



Arts

## **WATER MANAGEMENT SYSTEM OF KALIYADEH MAHAL**

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### **Abstract**

Water in architecture of India played an important role in the culture. Indians developed the traditional hydro engineering to conserve Rain water, Ground water, river, and other natural resources. It could be seen since earliest times. Stepwells were first used as an art form by the Hindus and they influenced many other structures, Mughal Gardens are the examples of the incorporation of water in the design of Architecture. The designs of the gardens are of the medieval Islamic Period.

Kaliadeh Mehel near Bheravgarh Fort at the bank of River Kshripa. Ujjain (Madhya Pradesh) is well known and one of the most famous historical landmarks of Madhya Pradesh, it is the fusion of Hindu – Persian architecture. The palace has the exclusive designed water system.

**Keywords:** Water Management; Island, Kund; Persian Architecture; Mughal Garden; Water Architecture; Stepwell.

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### **1. Introduction**

“Rivers and lakes have different social, ecological and economical demands made on them at different periods of societal development and that made them vulnerable to change.”<sup>1</sup>

Nile, Tigris and Euphrates, Huang-Ho and Indus Valley Civilization were flourished due to their advance water-management.<sup>2</sup>

Water in architecture of India played an important role in the culture. Indians



developed the traditional hydro engineering to conserve Rain water, Ground water, river, and other natural resources. It could be seen since earliest times.<sup>3</sup> Traditionally ecological values linked to the water resources were veiled behind the socio- cultural values. Stepwells were first used as an art form by the Hindus and they influenced many other structures, especially in Mughal period. Patronage influence of the stepwells is visible not only in their architectural decoration but also in their structural designing. The including water into design to enhance the landscape and Natural beauty of Mahal was popularized under Muslim rule.<sup>4</sup>



“The Unique structure of water engineering later takes the changes aesthetically in historic period and identified them the superb mesmerizing monuments of conservation in ancient India.<sup>5</sup>

Ram Bagh in the Agra was first Mughal garden. The Taj Mahal -Agra, Shalimar and Nishat Garden- Kashmir, Mughal Garden- Lahore are some of the examples reflecting the incorporation of water in the design of Architecture.<sup>6</sup>



The importance of water to the locations in which they were found and the practical idea encouraged, the development of many technique of water conservation. The ethical and social values gave them strength.<sup>7</sup>







The designs of the gardens are of the medieval Islamic Period. Although the nomadic influence, that comes from the Mughals' could be seen also. The outer side is walled off and protected from the outside world, and its inner space was filled with most pleasing elements of nature and Its essential features; included running water, pool, garden, trees full of fruits, flowers, birds and the reflection of the sky in the water of the pool, blowing cool breeze displays the cosmic beauty.<sup>8</sup>



Traditionally, water resources like rivers ponds and lakes have provided many important functions for societal developments. They have different social and ritual aspects.<sup>9</sup>

## 2. Kaliadeh Mahal

Kaliadeh Mahal is a palace located near Bheravgarh Fort which is 8 km. away from Ujjain at the bank of River Kshripa. Ujjain (Madhya Pradesh) is well known holy place of Lord Mahankal. The palace is one of the most famous historical landmarks of Madhya Pradesh, built by the sultan of Mandu in the year 1458 A.D.<sup>10</sup> The island- like site with full of natural beauty presents the glorious landscape.<sup>11</sup> It is the fusion of Hindu – Persian architecture. The palace is in approximate of 1 k.m. area. The premises of the palace are square in shape and each direction has the entrance gate. The Gates are very high and the Mehrabs are sharp in shape. The double storied palace has two verandahs on the outer and the inner side. The secret door is given from the corridor to reach to the second floor. The fine delicate carving is done on balcony.<sup>12</sup>

It has a unique water management plan in which some part, for some time the form of the river has been changed. The river Kshipra is flowing from the both side of the palace, and this structure has constructed in one part of them.

There are 52 ponds in Kaliahdeh Mahal some of them are small, and some others are very deep as they were originated as reservoir and storage tanks.

These ponds are extremely beautiful. It shows its utmost beauty when in it the water moves from one pond to another at its full swing, in full of joy, showing way to move from. In the middle there is a snake like shape from which, water sometimes moves to right side and sometimes to left side. These small ponds are connected to each other with water channels moves on the contrary of flowing of the river in its own path it flow between the square shape ponds.<sup>13</sup>



There are ways to go from one pond to another. Anyone who passes through these ways he found himself to be in the middle of the ponds. Here three ponds have given name in Avanti -Mahtmya of Skanda Puran that is – Surya Kund, Bramha Kund and Agni Kund . Since antiquity in India, water enjoys a respectable and unique status amongst all the natural resources. Many of peoples come to worship here. It is also said that in the “ Amavasya (No Moon) day a person who is surrounded with many outer problems should made to take bath by which he will get rid out of those problem. In the depth of Agni Kund there is a Chattri. Five ponds are being constructed inside the hall of the Fort.<sup>14</sup>





Muslims introduced the arch and the dome. Muslim domination clearly marks this shift on the palace. The central dome of the palace presents the finest example of Persian architecture.<sup>15</sup>

“Water had both to be managed and exploited for the survival. Hydro-technical installations are thus amongst the earlier technical achievements and innovations of mankind”.<sup>16</sup>

The exclusive water system is designed so systematically that it arises some questions in everyone’s mind about its existence. Actually, in that time also Kshripa has been stopped by making dam on it. This shows that the construction of dam has taken its place in the history also. It is even especially described that in 11<sup>th</sup> century Raja Bhoj made the largest artificial lake of Asia in Bhojpur near Bhopal, by making dam, so the dam on Kshripa River may be said as the next chain of it. By the way this whole dam is constructed by stones and if we stand on it and see in the direction of pond of Kaliadeh Mahal so it seems to be like river is entering in the Fort and there are apron seventeen doors open.



The entrance management of Kshripa in the Fort is also unique. Here small canals are constructed. These water channels take water with them and those moves ahead entering into each other. To maintain the uniqueness of the water management the exit of the river water from the ponds it has given the structure of waterfall. This construction is made on rocks. The structure is like “Diya” which is being digged on the land and when water passes through it it takes the structure like water fall. This type of

architecture indicates the Mughal Period. After the exit of water from Palace it again meets in the Kshripa River and start moving ahead. Stop Dam are also constructed on Kshripa on the outer side of the Fort.<sup>17</sup>

“It’s hard to imagine an entire category of architecture slip off history’s grid, yet that seems to be the case with these disappearing marvels. We hope our country’s burgeoning water crisis leads to redeem at least some of these subterranean edifices –and their priceless architecture before they disappear for all time to come.”<sup>18</sup>

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