

---

Case Study Paper

# REIMAGINING PAMBA

Sustainable design strategies for Sabarimala Pilgrimage.

Rahul V, B.arch; India

## Abstract

*Kerala, an Indian state, known popularly as gods own country, lies one of the ancient temples, Sabarimala. Other than its historical and cultural prominence, this temple is open only for a few days in a year and prohibits the entry of women of 15-55 years of age. The temple is situated along the banks of the river Pamba. The flood plain of this river acts as a transitional area between The Sannidhanam( the temple) and Nilakkal ( the parking area) .The Study extends from natural setting of the area to the pilgrim behavioural study . Unplanned development of the Pamba flood plain, without considering the context lead to the study of; Malai Arayans the natural inhabitants of the forest. Their settlement pattern and lifestyle were studied.*

*Research oriented design strategies were prepared also by considering recent devastating flood in Kerala and the Supreme Court order for women's entry which created lots of riots and chaotic situation within the state. Study includes pre-flood condition, during the flood and after flood scenario of Temple's base camp, situated along the bank of the River Pamba; during seasonal and non-seasonal time. After considering the need of pilgrims and ecological impact, proposal includes design interventions which reduce ecological footprint, waste generation, wildlife threatening and measures to improve tribal life. Design proposal includes study of local materials, documentation of indigenous techniques, construction details and issues of the native tribes. Rather than imposing an alien architecture inside the forest, the study ends up in search of temporary, semi temporary architectural interventions using natural materials and technology. End result of the project includes the whole mapping of Pamba during various stages, the pilgrimage culture and its effect on nature and a whole new design for pilgrim culture which includes women pilgrims; architecturally and non-architecturally*

## Keywords

*Sabarimala, Malai Arayans, Pilgrimage, Flood, Pamba.*

---

## 1. Introduction

Sabarimala is an ancient temple for Ayyappa (Sasthavu) situated deep inside the western ghats of Pathanamthitta Dist. Kerala, India. Nilakkal, 17 km before Pamba, acts the parking area for pilgrims. Pamba act as the final halting in the journey to Sannidhanam (shrine). Lots of preparations and rituals are happening at Pamba with very less facilities. Sabarimala is one of the area with floating population is greater than existing population of the entire state. Due to this lot of infrastructural facilities are introduced inside the forest, which cause tremendous changes that affected context and environment of the site.



Figure 1. Pamba basin before flood

Source: Google Earth

## 2. Site Study

### 2.1. Location

North: Peerumedu taluk

South: Pathanamthitta district

East: Theni, Thirunelveli & Ramnad District of Tamilnadu

West: Kottayam district.

The site area comes under high ranges of Southern Western Ghats with an altitude vary from 100 to 2019 m. The western part of the reserve, where the elevation ranges from 100 to 1100m, mainly occupies west coast tropical evergreen forests. It is in this biodiversity rich forests where the famous Sastha Temple is situated.

---

## 2.2. Climate

. The site experiences a varied range of temperature, humidity and rainfall due to the wide range of altitude. The river side has predominantly salubrious climate. The temperature varies between 19°C and 36°C. During winter months, at high altitudes the temperature is considerably less and frost occurs during the period. The humidity at the foothills varies from 70% to saturation, due to the presence of the river, whereas at higher altitudes it is slightly less. The two monsoons – The south west monsoon during the months of June to august contributes about 60-65% rainfall.

The Northeast monsoon experienced during September to November contributes 20-25 % of the rainfall and 10-15 % of the rainfall is received during January to May as summer rains..

## 2.3. Malai Arayans

Malai Arayans are the native tribals of travancore forests. The Malai Arayans inhabit mainly the Kottayam, Idukki and Pathanamthitta Districts of Kerala. They are included in the list of Scheduled Tribes officially accepted as such both by the Union and Kerala Governments.

### Settlements

The Malai Arayan Village was built generally on high ground mostly by the side of a stream. In defense of possible attacks by wild elephants they built anamadam on trees (tree houses) a bamboo ladder access. They took shelter in them during night and drove off wild elephant by shouting Ayyappa"

The huts were built without windows as a safe guard against the sultry heat of summer. The huts were scattered here and there and they had an easterly orientation. They stored the harvests chiefly paddy and tapioca in the "Anamaadam"

### Materials and Construction

Huts were built of Jungle-wood posts, bamboos, and reeds and thatched with grass. The huts were built without windows as a safe guard against the sultry heat of summer. Some Malai Arayans had huts made of stone or mud, built on foundations about two feet high. Some of the huts had mud walls and rooms with doors and windows fitted on wooden frames. Bamboo mats were used for sitting and sleeping.

---

## 3. Pilgrimage

### 3.1. Rituals

After 41 days of fasting, pilgrims reach Pamba after visiting Erumely either through traditional trekking route or by road. At Pamba, pilgrims take holy bath in the river and visit Pamba Ganapathy temple and continue their trekking to Sannidhanam. Lot of pilgrims stay and take rest at Pamba before taking steep route towards Sannidhanam. They are provided with space for placing 'viri' (bed spread) and take rest. During festival period, (April), the shrine is carried by head from Sannidhanam to Pamba "Arattukadavu" for the holy bath of Ayyappa as part of rituals.

### 3.2. Activities

SEASON

Continuous flow of pilgrims throughout the day and riversides are filled with them to conduct holy bath. Continuous KSRTC services. Services of TDB, Forest Dept., Ayyappa Seva Sangham, Fire & Rescue, Police force, Health Dept., BSNL, Water Authority, NDMA and many other private service providers. Commercial activities like hotels, stationeries, tea stalls, Prasadam counters etc are active during season. Dolly services are available at Pamba at a rate of Rs 4200/-



Figure 2. Mapping during pilgrimage season

#### OFF SEASON

Major construction and development activities take place. Few KSRTC buses with halt at Pamba. No Communication facilities other than BSNL. Employees of TDB, Police, Forest, KSEB, KWA departments accommodate at Pamba as well as in Sannidhanam. People visit Pamba Ganapathy Temple and conduct rituals like Choroону, Bali Darppanam etc.

#### 3.3. Building character

Visually the whole area inside the dense green forest is very shabby. No particular character or look is visible in most of the buildings. In addition, no structures are built by considering fire safety and other precautions. Building materials - Normal concrete construction using concrete blocks and cement. No consideration for environmental impact. Even Sannidhanam also, same construction practice is happening.

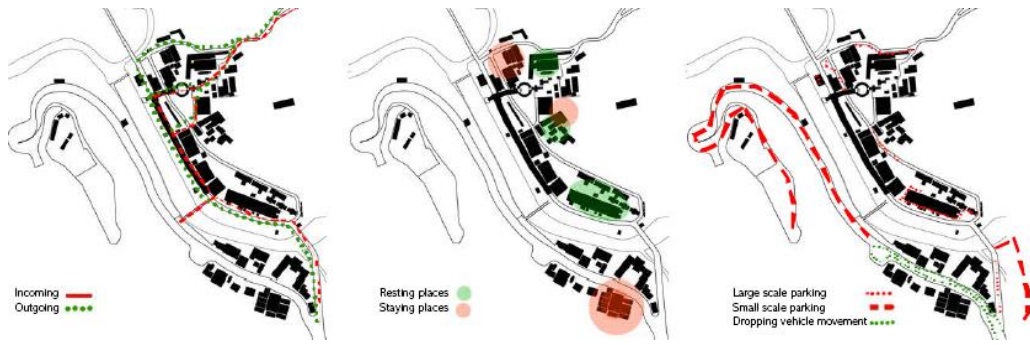


Figure 3. Various parking and vehicular zones

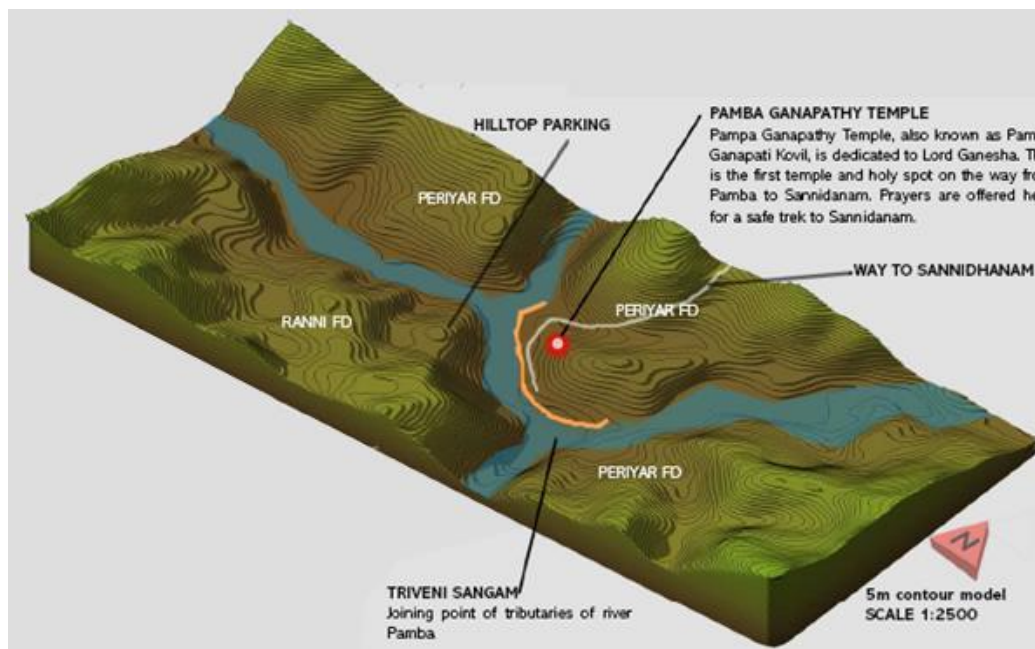


Figure 4. Contour setting of the valley

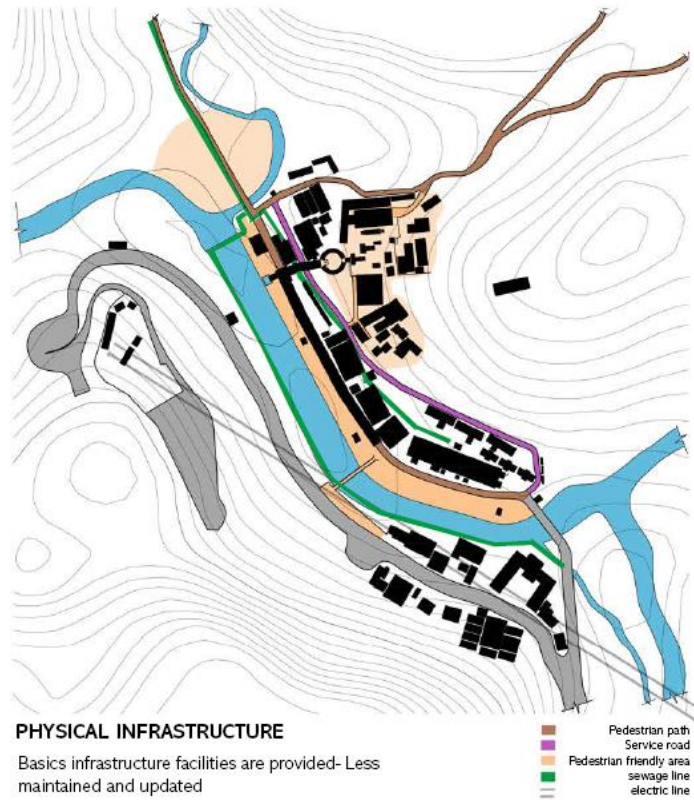


Figure 5. Physical infrastructure

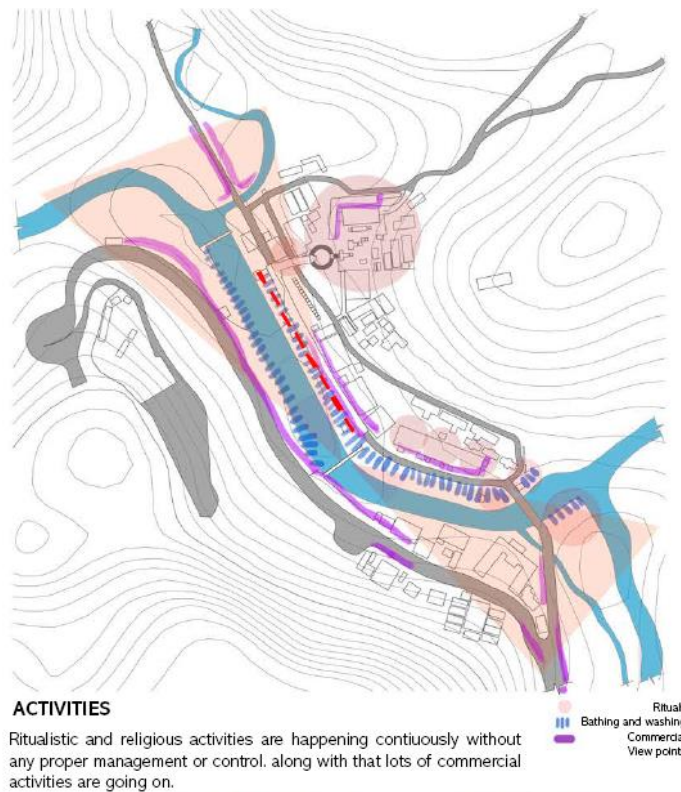


Figure 6. Activities during pilgrimage

### 3.4. Pilgrim behaviour

Most of the pilgrims are not aware about the proper path and spaces at Pamba. No proper guiding or signage are provided, and it causes scattered movement of pilgrims without any restrictions results uncontrollable crowd.

## 4. CURRENT EVENTS - FLOOD OF THE CENTURY

Impact of the flood on site was very huge. So many structures are destroyed and river flowing direction is changed. An estimated loss of 100 crore declined the human access to Sabarimala.



Figure 7. Pamba after floods

Source: Malayala Manorama newspaper

### 4.1. LOSS OF PROPERTIES

The pedestrian bridge, Toilet blocks, Annadana Mandapams, Resting halls, Hotels, Pedestrial paths etc., get destroyed fully or partially. Most of the temporary structures vanished from the flood plain.



Figure 8. Before and after flood - Hospital



Figure 9. Before and after flood - Bridge



Figure 10. Before and after - Waiting area



Figure 11. Commercial complex

More than the destruction happened, A huge amount of sand get deposited all over the plains. Estimated amount is 2000-3000 load sand. Ground floors of every existing structures get filled with sand, about 3m height deposition.





Figure 12. Before and after - Temple bridge

#### 4.2. Master Plan

Even the flood creates a chaotic condition at Pamba and Nilakkal, The masterplan gets more relevant, so that Nilakkal will become the Basecamp for the pilgrims and Pamba will become a transit points with basic facilities. And also masterplan aims at cleaning the Sannidhanam by reducing all the built ups to bring back the natural setting to a more splendid condition

#### 4.3. Findings

Due to increased built up which causes a huge runoff, results in flood with that microclimate. Also the water holding capacity of soil reduced due to the absence of water absorption cycle. Here in Pamba, the whole destroyed structures are constructed without respecting basic rules and get affected by the flood. Flood plain is always intended to works as a functional wetland which always keeps the water table normal, which reduces the effect of flood.

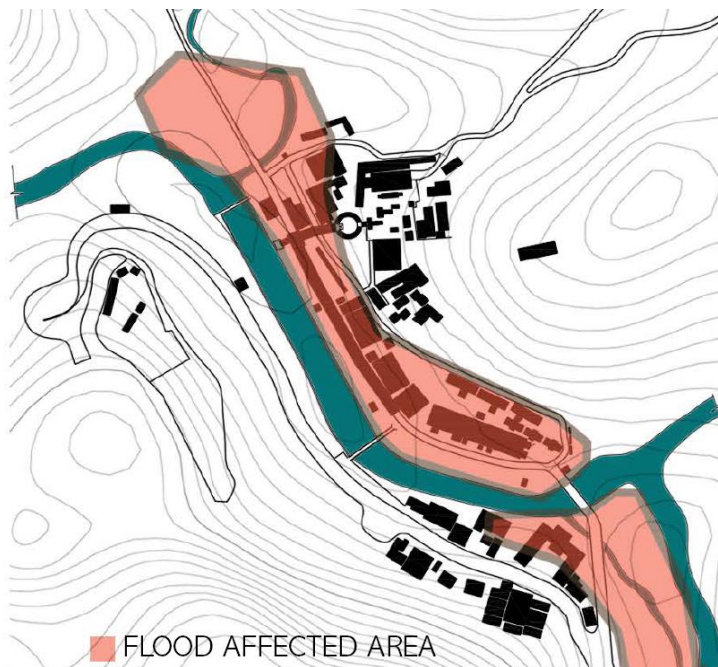


Figure 13. Flood affected area

---

## 5. Interventions

### 5.1. Regional Planning

The whole crowd that directly come to Pamba is controlled at Nilakkal by providing all amenities like parking, rest places, regional hotels, shops etc. All private vehicles are limited at Nilakkal. Then the pilgrims are transported through electric buses up to Pamba. Only mass transportation and emergency vehicles are allowed in this route.

From Pamba, after holy bath and rituals, pilgrims are controlled using queue complexes by prohibiting outside food and water. After visiting Pamba Ganapathy temple, pilgrims directed to Sannidhanam through oneway trek route. Interventions at Pamba will discuss in next chapter.

At sannidhanam, basic amenities are provided and no builtup other than these are allowed. An area with minimum built up area. Nature evokes the spirituality and is emphasized with a subdued architecture.

### 5.2. Pilgrim facilitation at Pamba

Pilgrims from bus droff off are directed to Ghats through a pedestrian bridge, with passive ventilated porous flooring, which helps to dry the barefoot easily. Bridge directs pilgrims to queue complex, where free medicated food and water is provided in reusable plates and glasses. From here crowd is controlled according to the rush, season and climate. Temporary structures kept inside this complex during off-season so that it can use during seasonal times, which reduce built up. No built up is provided on Ghats. In case of women entry become common, the symmetry of the complex helps to break the crowd to sides of ghats.

All designs and materials are inspired from the native inhabitants. Implementing a traditional architecture inside forest is not a sincere approach.

### 5.3. Non-Architectural Interventions

- Whole pilgrimage is redesigned according to current situation, climate and population. Limiting pilgrim count per day using online ticketing.
- Limiting all private holdings at Nilakkal
- Participation of Malai Arayans community for the maintenance and functioning of the system.
- Creating a less carbon footprint from each pilgrim by providing least packed food and bottled water.
- In future all administration and departments will concentrate at Nilakkal. Control rooms and information counters will be provided at Pamba.

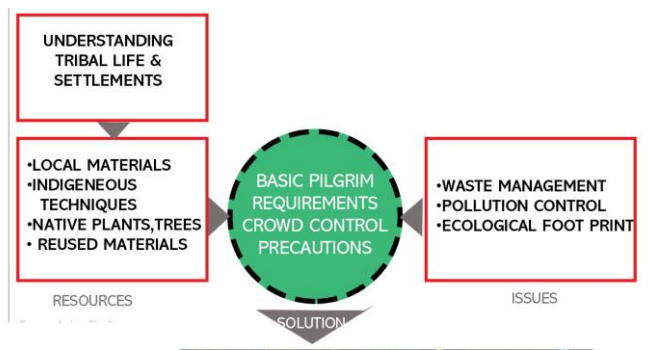


Figure 14. Design process

## 6. Conclusion

The journey to the Sannidhanam to see Swami Ayappan is considered very holy and the pilgrims and devotees follow strict ceremonies to qualify to visit the deity. Even though lessening the burden on the devotees is essential, we have to give something back to the nature, which nurtures us, and not destroy it. The purpose of this thesis has been to design for the needs of the pilgrims who come to visit the deity at Sabarimala after devout austerity, their trek to the deity being part of their religious journey, devoid of unnecessary luxury while retaining the sanctity of the pristine forests which itself was the reason the deity chose it as his abode.. The climate change has led to the Kerala Floods of 2018 washing off large portions of Pamba, which is the place where the pilgrims start their holy journey. The on-going controversy regarding the entry of women to Sabarimala, flooding of the River Pamba, increasing number of pilgrims, the services associated with the huge number of people, encroachment into nature have been addressed.

The design is pilgrim and nature centered accommodating age-old customs, restoring the degraded natural surroundings, actively incorporating passive crowd management techniques through design and planning.

## 7. References

- Mehrotra, R. (2015). *Kumbh Mela: Mapping the Ephemeral Megacity*. Allahabad, Academia Verlag GmbH, Uttar Pradesh.
- T., Aji A. (2005) *Impact of pilgrimage on the environment of Sabarimala with special reference to River Pampa*. (Doctoral thesis) Retrieved from Shodhganga.
- K. Joseph, Joice & et al. (2016). *Pilgrim governance and environmental sustainability: A case study of Sabarimala pilgrim destination, Kerala*. Retrieved from Research Gate.
- Patange, Priyanka, Dandapani, Shrinithiviahshini & Mahajan, D. (2013). Pilgrimage and the environment: Challenges in a pilgrimage centre in Maharashtra, India. *International Journal of Environmental Sciences*.
- Watson, Donald & Adams, Michele.(2011) *Design for Flooding: Architecture, Landscape and Urban design for Resilience to Climate*, New Jersey, John Wiley & Sons Inc.