



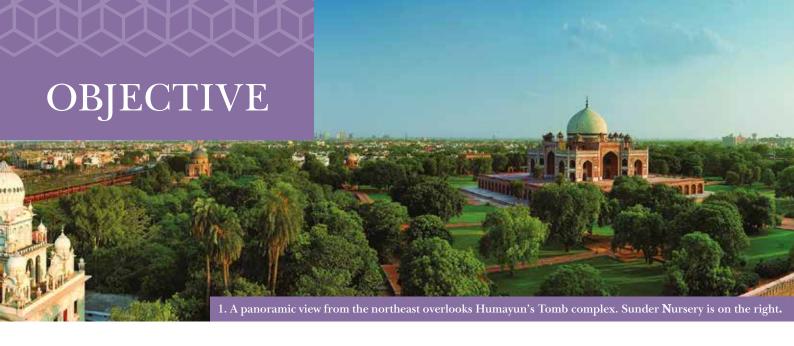
CASE STUDY 1.6.1:

SUNDER NURSERY Delhi, India

Master plan of Sunder Nursery

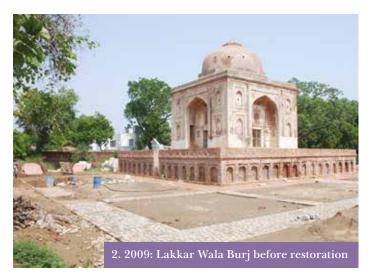


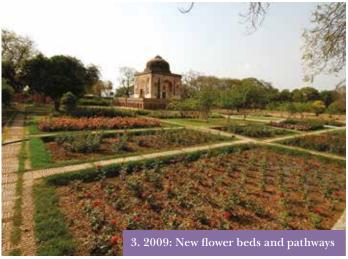




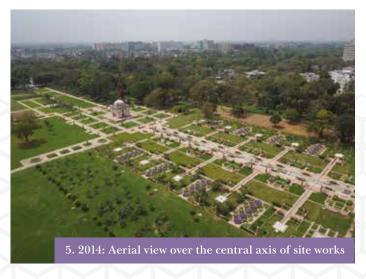
The project aimed to enhance and showcase the ecological and built heritage of the 90-acre Sunder Nursery. Another important aim for the development was to creatively combine monuments, forest and nursery functions within an interactive experience.

IMAGES OF SITE DEVELOPMENT









Sunder Nursery was established in 1912 as a plant nursery and is north of the World Heritage Site of Humayun's Tomb in New Delhi, India. Its purpose was to provide plants for New Delhi's avenues and to experiment with plants brought from across India and other parts of the British Empire.

The whole site, in the heart of New Delhi, has had continuous building activity since the 12th century and includes over a hundred mediaeval Islamic buildings. The revered Muslim scholar Hazrat Nizamuddin Auliya lived here in the early 14th century and, following his burial, tombs were built in the area for centuries.

The Sunder Nursery is part of a larger conservation, socio-economic and environmental programme to conserve over 30 Mughal-era monuments and create a city park with Delhi's first arboretum. The conservation process emphasised original crafts and skills with the aim of reviving declining techniques and traditional art forms. By doing so, it preserved cultural heritage and improved the quality of life for local residents.

CHALLENGES

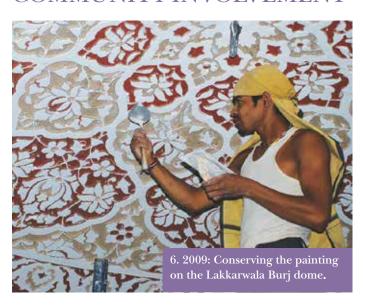
Located in the heart of New Delhi, the Hazrat Nizamuddin Basti is one of the city's densest settlements where three to four-story modern buildings stand alongside medieval monuments.

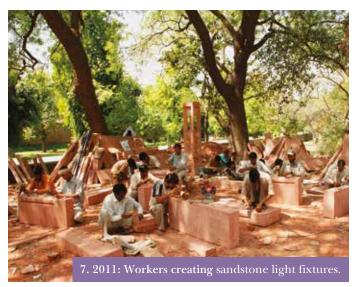
The Basti is separated from the large open space of Humayun's Tomb and Sunder Nursery by a major road.

Sunder Nursery had been a largely under-utilised green space with significant heritage and ecological assets.

Though they provide a poor living environment, several tombs are occupied as residences.

COMMUNITY INVOLVEMENT





The nursery is now part of an urban conservation zone with distinct heritage, ecological and nursery zones. It includes a micro-habitat zone and arboretum to showcase Delhi's fast disappearing biodiversity.

The arboretum is home to 300 tree species of Delhi's native flora (trees and plants) preferred by the Mughals. It is also an important bird habitat. It includes various micro-habitat zones including *kohi* (hill), *khadar* (riverine), *bangar* (alluvial) and *dabar* (marshy) zones, which are all representative of Delhi's fast disappearing biodiversity.

The park also has greenhouses, nursery beds, a training centre and a space for flower shows and exhibitions.

The central axis of the park draws in visitors and leads them through the many magnificent Mughal-period monuments set in lush gardens and ecological zones. Additionally, Sunder Nursery houses educational facilities such as an Interpretation Centre on Ecology and Heritage, an amphitheatre for cultural events and performances and a lakeside restaurant.

Over 100 household toilets have been connected to the sewerage system and portions of the sewerage system were relaid as part of the conservation

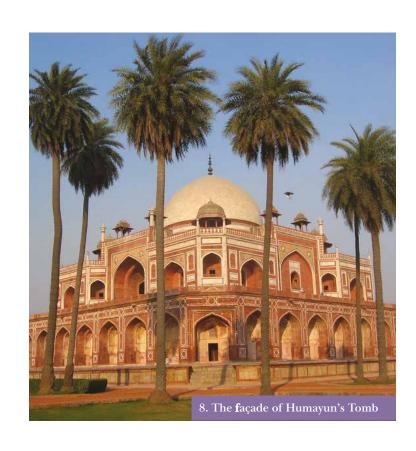
LEARN MORE ABOUT:

Sunder Nursery, Delhi, India Images/plans and maps Video clip (01.09)

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- 8. Aga Khan Development Network



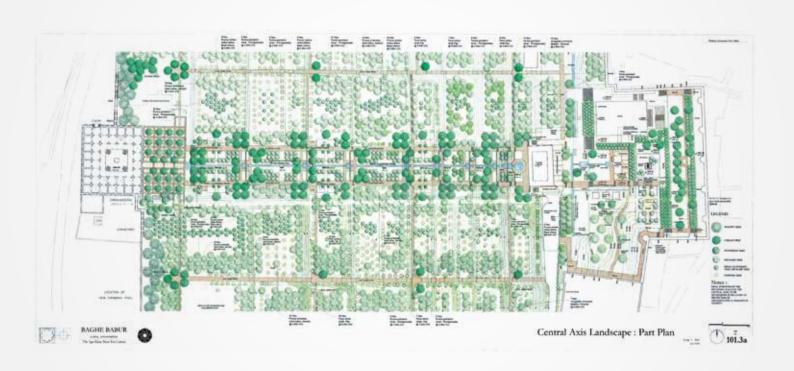




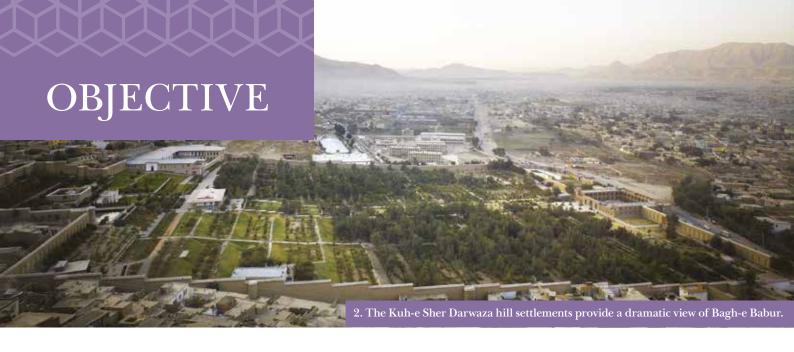
CASE STUDY 1.6.2:

BAGH-E BABUR Kabul, Afghanistan

Master plan of Bagh-e Babur



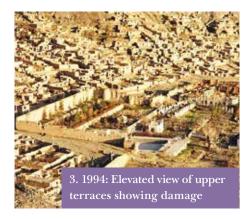


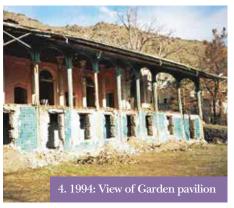


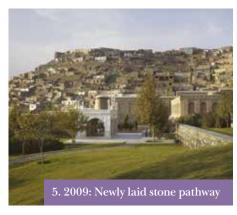
In 2002 an agreement for the rehabilitation of the eleven-hectare Bagh-e Babur Garden was signed between the Aga Khan Development Network (AKDN) and the Transitional Afghan Administration.

The objective was to restore the war-damaged mosque, other historic buildings and landscaping to the character of the original garden to allow residents of Kabul to once again access what had been one of the city's largest public open spaces.

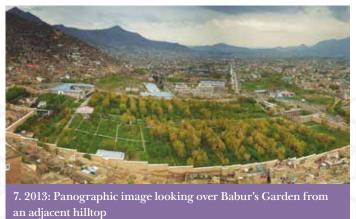
IMAGES OF SITE DEVELOPMENT











The site, now known as Bagh-e Babur, was laid out in the early 16th century by the Mughal emperor Babur and he was buried in the garden after his death in around 1540. The natural landscape was central to the life of Babur's court and his successors continued to develop the garden.

Accounts of 19th-century travellers suggest that the garden later fell into disrepair, and its perimeter walls were reportedly damaged in an earthquake in 1842.

During the reign of Amir Abdur Rahman Khan, at the start of the 20th century, repairs were carried out on the complex.

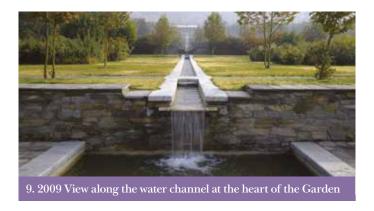
During the 20th century, European elements, including a swimming pool and greenhouse, were added.



When fighting broke out in Kabul in 1993-4, Bagh-e Babur was badly damaged as it was at the front line of fighting between different groups.

In 1995, mine clearance began and people who lived in the neighbourhood began to return to their war-damaged homes.

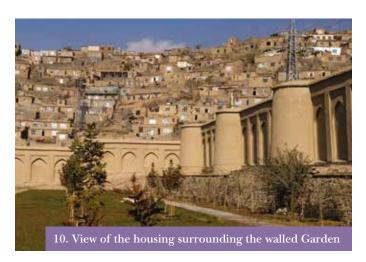
A comprehensive rehabilitation programme was started in 2002 and lasted until 2008.



Archaeological excavations in 2004-5 revealed sections of a marble-lined water channel and a series of water tanks along the central axis of the garden. This provided the basis for the design and reconstruction of a system that again allows water to flow the length of the centre of the garden, as it did in Babur's time.

CHALLENGES

The presence of unexploded ordnance (ammunition and explosives) in Bagh-e Babur and the surrounding area posed an initial challenge, as did the housing against the perimeter walls of the Garden. It was necessary to keep the site open to the public during the course of the rehabilitation work.



COMMUNITY INVOLVEMENT

It is thought that Babur had massive walls built around the perimeter of his entire garden. Nearly 1.5 kilometres of traditional compacted earth wall were rebuilt or repaired during 2003-4, creating many jobs for the residents of the surrounding neighbourhoods.

The war-damaged marble mosque and other historic buildings were restored and the character of the original garden was brought back through the reintroduction of flowing water and planting orchards of pomegranate, apricot, apple, cherry and peach trees.

As the Garden was rehabilitated, support was provided for improvements in living conditions for the 10,000 residents of the surrounding neighbourhoods, through projects which upgraded the storm-water drainage and water supplies, and provided better access to these areas.

In 2007 a series of vocational training courses for women and men were started, in order to allow people in the district to learn new skills and take on higher-paying jobs.

Many visitors to Bagh-e Babur say that it is a symbol of cultural recovery in Afghanistan; the challenge is to keep the unique character of the landscape and monuments while making sure the public may continue to access the space.

The Garden is visited by many people as it provides space for leisure, recreation, meetings and cultural events.

LEARN MORE ABOUT:

Bagh-e Babur Garden

Images Bagh-e Babur

Landscape plan

Drone footage

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- 9. Aga Khan Cultural Services Afghanistan. Along the central axis, water descends through a series of channels, water chutes and ponds, before being filtered and pumped back to the main holding tank at the base of the Garden Pavilion.
- Aga Khan Cultural Services Afghanistan. Top,
 I.5 kilometres of walls were rebuilt or repaired around the garden where people stroll and relax.





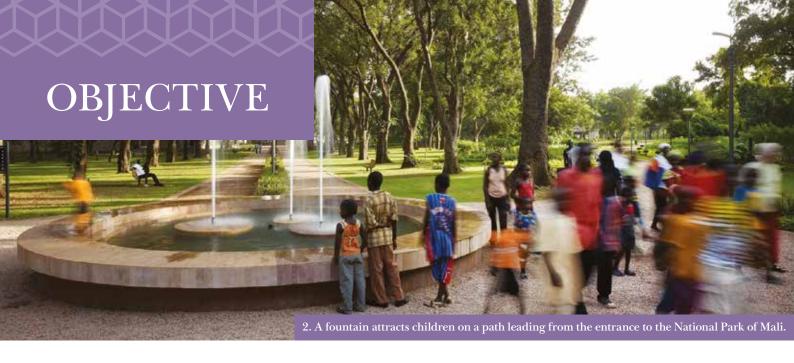
CASE STUDY 1.6.3:

THE NATIONAL PARK OF MALI Bamako, Republic of Mali

Master plan of the National Park of Mali





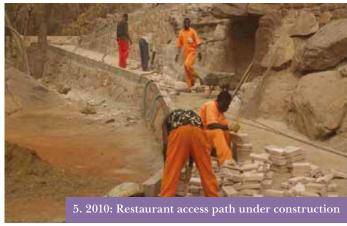


The population of Bamako, the capital of the Republic of Mali, has risen rapidly in recent years, creating new demand for housing and public facilities.

The objective of the rehabilitation project was to unify the sites of the National Museum and the existing botanical garden and zoo into a single cultural and ecological park of significant value, with natural and cultural attractions.

IMAGES OF SITE DEVELOPMENT









The site of the National Park of Mali is inside a larger protected forest reserve. The central part comprises a botanical garden, opened in the 1930s, an arboretum and a zoo. The remainder of the park is composed of terraces and slopes containing geological features such as caves, prehistoric habitats and important flora and fauna.

The botanical garden was used as a conservatory for local botanical species and a nursery for imported ones. A series of dams were constructed along the small riverbed to protect the area from terrible floods during the rainy season.

The zoo was developed later to house a number of African animals in cages. Small buildings were constructed throughout the period in the arboretum and zoo to accommodate maintenance staff and technical installations.

Over time, poor maintenance and invasive trees and shrubs transformed the park into overgrown thicket with insufficiently drained paths that became muddy in the rainy season. The zoo and several small buildings were neglected and became run-down.

Since sports and family recreation are culturally important and the Bamako population lives in dense, often informal settlements, the Park remained popular as a quiet shady sanctuary.

COMMUNITY INVOLVEMENT

Because of its natural attractions, its large size and its location next to the museum complex, it was envisioned that as the Park was rehabilitated, it could become a large open space for leisure and educational activities, focused on the general public, school groups and tourists.

CHALLENGES

Some times of the year are extremely hot and there are two intense rainy seasons which limit when construction and gardening can take place.

People light fires on the surrounding wooded slopes to encourage grass to grow for cattle grazing. These fires can get out of control and spread to other areas.

Informal collection of tree bark for medicine and wood for fuel threatened the mature trees on site.

Water is a precious resource in Mali and the water reserves underground can become depleted if people use too much.

The municipal infrastructure did not have enough capacity for drinking water, sewage treatment or irrigation requirements for the people in the local area.

The electricity supply was erratic.



The Bamako Park project included the creation of a high-quality, self-sustainable open space of 90 hectares allowing for cultural, sports, educational and family recreation activities.

The scope of activities included a major site survey, hydrology study, detailed design of civil and electrical infrastructure, road and path works, landscaping and facilities design, and construction. The team created reservoirs, a lake, pump stations, a sewage treatment plant for recycled water, the construction of perimeter fencing and a range of new buildings.

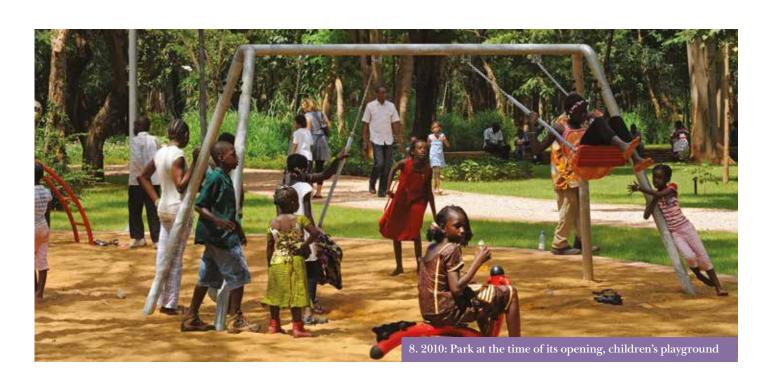
New botanical elements were added, including a medicinal garden, tree collections and extensive planting of plant species that are indigenous to Mali.

LEARN MORE ABOUT:

The National Park of Mali

Images and plan

Video National Park of Mali Zoo



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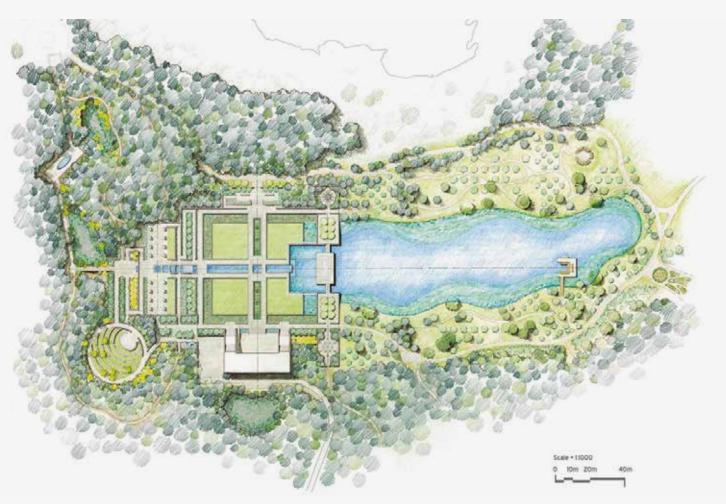




CASE STUDY 1.6.4:

AGA KHAN GARDEN Edmonton, Canada

Master plan of the Aga Khan Garden





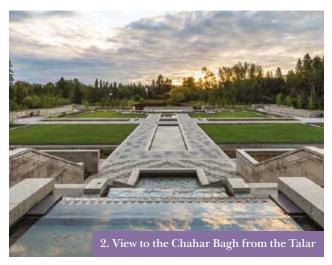
OBJECTIVE

To create a beautiful, welcoming, landscaped space that is social yet peaceful. To reinforce pluralism in Alberta's diverse, multi-ethnic society. To emphasise the importance of nature and remind users of our responsibility to protect and share nature's gifts through good stewardship of the Earth.

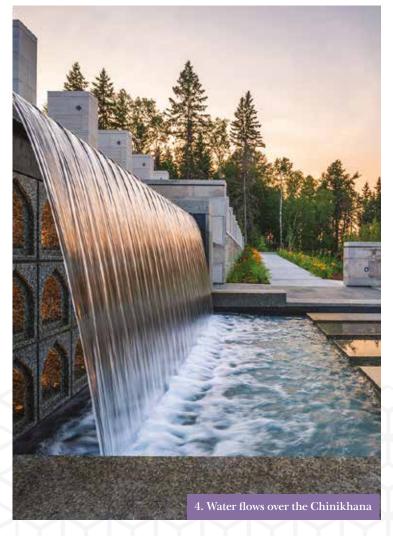
TIMELINE

The initial idea, to turn wetlands with a beautiful view into a garden, was developed in 2013. The Garden took 18 months to construct and was completed in 2018.

IMAGES OF THE FINISHED GARDEN







The Aga Khan Garden is a gift to the University of Alberta from His Highness the Aga Khan, celebrating over 40 years of partnership between the Aga Khan Development Network (AKDN) and the University of Alberta.

The Garden is inspired by the gardens of the Mughal emperors; traditional Islamic landscape design is combined with modern features. Garden elements from some of the world's best Muslim architecture, including the Taj Mahal and Humayun's Tomb in India, are combined with Canadian features, from Alberta's wild rose beds to Canadian-quarried stonework.

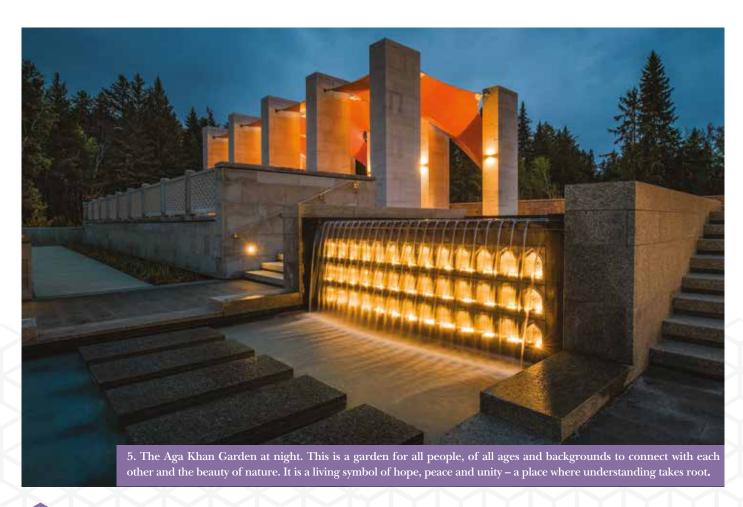
CHALLENGES

The biggest challenge was related to design – how to create the form of a 21st century Islamic garden in the prairies of Alberta, Canada. At the same time the

designers wanted to create something more than just a beautiful garden. They wanted the Garden to contribute to the ecology of Alberta.

COMMUNITY INVOLVEMENT

There were many community engagement meetings, especially with a volunteer group called the Friends of the Devonian Botanic Garden. They shared ideas of how to create a space for people to use. Many meetings were held to allow people to give ideas about how they would like to use the space. The community also continues to give ideas for events to take place in the Garden.



The peacefulness of nature is highlighted in the design including quiet forest paths, stone terraces, still pools that reflect the sky and a waterfall that tumbles over stone.

The Garden is laid out in three parts: woodland valley, central court and pond surrounded by an orchard.

The Garden contains more than 25,000 trees, shrubs and plants, selected for their fragrance, beauty and the ability to grow in Alberta's climate.

There are 12 water features and fountains in the Garden.

There are many visitors to the Garden every day and events, such as concerts, are regularly held. The community comes together in the Garden to relax, and to meet their friends and family.

LEARN MORE ABOUT:

Aga Khan Garden, Edmonton

Images/plans and maps

Video tour



6. After nearly a decade of planning and 18 months of construction, the Aga Khan Garden, Alberta opened to the public in 2018.

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- 6. AKTC/Jeff Wallace (photographer)

"We are all changed by the experience."

Visitor comment

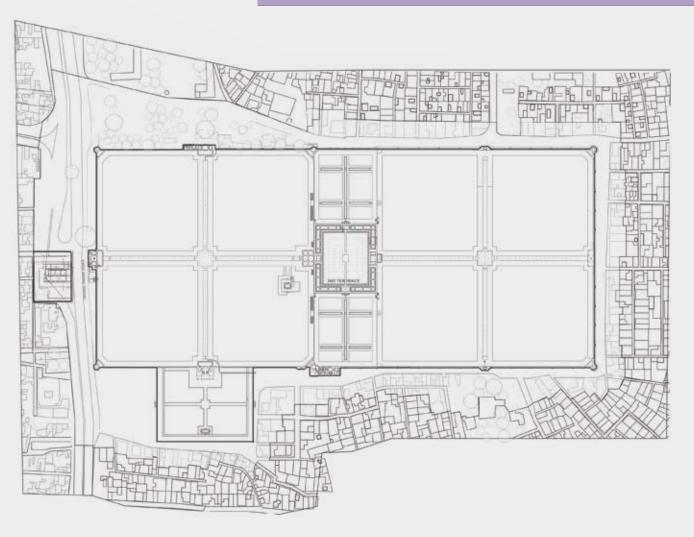




CASE STUDY 1.6.5:

SHALIMAR GARDENS Lahore, Pakistan

Master plan of Shalimar Gardens





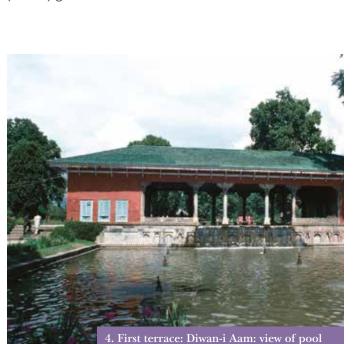
The Shalimar Gardens (which translates as 'home of love'), built by Shah Jahan in 1641-2, are Mughal gardens that have been described as being among the finest in the world.

A Mughal garden is enclosed by walls, has straight paths and features, and large areas of flowing water. The Shalimar Gardens are rectangular and measure 587 metres in length by 25 metres in width. They are connected to nearby Lake Dal by a long canal. The site is ideally suited to a garden, as the natural canal provides continuous running water.



The Shalimar Gardens are built around a formal Persian canal, known as a *chahar bagh*. This is uniform in shape, has a water source in the centre and four streams dividing the garden into four sections. This has been adapted because of the mountainous landscape in Lahore.

Beginning at the top of the garden, the canal runs through each of the *baradaris* (pavilions) in the garden. At each terrace, the canal flows into a larger pool, highlighting its *baradari*. Within the Shalimar Bagh, each of the three terraces had a different function and level of privacy: a public garden (first terrace), a private garden, also called the Emperor's Garden (second terrace), and the *zenana* (harem) garden, on the third terrace for the women.



3. Shalimar Gardens, view of central pavilion and chaddar from the sandstone pavilion

A large baradari, the Diwan-i Aam (public audience hall) is located just above the entrance gates. It has a black marble throne at its centre and is where the emperor held his daily court when in Kashmir.

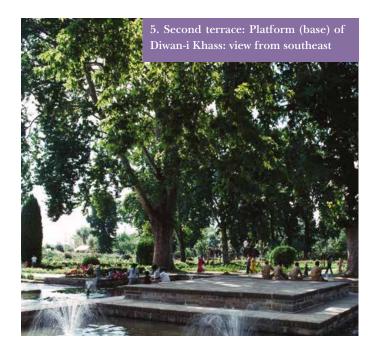
The second terrace, once contained the *Diwan-i Khass*, or the private audience hall, which was accessible only to the noblemen or guests of the court. Now, only the base of this building remains.

on downstream (west) side and west façade

Each of the three terraces is on a different level, and is hidden from the view of people entering from below. The highest, and therefore the most private, section is thought to have been used by the imperial women.

When Ranjit Singh ruled in the 19th century, the elegant Gardens were used to host European visitors who were touring the area. They stayed in its marble pavilion.

Today the Gardens are a public park.



CHALLENGES

Shalimar Gardens have never been a full 'project' in recent times, except for small scale maintenance efforts by archaeologists and some UNESCO sponsored work in the late 2000s.

In 1999, when a section of the Grand Trunk Road, (one of the oldest and longest roads in Asia) was widened, the Gardens' walls were damaged and one of the tanks that provided water to 410 fountains was demolished.

In 2000, the Gardens were placed on the World Heritage List in danger, due to the damage caused to the Gardens and the buildings inside them.

If the Gardens are to be preserved, the damaged water tanks and external walls need to be protected. Monuments, features and their settings also need to be

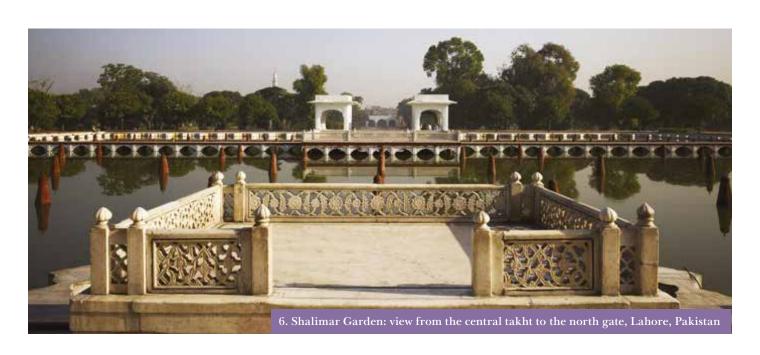
protected. Parking for tourist buses needs to be controlled and improved if this place of outstanding beauty is to be preserved for future generations.

Maintaining a historic site in its original form requires contemporary repair and conservation work, using and reviving traditional techniques and materials.

LEARN MORE ABOUT:

Shalimar Gardens, Pakistan Images

Shalimar Gardens Documentary (11.14)



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CASE STUDY 1.6.6:

KHOROG PARK Khorog, Tajikistan

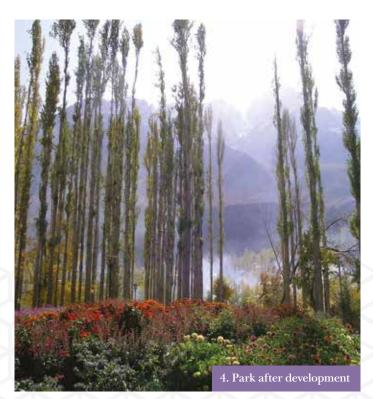
Master plan of Khorog Park

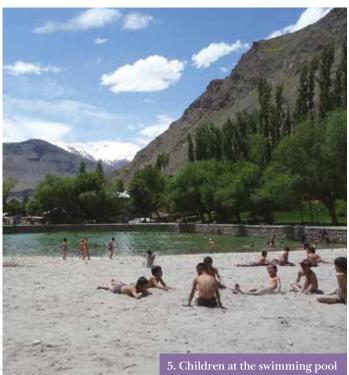




The development of Khorog City Park aimed to contribute a significant public green space to the city. It was designed in 2003, to offer visitors a place to reflect, relax and enjoy nature.

IMAGES OF SITE DEVELOPMENT

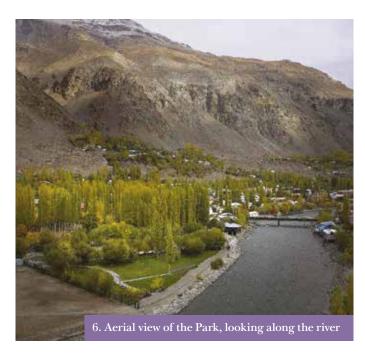




The town of Khorog is the capital of the Gorno-Badakhshan autonomous region in Tajikistan. It is situated in the heart of the Pamir Mountains near the border with Afghanistan. As Khorog is in a remote area, it must be as self-sufficient as possible.

There are very few recreational areas but those that exist are vital to the lives of the inhabitants as spaces to socialise and places to play.

The Park site, comprising a run-down open space on the riverfront, is in the centre of Khorog. It is on an alluvial plain only a few hundred metres wide, between the steep and infertile Pamir mountain range and a bend in the Gunt River.



When Tajikistan was part of the former USSR, the area was developed as a park, with pathways, flower beds and statues.

The site was overused and was not well looked after and so it fell into disrepair. The site was restored and upgraded, leading to the opening of the new multipurpose park.

CHALLENGES

The river next to the Park has a frighteningly strong summer flow, due to meltwater (melted ice and snow) from glaciers upstream. Strong currents can also carry large boulders that smash into obstacles.

Khorog's remoteness made importing materials difficult, so finding materials locally was very important.

The extreme mountain and valley topography, combined with the flood plain of the river, severely limits the land available for both urban and open spaces.

Long winters with deep snow and frozen ground require the seasonal coordination of works. In addition, the area experiences earthquakes.



COMMUNITY INVOLVEMENT

School children participated in Park clean-ups in areas where there was no building. Even the army contributed by helping to clear the site.

Vocational training programmes allowed people to develop skills as stone masons, construction workers, landscapers, gardeners and horticulturalists.

Khorog Park is a place for people to reflect, relax and enjoy nature in the company of friends and family. It is a lively green space for the entire city and has recreational facilities including a restaurant, teahouse, stone labyrinth, open-air theatre and a playground for children. The Park also includes an old meander that is now a water feature; in summer it is a pool for swimming and in winter it is used as an ice rink.



The Park has been designed with lots of lighting, so it may be used in the evening as well as during the day. There are also benches and a public toilet block.

Magnificent mature avenues and groves of Pamir poplar trees, natural rock outcrops and irrigation canals using traditional technology are part of the design.

The long, harsh winters in the Pamir Mountains make spring and its accompanying blossom of flowering trees, crab apples and cherries an emotional event. Although short, the summer growing season is special to people who love flowers. The Park has three formal flower gardens that connect with informal woods through a network of paths.



Income generated by a teahouse, café and open-air theatre support the ongoing Park operations.

Both the local population and visitors enjoy using the Park. Khorog City Park and its surrounding urban environment is an important public green space in the city. Its revival is helping the revitalisation of the city of Khorog as a whole.

LEARN MORE ABOUT:

Khorog Park, Tajikistan

Images/plans

Publications

Flyover Khorog City Park

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