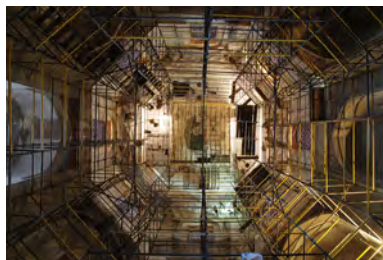




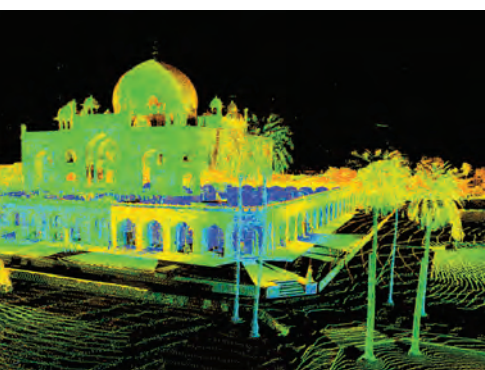
AGA KHAN TRUST FOR CULTURE

**Humayun's Tomb - Sundar Nursery - Hazrat Nizamuddin Basti  
URBAN RENEWAL INITIATIVE**



**HUMAYUN'S TOMB CONSERVATION**

**Aga Khan Trust for Culture,  
with co-funding of Sir Dorabji Tata Trust  
and in partnership with the Archaeological Survey of India  
undertook the conservation of Humayun's Tomb  
and associated structures during 2007-2013.**



Major conservation works were required on the dome (top) and the principal tomb chamber (centre) and were preceded with a high definition survey using 3D laser scanning (bottom).

## BACKGROUND

In the latter years of the 20<sup>th</sup> century, the Humayun's Tomb site suffered from a condition that had befallen many World Heritage Sites. Its gardens were worn, its masonry cracked, and the stonework broken or incomplete, the ruinous appearance resulting in few visitors to the site. The competition for resources made restoration of cultural sites an unpalatable position for many authorities. The challenge, therefore, was to find ways for cultural sites – many of great beauty and tourist interest – to sustain themselves.

Around the same time, the Aga Khan Trust for Culture set out to prove that heritage sites could not only sustain themselves, but could become catalysts for the revitalisation of historic districts. In India, AKTC began by restoring the gardens of Humayun's Tomb, as a gift to India by His Highness the Aga Khan on the occasion of the 50<sup>th</sup> anniversary of independence. Following the completed garden restoration in 2004, AKTC expanded its activities to encompass an urban renewal project that comprises the adjoining areas of Hazrat Nizamuddin Basti, Sundar Nursery and the Humayun's Tomb complex.

At the centre of the project is Humayun's Tomb, built in the 1560's to a far grander scale than any other earlier tomb in the Islamic world, which was the precursor of the famed Taj Mahal. Once, Humayun's Tomb stood in isolation on the outskirts of the city, but today is surrounded by the city. It continues to be an auspicious place because the Mughal builders chose to build Humayun's Tomb at this site owing to its close proximity to the Dargah of Hazrat Nizamuddin Auliya. Several other garden-tombs were built abutting Humayun's Tomb in the 16<sup>th</sup> century, including seven within Sundar Nursery.

In 2004, H.E. Dr Manmohan Singh, Hon'ble Prime Minister of India, while speaking on the successful garden restoration, requested that '*... more public-private partnerships be evolved to maintain and restore our nation's heritage*'.

To fulfil the Prime Minister's request, AKTC returned to the Humayun's Tomb-Nizamuddin Basti area in 2007 to undertake conservation works on several significant monuments while simultaneously undertaking significant socio-economic and environmental development initiatives.

## CONSERVATION PROCESS

Before undertaking conservation works, a significant archival research programme, coupled with meticulous documentation, was initiated, including the use of 3D Laser Scanning technology. An exhaustive condition assessment carried out by a multi-disciplinary team of conservation architects, archaeological engineers, and historians, revealed that although the Mausoleum and its associated structures were in a relatively stable structural condition, they were however, in a severe state of material deterioration wherein architectural details used by the Mughal builders had been compromised by 20<sup>th</sup> century repairs carried out using inappropriate modern materials.

The conservation works thus aimed at restoring the architectural integrity and the original Mughal splendour by using traditional building craft skills of masons, plasterers, stone carvers, and tile makers – all of whom would be working with the traditional materials. In view of the scale of work to be carried out and with a major departure from a ‘preserve as found’ approach, a Conservation Plan detailing the all proposed works was peer-reviewed at the outset by international experts.

## CRAFTSMANSHIP

Conservation works on all structures within the enclosed garden posed a number of significant challenges. To begin with, the scale of the structure is very large. Over 200,000 man-days of pain-staking work by master craftsmen – following the evidence of original architectural elements that remained – were required to restore the splendour.

On the roof of Humayun’s Tomb, water seepage was of a primary concern. To prevent further water seepage, masons carefully filled the joints of the grand white marble dome prior to plasterers restoring the plasterwork on the inner face of the double dome. In addition, stone-carvers manually removed a million kilograms of concrete, 40 centimetres thick, from the roof in order to restore the original levels and reveal buried architectural elements.

Almost the entire sandstone terrace of the upper platform required lifting. Major structural cracks were carefully stitched prior to resetting 5400 square metres (58000 square feet) of sandstone to original patterns and slopes. Stone-carvers also lifted 3700 square metre (40,000 square feet) of stone from the plinth, which was buried under 20<sup>th</sup> century interventions of cement. To reset the heavy stone blocks, some of which weighed over 2500 kilograms required up to 15 craftsmen to lift.

The contrasting red-white surfaces of the mausoleum, achieved by the use of red sandstone with white marble inlay, is the defining architectural element of the Tomb. Each stone of the facade was scientifically analysed to determine the most appropriate strategy: repair or replacement. Stone-carvers used traditional hand tools to match the original finish of the stone; similarly masons also used traditional building techniques to reconstruct the 42 arched recesses of the garden enclosure wall that had collapsed in the 20<sup>th</sup> century.

The use of cement during 20<sup>th</sup> century interventions altered the significance of many structures in the complex. Cement plaster as much as 15 centimetres thick that was causing significant damage to the stone masonry had to be painstakingly removed from the Northern and Eastern pavilions, the walls of the Western and Southern gateways, and on the ground level facade of the Mausoleum. To restore these structures, over 20,000 square metres (225,000 square feet) of wall and ceiling surfaces was re-plastered using lime mortar, prepared in a lime wheel with additives such as molasses, egg white, fruit pulp or marble dust. Lime plaster, applied in layers, with the final layer being one millimetre thick, and used by the Mughals to mimic white marble.



*Stone carvers (top), plasterers (central) and masons (bottom picture) used traditional materials building techniques and tools to restore the intention of the Mughal builders*



A prominent intervention was the removal of cement plaster and the restoration of the decorative star-shaped patterns on the facade of the 68 mini-mausoleums on the ground level where 160 Mughal family members, including Dara Shikoh, are buried.

For the Mughal builders, the tiles on the roof canopies represented a reminder of their Persian ancestry. In the 21<sup>st</sup> century, however, the tiles represented a craft skill lost in India. The conservation process required four years of experimentation, which was started under the guidance of master craftsmen from Uzbekistan – who trained youth from the adjoining Nizamuddin Basti in tile making.

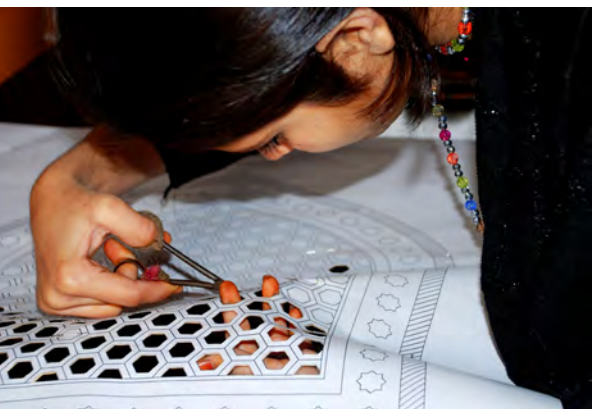
### URBAN LANDSCAPE APPROACH

The outstanding universal value of the Humayun's Tomb complex is also derived from it being at the heart of an ensemble of 16<sup>th</sup> century garden tombs. Together with conservation works on Humayun's Tomb, the adjoining monuments of Nila Gumbad, Isa Khan's garden-tomb, Bu Halima's garden-tomb, Arab Serai gateways, Sundarawala Mahal and Burj, Batashewala group of Monuments, Chausath Khambha, Hazrat Nizamuddin Baoli and adjoining monuments are all part of the on going project. In all cases, the setting of these monuments is also undergoing conservation, and landscaping or/and urban improvements.



### CULTURE AS A TOOL FOR DEVELOPMENT

The resident communities of Hazrat Nizamuddin Basti are bearers of living cultural traditions that have survived for over seven centuries. Yet many residents here did not have access to basic urban services. The project, through improvements in education, health, sanitation and infrastructure, has aimed to improve the quality of life. Physical upgrading has always been accompanied by training and empowering residents. Neighbourhood parks have been landscaped, housing improvements undertaken in partnership with house owners and support provided to the municipality to undertake a major street improvement programme. Performance areas have been created for the practitioners of Quwwali music traditions that were created here in the 14<sup>th</sup> century by Hazrat Amir Khusrau and continue to draw a wide audience.



*Restoration of tilework at Humayun's Tomb (top) required four years of experimentation. The skills acquired by local youth will be used to restore tile work on all monuments that stand in the setting of Humayun's Tomb, such as Nila Gumbad (centre). Youth and women groups have been trained in diverse skills ranging from computer operations to paper cutting (bottom picture) to create economic opportunities*

In order to disseminate the knowledge acquired during the conservation project, several publications will be produced, and the accumulated documentation will be made available on the project website - [www.nizamuddinrenewal.org](http://www.nizamuddinrenewal.org).

*For more information please visit [www.akdn.org](http://www.akdn.org) or contact the Aga Khan Trust for Culture, P.O. 3253, Hazrat Nizamuddin East, New Delhi 110013 Email: [info@nizamuddinrenewal.org](mailto:info@nizamuddinrenewal.org) Follow on: [www.nizamuddinrenewal.org](http://www.nizamuddinrenewal.org) or Facebook: [www.facebook.com/NizamuddinRenewal](https://www.facebook.com/NizamuddinRenewal)*