

A STUDY OF GARDEN LANDSCAPE OF TAJ MAHAL

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භූ දර්ශන පුරාවිද්‍යාඥයින් අතීත භූ දර්ශන ශිල්පයට අනුව පුරාණ ජන ජීවිතය ප්‍රතිනිර්මාණය කිරීමට උත්සුක වෙති. මන්ද, තම බහුවිධ අවශ්‍යතා සපුරා ගැනීම උදෙසා මිනිසා විසින් ස්වභාවධර්මය සමඟ ක්‍රියා කරමින් තම අභිමතය පරිදි වටපිටාව හසුරුවනු ලැබූ කලාව මෙතුළින් නිරූපණය කරන බැවිණි. මිනිසා විසින් නිර්මාණය කරන ලද භූ දර්ශන අතුරින් මෙම අධ්‍යයනය සඳහා මූලික වන ඉන්දියාවේ සාජහාන් අධිරාජ්‍යයා (ක්‍රි.ව. 1628-1658) තම බිරිඳ වෙනුවෙන් ඉදිකරන ලද ටාජ් මහල් උද්‍යානය සිත්ගන්නාසුළු උද්‍යාන භූ දර්ශනයක් ලෙස ඉස්මතු කළ හැක. පර්යේෂණ ගැටළුව වන්නේ ටාජ් උද්‍යානයේ නිර්මාණකරුවාට තම අවශ්‍යතාවලට අනුකූලවන ලෙස වටපිටාව පාලනය කිරීමට හැකි වූවාද? යන්න වන අතර අරමුණ වන්නේ ටාජ් මහල් නිර්මාණකරු තම අවශ්‍යතා සපුරා ගැනීම සඳහා වටපිටාව හසුරුවා ඇති ආකාරය හඳුනාගැනීමයි. පර්යේෂණයේ දී අනුගමනය කරන ලද ක්‍රමවේදය වනුයේ ඓතිහාසික මෝගල් රාජකීය උද්‍යාන පිළිබඳ පර්යේෂණ පත්‍රිකා සහ පර්යේෂකයන්ගේ ප්‍රකාශිත කෘති ඇතුළු ද්විතීයික සාහිත්‍ය මූලාශ්‍රයන්ගෙන් එක්රැස් කරගන්නා ලද දත්ත විශ්ලේෂණය කිරීමය. උද්‍යානයේ භූගෝලීය ලක්ෂණ, මිනිසා විසින් සාදන ලද ගොඩනැගිලි, උද්‍යාන සැකැස්ම, ජල කළමනාකරණ ක්‍රමවේද, වෘක්ෂලතාදිය, භූ දර්ශනයෙන් ඉස්මතු වන සංස්කෘතික හා ආගමික ගමනාර්ථයන් ඇතුළු උද්‍යානයේ ප්‍රමුඛ භූ දර්ශන ලක්ෂණ කෙරෙහි අධ්‍යයනය තුළ අවධානය යොමු කරන ලදී. සපයාගන්නා ලද දත්ත අනුව සැලකීමේ දී ටාජ් මහල් උද්‍යාන භූ දර්ශනය, “සිව්වැදැරුම් පිරිසැලසුම (Fourfold layout)” ලෙස හැඳින්වෙන සුවිශේෂී වූ උද්‍යාන පිරිසැලසුමකින් යුතු වෙයි. එම උද්‍යාන සැලසුම සකසා ඇත්තේ භූ දර්ශනය සමඟ සබඳතාවක් දක්වන අවට ස්වභාවික පරිසරය, ස්වභාවික ජල මූලාශ්‍ර භාවිතයෙන් නිර්මාණය කර ඇති දක්ෂ ජලවහන ශිල්පීය ක්‍රම, උද්‍යාන නිර්මාණය සඳහා වඩාත් උචිත භූගෝලීය පිහිටීම, භූ දර්ශනයට

අමතර අලංකාරයක් මෙන්ම සිසිලසක් එක් කරන වෘක්ෂලතා සැකැස්ම, මිනිසුන්ගේ භාවිතය සඳහා උද්‍යානය අවට ඉදිකරන ලද විවිධ ගොඩනැගිලි සහ භූ දර්ශන ලක්ෂණයන්ගෙන් ප්‍රකාශ කෙරෙන අතීත ඉන්ද්‍රියානුවන් වටා ඇති සංස්කෘතික හා ආගමික පසුබිම යනාදී වූ කරුණු ගණනාවක් කෙරෙහි අවධානය යොමුකරමින් ය. එබැවින්, මෙම අධ්‍යයනය තුළින් ටාජ් මහල් ඓතිහාසික උද්‍යානය, මිනිසා සහ සොබා දහම අතර ඇති සම්බන්ධය ඉස්මතු කරන විශිෂ්ඨ භූ දර්ශන අංගයන් විද්‍යාමාන කිරීමට සමත් ව ඇති බව හඳුනා ගැනීමට මග සලසයි.

මූලික පද : මෝගල් රාජකීය උද්‍යාන, භූ දර්ශන පුරාවිද්‍යාව, මෝගල් ජලවහන පද්ධති, උද්‍යාන භූ දර්ශනය

1. Introduction

The term ‘landscape architecture’ describes a location or the structure of the land that has been subjected to change with the interference of man and reveals the interaction between humankind and the natural environment. A great variety of such landscapes during the ancient period gives insight into how man has been able to control his surroundings. Amidst these landscapes, ancient gardens speak of past human behavior and Taj Mahal Garden can be considered as one of the significant examples.

Mughal gardens constructed in South and Central Asia during the 16th – 18th centuries, constitute one of the distinguished chapters in the history of garden and landscape arts. Famous as one of the UNESCO world heritage sites, the Taj Mahal at Agra, India is part of an elaborate complex consisting of a decorative gateway, a beautifully designed garden, a wonderful water system, and a mosque with other buildings showcasing an elegant garden landscape feature. Taj Mahal is built by the Mughal emperor Shah Jahan (reign. 1628 - 1658) in 1648 AD in memory of his Mumtaz Mahal (Koch, 2009).

This study is done concerning the main elements of the garden landscape of Taj Mahal Garden including geographical location, manmade structures, the layout of the garden, hydraulics, vegetation, and especially symbolic meanings of the particular landscape features with the intention of identifying the ways in which the ancient man has been successful in manipulating the surrounding.

The methodology adopted to compile this work was the analysis of data collected from secondary literary sources including the research papers and books of both national and international scholars and researchers who have conducted methodological excavations and field observations of the historical Mughal Imperial gardens. These sources were studied focusing mainly on major

landscape features of the relevant garden to discover whether the creator could control the natural environment and if so, how he was able to do so.

2. Results

Based on the study of the main garden landscape features of the Taj Mahal Garden, the following results could be identified.

2.1 Geographical location

Taj Mahal is located to the east of Agra, Uttar Pradesh of India, on a plain terrain and in an environment with a dry and tropical climate (Moyinham. 1979). In order to withstand the harsh climate, the creator of the Taj Garden has given special attention to a nearby water source in selecting the location. Taj Mahal is located close to the north of the Yamuna River, the main river in the Agra region (Figure 1). The need for water during the construction of the landscape has been taken care of by the river and it has been supporting the whole structure of the Taj Mahal as well as the maintenance of the garden (Ali, 2006). Additionally, the Mughal emperor has used the riverfront setting with the landscape while constructing the main building at the back of the garden, running along the riverfront giving an aesthetic view to the whole surrounding.

2.2 Garden Layout

Out of the total area of 580 meters by 300 meters of the Taj Mahal complex, the garden covers an area of 300m-by-300m distance and is based on symmetry and geometric arrangements (Parodi, 2017), while manipulating the land setting. The garden consists of two main components: a cross-axial and four-fold garden and a raised terrace with the buildings (Figure 2). Raised red sandstone lanes separate the Mughal Garden into four segments which further divided into 16 symmetrical sections (Moyinham, 1979). In the center of the garden where the walkways coincide is a raised platform. An elongated pool with fountains situated midway between the Taj Mahal and the Entrance offers a beautiful reflection of the Taj. Various fruit-bearing trees and Cyprus trees are arranged in symmetrical equidistant patterns along the raised central pathway. The garden is designed in such a way that it offers an unhindered view of the Taj from any random point. In planning the layout, the creator has given attention to the topography of the land as he has constructed the fourfold garden on the flat terrain and the buildings on the elevated terrain at the backside of the landscape. The flat terrain has been handled effectively with the principles of geometry to give out a pleasing view to the landscape.

2.3 Manmade structures

The most important structure in the vicinity is the mausoleum, Taj Mahal.

which is an octagonal-shaped building made of white marbles with 4 main sides and 4 intermediate sides (Figure 3). The whole building is perfectly symmetrical and at the crown of the building, there is a bulb-shaped dome. The main gate, a marvel of Mughal architecture that separates the inner courtyard, and the garden is the only real entry into the Taj Mahal site (Figure 4). Additionally, the inner courtyard has 4 buildings in four directions. The two southern buildings are the secondary mausoleums of the first two women of Shah Jahan. The two North buildings were used for funeral services. The pavilion of the guests is on the other side of the terrace, towards the East. It is very similar to the mosque. The mosque is the counterpart of the guests' pavilion, and it is to the west of the terrace, north of the Taj Mahal complex (Farhatullah, 2018) (Figure 5). Especially, the house porch is a unique architectural element introduced into Mughal art by Shah Jahan (Mishra, 2017). These buildings constructed for the different usage of man have also been incorporated to the land formation and water features. Especially, the main building Taj has built given prominence among others on the raised terrain at the back of the garden with the riverfront view given by the Yamuna River.

2.4 Hydraulic elements

The overall plan of the Taj Mahal environs was craft fully adopted by the architects, successfully incorporating various water devices. Water, brought from the river Yamuna, is supplied to the system in such a way that the garden looks full of life even after centuries. One of the most stunning features of all: an elevated lotus pond in the center of the garden that gives a pure reflection of the Taj Mahal is a mark of architectural wonder (Figure 6). The view of the Taj Mahal is further enhanced by a total of 24 fountains on all four sides of this lotus pond as the result of the systematic hydraulic setting (Koch, 2009) (Figure 7).

The water ducts at the Taj Mahal that are brought to the gardens are supplied with water by the River Yamuna and are supported by arches, situated at the western wall are still preserved in their original form (Fatma, 2012). The tank in turn supplied water to the garden which kept it green by channelizing it with the ducts that were laid all over the garden. The fountains in the garden were constructed in order to keep the whole garden irrigated and moist. Both copper pipes and earthen ducts are used to supply water. A copper pot was kept under each fountain pipe in order to make sure a uniform water pressure of the fountains. The water features of the garden are fed with water through interconnected canals. Except for the ramp, a maximum of the water devices which were built during the times of Mughals have withstood many centuries and are working perfectly and have stood the test of time.

The hydraulic elements of Taj are designed manipulating the topographical formation of the land concerning the pressure needed for the fountains to work and

water to flow supplied from Yamuna River via interconnected canals throughout the garden. Also, the water pressure has also been controlled by the different sizes of water pipes and copper pots. Water from the main outside water source for this water system has been controlled with the large water ducts supported by the arches.

2.5 Vegetation

The floristic arrangements of the garden surely enhance the exquisiteness and also serve as a painted backdrop for the whole site as visible in the Taj Mahal Garden (Figure 8),(Figure 9). Early accounts of the garden describe an abundance of vegetation including roses, daffodils, and fruit trees, but the plantings were altered during the reconstruction. Also, according to travel records, the fruit production at gardens would often exceed the needs of the royal family, and the surplus had been sold in local markets to offset the high cost of garden maintenance (Koch, 2009). Additionally, the vegetation arrangement has provided the surrounding, a cooling effect to stand against the dry climate. Thus, the creator has gained the maximum benefit from the natural flower plants and various kind of fruit trees to comply with his requirements in building up the garden landscape.

2.6 Cultural and religious implications

Mughal tomb gardens mainly imply the tradition of respect for the deceased and the paradise garden concept mentioned in the Holy Quran (Dickie, 1985; Moyinham, 1979). The Taj Mahal Garden, which symbolizes paradise according to the scholars, was well integrated with nature with waterways, fountains, pavilions, and other structures. The number four is considered the holiest number in the Islam religion; hence, the layout of the Garden is based on four or its multiples according to the researchers (Dickie, 1985; Fatma, 2011). The entire garden area is divided into four segments, by canals with fountains. In each quarter portion, 16 flowerbeds have been divided by stone-paved raised pathways. The floral arrangement in the garden also indicates symbolic meaning. The Cyprus trees in the garden imply the concept of death, whereas the various fruit trees indicate life (Koch, 2009).

Especially, the main mausoleum and other tombs built within the garden represent the culture of the Mughals, the commemoration of the death. Respect for the dead is a cultural trait major in the life of the people in the past as well as present. The buildings and garden arrangement of this tomb garden give out the intention of the creator, where he needed to showcase his sheer respect for the loved ones. So, it is clear that this historical garden landscape features depicts the life aspect of the creator in culture and religion.

3. Discussion

Along with the abovementioned garden features, it could be understood how the man has been able to control the environment to fulfill his requirements and how he has been attempting to connect with nature during the process. Foremost, the geographical setting which is a vital factor in designing a garden landscape has been chosen to co-op up with the dry climate, while selecting a nearby water source. The arrangement of the garden features has been incorporated into the natural setting with a riverfront view and symmetrical layout. Water has played a significant role in the garden functional-wise as well as in increasing the alluring beauty of the landscape. The topographical features were given attention in controlling water gain from the outside water source.

Man-made structures are noteworthy since they display the needs of the creator. As a tomb garden, a range of buildings is constructed manipulating the surrounding within the vicinity of the Taj for the usage of the man, expressing architecture and culture. One of the striking features is that the buildings have been intervened with water features; mainly watercourses, probably to minimize the effect of the dry climate. The cultural and religious symbolism and implications manifested in the garden features indicate how the man connects his life with the natural setting.

Consequently, the Taj Mahal Garden creator has been successful in connecting with the environment in various ways in constructing the garden elements. In planning the landscape architecture of the Taj Garden, the surrounding natural setting has been especially concerned as visible from the main garden features as discussed. The land, water, vegetation has been altered and controlled to satisfy his needs. So, this historical tomb garden can be highlighted as one of the finest specimens of ancient garden landscapes which manifest the interaction of human elements and the natural elements to a greater extent.

4. Conclusion

The garden which encompasses this whole complex bears special and noticeable natural and human elements intervened together to render a praiseworthy garden landscape as discussed in this study. The Taj landscape is properly planned and executed with impressive structures and buildings, waterworks, floral arrangements by making use of the geographical and natural features. It embraces noticeable features highlighting the connection of man and nature along with the Mughal landscape architectural skills which combine with nature and also their culture and beliefs that bring out with the symbolic elements associated with the garden. So, it is conspicuously clear that the garden landscape of Taj Mahal garden is one of the most important pieces of evidence of historical garden landscapes which showcases how the man was able to manipulate nature, while bringing out the most of it to comply with his needs

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