

## Reinterpreting Tal Chappar A Black Buck Sanctuary in Northwest India

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Ecological and democratic values do not diffuse easily into a historically feudal society that has superficially adopted the consumerist culture of contemporary Indian economic space post the economic liberalization of the 1990s. The residents of the villages surrounding the Tal Chappar Black Buck Sanctuary struggled to cope with survival on the harsh and arid land while they witnessed the prosperity of the trading communities in the area. The men folk migrated seasonally to earn a livelihood, while the women were often left to fend for themselves for a large part of the year. To complicate matters, the growing population of black buck from the grasslands of the sanctuary began marauding the agricultural fields with greater frequency and were often killed to protect the crop, as well as for game.

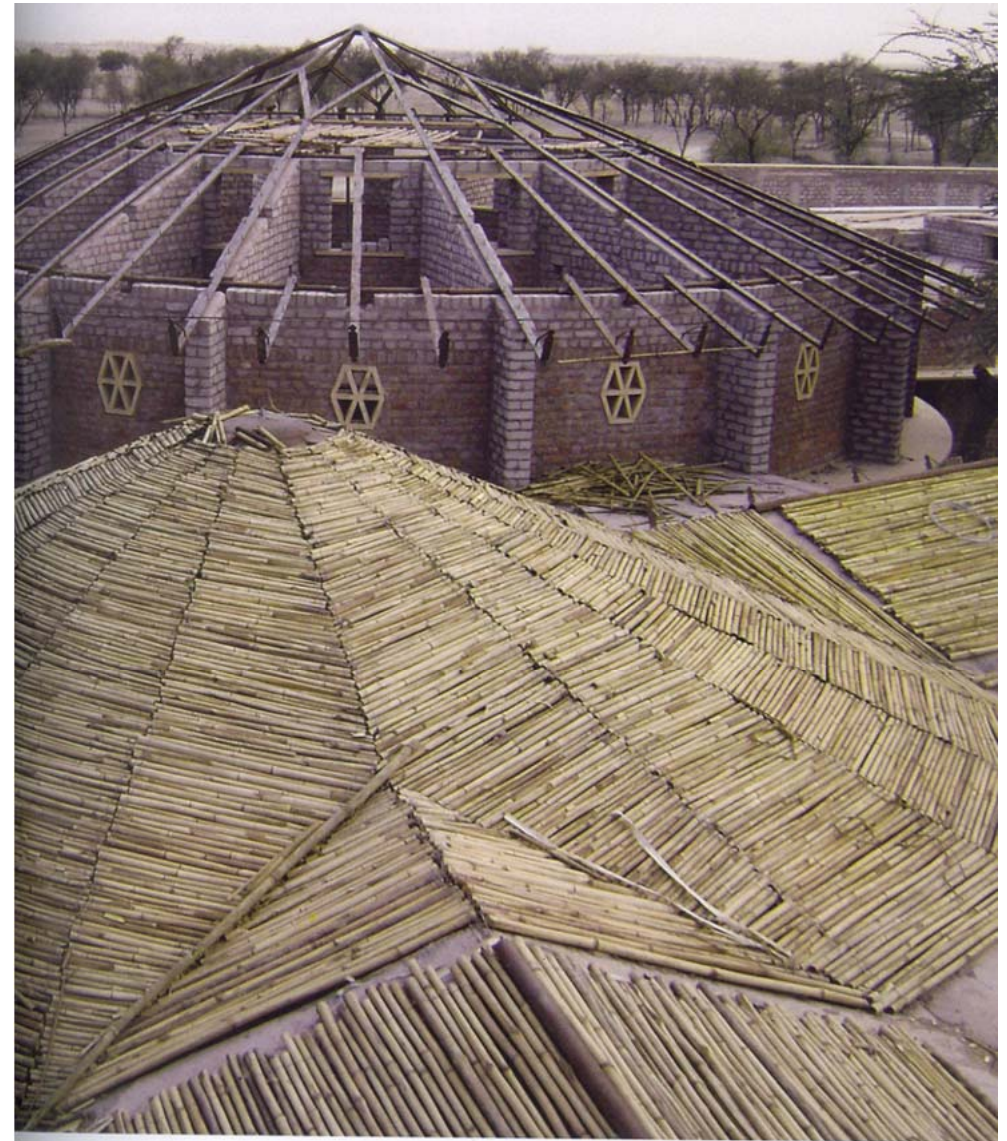
To address these multi-faceted problems, the Chief Minister of Rajasthan launched an innovative proposal to upgrade the facilities and integrate the activities of the sanctuary with development programs to provide sustainable livelihoods for the women in the surrounding villages. The Rural Non Farm Development Agency (RUDA) was set up to coordinate the activities of various women's associations, the Forest Department, the Tourism Department and the local administration.

The existing physical infrastructure at Tal Chappar was inadequate to meet the needs of the envisaged activities, and therefore, a coordinated programme and

design brief was formulated, involving the local village communities, the various government departments, social workers, and the architects. A Master Plan was prepared for the development of the 715 hectares of the sanctuary, with an emphasis on the preservation and aesthetic appreciation of the black buck antelope and its habitat. The strategy for developing the physical infrastructure involved the design of new eco literate buildings as well as the adaptive reuse of the existing structures on the site.

Concurrently, a social programme was outlined to create awareness in the community about the need to preserve the black buck population and habitat. It also served to recognize the importance of that action as a means to improve economic levels within an increased tourism by creating a market for the production and sale of craft items produced by the women of the area. The inspiration for this social programme was the neighbouring *Bishnoi* community that embodies the symbiosis between man and animal. The *Bishnois* have traditionally ensured a supply of water, browse, and seeds for the blackbuck during the summer, and allowed the animals to graze on fallow lands in the late winter, thus fertilizing the fields for the next crop.

Tal Chappar is located in the Thar Desert on the western fringes of the black buck's historical habitat. The black buck have thrived over large tracts of north-



Bamboo roof construction



65 Opposite Black buck at Tal Chappar  
Above Existing structure, first phase of construction

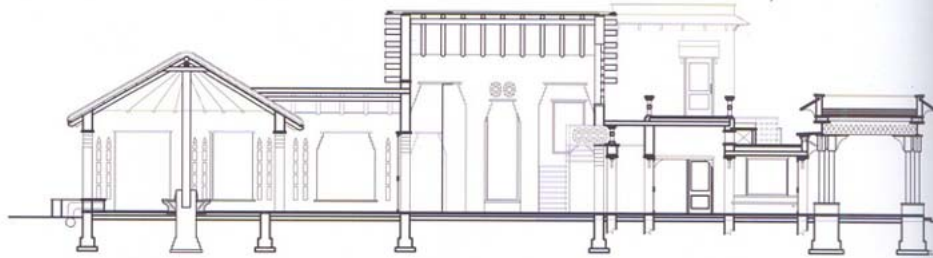
ern and central India making them an intrinsic part of Indian culture and civilization. However, habitat degradation elsewhere, and the availability of fresh water and high levels of sodium in the soil at Tal Chappar brought the animals there in large numbers in the early twentieth century. This prompted the Maharaja of Bikaner to establish hunting grounds in the area. However, subsequent salt mining near Tal Chappar decreased the available fresh water and caused a decline in the black buck population at a time when the species was declared endangered all over India. In 1966 Tal Chappar was declared a sanctuary for the animal.

A transformation in the ecological character of the sanctuary from a natural habitat to a hunting reserve and then a park required the careful attention to the interaction of human and animal. A design should respect and maintain the sanctity of animal behaviour so that the black buck continues to be a creature of the wild. Values therefore needed to be inculcated in the local population and visitors. The architecture too, needed a transformation.

The development was divided into seven phases, of which the first is complete. The first phase of the project involved adapting the four existing buildings, a guard's living quarters, the District Forest Officer's office, a VIP guest house, and a general purpose hall, and the addition of an interpretation centre, an amphitheatre, a seminar room, a crafts shop, a cafeteria, and other public amenities. The second phase will involve building a dedicated interpretation centre closer to the reserve and placing some distance from the administrative functions. Phase three will consist of adding guest rooms to be run by women from surrounding areas. The fourth phase envisages the landscape development of the interface between the reserve and the interpretation centre. The fifth phase will be the conversion of the Maharaja's old hunting lodge into a heritage hotel while phases six and seven will involve upgrading the infrastructure of the reserve itself by adding a watch tower, hides and a water tank.

The first phase of the project focused on the accommodation of the many differing needs of the users that ranged from visitors and tourists who came in bus loads for a few hours, to V.I.P.'s such as the governor and ministers who stayed for a few days, research scholars who





spent weeks or months, designers and social workers who ran programmes, large and small groups of villagers who attended political rallies or workshops, crafts women and men who came to pick up materials for processing or to deposit their finished products at the craft shop, administrators and bureaucrats who organized seminars and meetings, forest officers and rangers to whom it was home, some or all of whom could occupy the facilities simultaneously. The existing structures designed by engineers of the Public Works Department as matter-of-fact structures, served only simple needs. It was necessary to create a sense of place for all its users. The involvement of local stone, craftsmen in the implementation of the project was crucial to its success.

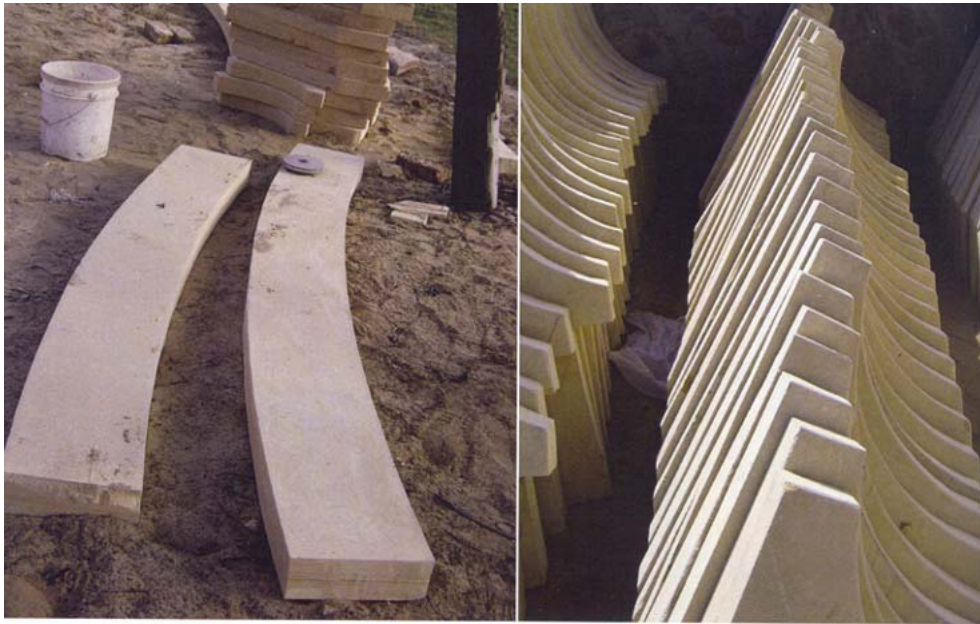
The craft traditions of the area around Tal Chappar are highly developed. Over centuries, the stone masons have crafted and assembled an array of building elements, columns, brackets, lintels, niches, parapets and screens to name a few. The use of the local architectural language and syntax served as a concept for the modification and extension of the existing structures. Utilizing the techniques and skills of the craftsmen in the modification of the pre-existing buildings re-enforce part

of the project's aims in the support of local craft. The strength of this aspect of the project lies in the coming together of educated government engineers with the 'illiterate' local masons, enabling them to read drawings and participate in the construction of a contemporary interpretation of their ancient traditions. These partnerships are critical to the equitable distribution of wealth in developing economies, these local masons earned 70 percent of the Rs. 20,000,000 budget while the head mason received an award from the district administration for his leadership qualities and craft skills.

The morphology and spatial structuring required a delicate balance between reinforcing the formality of the existing buildings and introducing informality in the interstitial infill. The careful juxtaposition and seamless blending of the two give the architecture its energy. The materials and methods of construction vary subtly, ranging from the rectilinear stone crafted buildings to the circular, conical constructs of the crafts shop and visitors' lounge. The corridors connecting the two weave through the existing trees, forming numerous shaded courtyards that serve as spaces for a variety of the centre's activities, including craft workshops and discussions.



Opposite Section of the administrative block  
 Top Construction details  
 Bottom Construction details



The corridors function not just to connect spaces but also to create spaces. The articulation of the architecture and its elements reference the folds of classical Indian art through the conscious expression of both the square and the circle in a continuous dynamic.

The building is constructed primarily of fly ash brick masonry, a waste material sourced from a nearby thermal power plant. Other materials include brick and stone slabs recycled from old buildings, steel girders and pipes, local bamboo, prefabricated stone elements such as the columns, brackets, and *jaalis* constructed with quarry waste, plinth cladding with stone waste generated on the site, soil from the dredging of nearby ponds, and local ground cover and grass.

The use of traditional building elements, like the *chajjas* (horizontal shading elements), *jaalis* (perforated screens), and shaded courtyards, enabled the buildings to be responsive to the harsh desert climate, with temperatures varying from about -1°C to over 50°C. The

thick earth roofs with grass cover are equally proficient in increasing the insulation of the new buildings.

The effectiveness of natural watersheds was increased by the strategic location of ponds for rain-water collection and percolation into the underground aquifer. A chemical-free sewage treatment system harnessing the digestive processes of anaerobic bacteria further reduced the environmental impact of human presence in Tal Chappar. By ensuring that the Public Works Department (PWD) participated enthusiastically in the entire construction process, we aimed to transform the PWD's architectural vocabulary, eroding their colonial values in favour of architectural principles that are more responsive to local climate, traditional craft, and intelligent resource utilization.

The architecture of Tal Chappar integrates rural with urban, natural with man-made, scientific with artistic, bureaucratic with creative, and traditional with modern, all under the umbrella of eco-literacy. In this context



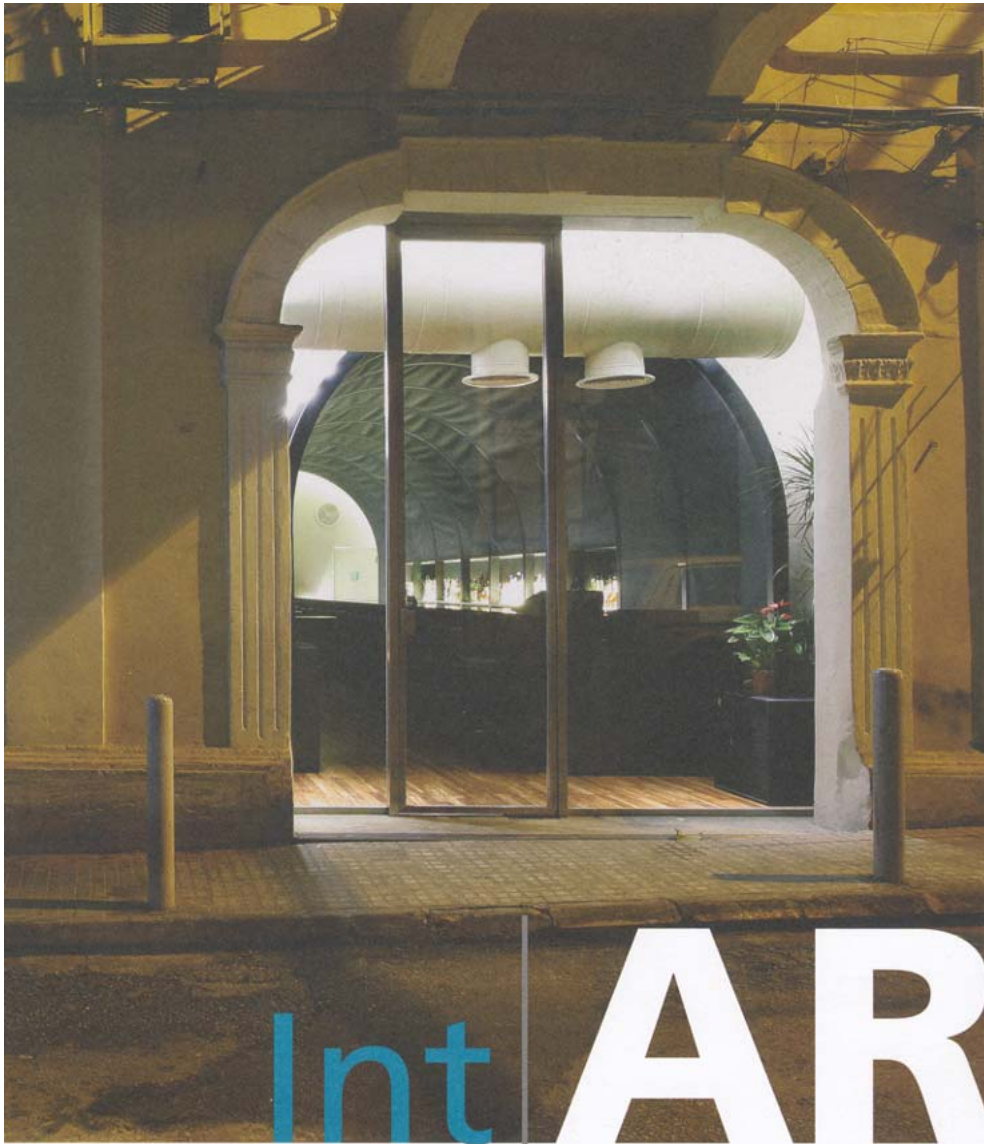
ecology must be understood as encompassing both the evolution of nature and culture. Tal Chappar exemplifies the central principle that has guided our architecture, that the purpose of human culture in general, and of architecture in particular, is to accord dignity to all forms of life, to recognize the holistic nature of the environment, and to value its regenerative and self-organizing capabilities. The role of the eco-literate architect is to rebuild what is currently an unsustainable and inequitable pattern of resource utilisation into a habitat in which humans are synchronous, even symbiotic, with natural systems and cycles in an integrative and sustainable manner.

Of the seven proposed phases of development, one is complete. It is hoped that political interest in the project will remain to enable the funding of the remaining phases, and the development of Tal Chappar will be realised.

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Left Construction detail  
Middle Construction detail  
Right Bamboo roof



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