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Identifying the Unidentified Baolis (Stepwells): An Attempt to Conserve the Ancient Water Management System in Gwalior Town

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Abstract—*In the present day context growing water demands and its crises are emerging as a major challenge, especially in India. In the race of urbanization and globalization, We are forgetting our own rich heritage resources and are instead dependent on western techniques for water conservation and management. Water conservation structures like Baoli (Stepwells), tanks etc were constructed in the western and central region of India not only to sustain water needs of population but also with a cultural, regional and sometimes sacred perspective.*

Gwalior, a town in Madhya Pradesh has plenty such Baolis which are unidentified as a resource for water conservation and management. Many of them are in ruins and many are in verge of destruction as a victim to lack of knowledge and identification as heritage thus, leading to loss of its integrity as well as functionality. Presently the town is facing excessive water crisis., with that a need has evoked to understand the importance of existing ancient water systems and its revival to improve the situations from getting worse. This paper aims to highlight the importance of ancient water management system, these structures (Boalis) once identified and preserved will not only serve culturally but also conserve water to deal the present day water crisis situation in Gwalior.

Keywords*: Baoli (Stepwells), Water conservation and management, Ancient water systems, Heritage.*

1. INTRODUCTION

Water is the basic resource for sustenance. Since time settlements evolve along the water sources. With the growing population need emerged for storage and conservation of water for various functional as well as cultural uses which lead to the emergence of Boalis. These structures helped in conserving water due to the series of diminishing terraces and conserve water for community purposes during dry reason.

Water collection and conservation became an integral part of the Indian communities since the Harappan valley civilization, serving not only the daily needs of the population but also serving the purpose of social, cultural and religious practices.

Baolis can be categorised into various typologies on the basis of their construction (Boalis with straight stepped corridor and a single entrance, Boalis with straight stepped corridor and three entrances, L –shaped Boalis, Boalis with circumambulatory passage around them, Boalis with cross shaped ground plans etc) as well as can be categorised on the basis of their location and usage (for example step wells located near a temple were used for religious purposes. Step well within village were used mainly as a place for gathering and for agricultural purposes. Step wells located outside the village, on the trade routes: they were used by the travellers.)

Gwalior, a historic town in Madhya Pradesh has excessive quantum of water structures in the form of taals, baolis etc. The Gwalior fort alone sustains many taals and baolis. The city has vast typologies of monumental heritage which has been worse affected by the lack of conservation policies during development. There is a need to envisage the significance of existing heritage in contemporary world. Water sacristy is emerging out as a major problem in the city and the existence of Boalis throughout the city significantly prove that they have once served to collect the water of the monsoon rains and keep it accessible by means of diminishing terraces. Such practices are lessons even today and may effectively contribute in water conservation in present water crises.

2. BAOLIS OF GWALIOR

2.1 Water conservation structures at Gwalior fort:

The History of Gwalior dates back up to the lithic eras due to the presence of painted rock shelters amongst and around the city. The settlement in Gwalior began around the 5 century with the giant fortification of the holy tank on Gopagiri by King Suraja Sen on instruction of the hermit saint Gwalipa. It is this Gopagiri hillock from which Gwalior derived its name. The cliff was by far the most secure terrain to feel protected from the enemies. Apart from this the fort has rich water resources with many sources of water, and even in harsh

summers the water sources were always there to facilitate people and they never dried up in the past, and are capable to serve even todays's population. Fort comprises of wells, ponds and baolis namely Assi Khamba Baoli, Gujri Baoli, Ghondha Baoli, Sharad and Anar Baoli, Dhargaj Baoli, Suraj Kund, Tikoniya Pond, Johar Pond, Shahjahan Pond, Mansarovar Pond, Rani and Cheri Pond, Gango Pond, Katora Pond, Ek Khamba Pond, Dhobi Pond, Nuri Pond, Saas-Bahu Pond[1]. The most significant water conservation structure sustaining on fort is Assi khamba Baoli.

2.2 Assi khamba Baoli.

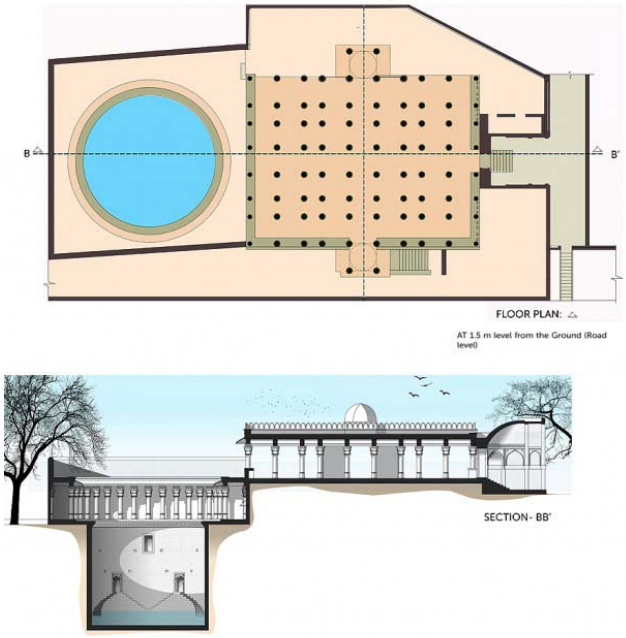
Ownership: Protected by Archaeological Department. (A.S.I)

Past use: Used for various water purposes.

Present use: Unused. (Only monumental value; no functional value.)

Basic Description: It is situated in the south-west part of Mansingh Palace at Gwalior fort. There is a main entrance door for Step well from the East. The boali is circular in shape and is carved out of sandstone with extreme intricacy in craftsmanship and ornamentation. Diameter of Baoli is 12.75 meters and depth 11.45 mts. There is 1.85 mt wide corridor inside which is surmounted by 64 round columns. There are only 64 columns but it's been famous by the name Assi khama (meaning 80 columns). Though the monument is under protected status its functional values remains unidentified. Now a day, It is only known for aesthetic value.

Figure 1: Assi Khamba Baoli – Gwalior Fort.



Source: Cept Portfolio (available at https://portfolio.cept.ac.in/the-magnificent-forts-of-madhya-pradesh/)

Figure 2: Plan and Section: Assi Khamba Baoli- Gwalior fort.

2.3 Sharda Vihar's Baoli

Ownership: Local Government (working on restoration)

Past use: Used for various purposes like bathing, drinking etc.

Present use: Unused. (Partially in ruins)

Basic Description: Mostly the step wells have a simple rectilinear plan. But, this step well at sharda vihar's has a linear form in plan. Steps from the east lead down to meet at the landing, steps leading further down towards west to it. The building material of bricks and local sandstone is carved with rich ornamentation. The Baoli has a rich inflow of shades and shadows. Upon arrival at the bottom, a square stepped floor descends up to the bottom, which is cut out into a circular well. Column and beam, wall and arched openings around the stepped court create a great balance of rhythm adding to its aesthetics.

But like other unidentified monumental heritage in India this monument has also lost its functional value and finally integrity. Due to developmental pressure colonies are grown here putting no concern to the catchments of the Baoli. The Baoli is currently in ruins.

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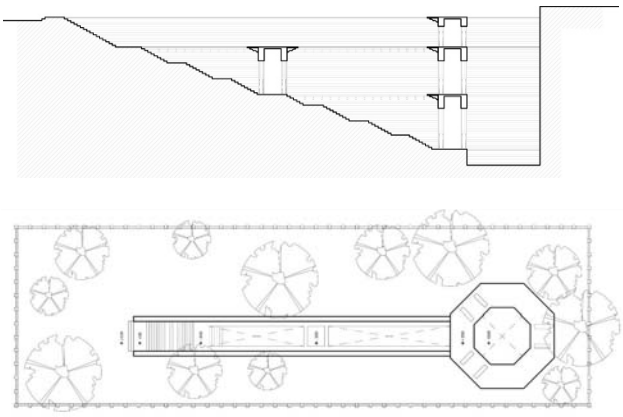

Figure 3: Plan and Section: Sharda Vihar Baoli.

Figure 4: Sharda Vihar Baoli.

2.4 Ek Pathar Ki Baoli

Ownership: Under Jain council

Past use: Water source

Present use: Used as a water source for sacred purposes.

Basic Description: Ek Patthar ki baoli is a water reservoir carved out of a single stone (monolithic). It was constructed in around 14-15th century. Presently the Baoli is under the protection of Jain council and because of its sacred importance its in function and protected by the residing, worshipping community.

Figure 5: Ek pathar ki Baoli.

2.5 Vasihno Matamandir's Baoli

Ownership: Under temple trust.

Past use: For sacred purposes.

Present use: No water (Unused).

Basic Description: There is a centralized temple placed at the centre of the Baoli, which makes it more unique. The monument is preserved as a part of temple premises but is currently not used due to encroachments in the catchment areas of the Baoli.

Figure 4: Vasihno Matamandir's Baoli

3. DISCUSSION AND CONCLUSION

As per the study, Gwalior has a vast existence of water conservation structures which had served the population. These structures are capable to sustain the present water crises, due to their high capacity of water collection in monsoon. But in the present scenario due to continuous negligence of traditional water conservation methods these Heritage structures lost their importance in the eye of local community as well as policy makers. The existing Boalis are either abandoned, deteriorated or due to unawareness affected by the planning polices with less or no concern to its built heritage. Through the above examples we can analyze that how these polices in the master plan are threat to our cultural heritage. Thus, affecting the architectural, functional, historical and social value. These must be envisaged in order to preserve these monuments for our future generations.

Their identification is important not only in terms of their physical remains but their regeneration (by reviving the catchments) may solve the existing and upcoming problems related to water conservation.

Time had come to realize the value of our rich cultural heritage in the race of homogenization.

4. RECOMMENDATIONS

The following can be recommended:

1) Heritage and its value must be identified at the earliest, by the community, local residents, policy makers and policy implementers for its sustenance. Not only for preserving the structures but also to make it available as a resources to society.
2) All these Baolis must be identified and listed, so that they can be protected from encroachments and development measures.
3) Detailed documentation of the existing structures and communities must be done in order to keep a record and also to bring them in function to serve the residing community.
4) Structures must be taken under protection to prevent their further deterioration.(As seen in many cases here.)
5) Communities must be the major beneficiaries and active participant in the protection process.
6) Ancient water management system must be revived keeping in mind the contemporary needs for its sustenance.
7) Adequate policies and facilities must be initiated by government for their revival and re-establishment.
8) Various charters, case examples etc must be referred for carrying out adequate protection measures.
9) Education and awareness must be carried out, within the working communities, local residents and stakeholders, such that everyone benefits.

These Baolis are in threat due to lack of identification and listing. The challenges laid down by the new era are much difficult and thus there is a great need to regenerate our existing resources.

5. ACKNOWLEDGEMENTS

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