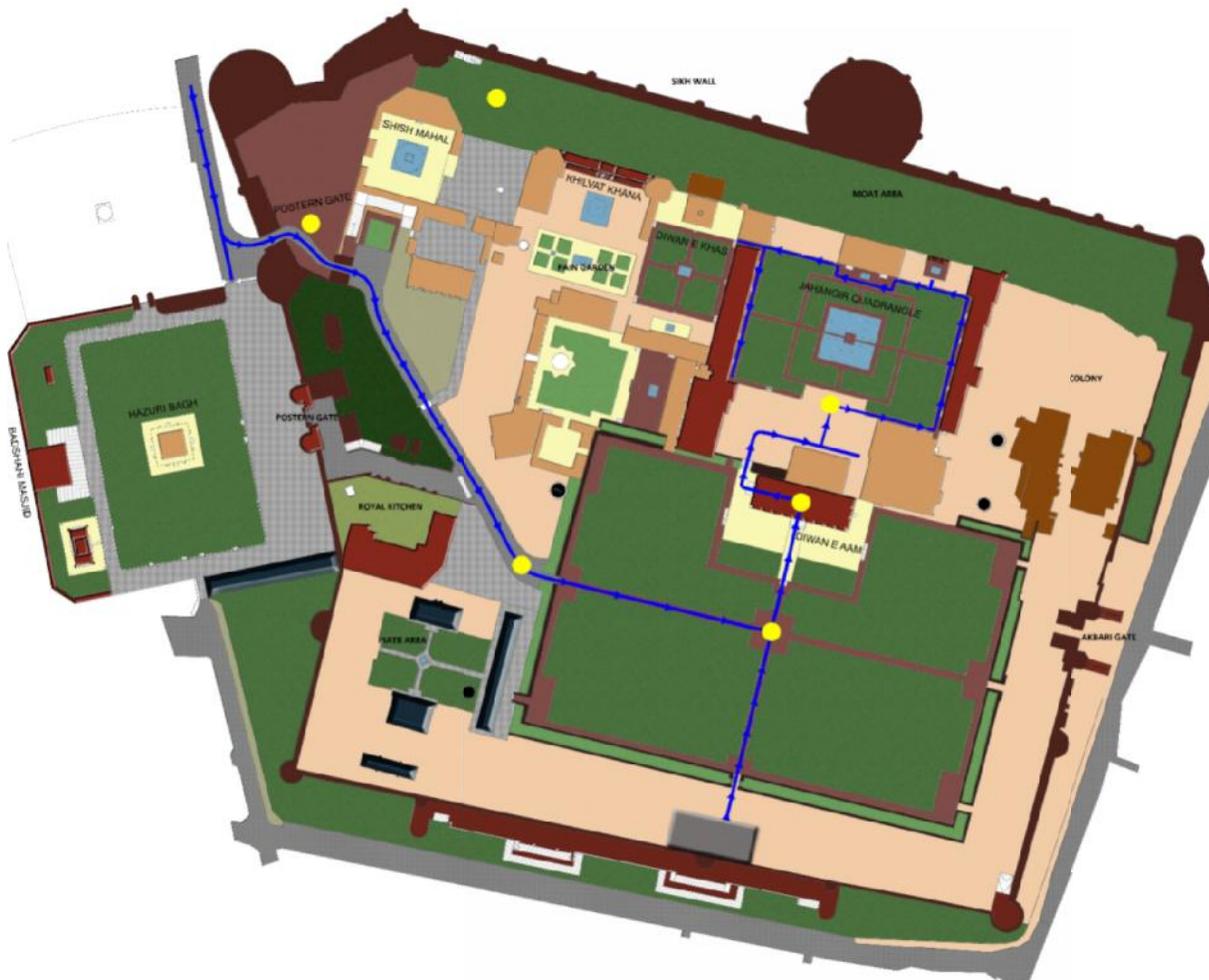
Since inception, Walled City Lahore Authority truly felt that the necessities of the monument are high while an intensive research work in the form of documentation of individual historic components, condition assessment surveys of structures and spaces and conservation reports are required. Although records have been created over many years unfortunately they were not maintained in a systematic or comprehensive way. From the inception, the ongoing activities by WCLA are mainly includes: research work, condition assessment surveys, conservation proposals, removal of debris, upgraded tourist facilities, and consolidation & maintenance works. Some of the factual details are additionally enclosed in report in the form of description and images.

Considering the facts and needs of the site Conservation Wing WCLA is more leading research work and receiving assistance from alleged international and national organizations as well.

It has also been observed that the allocated previous budget of PKR 300 million in 2005 - 2006 was insufficient to achieve set goals of conservation therefore; it was decided in 2014 - 15 to revise PC-I on the basis of site requirements. Considering the facts and nature of activities revised PC-I costing to Rs. 964.087 million has been submitted to Local Government Department, Punjab for further approval.

Once the project is approved conservation activities will be properly initiated, while to achieve the set goals. Presently the WCLA is consuming fort revenue fund for the conservation and management activities.

MAP OF LAHORE FORT



Following conservation, maintenance and upkeep efforts have been made during the year 2016 in Lahore fort:

CONSERVATION OF THE ROYAL KITCHEN

Royal Kitchen was built around 16th C by the Mughal ruler Shah Jahan. It was designed as Royal Kitchen to serve kings / inhabitants of the fort. A caravanserai was also located nearby but no longer exists. It is located in the southwestern corner of the fort. According to historians the **Mughal rulers** used this building as the center of all imperial feasts; **Sikh** used this complex as food storage and later on converted as interrogation cell.

Due to the ignorance of the previous conservation schemes for the Lahore Fort, the Royal Kitchen Complex could not get the required attention. Years of neglect and oversight had spawned wild growth of vegetation, debris of fallen structures reflect as a haunted place and after becoming living area of wild animals it lost importance and visitors avoid to visit this historical site. At present a major portion of this site turned into ruin.

Walled City Lahore Authority (WCLA) has acknowledged the importance of the historical place and has taken the responsibility of sustainable conservation. In 2016 conservation activities have been started some of the details are listed below:

1. Detailed documentation by using Total Station, 3D scanner have been carried out to achieve the accurate form of building and recording of present status along penetrated structural and finishes issues.
2. To monitor the structural movement & recording of cracks, telltales were fixed and are properly recorded by the site team.
3. Exploratory works to understand the exact condition of buried structures and elements were also carried out.
4. A major part of masonry work of the Royal Kitchen is decayed and undermined at different places while a major portion of eastern and southern walls (external) are buried inside soil. A certain level of buried walls is the result of inappropriate interventions of the past. The burial wall may undoubtedly causing destructive salts to form on and within

the bricks veneer but in the same time it support raising dampness in walls. A detailed investigation of soil tests of the site have been conducted to know the bearing capacity.

5. A retaining wall to secure the historic structures and for the purpose of easy management and maintenance have been constructed. The buried historic part of structures has also been exposed and secured from the moisture deteriorations.



Excavation and exploratory works on eastern side of royal kitchens



Construction of access path on eastern side of royal kitchens



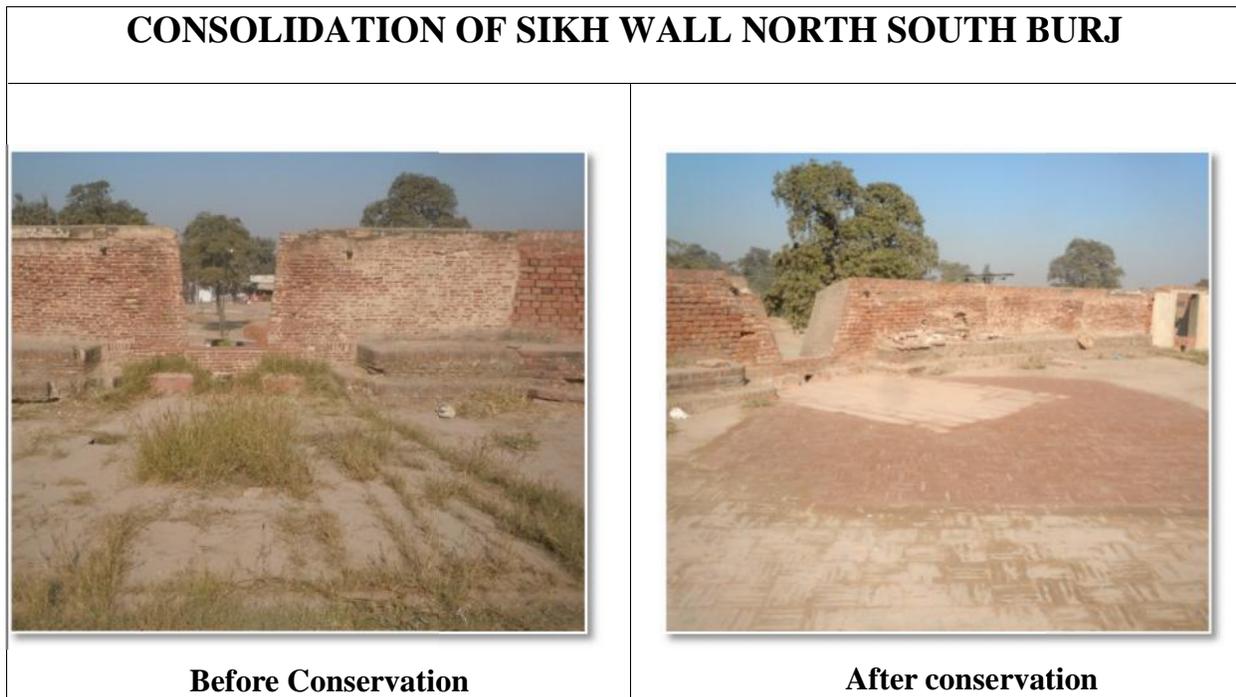
Excavation and exploratory works in progress



Excavation and exploratory works in progress

CONSOLIDATION OF SIKH WALL NORTH SOUTH BURJ

Consolidation of historic flooring of the Sikh period wall and burj located on the South Western corner of the Lahore Fort, which is accessed by a ramp. This area was used in war for attack and hence had canons placed after regular intervals. However, it was found covered in vegetation and the sandstone platforms were subsidizing. In sum, due to subsidence in floor rain water was getting access and deteriorating historic walls. This task was started in 2015 and completed in 2016.

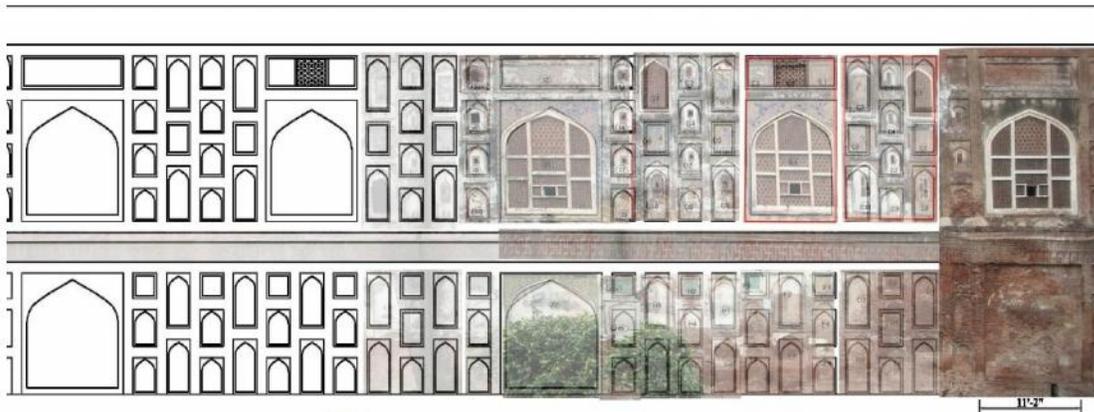


THE PICTURED WALL

The pictured wall at the Lahore Fort, built during 1624-32 during the era of Mughal emperor Shah Jahan. The Pictured Wall is depicted with animal, birds and royal recreation or with the royal court's activities. The scenes of polo games, animal hunts, trees and vegetation are also inscribed on it. The mural contains unique Pietra-dura technique, which is an Italian technique of creating images on polished colored stones. Walled City Lahore Authority (WCLA) and Aga Khan Culture Service Pakistan (AKCS-P) joined hands to restore Lahore Fort's historic Pictured Wall and completed the architectural surveys, condition assessment and reports. Due to its high nature architectural and historic value, beforehand any physical work feedback and

technical expertise will be engaged from national and international level. Seminars, symposiums and lectures locally and international forums are the part of research program. Once substantial feedback and concrete finding from experts will be collected than conservation proposals may initiated comprehensively. Surveys and assessments are completed in all respect.

Surveys and assessments of Pictured wall



FIXING OF TELLTALES (Building Monitoring Device)

Major and Minor cracks have been recorded at multiple location in the Lahore Fort. As there are numerous reasons for these elements of destabilization in the monuments which include: earthquakes, subsidence of floors, load of the structure, etc. Therefore, telltales and glass studs have been fixed at multiple locations to monitor the movements in the structures so an active and effective counter activity plan can be envisaged.

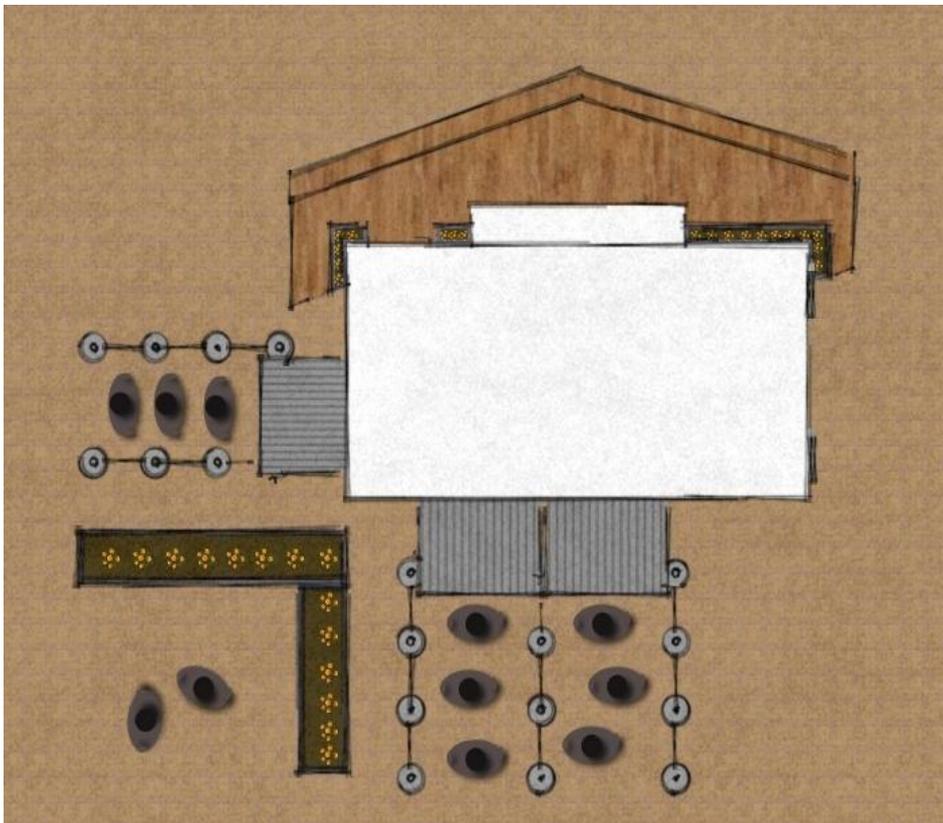
FIXING OF TELLTALES AT DIFFERENT LOCATIONS OF THE FORT



PROVISION OF TICKET HOUSE:

The previous Ticket House structure was located on the right side of Postern Gate. However, due to major inflow of tourist the area cannot contain a large number of people, especially since this is the main entrance into the vicinity of the Fort at the moment. Therefore a moveable container Ticket House has been placed located in the large space opposite the Picture Wall to ensure a systemized flow of sightseers.

PROVISION OF TICKET HOUSE



CONSERVATION AND RESTORATION OF WOODEN BRIDGE

About 32' long wooden truss bridge is situated over the road from postern gate to Maidan-e-Dewan-e-Aam at about center of its run. Most of the wooden members of this bridge are decayed due to termite and weather affects. It is proposed that the decayed parts should be removed and repaired with new seasoned wood of selected quality. Due to severe condition of wooden bridge it was decided to come up with number of proposals along detailed documentation. Considering different aspects of the bridge it was decided that deteriorated elements may replace for which a detailed investigation and assessment have been carried out.

During assessment phase of the bridge two R.C.C beams and a steel girder in middle of bridge were deeply studied. The mortar of the both side buttress walls were turned into form of powder and fully deteriorated. The steel girder was covered with wooden trunk which was also fully decayed. It was also observed that the resting corners of R.C.C beams were in verge to collapse, therefore, a decision to careful removal of R.C.C beams along steel girder was decided. In this decision all aspects were considered specially the safety and security of daily visitors and other users.

CONSERVATION AND RESTORATION OF WOODEN BRIDGE



RAMPS FOR DISABLES & OTHER AMENITIES

The Management and Technical teams of WCLA are well aware about penetrated issues of the tourists and convinced to deliver additional facilities especially for Disables than the visitors at Lahore Fort. Understanding the factual issues the following tasks including, construction of ramps for disables, construction of water purification plant, bath rooms and wooden seating have been provided. The provision of ramps for disables was vital in some of the locations of the fort which have been completed.

PROVISION OF RAMPS FOR DISABLES & OTHER AMENITIES



IMPROVEMENT OF GARDENS

Horticulture and landscaping teams are putting their best efforts to improve gardens by using appropriate garden techniques. From the inception considering the facts of the water damages a principle of controlled watering was initiated and investigated. The results were very much encouraging and appreciated.

IMPROVEMENT OF GARDENS OF LAHORE FORT



IMPROVEMENT OF GARDENS OF LAHORE FORT



Fig. 41



SHALAMAR GARDEN

Shalamar Gardens, a marvel of Mughal garden architecture, is one of the greatest gardens in the world, representing of the Islamic concept of Paradise. The Shalamar Gardens built in 1642, is a grand manifestation of the ingenuity and craftsmanship of a group of architects, hydrologists, horticulturists, engineers and master craftsmen. The Emperor Shah Jahan intelligently selected a site to build a garden, naturally-terraced to allow for the complex flowing-water system, with fountains, falls and pools, which were fundamental to a Mughal garden. With the passage of time deteriorations in different parts of the gardens were quite significant. Shalamar Gardens was transferred from Federal Government to Punjab Government in 2004 and since then the Directorate General of Archaeology; Punjab has been doing its level best for its proper upkeep, maintenance and conservation. The Government of the Punjab also approved a major conservation plan for preservation and restoration of Shalamar Gardens” amounting to Rs. 300 million in 2006-7 and works for preservation and restoration of various areas inside the gardens remained continued till 2016. Different parts of the Shalamar Gardens have sufficiently been conserved, restored and stabilized to avoid further decay. In the light of the decisions of the Steering Committee and Technical Committee constituted for the smooth execution of conservation works, the scheme has been revised to incorporate the missing elements for further execution, which is in the process of approval from the competent forum.



PLAN OF SHALAMAR GARDEN

In 2016, following two new conservation projects have been initiated:

1. Preservation and Restoration of Naqqar Khana Complex of Shalamar Gardens, Lahore
2. Preservation and Restoration of Hydraulic Tank of Shalamar Garden, Lahore

Conservation works on both the projects are in progress and detail of these projects is as under:

1. Preservation and Restoration of Naqqar Khana Complex of Shalamar Garden, Lahore

Naqqar Khana complex is a part of Shalamar Gardens and for the all official activities during the presence of emperor Shah Jahan, this area was used as government secretariat. All important announcement and official order were issued from this place. Presently the main entrance for visitors to the Shalamar Gardens has been provide through Naqqar Khana.

A conservation project costing Rs. 6.154 million has been commenced to preserve, restore & develop the different parts of the Naqqar Khana Complex and to preserve and restore it and make it in more presentable condition.

The important components of the project are, consolidation of walls, traditional lime plaster, lime terracing on roof to make them watertight, glaze lime plaster (*Pacca qali*), restoration of walkways with special size brick tiles, repairs of wooden gates, plinth protection of perimeter wall and fencing around the protected area. The works are in progress at the site and will be completed in 2017.

Plinth protection and Fencing on Northeast side of perimeter wall



Before



During

Plinth protection with brick tiles on edge flooring on Northern side of perimeter wall



Before



During

2 Preservation Restoration of Hydraulic Tank of Shalamar Garden, Lahore

The old hydraulic tank structure is situated on the southern side of the Shalamar Gardens, a complex of brick built sedimentation/ filtration tanks. Water was brought through Shah Nahar (Royal Canal) from the Chamba Hills of Rajpur, presently Madhupur in India, at a distance of over one hundred and fifty kilometers from Lahore. It was planned by Ali Mardan Khan, the Persian Canal engineer of Shah Jhan, and completed By Mulla Ala ul Mulik Tuni an expert in hydrology. At present the system and hydraulic tank is no more functional and remnant of structure are available.

Keeping in view the historical significance of the Hydraulic Tank, a project amounting to Rs. 6.266 Million has been approved to preserve and consolidate the remnants of the Hydraulic Tank.

Major components of the conservation plan are, plinth protection around the hydraulic tank with brick on edge pavement, consolidation of walls with special size brick tiles in lime mortar, Kankar lime terracing on roof and parapet, Pacca qali and kankar lime plaster on walls, Information & History Board , Boundary wall around the protected area around tank, and Landscaping of surrounding area. Work on the various components is in progress and will be completed in 2017. .

Preventive Conservation and Consolidation of Structure of Hydraulic Tank



Before



After



Before



During



3. Provision of Visitors Facilities Area and Security Arrangements

The Directorate General of Archaeology, Punjab acquired land on the Southeastern corner in front of Naqqar Khana complex of the Shalamar Gardens to create tourists facilities for the visitors. For the purpose, a comprehensive development scheme was launched amounting to Rs: 30.534 million. The main components of the scheme were parking facilities, cafeteria, lawns, restrooms, gift shops, ticket booths and security posts. Architecture of newly developed area has been harmonized with the old historic structures of the gardens. The work has been completed and now the area is functional.

Security arrangement for the tourists has also been enhanced by providing security guards and equipments. After these improvements has more tourists are attracted , especially the foreign tourists which had reduced due to the security hazard.

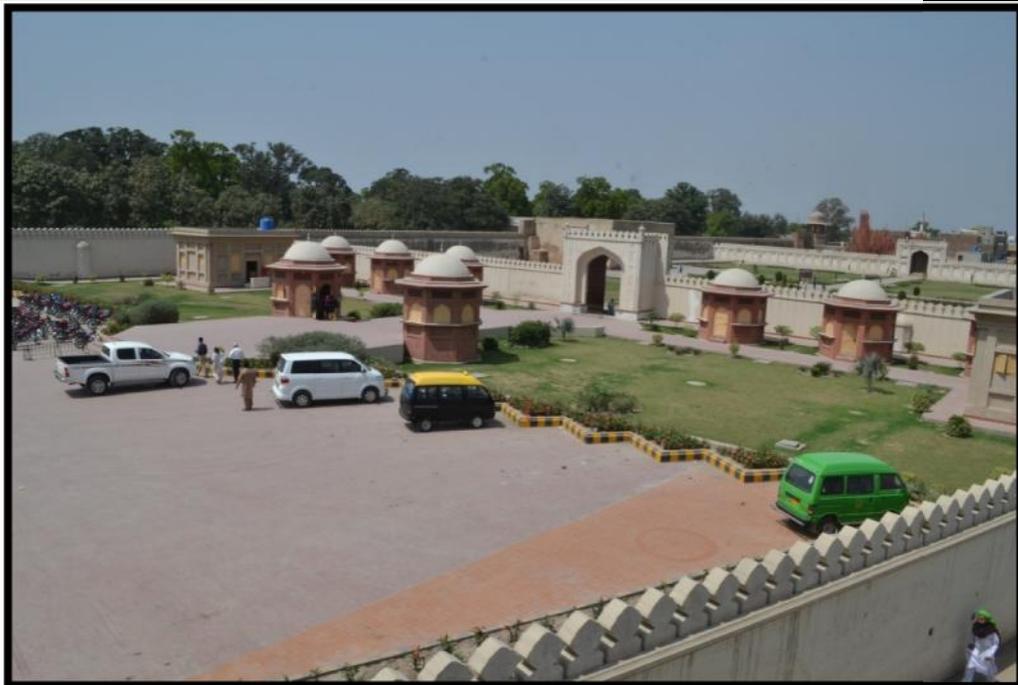
Aerial View of the Newly Developed Tourist Facilities Area of Shalamar Garden



Before



After



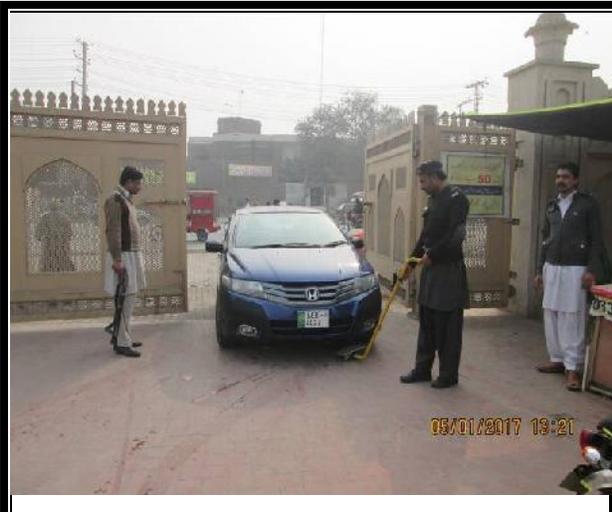
View of Deck of Parking Area



Checking of Local Visitors



Checking of foreign Visitor



**Checking of Vehicle by bottom view
mirror**



Parking for Motor Bikes



Booking Counter



Cafeteria



Foreign visitor at Shalamar Garden

CONSIDERATION REGARDING OUTSTANDING UNIVERSAL VALUE OF THE PROPERTY

The Government of Punjab had started Lahore Orange Line Metro Train Project to overcome the ever increasing traffic issues at Multan Road and G.T. Road to Lahore. The study conducted by the relevant department that about 2.54 million people travel on these roads on daily basis. The Orange Line Train Project has been designed to overcome the traffic congestion on these two roads and to provide any affordable and quick mean of transportation that could save considerable time of the people that they consume in travelling on these roads.

The Government of Punjab is well aware of the importance of the heritage and keep them save from any negative impact special study was got conducted and the design was prepared accordingly to elevate any possible impact of vibration on the historical buildings. For that particular matter the German Standards were used as the key for measurement of vibration impact. Studies conducted by NESPAK and Chinese Engineer confirmed that the vibration would be 0.3 mm/Sec against the permissible limit of 3 mm/sec provided by the German standard. Hence there would be no threat to the historical buildings falling near the track of this project.

As far as the World Heritage properties are concerned, it is stated that Orange Line Project would pass south of Shalamar Gardens from the safe distance while Lahore fort is far away from this project and Shalamar Garden too the visual impact is negligible. The Government of Punjab has awarded contract to a renowned international firm to conduct visual impact study which is expected to be completed by March, 2017.

All studies already conducted confirmed that there is no ascertain or potentially danger to outstanding universal value of the property and the visual impact study is also expected to confirm results of the earlier study.

Revitalization of Pakistan Institute of Archaeological Training and Research, Old Fort, Lahore

