

SALVAGING, TRANSPLANTATION, RECONSTRUCTION OF HERITAGE SITES

TECHNIQUES AND PROBLEMS

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ABSTRACT

In the age of modernity it has become an easy task to cross the limits of sky, it is not impossible and that much hard-hitting to perform the earthly works to the human being. The only entities, which have made it easy or likely, is power or energy. It has increased the outlay and consumption of energy a lot. To complete the supply of electricity and utilizing the demand of agriculture and industrialization, the artificial lakes and dams are built after preventing the river water. For this, thousands of villages were displaced to another sites and cultural heritage, ancient monuments and sites of archaeological importance, were safely transplanted and protected from one place to another, for their safely existence, for immortality of cultural glory of the country. The work of safely removal of cultural heritage sites and ancient monuments of any region is known as 'salvage archaeology and the work of relocating the sites and monuments is known as Transplantation of the Monuments and sites.

KEYWORDS: Task, Transplantation, Submerged, Power, Utilization, Consumption.

The continuous and prompt growth of industries and construction of dams over the rivers for irrigation and generation of power projects posed the gravest threats to our cultural heritage in the form of monuments associated with relics of importance. Monuments of historical importance and architectural merits, which are numerous in numbers, suffer a lot and are likely to vanish under water whenever schemes of constructing dams over rivers are either propose or implemented. It is therefore our primary duty to undertake rescue operations for retrieval of those antiquities that are buried or in *situ*, and are threatened to be submerged under water. This sites and cultural heritage can be vanished and disappeared forever, without any bold and safe decision. The work of removal or relocating the sites and Monuments of Archaeological importance is defined as 'transplantation of site.'ⁱ

The work or effort of transplantation is as old as, the human started to think about stepping towards the developing civilization, urbanization, modernization, but to save, conserve and preserve their cultural heritage. The Firoz Shah Tuglaq of Tuglaq dynasty is, at one place where is famous for his Tuglaqui Edict, on the other side he is famous for his transplantation and transfer policies. He had transplanted two Maurayan pillar inscriptions of Asoka's period from their original sites from Topara and Merath, to Delhi. He had transplanted one at his capital at Firoz Shah Kotala and another at Pir Sahab.ⁱⁱ Sometimes, the sites are being transferred and transplanted due to the effect of environment and ambiance or transforming atmosphere.

In Indian traditions, the dams were built for agriculture work from very early period. In Mahabharata at one place in a story telling, Narada asked from Yudhisther, whether the state has availability of dams for whole population and are the filled with water?ⁱⁱⁱ

The Sudarshan lake Dam at Junagarh was constructed by Ashoka Maurya and later it was renovated by Saka Kshatrapa, Rudradamana.^{iv} After him, it is inscribed on the Junagarh rock inscription of Sakanda Gupta, that he had also renovated the Dam. After the independence, several dams were constructed in India. Among these, Nagarjunkonda of Andhra Pradesh, Tihari Dam located in Uttarakhand, Sardar Sarovar Dam at Guajrat and Bhakhdra Dam of Punjab are the most famous Dams in India. In the region of Andhra Pradesh, the area spread around the 23 square km., is the earliest site in world history, where such plan of transplantation was implemented and the Government of India succeeded in this project on the large scale.^v

During the formulating these dams, the most responsible and valuable mission was to conservation and protect the ancient heritage monuments and sites, which were the legacy of our precious historical period. In these, the transplantation of Buddhist antiquities in Nagarjunkonda of Andhra Pradesh was the first and foremost task before Archaeological Survey of India. It was started in 1952 and after eight years of hard work and dedication of skilled labor got completed in 1960. In the history of Archaeological Survey of India, this project of heritage sites dismantle and Transplantation was the biggest achievement before the world history when while making the irrigation Dam across the river Krishna.^{vi} In this project, on the first stage, all the antiquities of selected area were examined and documented with drawing photo shoots. The proposal plan was made for furnishing the work in six years. The work got started after two years or in 1954 and finished in 1960. In the explored sites, there were hundreds of archaeological sites of Stone Age and middle period. After focusing on the architectural characteristics of that period, only nine sites were selected for transplantation. In this process, the paintings and models of selected sites were prepared and installed safely on the hillside and the antiquarian remains of the monuments were exhibited in a museum. Thus, after making a scientific plan, the glorious and mythological challenge was taken to corollary and the ancient heritages were saved from sinking in water. Otherwise, the rich relics of archaeological importance could have been submerged under water after construction of Nagarjun Dam.^{vii}

After the success of the project of Nagarjunkonda in the year 1959, the Egyptian Government decided to build a dam in Nubia on the river Nile. Through the project, two large temples of Abu Simbal, dedicated to Sun, were in danger. Raja Ramses, (in between 1227 C.E. and 1304), built the temples. These sites were transplanted after taking the financial, expertise help of the experienced teams of archaeologists, engineers and scientists of fifty other countries including India.^{viii}

Thus because of the building of dams and power projects, there are many archaeological sites and monuments from where the antiquarian remains were removed, shifted to another places and conserved. To save the archaeological sites of Karnool in Andhra Pradesh and Shrishailam in Mehaboob Nagar, the contemporary Director General of Archaeological Survey of India Shri M. N. in a committee was assigned in the membership of M.N. Desh Pandey. After the direction of this committee, the antiquarian remains of these sites were documented first time.

Including the preparation of detailed drawing and photographic documentation, the second step is to take measures for immediate recovery of all material, which can be re-employed later at the time of transplantation of the sites and monuments.

Before dismantle the monuments, the accurate scientific study of the whole structure is very essential part. In our country, the methods and techniques, adopted for salvation and transplantation are as follows:

Making the Survey Plan

The first step of 'salvage archaeology' is to prepare survey plan, showing the current situation of existing monuments in the entire area under threat. In this process when need is required for removal and transplantation, the team of experienced surveyor prepare a draft after surveying whole sites and monuments, the current situation, soil typology, existing level on earth and under earth is surveyed. The record of total height, width, length and thickness is designed briefly considerably. On this stage, current structure of the site and monuments with all its safe and damaged relics are investigated and pointed out, so that it can help during transplantation of the monuments, on another place. The detail of this survey is kept in safe hands for the plan.

Documentation of the Monuments

Documentation of the sites and cultural object is very important step. Documentation of the sites and monuments includes the description of region, describing its historical aspects, architectural value of the structure and its associated relics, the construction methods and material used and above all, the setting i.e. the environment, the original form and alignment should be documented appropriately. Documentation of all the selected monuments and sites is very significant work, because before transplantation of the monuments at another place, the exact position of the monuments should confirm. The documentation should do from all the sides and it includes photography still and video, ground plan map, elevation both front and back. After making the front elevation map, the numbering of the stone should be completed accordingly. The precise numbering of the stone can help during transplantation on the place. The monuments and sites first are documented as whole and later all parts should be documented separately. Later the sculptural part should be documented. Even during the work of dismantle of sites, the photography and video work should be continued, as later it would help to remind or recounselling the position, how the parts were connected to each other and with which methods or techniques later were dismantled.^{ix} The similar techniques are being pursued during repair and renovation of the sites and monuments. In this after completion of the work of photography and video, the repair is started.

Selection of the Site

The selection of the appropriate sites for transplantation is an important part, before dismantling the monuments and heritage sites. All archaeological sites are always belongs to very ancient period and selection of the sites was not a tough job during that that age or period, when they were built. It was because the pressure of population was not as much of like the present scenario and the space for building of temples, forts and palaces could be finding very easily. Besides this, almost the monuments are built near about the lakes, river and water sources, so that it would make easy to find water for construction of monument. Therefore, the structure of the new sites should be similar to the old one. The selection of the higher place for site or on the prospect region would help not only in attracting the tourists but also make it striking and eye-catching from the surroundings. Secondly, the site can remain safe and dry during rainy season and flood as water flow away towards the low valley. The selection of precise surface can help in this situation. The soil should neither be moist, nor be rock-strewn or gravelly. Wet and misty land should be avoided and forbidden strictly, because it is not safe for foundation. Besides this, the sites should neither be existed in the dense populated area nor be in the interior. Because in the dense populated area, the monuments will always remain in danger and people should always be kept under the perimeter law, and if the monuments will be situated in the remote area, nobody would like to visit the place. Because lacking in the means of communication and transportation will make the sites and monuments backwards, on the viewpoint

of tourism.^x No doubt, grounding is confirmed for placement of heavy stuffs and effects, so that it can prevent the foundation later.

Process of Numbering the Stone

Before the work of dismantling the monuments, all the stones should be documented according to their existing position from both of the sides. During this work, the directions should be kept in notice. As the stone, which are removed from the northern side of the monuments should be numbered as N-1, and N-2, N-3 accordingly, from both inner and outer walls. The other architectural parts of monuments like, *amalaka*, *ghatta*, *beej purak*, *sikhara*, *jangha*, *jagati* and molding should be marked step by step, so that during their re-establishment, no changes occur in their present arrangement plan and monument remain similar to the past. In this regard, the color of the stone should be kept in mind to keep clarity in the position until transplantation of stone.

Dismantling the Site

The work of dismantle is very hard-hitting and it should be completing according to the scientific methods. For this, there is a dire need of skilled team, who are experts of the architectural science and engineering. They should have the knowledge of archaeological science along with the architecture science.^{xi}The work of dismantle is started from up to downwards and work of transplantation should be started from the down to up. In the dismantle process, one stone should be dismantle after another, one number after another, one line after another, so that the work of dismantle the monument should be completing in accurate.

The Collection of the Dismantle Parts

All the dismantled parts should be collected according to their directions in different groups and is kept according to their building sequence. It will keep them separate from each other and so that it does not waste the time while searching the stone. In this regard, the stone of *mandapa* in one group, the stone of *garbha-griha* in one group and stone of all the directions should keep maintained in separate groups accordingly. These stones should transfer either in trolleys or by tractor, or truck safely during their transfer to the selected site. To keep cotton, mattress, soil, grass, and tier or wheel under the stone during transfer, increase their safety.

The Transplantation of the Foundation of Monument

The structure of the foundation of monuments during transplantation should be stiff, hard, and bearing capacity of the site should be of the higher potentials. So, before starting the work of transplantation, the soil under earth should check properly. If it is light weighted, then the quality of the soil should improve, through groundwork. The stone of the foundation work should connect in the beds made for founding it, to connect them with the underground level. It will increase their protection level under the earth, during earthquake, flood, rain and other disaster situation.

Orientation

During selection of sites for the transplantation of monuments, the orientation work is required and completed carefully. For the transplantation of monuments, the site should have available on the same orientation or direction as it was on original. It makes the sites to be looked as original artifact and structure of the site will remain the same. Lack of proper orientation, can change the structural position, as well as the structural plan.

Atmosphere and Environment

The atmosphere and environment both have an important accountability in safety measures of the sites and monuments transplanted. First and foremost thing is that the sites and monuments were remained the part of different locality and environment before transplantation.^{xii} Therefore, during selection of sites for transplantation of monuments, the similarity of the sites should taken as the urgent bases and site recommended should not be much different as comparing to the original sites. Deficiency of similar milieu, environment and impression can change the configuration of structure due to moisture, dryness and heat. In other words, it is well said that the past should be conserved after keeping in mind the future of the monuments. It would help the monuments increasing its age and become capable to conserve for the future generation, as it was in the past after bearing the squall of the centuries.

A special project for extensive excavation and transplantation is working in Himachal Pradesh, to cope with the situation under Jurisdiction of Archaeological Survey of India, Shimla Circle, Language, Art and Culture Department Shimla. In the region, while building the Dam at Bhakhda in 1954, whole Bilaspur town submerged into the Govind Sagar Lake. Along with the private houses and buildings, around two dozens of temples were also submerged. In these, some of the temples are of the *nagara* style and belongs to 7th -8th century C.E.

A special time bound work plan and developed technique, skilled hands and expert minds are required to save this national property. Every year in rainy season, the monuments get submerged in the Govind Sagar Lake, which again can be seen after four to six months. This sinking of water is devastating their actual structure day by day. The work of salvation though is hard-hitting, not unfeasible. An accurate planning structure, selection of precise and pertinent site for transplant, and skilled labor can create a success.

In India, Archaeological Survey of India is responsible for the conservation and protection the sites and monuments of national importance and the local divisions and circle of states take care of the heritage sites, which comes under their jurisdiction.^{xiii}

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- ⁱ N. L. Batra, *Heritage Conservation, Preservation, and Restoration of Monuments*, Aryan Book International, New Delhi, 1996, p. 30
- ⁱⁱ *Ibid*, p.30
- ⁱⁱⁱ Virender Kumar Tiwari, *Prachin Bharatiya Smarakon ka samrakshan, technique, Evam Pravidhivyan*, Savita Shakti Prakashan, Lacnau, 2011, p. 151.
- ^{iv} *Ibid*, p. 151&152
- ^v N. L. Batra, *opcit*, 30
- ^{vi} *Ibid*, p.31
- ^{vii} *Ibid*. p.31.
- ^{viii} J Virender Kumar Tiwari, p. 152
- ^{vi} Prashant Shrivastava, Sanjay Kumar Mahapatra (Editor), *History and Heritage*, Swati Publication, Delhi, 2015, p. 443.
- ^x Virender Kumar Tiwari, *opcit*, p.153
- ^{xi} N.L. Batra, *opcit*. p.30
- ^{xii} Prashant Shrivastava, *opcit*. 607
- ^{xiii} *Ibid*. p.443