

Eco-tourism resort at Jharkhali

Introduction

The Sunderbans, the world's largest delta and mangrove gene pool, is well a known tourist attraction point in west Bengal. It is a privilege for the Indians to have such wonderful place of natural grooming and wild life habitat. The forests of Sunderbans with its flora and fauna are fantastic bond of fury and beauty.

Current Scenario of tourism at Sunderbans

Existing tourist facilities at Sunderbans are *upto the mark* for the tourists owing to the discomfort during the journey and unfulfillment of the expectation creating ample scope for further development. But for an eco-sensitive zone like Sunderbans one has to very much sympathetic and careful to develop or extend tourist facilities at selected zones. Eco-tourism seems to be the only feasible solution for this kind of development.

The Eco-Tourism

Eco-Tourism is the fastest growing sector in tourism. The World Tourism (WTO) organization estimates that nature tourism generates 7% of all international travel expenditure and 20% of international travel. Moreover, while the tourism industry's estimate annual growth rate is 4%, nature travel boasts the growth rate is 10% to 30%.

The Site

The proposed site is located around 112 km away from the city of Kolkata. The site could be accessed via Basanti Main Road from Kolkata. A waterway connection to the site could also be developed from Canning through Matla/Vidyadhari and Herobhanga river.

The proposed site is an island surrounded by shallow tank of Fishery Department where pisciculture takes place. The total site area including the fishery tank measures about 106 acres, where the island area is about 69 acres. The Island also includes three shallow creeks which divides the island in major four parts. Topography of the Island is majorly flat with spars vegetation of shrubs. The site being located just 200 meters away from Herobhanga river, possesses immense scenic beauty which is one of the main attraction of Sunderbans Tourism Potential. As the site is very near to Kolkata, the area could be developed as a Week End Resort for the Kolkatans' and at the same time it could be the transit point of a tourist circuit.

The Planning

Concept

“All things are bound together. All things connect. Every things aim at one point - unity”

Sustainable development utilizes a whole systems approach to design. **Physical, social and economic systems** are integrated into the whole project design. The physical and economic environment is arranged so that quality time with family, friends and community is possible through Leisure, recreational and civic activities.

Elements of Design

1. Ecological Elements

- a) **Organic food producing gardens and orchards** - Some percentage of resident food supply shall be grown within the community.
- b) **Water conservation, reuse and reclamation.** Biological grey and black water reclamation systems will be utilized. Rain and surface water collection systems will be utilized. Permeable surfaces shall be used throughout the Village as appropriate to maximize return of water to the water table. Drip irrigation, and generous use of creek will be used for plant watering, reclamation, recreation and aesthetics.
- c) **Passive solar design, conservation, and efficiency** will reduce internal energy needs. Grid connected solar energy systems shall supply the internal energy required by the resort on a net annual basis.
- d) **Other renewable energy systems** such as biogas etc. will be incorporated into the resort design to demonstrate their use. Some part of the total energy requirement will be reclaimed from these secondary energy sources.
- e) **Building materials** - Local, regional, native, recycled and non toxic building materials shall be used wherever practical.
- f) **Transportation Systems** - No ownership of fossil fueled vehicles will be permitted into the some parts of the Resort. Electric vehicles, bicycles and other non-polluting vehicles may be used instead.

2. Social Design Elements

- a) **Ecological Design Principles** will be followed for all aspects of the resort, effectively integrating the physical, social components of the project.
- b) **Pedestrian Oriented Design** will be a key feature for the design. Each and every important nodes of the resort will be accessible and unified by pedestrian pathway.
- c) Introduction of an open **air performance arena**, where local people could perform native cultural activities will boost the local economy and affection of the local people towards the resort. The argument is that even a fraction of revenues, if channeled in the right direction can go long way to help local economy and ecology. A number of activities could also take place in that plaza aiming towards greater social mixing.

3. Physical Design Elements

The creeks will play a big role in physical design. Specially the meeting point of the creeks may become the focal point of the resort, where people will have lot of open spaces and activity centres nearby. Earthen dam around the periphery of the island has the potential be used as promenade and continuous patch of green barrier.

The approach

The site being divided in four parts by the creeks, the planning takes the full advantage of this natural phenomenon. The conceptual zoning splits the island in four different parts adhering to proximity and movement of people, accumulation and distribution of functions. A vehicular road and pedestrian pathway unifies all four parts and facilitating services and smooth pedestrian movement to different pockets. As the resort is to serve mainly two types of visitors like day visitors and resident visitors, this concept of segregating different functions to different parcel of lands will be beneficial for administration as well as from the user's point of view. At the same time effort will be there to make each zone **self-sustainable**. A three tier privacy level is proposed using the creeks in a more meaningful manner. This will facilitate to control the penetration of visitors during day-time.

Zoning

The total site is divided into four zones. **Zone 1** being the first of the zones and most near to the main approach road, houses most of the common functions like administrative block, ticket counter, maintenance office and other major service facilities. This zone has been conceived as **Public Zone**. Major parking facilities for cars, buses etc. for the day time visitors could also be accommodated in this zone.

Zone 2 is the next to come as one approaches into the resort and conceived as **Semi-Public Zone**. This zone is meant for picnic spots with cooking shed and common toilet facilities, Sunderbans theme park, restaurant, museum, library and other service facilities all set in a amidst lush green space. This could also be useful as seasonal mela ground.

Zone 3 is conceived as **Special Semi-Public Zone**. This zone houses some functions which are mainly accessed by people visiting in group for official purposes, like small convention, corporate meetings etc. A banquet hall and open air performance plaza are added in this zone to host small parties of cultural activities by the local folk artists.

Zone 4 is the **Private Zone**. This zone is especially for the resident tourists. Here, in this zone, cottages, log houses, health club, gymnasium, swimming pool, yoga court, dining facilities with all support facilities is housed. This zone is planned in such a way that it keeps ample space for future expansion.

The construction methodology which is to be adopted for this kind of Eco-tourism resort should innovative, cost effective and eco-friendly. Keeping this vision in mind, a construction methodology which is largely used in Indian villages is proposed with

4. A sustainable construction methodology for the resort

suitable modification. This proposed technology, having its roots in the traditional, vernacular architecture uses mainly natural resources and elements like bamboo, mud etc.

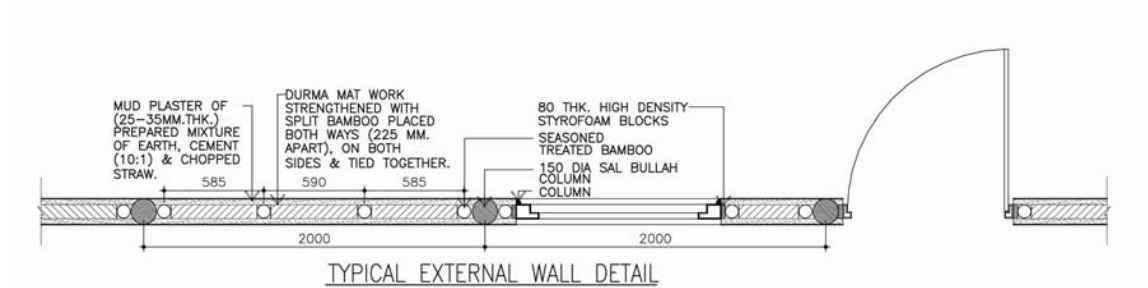


Fig 1

As described in the above figure, 250mm thick conventional load bearing brick-cement masonry is proposed upto the **Sill** level of the buildings. Above that, the structural frame work will be made with **Sal Bullah** (150mm dia., 2000mm apart posts). There will be bamboo (seasoned and treated) runners at **Sill**, **Lintel** and **Roof** levels as stiffeners. Thus created intermediate panels are to be filled up with composite system of high density Styrofoam block (80 mm thick), Durma mat work and Mud mix plaster (25 to 35 mm thick) of earth, cement and chopped straw.

The floors (first floor levels) are to be made of seasoned wooden planks supported by sal bullah joists (refer Fig 2). The joists are further covered up by U-shaped hard wood cover block to enhance durability.

Roof is proposed to be made with bamboo truss. For roofing actually two materials are proposed, one is vernacular earthen tile and another is pre-coated aluminium sheet covered by thatched straws.

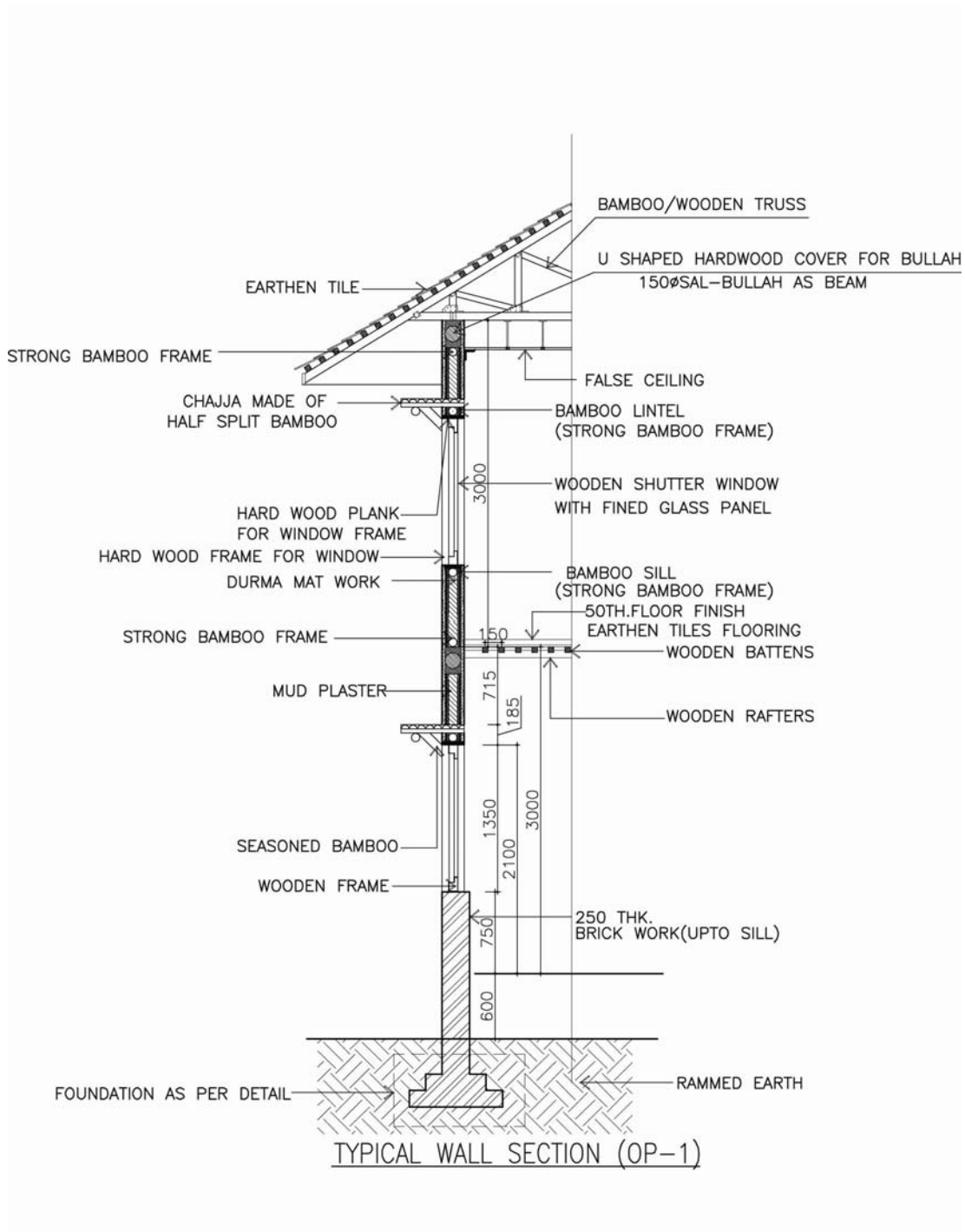


Fig 2

Proposed Eco-Tourism Resort at Jharkhali

PROJECT AT A GLANCE	
Total Site Area	106 Acres
Site Area Excluding Pisciculture Ponds	69 Acre
Total Ground Coverage	8000 sqmt (approx)
Green Belt	12.5 Acre
Artificial forest & orchard area	20 Acre
Utility & Services	1.5 Acre