



CASE STUDY 1.6.7: SUNDER NURSERY Delhi, India

Master plan of Sunder Nursery







The project aimed to improve the 90-acre Sunder Nursery by creatively combining monuments, forest and nursery within an interactive experience.

IMAGES OF SITE DEVELOPMENT



Sunder **Nursery** was started in 1912 as a plant nursery north of the World Heritage Site of Humayun's Tomb in New Delhi, India. Its purpose was to grow plants for New Delhi's avenues and 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 Muslim **scholar** Hazrat Nizamuddin Auliya lived here in the early 14th century and, following his death, **tombs** were built in the area for centuries.

The Sunder Nursery is part of a larger programme to look after 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 bringing back traditional techniques and art forms. It aimed to preserve cultural heritage and improve the quality of life for local residents.

Nursery: a place where young plants and trees are grown **Scholar:** a well-educated person who enjoys learning

Tomb: a stone structure or underground room where someone is buried

Era: a long and clearly defined period of time in history

Arboretum: a place where trees, shrubs and plants are grown for scientific and educational purposes

Conservation: to look after and protect a place

CHALLENGES

Sunder Nersery is in Hazrat Nizamuddin Basti, an area in the heart of New Delhi where many people live very close together. Modern buildings are next to medieval monuments.

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

Sunder Nursery's green space has not been used as well as it could be.

Though they provide a poor living environment, people live in several of the tombs.

COMMUNITY INVOLVEMENT





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

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

Urban: of a town or a city
Heritage: things passed down from older generations
Ecological: living things
Habitat: natural home to animals and plants
Alluvial: clay, sand and gravel deposited by running water

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 monuments set in **lush** gardens and ecological zones. **Lush:** an area where there are lots of healthy plants that are growing well

Sunder Nursery also has educational facilities, an **amphitheatre** for cultural events and performances and a lakeside restaurant.

Amphitheatre: a round or oval outdoor theatre

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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CASE STUDY 1.6.8: BAGH-E BABUR Kabul, Afghanistan

Master plan of Bagh-e Babur







In 2002, an agreement to repair the 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 so residents of Kabul could once again access one of the city's largest public open spaces.

IMAGES OF SITE DEVELOPMENT



4. 1994: View of Garden pavilion





6. 2003: Elevated view showing the gardens during restoration



7. 2013: Panographic image looking over Babur's Garden from an adjacent hilltop

Elevated: lifted up, raised up above the ground

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

Successor: a person who has a position or title after someone else.

Nineteenth-century travellers told stories that suggest that the garden wasn't always looked after and became run-down. The walls around the outside were reported to have been damaged in an earthquake in 1842.

At the start of the 20th century repairs were carried out during the reign of Amir Abdur Rahman Khan whose family used the complex.



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

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



9. 2009 View along the water channel at the heart of the Garden

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

The repair programme was started in 2002 and lasted until 2008.

In 2004-5, archaeologists found sections of a marble-lined water channel and a series of water tanks in the centre of the garden. This meant that the system could be rebuilt to allow water to flow the length of the centre of the Garden, as it did in Babur's time.

CHALLENGES

The presence of unexploded ammunition and explosives in Bagh-e Babur and the surrounding area made it challenging at the start, as did the housing very close to the walls of the Garden. It was also necessary to keep the site open to the public during the course of the rehabilitation work.



10. View of the housing surrounding the walled Garden

COMMUNITY INVOLVEMENT

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

Compacted: tightly packed together

The war-damaged marble mosque and other historic buildings were restored. The original Garden was brought back by reintroducing 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.

Rehabilitate: to make something healthy again **Drainage**: a system that takes away waste water **Vocational:** learning that develops skills for jobs Many visitors to Bagh-e Babur say that it is a sign of cultural recovery in Afghanistan. However, it is difficult to look after the landscape and monuments while also making sure the public can use the Garden.

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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- 4. Jolyon, L. 1994. View of Garden pavilion
- 5. Aga Khan Trust for Culture. 2009. Newly laid stone pathway
- 6. Maiwandi, A. 2003. Elevated view showing the Gardens during restoration

- 7. Norfolk, S. 2013. Panographic image looking over Babur's Garden from an adjacent hilltop
- 8. Aga Khan Cultural Services Afghanistan. Swimming pool relocated during the restoration process is a popular attraction in the warmer months
- 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.
- 10. Aga Khan Cultural Services Afghanistan.1.5 kilometres of walls were rebuilt or repaired around the Garden where people stroll and relax.

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CASE STUDY 1.6.9: THE NATIONAL PARK OF MALI Bamako, Republic of Mali

Master plan of the National Park of Mali







2. A fountain attracts children on a path leading from the entrance to the National Park of Mali.

The population of Bamako, the capital of the Republic of Mali, has risen quickly 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 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 includes 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**.

Arboretum: a place where trees, shrubs and plants are grown for scientific and educational purposesFlora: the plant life in a regionFauna: the animals in a region

The botanical garden was used to look after local plant species and as a nursery for imported ones. A series of dams were built 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 for maintenance staff and equipment.

Over time, poor maintenance and **invasive** trees and shrubs transformed the park into overgrown **thicket**. Water could not drain from paths so they became muddy in the rainy season. The zoo and several small buildings were not looked after and became run-down.

Invasive: spread very quickly in a way that causes damage **Thicket:** trees or bushes that grow very close together

COMMUNITY INVOLVEMENT

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.

Dense: close together

Informal settlement: an area of housing that has been built without permission, on land that does not belong to the people who live there Because of its natural attractions, its large size and its location next to the museum complex, it was imagined that, as the Park was repaired, it could become a large open space for leisure and educational activities. The users were expected to be the general public, school groups and tourists.

CHALLENGES

Some times of the year are extremely hot and there are two heavy 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.

People collected tree bark for medicine and wood for fuel, which threatened the trees on the site.

Water is a precious resource here and using up all the **groundwater** is an issue. The area's **infrastructure** did not have capacity for water that is safe to drink, **sewage** treatment or **irrigation** requirements.

The electricity supply was erratic.

Groundwater: water that collects underground Infrastructure: the organisation of facilities (e.g. hospitals, schools, roads, power and water) Sewage: waste water and excrement Irrigation: the process of controlling the watering of plants Erratic: not regular, unstable



The Bamako Park project included the creation of a highquality, **self-sustainable** open space for cultural, sports, educational and family leisure activities.

Self-sustainable: able to look after itself

The work included improving electrical infrastructure, roads and paths, and the design of and construction of landscaping and facilities. The team created **reservoirs**, a lake, pump stations, a sewage treatment plant for recycled water, fencing and new buildings.

Reservoir: a natural or human-made lake used as a water supply

New plants were added, including a medicinal garden, trees and many **indigenous** plant species.

Indigenous: originally from the local place or country, in this case, Mali

LEARN MORE ABOUT: The National Park of Mali Images and plan Video National Park of Mali Zoo



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- 7. Monreal, L. 2009. Plant nursery
- 8. Otte, G. 2010. Park at the time of its opening, children's playground





CASE STUDY 1.6.10:

AGA KHAN GARDEN Edmonton, Canada

Master plan of **the** Aga Khan Garden





OBJECTIVE

To create a beautiful, welcoming space. To reinforce pluralism in Alberta's diverse society. To emphasise the importance of nature and our responsibility to protect it 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. It celebrates over 40 years of partnership between the Aga Khan Development Network (AKDN) and the University of Alberta.

The Garden is inspired by the Mughals and combines traditional Islamic landscape design 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 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. **To quarry:** to remove rock, sand or minerals from the ground

Prairie: a large area of flat grassland. These spaces cover a lot of the centre of Canada

COMMUNITY INVOLVEMENT

There were many community 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.



5. The Aga Khan Garden at night. This is a garden for all people, of all ages and backgrounds to connect with each other and the beauty of nature. It is a living symbol of hope, peace and unity – a place where understanding takes root.



The Garden has been designed to be very peaceful. It has quiet forest paths, stone terraces, still pools that reflect the sky and a waterfall.

The Garden has three parts: a woodland valley, a central court and a pond surrounded by an **orchard**.

The Garden contains more than 25,000 trees, bushes and plants, selected for their lovely smell, 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.

Orchard: an area where fruit trees are grown

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 1.6.11: SHALIMAR GARDENS Lahore, Pakistan

Master plan of Shalimar Gardens





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

A Mughal garden is enclosed by walls, has straight paths and features, and large areas of flowing water. The Shalimar Garden is rectangular and measures 587 metres in length by 25 metres in width. It is connected to nearby Lake Dal by a long **canal**.

Canal: a waterway created by people



In the Shalimar Gardens the formal Persian *chahar bagh*, (usually the same shape, with water in the centre and four streams dividing the garden into four sections) has been adapted because the landscape is so mountainous.

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*.

Pavilion: a decorated building or summer house **Terrace**: each of a series of flat areas made on a slope



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



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

Each of the three terraces is on a different level, and is hidden from people entering from below. The highest section is the most private and was probably used by women.

During the reign of Ranjit Singh in the 19th century, European visitors stayed in the marble pavilion when they travelled in the area.

Nobleman: a member of the ruling class **Reign:** the time that an emperor/empress holds power Within the Shalimar Gardens, each of the three terraces had a different use 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.

The large Diwan-i Aam (public audience hall) is near the entrance gates. It has a black marble throne and is where the emperor held his daily court when in Kashmir.



CASE STUDY: SHALIMAR GARDENS, Lahore, Pakistan

CHALLENGES

Shalimar Gardens have never been a full 'project', except for some small repair work 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 knocked down.

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. To look after the Gardens, the damaged water tanks, external walls and buildings need to be protected. Parking for tourist buses needs to be controlled and improved. If the Gardens are looked after, this beautiful place can be enjoyed by future generations.

LEARN MORE ABOUT: Shalimar Gardens, Pakistan Images Shalimar Gardens Documentary (11.14)



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CASE STUDY 1.6.13: KHOROG PARK Khorog, Tajikistan

Master plan of Khorog Park





The development of Khorog City Park contributes a significant public green space to the city. Since 2003, it has been the focus of a rehabilitation project designed to offer visitors the possibility 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 in the centre of the Pamir Mountains near the border with Afghanistan. As Khorog is in a remote area, it must be as self-sufficient as possible.

The few social areas are important to the lives of the people who live there, as spaces to meet friends and play.

The Park was developed from a run-down open space on the riverfront. It is in the centre of the city. It is on flat area only a few hundred metres wide, between the steep Pamir Mountains and a bend in the Gunt River.

Autonomous: free to govern itself



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 multi-purpose park.

CHALLENGES

The river next to the Park has a very fast flow, due to melted ice and snow from glaciers in the mountains. Strong currents can also carry large **boulders** that smash into obstacles.

Khorog's location made it difficult to import materials. These had to be found in the local area.

The extremely steep slopes and the flood plain of the river limits the amount of land that can be used for the Park.

Long winters with deep snow and frozen ground stop work being done at this time of year. Also, there are earthquakes in the area.

Boulders: large smooth rocks



COMMUNITY INVOLVEMENT

School children took part in Park clean-ups. Even the army helped to clear the site.

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

Khorog Park is a place for people to reflect, relax and enjoy nature with friends and family. It is a lively green space for the entire city and has 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 swimming pool and in winter it is used as an ice rink.

Labyrinth: a maze Meander: a winding curve or bend in a river



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

The design includes Pamir poplar trees, natural rock outcrops and **canals** that use traditional technology to water the plants.

The long and very cold winters in the Pamir Mountains make people look forward to spring. When the trees blossom, it is a sign that summer is coming. Although short, the summer is special to people who love flowers. The Park has three flower gardens, which have paths to connect with the woods.

Canal: a waterway made by people

Both the local people and visitors enjoy using the Park. Khorog City Park is an important public green space in the city. It is helping to **revitalise** the city of Khorog as a whole.

Revitalise: to improve something by bringing it back to life

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



LEARN MORE ABOUT: Khorog Park, Tajikistan Images/plans Publications Flyover Khorog City Park

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