



AGA KHAN TRUST FOR CULTURE
AGA KHAN CULTURAL SERVICE - PAKISTAN

CONSERVATION OF THE LAHORE FORT PICTURE WALL





Above: Aerial view of the Lahore Fort and its environs

INTRODUCTION

The Walled City is situated northwest of the metropolis covering an approximate area of 2.56 sq. km. Once a fortified settlement, much of the city's historic fabric evolved during the Mughal era. The city was originally accessed through thirteen arched gateways, some of which exist as British period reincarnations. The most recognized landmarks of the historic core include the Lahore Fort, a UNESCO World Heritage Site since 1981, and the Badshahi Mosque. The Walled City's intricate labyrinthine alleyways and cul-de-sacs consist of a diverse array of spectacular monuments, architecturally and historically significant buildings, public spaces, residential areas, as well as bazaars. By virtue of its tangible and intangible heritage, the Walled City presents Lahore's multifaceted past and is comparable with other historic quarters of great cities in the Muslim World, such as Cairo, Delhi, Isfahan and Samarkand.

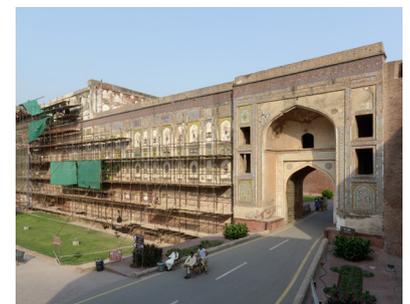
One of the most neglected parts of the Lahore Fort, the Picture Wall, especially the northern section, had become a site for storage of surplus materials and disposal of refuse. A major road (removed in 2016), just outside the Fort and running parallel to the Picture Wall, carried heavy traffic and further contributed to the wall's degradation. As a result, the wall's surface decoration was deteriorating at an alarming pace, exposing it to the risk of complete destruction.



THE LAHORE FORT CONTEXT

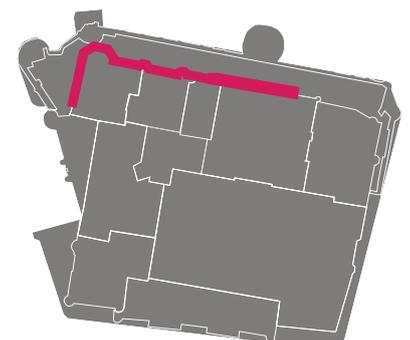
In 1981, the Lahore Fort precinct and its 21 surviving monuments were inscribed by UNESCO as a World Heritage Site. Surrounded by an inner fortification wall encircling approximately 19.5 hectares of royal structures and formal gardens, the Fort was largely built and developed in its current configuration between 1556 and 1707 by four Mughal emperors – Akbar, Jahangir, Shah Jahan and Aurangzeb – after which it was extensively modified during the Sikh and British periods.

The Fort's foundations were originally laid in the 11th century, after which Lahore was plundered by several invaders who repeatedly destroyed and rebuilt the city. The city was finally rebuilt and repopulated by the leader of the Sayyid Dynasty in 1421; however, it was extensively upgraded during the reign of Mughal Emperor Akbar in the 1500s, who spent twelve years of his reign in Lahore. The mud-brick walls of the Fort were replaced by burnt brick, and a palace was built towards the East of present-day Jahangir's Quadrangle. During his son Emperor Jahangir's rule, the Fort was extended to include Jahangir's Quadrangle. Major contributions to the Fort, however, were made by Emperor Shah Jahan in 1634, who commissioned new buildings. These include the Shah Burj, Summer Palace, Sheesh Mahal, Lal and Kala Burj, Diwan-e-Khaas and the Moti Mosque.



Above: View of the western façade of the picture wall, also showing the Shah Burj Gate (Hathi Pol)

Below: Plan showing location of the picture wall in the context of the Lahore Fort



THE PICTURE WALL

The Lahore Fort Picture Wall is one of the principal features of the UNESCO World Heritage Site. It is about 460 meters (1,510 feet) long, with an average height of 16 meters (50 feet) and forms the northern and western façade of the Lahore Fort. Together with the Shah Burj Gate (Hathi Pol), the Picture Wall forms the original entrance to the Fort. Built approximately 400 years ago; it is among some of the most exquisite features of the Lahore Fort and is one of the largest murals in the world. Parts of the wall are extensively embellished in cut brickwork, cut glazed tile mosaic work, filigree work and painted lime plaster. The wall consists of an array of exquisitely decorated recessed panels, and the eaves and brackets of pavilions and other roof top structures are carved in sandstone and marble-work inlaid with semi-precious stones.

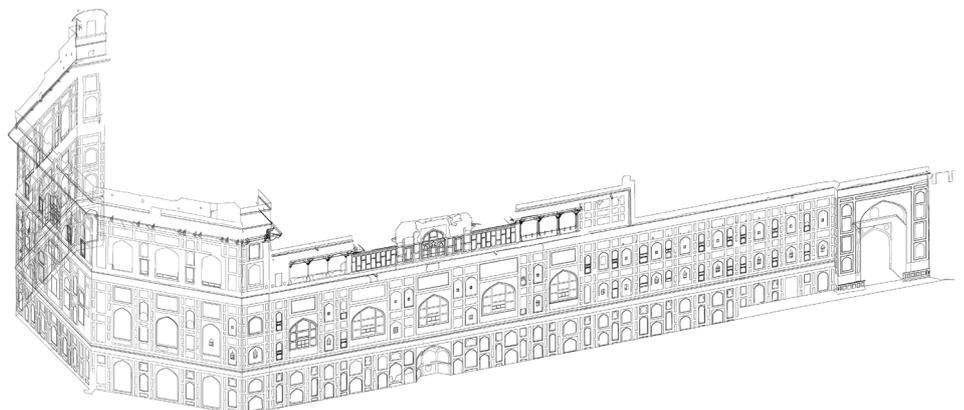
The sequence of developments during the respective reigns of Akbar, Jahangir and Shah Jahan can also be associated with the variations seen in the iconography of the tile decorations on the Picture Wall. The glazed tile decorations characterized largely by floral and plant motifs on the eastern part of the wall can possibly be attributed to the late Akbari or early Jahangiri period. These change to include the depiction of human, bird and animal figures on that part of the wall, which can be more surely identified with the period of Jahangir. Finally, during the reign of Shah Jahan, the scale and iconography of the Picture Wall around the Shah Burj become markedly enhanced and flamboyant both in narrative and decorative idiom. Through embellished brickwork, glazed tile mosaics, filigree work and frescoes, the iconography reveals aspects related to the life and entertainment in the royal courts and consists of imagery of battles, animal fights, fairies, angels and demons.

The Picture Wall's tile-work and decorative scheme cannot be studied in isolation from its adjacent structures. The northern part of the wall's west façade forms part of the Shah Burj, which includes the Summer Palace and the Sheesh Mahal Quadrangle. The five arches on the second level of the Picture Wall form the main façade of the Summer Palace, Shah Jahan's private quarters. The Sheesh Mahal, or 'Palace of Mirrors,' is a rectangular structure that consists of intricate mosaic mirror-work and white marble with inlaid semi-precious stones (pietra-dura work) in floral patterns. The Naulakha Pavilion is a small marble-clad pavilion that has a view of the landscape in front of the Picture Wall's west façade. It consists of a unique, curved roof structure, and intricate pietra-dura work on its elevations.



Above: Images showing the iconography of the Picture Wall, which includes imagery of hunting, battle scenes, angels and demons, human figures, animals, birds as well as geometric and floral patterns

Right: Isometric drawing of the Picture Wall



The Picture Wall has been mentioned in many accounts of Western visitors to the subcontinent. However, it was most comprehensively documented in 1920 by Dutch historian, J. Ph. Vogel, who not only wrote about the history of the wall, but also extensively documented it in the form of plans, elevations and lithographs of 116 pictorial panels. Since then, the Picture Wall had largely been left unattended, although repair work was begun on the Fort in the British period, and has since continued in various, separate phases after independence.

REVIEW AND ANALYSES OF CONDITIONS

Starting in September 2015, the Aga Khan Trust for Culture (AKTC), and its country affiliate, the Aga Khan Cultural Service-Pakistan (AKCS-P), under a number of partnership agreements with the Walled City of Lahore Authority (WCLA), has been engaged in the conservation of the Lahore Fort.

Detailed studies on the Lahore Fort and an extensive documentation of the Picture Wall were generously supported by the Royal Norwegian Embassy, and involved using a 3-D laser scanner and Electronic Distance Measurement (EDM) devices, as well as high-resolution ortho-rectified photography coupled together.

After the completion of detailed documentation, a technical review of the challenges pertaining to the conservation of various decorative elements led to the selection of a 10 meter wide and 15 meter high section of the western façade of the wall for prototype conservation, which was to inform the Picture Wall's conservation principles and methodologies. This commenced in late November 2016 and culminated in an International Workshop held at the Lahore Fort in January 2018.

A review and analyses of the Picture Wall's as-found conditions led to the following observations:

- Water ingress is one of the principal causes of surface decay in the Picture Wall. It is believed that structural modifications that took place during the early British Period rendered the Fort's original water drainage system dysfunctional. During heavy rainfall, water found its way into the spaces attached to the wall, and then moved towards both the northern as well as western façade of the Picture Wall. Consequently, the brick masonry and decorated surfaces gradually began to deteriorate. Most of the wall's decay, if not all, can be attributed to water infiltration.
- The glaze of the tile mosaics has detached from the body of the tile, leading to the weathering of the body itself. Laboratory investigations showed that this detachment is a result of water being absorbed by the tiles, which is unable to evaporate through the glossy, impermeable surface. Prolonged water seepage has also caused the cracks in the fresco and brick imitation plasters to expand. Additionally, there is loss of paint, and a thick biofilm of algae and bacteria has formed in areas where water is retained by porous surfaces for extended periods of time.

Evidently, for the long-term conservation of the Picture Wall, water infiltration and structural moisture must be mitigated. While a large-scale restoration of the Lahore Fort's original drainage system is being proposed, to allow the conservation of the Picture Wall to take place, current water outlets damaging the wall have been extended with temporary pipes so as to divert the water away from the structure.



Above: A conservator carrying out material tests for the conservation of glazed tiles



Below: Master craftsmen working on repairing filigree work





Above: Documentation of the as-found conditions of the Picture Wall's western façade, using high-resolution orthorectified photographs

Below: As-found condition of 'prototype' area, also showing archaeological excavations



CONSERVATION PROCESS

In Pakistan, the conservation of frescoes and other architectural surfaces traditionally involves the replacement and reconstruction of decayed sections. However, contrary to this approach, the goal of the conservation of the Picture Wall's western façade was not to reconstruct missing pieces, but instead to protect and enhance what remains of it. For this reason, reconstruction was kept at a minimum and only implemented where there was a clear aesthetic benefit, and where the original decoration of the wall was completely lost. Major activities included: the stabilization of decorated surfaces and detached plaster; improving adhesion between ceramic tiles and bed plaster; removal of British period plasters; cleaning of bacteria and biological growth; consolidation of glazed tiles and colored glaze; and application of lime plaster and/or lime wash where brick masonry was exposed.

The aesthetic presentation of the original decorated surfaces and the reintegration of lost parts was the final phase of the conservation treatment. The development of an agreed presentation concept involved extensive team discussions, as well as numerous on-site trials and computer simulations. The solution that was adopted had the objective to safeguard the as-found condition and to enhance what remains of the original decorations by creating a visual order and by reducing visual interferences. This was achieved via selected reintegration of lacuna, mainly in the brick imitation frame.

The project warranted the expertise of both heritage crafts as well as conservators. Trained craftsmen dealt with areas where partial reconstruction was required and conservators were entrusted with the responsibility of stabilization, cleaning, and the final presentation of the original surfaces.



FUTURE PLANS

The conservation of the Picture Wall's northern façade is expected to begin in April 2019, and be completed in 2021. While the conservation principles and methodologies developed for the western façade of the Picture Wall will inform the course of action for the conservation of the wall's northern façade, the latter presents its own set of unique challenges, which will have to be studied and dealt with accordingly.

PROJECT FUNDING

AKCS-P would like to convey its gratitude to all persons involved in the work leading up to the completion of the conservation of the Picture Wall's western façade. We are thankful to our partners in the WCLA for their facilitation, collaboration and understanding. Sincere gratitude and thanks to the Royal Norwegian Embassy, the Government of Punjab, the Federal Foreign Office of the Federal Republic of Germany and the AKTC for the financial support, amounting to a total of about USD 1 million, which made this ambitious and challenging project possible.

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Below: Virtual conservation of the 'prototype' area developed after international workshop

