Preservation of Buddhist Architecture of Gujarat: Problems and Remedies

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Abstract: The occurrence of Buddhism goes back to Mauryan time in Gujarat and the Buddhist architectural edifices were carved into the rocky cliffs at various pockets in Saurashtra, Kutch and south Gujarat. Over 100 Buddhist rock-cut caves are known from Gujarat ranging from isolated structures to large and elaborate complexes. Construction of Stupas was done at the plane lands of North Gujarat and in the forested areas of Junnagadh. Buddhist Architectural Monuments from Gujarat showcase variety of preservation problems based on the diversity of geographical features and climatic variations. Neglect, pollution, vibration, fire, arson theft, vandalism, previous interventions, road constructions, quarrying, natural aging, weathering and erosion are found as the major causes of their deterioration. As individual Buddhist caves highlight few common and some specific problems of preservation addressing all the different issues is a challenging task. The present paper discusses the outcome of the qualitative examination of the problems observed in the Buddhist architectural monuments and some remedies for the same.

Keywords: Preservation, Buddhist Architecture, Gujarat, Heritage, Rock Cut Caves, Vandalism, Public Awareness

Introduction

Buddhist religion from its incipient days, paved the way for creating different kind of monumental structures mainly rock cut caves to cater the needs of the monks. The religious practice of chanting and meditation either in isolation or in groups demanded larger spaces in volume to hold a large number of participants gave way to the construction of large assembly halls. Buddhism gave the uniform concept of order of monks, and found monasteries to accommodate the monks and nuns to pursue spiritual and religious duties prescribed by Buddha. The monasteries undergone evolution through time while transforming themselves into well known centers of learning namely Nalanda and Vikramasila, were attested in the travelogues of Chinese travelers Huien-Ti-sang and Itsing.

The most significant structure of the Buddhists were stupa, derived from the word thumuli, meaning mound, where the sacred relics were buried, which later got
modified and well constructed as hemispherical brick masonry. The tradition of erecting votive stupas near the main stupa was seen as a wide spread tradition in the Buddhist architecture and the major stupa and monastic complexes were reported from sites across north western frontier to north eastern provinces of the Indian sub continent (ASI Memoirs 1904,1907 & 1910). The Architecture of Stupa showed regional variations in their form and style in varied cultural and chronological contexts.

Outside its Gangetic homeland, the spread of Buddhism was associated with the extension of state power and state sponsorship (Heitzman 1984). In case of Gujarat, the north western state of India, the emergence of Buddhism goes back to Mauryan times. Buddhist monasteries were carved into the rocky cliffs at various pockets of Gujarat, in Saurashtra, Kutch and south Gujarat. Over 100 Buddhist rock-cut caves are known from Gujarat ranging from isolated structures to large and elaborate complexes. Architectural styles of rock cut caves slowly became elaborate (Burgess and Fergusson 1880; Dehejia 1977), comprised of smaller cells known as chaitya grihas (for living of monks) along with big halls having verandas referred as mandapas for meditation purpose and chaitya halls with stupa carved inside the cave for worshipping.

Henry Cousens (1891) located Boriya stupa in the southern slopes of Girnar Mountains and later the site was excavated through which a brick structure revealed and identified it as a stupa. In 1949, G.V.Acharya excavated the Intwa monastery near the Boriya stupa in the hilly forest area and was reported in the daily news Gujarat Samachar. Later, Chhabra (1949) studied the clay tablets reported from Intwa and confirmed it as a Buddhist monastery built by Maharaja Rudrasena and dated to 2nd cent AD.

Both Kshatrapa and Maitraka period of Gujarat witnessed establishment and existence of stupas and monasteries in plain lands of North Gujarat and rock cut caves (consists of chaitya halls and chaitya grihas) in the rocky cliffs of Saurashtra, Kutch and South Gujarat, which served the purpose of large number of monks for living, worshipping, meditating as well as acted as centers of worshipping and pilgrimage for the laity. Maitraka Copper Plate inscriptions, assigned to 500-700AD, popularly known as land grants, are the testimonies of Maitraka King’s donation to monks for the establishment of monasteries. Though these epigraphs authenticate the existence of large number of Buddhist monastic settlements in Saurashtra during the Maitraka reign, lack of archaeological and architectural remains till date makes it difficult to elucidate the Maitraka Buddhist architecture.

The travelogues of Hiuen-t-sang and I-tsing record the co-existence of Hinayana and Mahayana sects flourished in Gujarat during the Maitraka time (Sompura 1969). Hiuen-t-sang in his travelogue on the Western Indian visit refers to seeing monasteries and followers of Hinayana Sammatiya and Mahayana Sthavira schools in various parts of Gujarat. The architectural evidences as testimonies for the continual existence of the Buddhism are scanty and it appears that Buddhism faced declination towards 9th
century AD. Thus, the Buddhist monuments are large in number and their state of preservation is the area of present day concern in terms of sustainability.

**Preservation Issues of Architectural Heritage**

Owing to the passage and ravage of time, the monuments disintegrated due to natural environmental reasons clubbed with human vandalism and negligence. The increasing rate of pollution in urban and industrial areas caused by the burning of the fossil fuels is changing the amount of deleterious ingredients in the air which are transmitted on to rain and surface waters (Winkler 1970). Stone decay of monuments are closely related to the geologic process of rock weathering, whereby all most all the decay occurs above the ground surface. The main agents of deterioration are atmosphere, rainwater, surface waters, seawater, ground water, plants and animals.

Since many centuries, there has been awareness of the significance of preserving built heritage, but the practical aspects of restoration really got materialized during the 19th century and later the concept of cultural heritage conservation broadened to include other areas of heritage, especially related to the movable part. In the second half of the 20th century, a series of resolutions, recommendations and conventions was taken by international organizations such as UNESCO, and its related agencies; the International Council on Monuments and Sites (ICOMOS), the International Council on Museums (ICOM), and the International Centre for the Study of the Preservation and Restoration of Cultural Heritage (ICCROM) for the preservation and protection of immovable and movable cultural properties. World Bank in the year 2006 signifies cultural heritage resources through a policy declaration explain; “physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people’s cultural identity and practices”. At the same time World Bank broadly defined physical cultural resources as “movable or immovable objects, sites, structures, groups of structures, natural features and landscapes that have archeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance.”

As a nation, India holds the prestigious status of having rich cultural heritage with large number of excellent architectural heritage structures which showcase several thousand years of cultural history with strong threads of continuity. The need to protect and manage cultural heritage especially the architectural built heritage (refers to objects that embody the culture, principally archaeological, ethnographic and historical objects, works of art, sites, structures and remains of archaeological, paleontological, historical, religious or aesthetic) has become increasingly apparent in recent years (Cleere 1989; 1993; Goodland and Web 1987).

The Archaeological Survey of India under the Ministry of Culture and the State Archaeology departments of the respective states of India hold the responsibility of protection and preservation of monumental heritage. Maintenance of monuments, archaeological sites and remains of national importance along with regulating
archaeological activities in the country as per provisions of the Ancient Monuments and Archaeological Sites and Remains Act 1958 and Antiquities and Art Treasure Act 1972 through its 24 circles and specialized branches are the main function of ASI.

Scholars have identified a number of obstacles to the protection and management of India’s cultural and built heritage. The hindrances vary from place to place, the most irksome issues are, weathering, erosion, looting, vandalism, lack of protection, legislative laws, adequately trained professionals, lack of awareness of the value of cultural heritage resources and heritage management programs, scarcity of research on preservation techniques and methods, lack of appropriate equipments, information, storage and curation facilities (Kibunjia 1997; McIntosh 1993).

Differing rates of material decay and susceptibility to different threats determine the longevity of structures. Various forms of human intervention, decisions to repair, rebuild, abandon, or even destroy structures; the other events during the course of its life time have an equally fundamental effect on patterns of architectural survival. Geology and geography obviously exert a primary influence on the building materials available in any one region. The idea that architectural traditions are conditioned by the materials available for construction and the state of Gujarat is geologically and geographically diverse and is consequently home to several distinct building traditions.

Majority of the Buddhist built heritage of Gujarat, commissioned by rulers and elites were constructed at those pockets where natural rocky cliffs were available for excavating rock cut caves as chaitya grihas and monasteries. A few free standing stupas and monasteries were built in the plain lands falling in the ancient trade routes connecting the region of Gujarat with further northern regions. Stupa site of Boriya is located deep inside the heavy forest area of Junnagadh which makes it difficult to access. It is unfortunate that, the original stupa site of Devnimori went underwater due to the water reservoir construction in the Meshvo valley.

It is generally known that, documentation and interpretation of built heritage is largely depending on what survives, with materials playing an essential role in patterns of survival. Many field visits were carried out by the author to various Buddhist architectural sites during the years 2009-2015 at varying seasons to observe, estimate and generate data of patterns of survival, condition and extent of deterioration through time. The present paper discusses issues observed and recorded through qualitative documentation i.e., direct observation of structural damage and material decay.

**Causes of Deterioration of Rock Cut Caves**

The field visits were conducted in almost all the rock cut caves of the region of Gujarat so as to estimate the issues of deterioration and preservation. The major cause of degradation of these cultural relics is the natural result of unfavorable environment. The effect of marked fluctuations in temperature and relative humidity has been
extremely deleterious to rock paintings as well. The tropical climatic conditions characterized by high relative humidity and high temperature, and marked fluctuations in these climatic parameters which are the biggest hurdles in the preservation of the rock cut monuments. Since these rock cut caves are exposed to sun, wind and rain, they are vulnerable to the damaging effects of excessive heat, moisture and blown sand. Almost all the rock cut caves in Gujarat are facing manifold issues of deterioration ranging from natural environmental deterioration, bio-deterioration, manmade vandalism and effects of negligence. Discussion on some of the commonly observed issues during the field surveys are discussed below.

Weathering and Water Seepage
The condition and state of preservation of Bava Pyara caves have been explained in detail by Soundara Rajan (1985). This rocky cliff, because of its calcareous sand stone origin, suffered heavy weathering. The calcareous sand stone cliffs are facing heavy weathering at present due to the high amount of rain fall and climatic effects. Three distinct rows of caves/cells were carved out at three levels in the sloppy terraced hillock. The lower floor facing issues of structural stability has been provided brick a pillar support. The similar case is observed at Upperkot caves and an additional brick pillar support was provided by ASI so as to enhance the structural stability (Fig. 1). These flat and sloppy roofed caves were simple cells of either square or rectangular layout and were scarce with images and ornamentation.

Figure 1: The Pillar support for strengthening the structure, Uparkot caves
Weathering connotes all physical, chemical and biological changes which alter the characteristics of stone by deterioration and disintegration. The degradation of rock has brought about the interplay of many factors which work singly or jointly, such as sun, rain, wind, vegetation, topography etc. By all the aforesaid means the surface of the rock, which also acts as the substrate to the micro-floral growth developed cracks, fissures and mineral as well as block disintegration? Almost all the caves in the region of Saurashtra are heavily weather beaten. Sana caves, from the Saurashtra region, have heavily weathered walls which are almost vanished and the square entrance to the cells become de-shaped with great part of the wall missing (Fig. 2). Weathering and deterioration of stone monuments by frost are common in cold and arid regions. Frost action is pronounced if there is a diurnal crossing of the freezing point of water (Zumberge 1958).

![Figure 2: Effect of Weathering, Erosion resulting missing parts](image)

During monsoon the rain water penetrates through the crevices and cracks on the structure and leads to high humidity inside the monuments. The prolonged stay of moisture leads to deterioration of the surface strength of the stone by loosing binding capacity which further causes powdering, flaking cracking etc. of the rock surfaces. Cracks formed on the overhanging areas also allow the water to seep in to the walls and inner areas. Due to seepage of water, there is immense condensation in the inner areas of the caves which in turn stimulated high relative humidity. The film of water is formed by condensation or by deposition of water molecules suspended in the air create more damage than the direct rain does. The condensed water deposit is mostly
acidic and transports air pollutants namely dust, gases smoke present in the atmosphere. Often rain water having fair amount of dissolved air polluting gases in it, and gases like carbon-dioxide dissolve to form carbonic acid and the acidic nature of such deposits activate deterioration of rock cut cave’s walls, pillars and roof.

The Khaprakodiya caves are showing many issues of preservation including heavy weathering, cracks and breakage. The original excavation of the rocky cliffs was done through horizontal planes but the rock laminations were being sharply oblique or tilted, there are weak points/flaws in the rock which causes leakage and percolation of rain water and further accelerate the deterioration of the carved caves. The bracket figures of the capitals of the pillars and the couchant lions are now missing. The absence of the adornment is due to the heavy erosion and because of the flows on the rocky cliff.

Occasionally the seepage of water has resulted in the concentration of water-soluble salts on the inner walls. There are stains of water seepage and pockets of salt deposits observed in the inner surface areas of many of the Buddhist rock cut caves in Gujarat. In long run, soluble salts as they are accumulated in the evaporation sites play a role in capillary rise and cause damage while they crystallize. The crystal of salts in the course of their growth, in dehydrated form increase in volume and exert pressure on the capillary areas and can lead to rupture. The growth of salts crystals is encouraged by continuous supply of salt solution in the capillaries. Due to evaporation, the phenomenon of salt efflorescence takes place and on drying forms a white surface deposit. The osmosis of the water whereby salt moves from less concentrated areas to more concentrated areas creating salt deposits on the surfaces which lead to powdering and weathering of the rock at various pockets.

The seepage through roof or ceiling, infiltration through wall, direct rain fall on walls, ascending moisture from ground i.e., the moisture rise through capillary rise, absorption by hygroscopic materials present in the structure of the wall, high humidity of the environment and condensation leads to the persistent existence of moisture content on the rocky surface also act as the one of the cause of weathering. As the air circulation inside the rock cut caves are highly restricted, the rate of evaporation is relatively less and hence the moisture content in these caves stay for longer period of time which cause manifold damage of weathering to the structure.

**Wind Erosion**

Wind erosion is one of the major causes of deterioration observed in the caves of Saurashtra. Apart from dirt and dust deposits, the salt content in the windblown in the coastal regions, while getting in contact with the monuments, the surface develop salt encrustations on the rock surface, on due course of time, which further leads to powdering and erosion of the surface features, relief sculptures as evidenced from Khambalida caves (Fig. 3) along with disfigurement of the structural features observed seen in the caves of Sana and Talaja.
Dust and Dirt
All most all the caves have interior filled with dust and dirt as could be seen in Kadiyadungar from south Gujarat and remain as a common issue for majority of the caves. At some of the cave sites, the state archaeology and ASI have done landscaping through green surrounding provide an ambience in the exterior, leaving interior still facing dirt and dust issues.

Birds, Bats and Animals
Bats and birds inside the monuments are mainly due to failure of regular monitoring and upkeep. The rock cut caves being open structures are prone to intrusion by birds and bats who finds feasible spaces at niches and ceiling for nesting. Bat and bird droppings accumulated in the floor of the caves are a general feature. The faecal deposition materials is the obvious sign of bats in the caves and these deposited excreta of both birds and bats being acidic are harmful to the structure and highlight a shabby look on the roof, wall and floor. The bird and bat droppings if remained for long time in the structure which develops stains which are difficult to remove. The oxidation and reduction process by decaying of faeces deposits can lead to the formation of salts such as nitrate, phosphate and ammonia. Close examination revealed staining, microbial growth, pitting of the surface, deformation at various pockets on the surface of the wall.

Micro and Macro Flora
The micro biological agents namely fungi, bacteria, algae and lichen are commonly noticed in the rock cut caves. Algae is often found in monuments during monsoon and humid climatic seasons. They grow profusely on porous stone surfaces and they damage the stone vigorously. Algae thrive well when the rock surface is highly
moistrous and when the moisture get dry, the algae decrease rapidly, but reoccurs as and when it get suitable condition of growth. The algae produce and secrete variety of metabolic products, predominantly organic acids, namely lactic acid, oxalic acid, succinic, acetic, glycolic and pyruvic acid which either directly dissolve the rock or activate deterioration. The algae also produce protein as products of assimilation like proteins, which are chelating agents and contribute to dissolution of phosphate rock besides organic acids. The growth of algae has deleterious effect on lime stones which suffer chemical weathering and eventual pitting (Hedvall 1962).

Lichens are small plants, a symbiotic association between algae and fungus. Apart from mechanical damage, the lichens can create chemical deterioration of rock surfaces. Sometimes the lichens are considered preferable because the thick layers of lichens protect stone against frequent changes in humidity, which are severe threat to the durability of the stone. But at the same time the water retention by lichens keeps the rock surface moist underneath and can contribute damage later on. the growth of crustose type lichen cause biochemical weathering to rocks by generation of organic acid such as oxalic acid.

The Fungi play a significant role in dust setting mechanism cementing them on the surface. The spores of fungi are always found present in the environment and whenever they find suitable climate, the fungal hyphae grow deeper in the stratigraphic layers of rock and excrete metabolic products like organic acids capable of dissolving specially limestone and accelerate powdering and crumbling. Thus fungal growth on the rock surface develops fine cracks and crevices.

Figure 4: Vegetation on the monuments; missing pillars and ornamental parts
The cave at Khambilida is created out of lime stone outcrops indicated powdering and crumbling, weathering and attach of lichens. On account of water and wind also these the limestone caves suffered to a great extent. Due to heavy weathering the sculptural panels got disfigured, features are missing, making them difficult to see and are on the verge of vanish. The areas of water seepage are the favorable locations of algae growth. Higher plants like grass, bushes and weed are seen growing on the sloppy covering areas, like the Khambilida and Talaja caves (Fig. 4) indicative of poor maintenance. The penetration of the roots of the plants through the cracks and crevasse leads to further instability and damage.

**Vandalism**

Vandalism is one of the serious causes of damage to rock cut caves. The continuous mere touch by the human hands can leave acidic as well as greasy stain and discoloration on the surface. Often the visitors scratch their names and make different engravings and graffiti marks on both inside and outside of the caves. Indications of stains developed by human touching, dumping of waste and spitting on the walls are also observed in many caves. Thus, human vandalism has been observed in almost all caves, especially in Kadiyadungar (Fig. 5), Siyot, Talaja, Sana etc. Some of the caves are vandalised by the local community for worshipping as well as for temporary resting purposes.

**Figure 5: Indications of Vandalism, Kadiyadunagr caves, South Gujarat**

**Preservation Measures: Problems and Remedies**

The alarming deterioration of the monuments indicates the fast disappearance of valuable structures and sculptures attached to them. The failure in preserving these monuments is invariable result of both negligence and lack of knowledge of materials and techniques.
The rock paintings depicting Stupa from North Gujarat are observed as highly sensitive and should be provided proper attention. These Buddhist rock paintings from Idar, are mainly painted in red and white and it appears that the paintings were done/applied straight on the bare rock surface without any ground support. As there is no evidence of permeation, the pigments appears to be applied in powder form and not in fine aqueous suspension form. It also seems that the naturally occurring hematite or red ochre was used as the red pigment. It is not unlikely that the lumps of pigments were rubbed with water on grinding stones and the fine aqueous paste so obtained might have used for painting. The binding media used for the painting is not clear. However as per the chemical analysis conducted by Lal (1976), to understand the binding medium used in prehistoric rock paintings, such as glue, fat or resin. The result turned out to be negative indicating no binding medium was used along with the pigment. However, no such pigment analysis and study is done for the Buddhist rock paintings from Gujarat.

The causes of deterioration observed in the rock paintings are; the degradation of the rock surface (the substrate) by chemical and physical weathering where the rock surface indicated cracks, splitting, flaking, spalling and mineral disintegration. Erosion by rain water and sand blasting by dust laden winds might have caused a reason for erosion of the painted rock surface. Salt efflorescence and disintegration action of water soluble salts are also notices at some portions of the paint surface. Accretions of dust, dirt, cobwebs and soot and loss of colours of the painting due to leaching of water is also observed. Some part of the rock near the paintings have algal growth, the moist on the surface invites the formation of mud nests by wasps and other insects. Since the rock shelters are exposed to direct sun, wind and rain, the paintings are vulnerable to the damaging effects of excessive heat, moisture and blown sand. The systematic study of the causes of natural deterioration with a view to develop methods of preservation, research addressing the questions like, nature of pigment, binding media, the nature of bond between the rock and the causes of fading of the pigments are called for. A natural environmental condition is a serious threat, which would slowly but surely destroy the paintings. Very little has been done to preserve the paintings, effective methods of preservation are to be designed and used.

The paintings can be cleaned by organic solvents and after cleaning, the painted surface can be consolidated with 3-5% high quality polyvinyl acetate containing 2% dibutyl phthalate as a plasticizer as suggested by Lal (1976). As a result the rock surface becomes firm and the paintings become more clear and brighter. The spraying of the paintings with polyvinyl acetate also could produce satisfactory result.

Case studies from Central India indicates the application of paraffin wax of high melting point to keep moisture away from the rock surfaces (Lal 2000), but because of the drawback of paraffin wax having the tendency of turning the rock surface dark, this method is not preferable for all kinds of rocks. However, impregnation of weathered stone with paraffin wax was attempted in many cases to reduce the solvent
action of rain water. But, due to the lack of stability, the application of the
impregnation has to be repeated at regular intervals. Though modern synthetic resins
which are reversible can be effectively used for interior preventive coatings against
moisture and for water proofing, but for the exposed monuments this measure will not
stay for longtime. The use of paraffin wax is not preferred for spalling, splitting or
exfoliation of the rock in the tropical climatic conditions. For consolidation of friable
and highly weathered stone, polymethyl methacrylate or polyvinyl acetate dissolved in
organic solvents has been proved effective. Methyl methacrylate in due course of time
develop as insoluble film on the stone act as resistant to moisture and proved to be
effective for using as preservative for reducing action of rain water. Though silicones
are found effective for water proofing, due to the scarcity of silicones, large scale
experiments for water repellent treatments on stone monuments have not yet
attempted in India (Lal 2000).

Protection against salt is usually done by paper pulp method to remove the soluble
salts. Large scale paper pulp technique has been conducted in Elephanta caves proved
successful though it has to be repeated at regular intervals so as to keep away the salts.
Similar method can be used for treating the Buddhist caves of Gujarat. The technique
of electro dialysis also used for removal of salts, but generally for small stone objects.
However, the application of the same to large exposed stone monuments have not yet
attempted in India.

The cryptogammic (algae, lichen and fungi) growth can be softened with aqueous
ammonia and zinc silicofluoride in dilute solutions, followed by mechanical cleaning
by gentle brushing with soft fiber brushes. The application of 1-2% zinc silicofluoride
aqueous solution has been invariably found effective against cryptogrammic growth.
The cryptogrammic treatment usually follows impregnation of 3-5% solution of
polyvinyl acetate in organic solvents to the stone surface.

The extraneous accretions were eliminated effectively by use of organic solvents such
as toluene, petroleum spirit, ethyl alcohol and acetone. The sooty accretions can be
eliminated by using triethanol amine- ethyl alcohol mixture. Water stains can be
removed by aqueous ammonia and alcoholic ammonia as well as with the use of
detergents namely Teepol or Tergitol. Apart from chemical cleaning consolidation of
the rock surfaces is necessary to reduce erosion by wind and water and to eradicate
algae and insects.

Protective coatings have been used for consolidation of friable, loose-textured and
spongy rock. The purpose of protective coating was done mainly to add strength to the
weak textured stone/rock surface or to protect the rock surface from injurious
accretions, polluted atmosphere, driving rain and abrasion/erosion by dust laden
winds. Thin solutions of polyvinyl acetate and polymethyl methacrylate in organic
solvents have been extensively employed and the results have been satisfactory in
Indian contexts. The application of preservative is temporary in nature, a permanent
protection to weathered rocks of exposed monuments against rigorous natural forces, is yet to be evolved. Periodical applications of surface-protective materials are necessary for effective preservation of stone.

Public Awareness
"Prevention is better than Cure" and the application of preventive measures for preservation of architectural heritage is the need of the hour. Buddhist Architectural Monuments from Gujarat showcase variety of preservation problems based on the diversity of geographical features and climatic variations. Neglect, pollution, vibration, fire, arson theft, vandalism, previous interventions, road constructions, quarrying, natural aging, weathering and erosion are found as the major causes. However, individual Buddhist caves highlight have some common and some specific problems and preservation of each one of them by addressing all different issues is a challenging task. Application of fungicidal and algaeceide spray, filling of the cracks, stopping of erosion through wind by providing cover to caves, applying consolidates for strengthening and providing structural stability support has to be attempted wherever the issues are observed. Sincere efforts and essential formulation of a maintenance and regular monitoring plan for the monuments, periodical inspection, cleaning and upkeep are to be strictly implemented. Creating increased awareness and feeling of owning for the architectural heritage among common man; adding a tag of brand value to the built heritage for opening up of avenues of revenue generation through tourism. These efforts can create symbiotic relation between community and cultural heritage resources including architectural heritage, which in turn can enable sustainable growth and the community holding pride in the local heritage, thus takes care, protect and preserve them locally.

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