

MASTER PLAN MODULES**BUILT FABRIC ANALYSIS MODULE**

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1. INTRODUCTION

1.1 Background and Relevance

In order to provide a better pilgrimage experience at Sabarimala, it will be important to develop the place in such a way that the religious character of the temple is restored and enhanced. The perceived character or *Imagibility* of the temple located in the dense Forests has been lost owing to haphazard development around it in an attempt to provide for growing demands. Visual reconnaissance of the main areas connected with the holy pilgrimage exposes the extent of degradation and stress which the buildings and spaces are put to due to the activities of the pilgrims and resultant development pressures. The Master Plan for Sabarimala is thus aimed at restoring the original character of the Temple. In this context, the built fabric has been analysed in terms of relationships between the built and unbuilt spaces, its vertical and lateral disposition, and how people perceive and use built and unbuilt spaces in Sabarimala.

1.2 The Need and Importance of Development Guidelines for Sabarimala

Pilgrims value the sanctity, diverse religious character and the unique quality of pilgrimage at Sabarimala. Unfortunately, this has been compromised due to the unplanned layouts and development pressures. Appropriate development initiatives at Sabarimala would be those which strike a balance between the natural forest settings, historical and religious significance of the site and the temple structure *per se*, and the surrounding regional context and the needs of the pilgrims. The need to clean and orderly settings taking into consideration religious tradition will continue to be an essential component while planning the region. Hence it is essential that plans should be aimed towards promoting quality development and redevelopment that is considerate about the norms on religious, ritualistic, aesthetic composition and sustainable durability.

Two major determinants that make Sabarimala one of the most famous pilgrim centers in India and continue to spread its fame all over is the "unique character" and "quality of experience the pilgrimage in the forest" it offers. It had been the observed fact that these two factors are the main determinant force that has influenced and contributed to the gradual but steady growth of pilgrims visiting here. Thus, to sustain the faith and devotion of the pilgrims it is essential that the character and ambience that contributes to the unique experience be conserved.

At Sannidhanam; the core temple site of Sabarimala, there once existed only a small granite temple surrounded by thick evergreen forests. This locale has been transformed into a mini-township as a result of unplanned and unchecked building activity in its vicinity since early 1950's, ever since the road way to Sannidhanam was laid. But the development has been haphazard and ill-planned with little or no consideration for the character and imagibility of the place, which sustain the religious beliefs. This will not only result in a criminal waste/destruction of our precious natural and cultural recourses but also will lead to a gradual depletion of the religious sanctity of the place which stems from its natural setting and the rituals and observances which have a strong mooring on this.

At the present, the buildings at Sannidhanam range from simple structures to that of complex structures that serve and support the religious, accommodative, service related and administrative purposes. These structures had been conceived and upgraded in an ad-hoc manner through ages and thus have completely transformed the actual character of the “Temple in the Pristine Jungle” to that of a “Temple within a Concrete Jungle”. This situation is more serious as the buildings neither seems to follow any style as opposed to the many religious towns or precincts in the country nor conform to any of our traditional architecture outlook, design or planning.

1.3 Area and Purpose of the Study

The study area includes Pampa, Sannidhanam and trek routes, which forms the final destination of Sabarimala pilgrimage. This report presents information on the visual elements of the Sabarimala, and how they contribute to its identity and character. It would provide the basis for a planning process that would enable concerned authorities to shape the growth of the area in a manner most beneficial to the pilgrims and the environment. This report discusses the built form in Sabarimala by providing:

- An overview of some important physical features of Sabarimala
- A description of the built structural units or “building blocks” at Sabarimala and;
- A description of strong, recognizable features, such as density, pattern, scale, views/vistas, gateways, nodes, streets, landmarks and other elements that define the character of the place, designates an area just as a space or a vibrant place and contributes to defining the place being imagible

These elements of built form are analyzed at both a macro and micro scale to identify those visual qualities that are valuable and worth preserving (religious context); those that are undesirable and which should be changed; and those vulnerable to change. Analysis of these visual qualities is expected to explain the opportunities and constraints that can serve as the basis for policies and programs which shape the character of Sabarimala in the years to come.

1.4 Priorities for Planned Development at Sabarimala

Planned Development at Sabarimala is concerned with both the quality and form of the built environment, including the complex inter-relationships between buildings, spaces, landscape, and circulation/movement patterns, and the functioning and sustainability of the Sabarimala for offering unmatched - unparalleled quality of pilgrimage for its pilgrims. Development paradigm should understand these relationships and balance the competing demands to deliver a sustainable, vibrant temple settlement of the highest design quality.

Valuing the existing physical diversity and the religious significance; the effort has been to re-evaluate Sabarimala in a new light – ‘in the context of today’. The effort has been to develop and redevelop Sabarimala to conform to all our religious aspirations and to imbibe the best of Kerala’s traditions in accordance to art, culture, traditional temple architecture (*Vastuvidya*) and planning. The planning approach had been in three levels:

1. Holistic
2. Area specific (Vicinity, Zone, Precinct, Sector) and
3. Location Specific (Spots, Locality and Setting)

1.5 Methodology

Following table and figure describes the methodology followed for the study and subsequent analysis.

Surveys to capture the imagibility of the area and the ‘sense of place’ were carried out in addition to specific surveys to understand the perception of the pilgrims and other stakeholders. Terms of Reference adopted for these surveys have been presented as Annexure 1. Detailed component wise mapping of the landuse, vertical and horizontal development was carried out to work out the strategies for future development.

Table 1: Techniques and Methods used for Study and Analysis

<i>Topics of Analysis</i>		<i>Techniques and Methods</i>	<i>Tools</i>	
Analysis of the Man-made (Built) Environment	Topographical features	Surveying techniques	Maps Tables Charts Diagrams	
	Soil			
	Landscape - Vegetation			
	Plantation – Flora / Fauna			
	Water – water bodies			
	Climatic Features			
	Location analysis	Documentary research	Maps	
	Historical analysis	Documentary research	Data collected from books, maps, documents; Inventory forms can also be used to document buildings, streets, etc. of historic value	
	Physical analysis	Form of development	Morphological analysis	Maps , 3D drawings
		Solid-void relations	Figure – Ground analysis	Maps, Street silhouettes, 3D proportionate or scaled sketch drawings Photographs
Street pattern; Urban spaces in terms of their quality, enclosure, character, activities				
Urban Pattern analysis		Elements of the area such as paths, nodes, edges, landmarks and districts	Lynch analysis	Maps Photographs 3D sketches/ drawings
	The gap sites and vacant plots of land, streets or spaces requiring definition or redefinition	Lost space analysis	Maps Photographs	
Architectural evaluation		Site surveying	With sketch and measured drawings and photographing; information gathered on tables, inventory forms for all buildings	
Technical infrastructure		Documentary research	Maps and reports	
Functional analysis	Accessibility / Permeability / Traffic Circulation	Traffic and transportation survey	Maps	
	Functional distribution	Landuse survey	Maps presented with appropriate coloring and coding	

<i>Topics of Analysis</i>	<i>Techniques and Methods</i>	<i>Tools</i>
Demographic structure of the users of / within the area	Questionnaire survey	Tables
The existing economic activities and employment Pattern	Interviews	Bar-charts
The existing laws and regulations	Documentary research	Documents
The current local authority/government policies		Laws, regulations
The official and non-official stakeholders in development activities	Interviews Questionnaire survey	Tables Graphs Bar-charts

The methodology followed for the study is presented in the following figure.

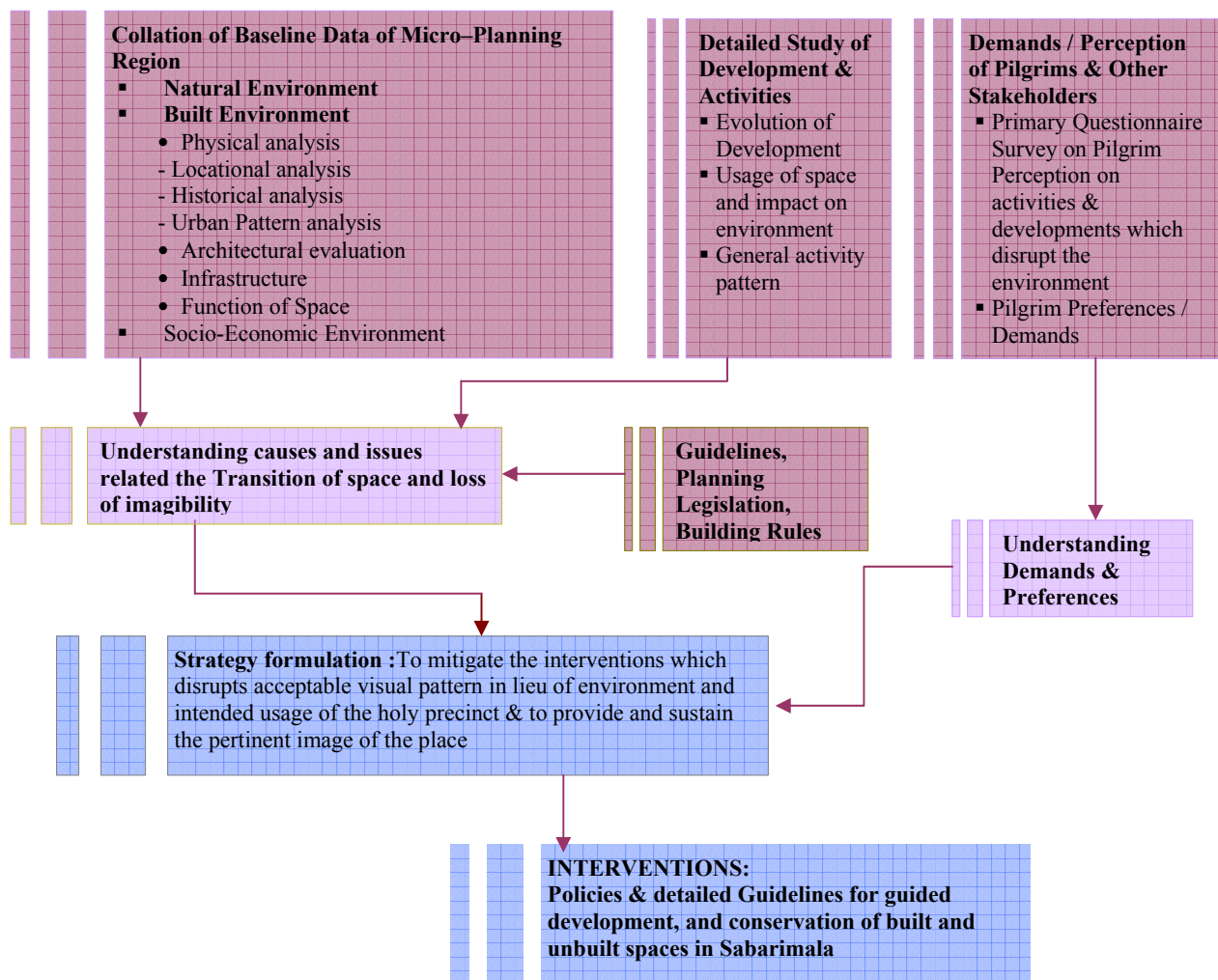


Figure 1: Methodology Adopted for the Study

2. DEVELOPMENT PATTERN AT SABARIMALA

This section presents an overview of the history of development of the temple precinct and associated areas and describes the existing built fabric at Sabarimala

2.1 Transformation of Spaces: Sabarimala, Past and Present

Sabarimala has surpassed all the accepted definitions of a pilgrim centre. The geographical, ecological and ritualistic uniqueness gives Sabarimala entirely different dimensions in comparison with other pilgrim centers. The Sabarimala temple has been attracting pilgrims even during the 18th and the 19th centuries. The number of pilgrims has increased tremendously over the past several years, especially after the sixties when the road head was opened in connection with the Moozhiair Power Project in the neighboring Ranni Forest division.

Historic transformation of Sabarimala from a lone granite temple structure in the midst of the dense forest to that of the present sprawling - *urban like* - development with depleting forest cover can be traced back to some of the major events over the last four decades (namely, from 1960's to 1970, 1970 to 1980, 1980 to 1990 and 1990 to present date); ever since 1949-1950; when through the promulgation "Travancore Cochin Hindu Religious Institution Act", the management and administration of Sabarimala was vested with the Travancore Devaswom Board.

Table 2: Transformation of Sabarimala through Decades

Period 1960's to 1970:	<ul style="list-style-type: none"> • An area of 60 acres (50 acres at Sannidhanam and 10 at Pampa) was leased to Travancore Devaswom Board (TDB) during 1962. • Till early 1960s no infrastructure was required either at Pampa or Sannidhanam for containing pilgrim crowd as pilgrims were mostly from Kerala. • A remarkable hike in pilgrim strength had probably occurred with the spread of news about the burning of the temple in 1950. • Temple rebuilt consisting of a sanctum sanctorum with a copper-plated roof and floor, golden finials at the top, two <i>mandapams</i>, the <i>belikalpura</i> which houses the altar, and the flag-staff. • Temple gained in popularity in late 60's through a Film on Lord Ayyappa, filmed in all South Indian languages. • The Swamy Ayyappan Road was built at the time of production of this Film – which eventually becomes the route to transport building materials and other materials. • The road head was opened in connection with the Moozhiair Power Project making possible full vehicular access up to Pampa.
Period 1970 to 1980:	<ul style="list-style-type: none"> • Formation of Pathanamthitta District inclusive of Sabarimala region carved out of Idukki • Commercial development along the trek route from Pampa to Sannidhanam

Period 1980 to 1990:	<ul style="list-style-type: none"> • Large Scale constructions in the leased area took place during 80's and 90's (Refer Figure: 2). • Water supply scheme to Pampa Sannidhanam was commissioned in 1984 • In 1985 the Pathinettampadi was covered with thick plates of <i>Panchaloha</i>.
Period 1990 to till date:	<ul style="list-style-type: none"> • 1996 Appam Aravana Complex construction was initiated under a Build- Operate – Transfer (BOT) scheme through private participation. • Two numbers of six story Donor Houses were constructed (largest and dominant structures at Sannidhanam) • Water supply augmentation was carried out in 1996 • 66kv substation at Pampa was initially conceived in 1996 which was finally installed and made operational in 2006 • In 2001 November – Sewage Treatment Plant and Incinerator at Cheriyanavattom in Pampa, were installed (Instillation started on September 2000) • In 2001, 12 Oxygen parlors on trek path from Pampa to Sannidhanam, Cardiac care facilities were donated by Chennai based Apollo group of hospitals, and Cardiology unit was installed at Neelimala. • All trek routes to Sannidhanam were operated/managed by TDB till 2000. In 2000, following the High Court decision on OP No. 15586/2000 the management of Trek routes from <i>Erumely</i> to Pampa and trek routes from Sathram/ Uppupara to Sannidhanam was transferred to Kerala Forest Department who started management of these routes through Eco Development Committees (EDCs). • In 2005, additional forest area of 12.675 Hectares (from PTR) at Sannidhanam and Pampa and 110 hectares (from Ranni Forest Division) at Nilakkal was transferred to Travancore Devaswom Board following an Interlocutory Application (IA 1373) filed before the Honorable Supreme Court of India by the Board based on the recommendations in Report on “The Outline of the Master Plan for Sabarimala”¹.

The following figure indicates the development of the Sannidhanam area from a small forest temple to the sprawling urban-like area today over a period of around 50 years.

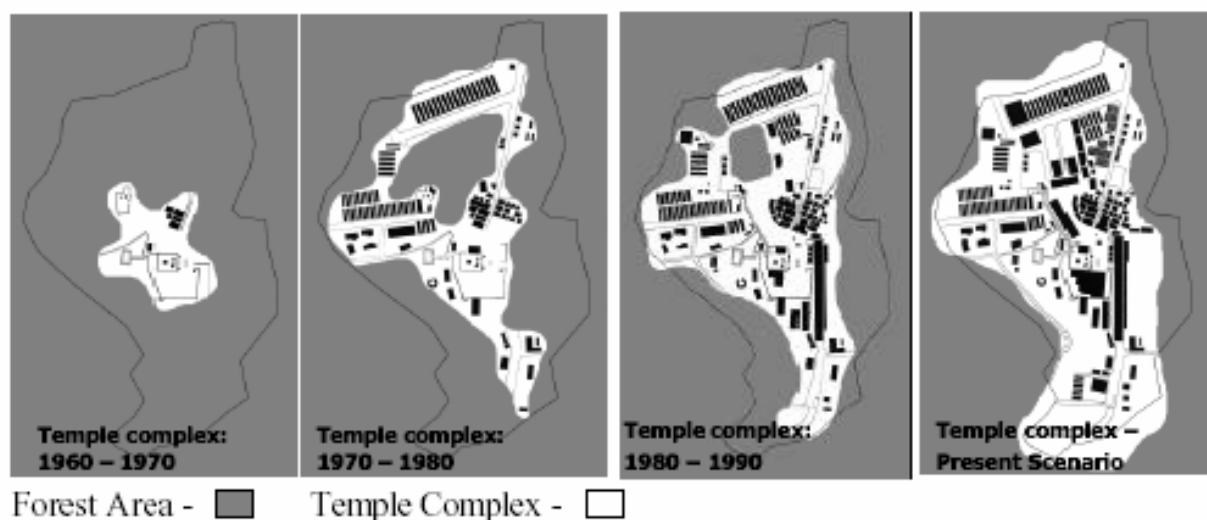


Figure 2: Growth of Sabarimala Temple Complex (Sannidhanam)

¹ IL&FS Ecosmart Ltd (2005), **The Report on the Outline of the Master Plan for Sabarimala**, Government of Kerala (Approved and Unpublished)

2.2 Visual Characteristics of Built Fabric at Sannidhanam

Main components of the built fabric are typical 2 to 3 floor urban structures and few of even 6 to 7 floors dispersed around the Temple. The Core Area has a very diverse built form; mainly of religious nature. Though certain important elements such as dense and disoriented spread, pedestrian ways with ramps, underpasses, flyovers, bridges, flight of steps etc announce its pedestrian orientation; the scale of most of recent developments negates this. Numerous 4 to 6 storied buildings have been recently constructed to accommodate the ever increasing pilgrim requirements. Most of the buildings have a rectilinear foot print with few exceptions (mainly storage tanks, Over Head Tanks). Flat roofing pattern has been followed in most of the buildings, in stark contrast with the sloping roof style most suited to such tropical habitats. The flat roof pattern allows for future vertical additions to the structures and could be viewed as a design response to adopt vertical stacking to effectively utilize the scarcely available forest land. However, certain recent additions have shown sloping roof profile, where the top floors are provided with semi-permanent roofing systems. This feature is able to match the sloping roof profile and at the same time optimizes the load on the lower structure.

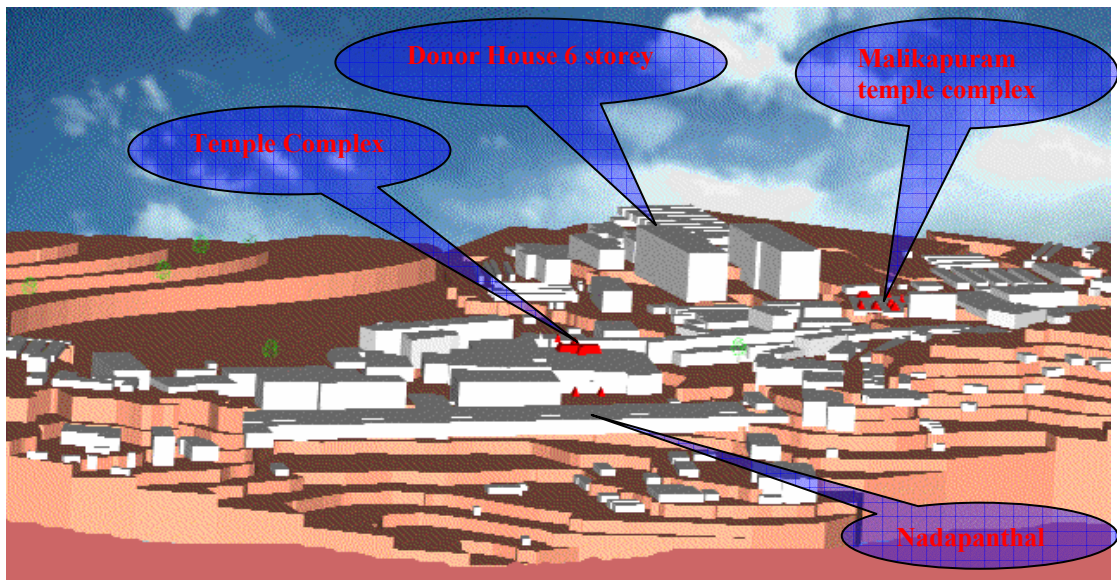


Figure 3: Three Dimensional View of Sannidhanam Built Form



Figure 4: Existing Built Fabric

2.3 Size and Visual Sprawl

The growth of Sannidhanam area is along linear axis following the main trek routes, from Pampa on south and from Uppupara in the north and the connecting interior axis formed by the main pedestrian route; both sides of which have witnessed commercial developments, highly concentrated in the area to the north of Sannidhanam. The land characteristics along with the travel pattern of the pilgrims had restricted and defined the development. High intensity of development has been observed in and around the most easily accessible land with flat topography in Sannidhanam wherein the coverage² is above 75percent e.g. the temple core. However, considering the entire area available for use at Sannidhanam, it is observed that coverage is an average of 30percent, which is low mostly owing to highly stacked structures and unusable niches, which resulted from unplanned developments.

Review of the topography reveals that almost 75percent of the land available at Sannidhanam which is at an altitude of more than 900m (above MSL) has differential sloping characteristics. Thus only 25percent of the remaining land which form a plateau sort of formation in and around the Temple precinct (Sanctum Sanctorum) is comparatively flat and suitable for developmental activities without requiring land modifications. In the remaining area, where density of development is high, the sprawl has occurred by adopting major land modification techniques like slope cutting and filling, which is actually prohibited in the eco-sensitive zone of the Periyar Tiger Reserve (PTR).

2.4 Pattern, Grain and Texture

The main core of Sannidhanam, namely the Sanctum Sanctorum area, which was in existence since the yore, has a rectilinear block pattern over a plateau. Areas surrounding the temple core / Sanctum Sanctorum per se, exhibits haphazard block and pedestrian street pattern over a rolling – undulating terrain which is very steep especially towards the periphery. As one moves from core to the outlying areas curvilinear street and block form could be observed. This variation in pattern is aggravated by the angular disposition of buildings. Mixture of irregular open space and built space constitutes still another pattern.

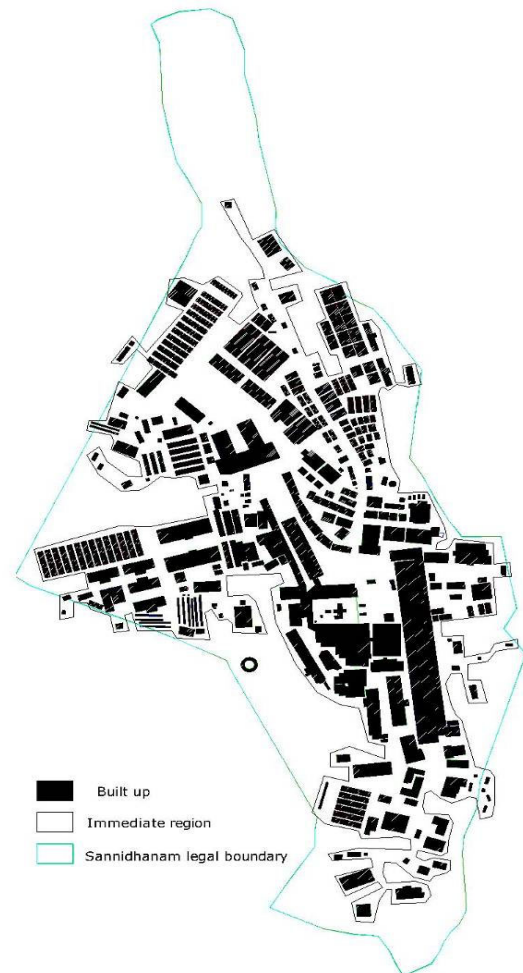


Figure 5 : Existing Grain and Pattern at Sannidhanam

² Coverage is 'built up area' as percentage of 'total area'

In general, the development at Sannidhanam shows coarse grain and texture, characterized by buildings of varying sizes and angles with differential heights and shapes distributed randomly. This is in stark contrast with the smooth grained temple towns and precincts with definite pattern visually familiar and appealing. This also contrasts with the expected pedestrian scale and reduces the imaginability and easy orientation. Refer Figure 6.

2.5 Vista and Skyline

Every place at Sannidhanam has few striking vistas ‘of it’ and ‘from it’. The spaces between the tree trunks along the trek route opens the unpleasant vista of towering clustered buildings above the green background of pristine forests for those approaching Sannidhanam from north or south. The contrast is unpleasant and unacceptable to the visitor who treads the forest trek route to reach the temple of ‘*kananavasan*³’. Though the temple is situated atop a high plateau, the waiting pilgrims mostly fail to get a glimpse of the *Thazhikakudam*, the most adored vista in a temple precinct as the sanctum sanctorum is engulfed by a pedestrian flyover which towers above it.

Most of the views to and from Temple to the surrounding area are blocked at various levels by adjacent structures. As many new structures have been built around the Sanctum Sanctorum, the possible view of the same from Sharamkuthy at a higher elevation as the pilgrims approach the Sannidhanam through the traditional route remains totally blocked. The photographs taken from the same location would explain how the unplanned development has totally transformed the place and have disturbed the much cherished visual experiences traditionally understood as associated with this unique pilgrimage.



Figure 6: Vista towards Sannidhanam while Approaching from Sharamkuthy

2.6 Evolutionary Characteristics of Built Fabric at Sannidhanam

2.6.1 Growth Pattern of Sannidhanam

Sannidhanam is shaped by different factors; *insitu* and *exsitu*. The main *insitu* features which have shaped the development of Sannidhanam are its topography and its routes. The Sannidhanam area development is linear in character that defines the importance of the

³ One whose abode is Forests

approach routes. The Sannidhanam area can be clearly divided into the central circular core sector and two rectilinear sectors along the two major transportation routes.

The Sree Swami *Ayyappa* Temple, located in the central circular core sector consisting of old religious structures can be easily differentiated from the rest of the area which consist of numerous new structures which support pilgrim movement and facilitate religious activities. Recent addition of fly over around the Sanctum Sanctorum, under passes and the *Neyyabhishekam* queue complex have completely transformed the imagibility of this religious precinct, which now resembles an urban central business district (CBD) area with fly over and bustling commercial activity around.

The other areas being the comparatively newly added ones along the transportation routes are towards the south, the north - west and the north of the temple complex. These areas started developing around 1980's with the initiation of large-scale construction activities to facilitate pilgrim accommodation at Sannidhanam. Construction activity is rampant even today. For any future development, these newly added areas would serve as the nucleus as core area is saturated.

2.6.2 Density of Development at Sannidhanam

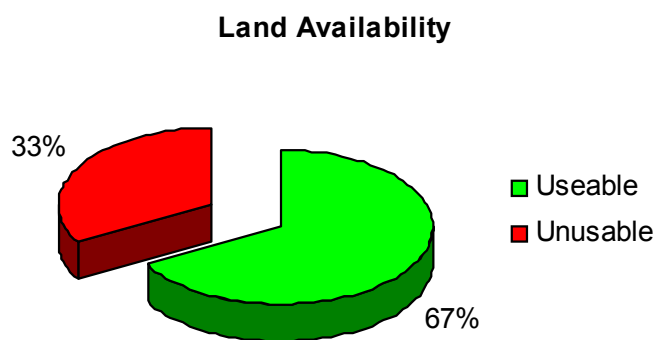


Figure 7: Land Availability for Development at Existing Sannidhanam Area

Due to development of newer and unplanned buildings in and around the temple and along the sides of major access routes the building density has gone up considerably. For example, if we take up a piece of land of about 100sq.m of the core area (i.e. temple precinct) for evaluation, it could be arrived at that the total land coverage is about 90percent (considering the paved areas also as built up areas). Considering the whole of Sannidhanam, the actual useable land from the total vacant land of 14.2 hectares (total plot area minus built up area) is only around 4.7 hectare (47293 sq.m). Total unusable area is about 9.5 hectares (95059 sq.m). Thus, there is not much scope for future development within the existing boundary limits without demolishing the structures and arranging them judiciously. Within the existing space limits, only way to accommodate more facilities is to redevelop or restructure the whole settlement wherever possible and to limit the extent of accommodation provided at Sannidhanam. This is mainly because the area has been injudiciously used resulting in a sprawl which is difficult to reverse.

Another major disadvantage is that due to high density development in and around the temple complex and along the movement routes, several land uses are ill-housed especially accommodation, commercial, public and semi public and the service and amenities. Majority

of the activities operate in congested and unhygienic environment. Accommodation for officials is mostly in the public/semi-public buildings adjacent to their offices.

The increasing influx of pilgrims has overburdened the infrastructure facilities at Sannidhanam. Though much of the area is unused, the existing haphazard development provides minimal scope for addition of new facilities without expanding its boundaries. Thus congestion remains despite all efforts primarily aimed at providing more.

2.7 Functional Characteristics of Built Fabric at Sannidhanam

Sabarimala has been experiencing immense pilgrim influx over the past 20-30 years. Over the years, phenomenal increase of building activities at Sannidhanam and Pampa has greatly altered the landuse structure which was originally dominated by natural forests, existing since ages. Forest was the main ingredient of the concept of Sabarimala pilgrimage as Lord *Ayyappa* selected the locale as his abode owing to its unique location within the forests, and the traditional principles of this pilgrimage are “forest centric” and “temple centric” calling for strict religious observances leaving no scope for uncalled-for activities or luxuries. This beckons simple utilization of space here, in a way most suited to the nature / environment. However, unplanned developments here have resulted in a sprawl with buildings set out haphazardly diminishing the possible utilization of available area.

2.7.1 Land use at Sannidhanam

The total developed area at Sannidhanam is about 25 hectares. As derived from the detailed landuse updation survey conducted at Sannidhanam for this study, the area under accommodation, services/amenities, assembly, circulation, public/semi-public, religious, manufacturing, and forest/open spaces is 25percent, 16percent, 10percent, 9percent, 8percent, 2percent, 3percent and 22percent of land respectively at Sannidhanam.

In general, majority of the permanent built areas in Sabarimala are either constituted of structures for accommodation purposes, for office/ service/commercial purpose or related to the activities of religious significance associated with central core temple complex. Around 75percent of the total structures in Sannidhanam are permanent in nature.

Streets and road are non-existent, as the area is used by pedestrians. Elaborate extent of paved pathway with numerous steps at close intervals can be seen in Sannidhanam area. About 9percent of the total available area is used for this purpose. The land use map and built area character map is attached as Maps 1 and 2.

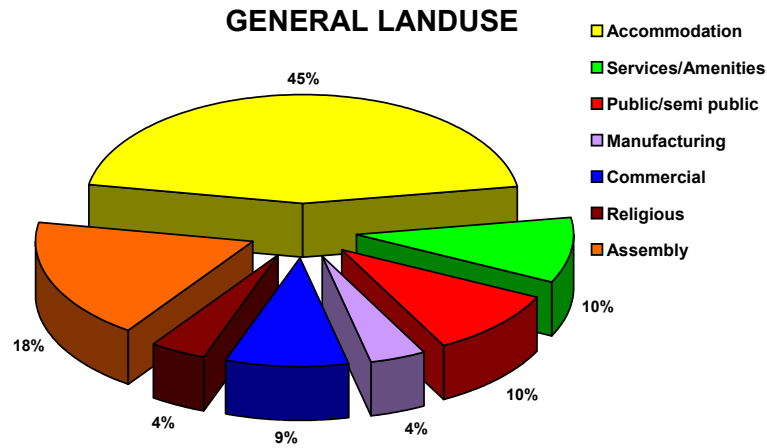


Figure 8: General Land use Characteristics : Sannidhanam

Table 3: Landuse Pattern at Sannidhanam

S.No	Land use / Built space Utility	Zonal Area		Built up area	
		Sq. M	perce nt	Sq. M	per cen t
1	Accommodation	57075.78	25	26777.55	45
2	Services	35866.41	16	5839.764	10
3	Commercial	13445.36	6	5422.342	9
4	Circulation	20829.70	9		
5	Public/semi Public	18208.48	8	5926.239	10
6	Assembly	21837.59	10	10819.77	18
7	Religious	5659.63	3	2484.419	4
8	Manufacturing	4158.86	2	2639.686	4
9	Open space	48969.12	22		
Developed area		226050.93	100	61598.35	100

Ref: Landuse Map attached for details

Built up area refers to plinth area of all existing buildings based on the detailed landuse and topographic survey maps.

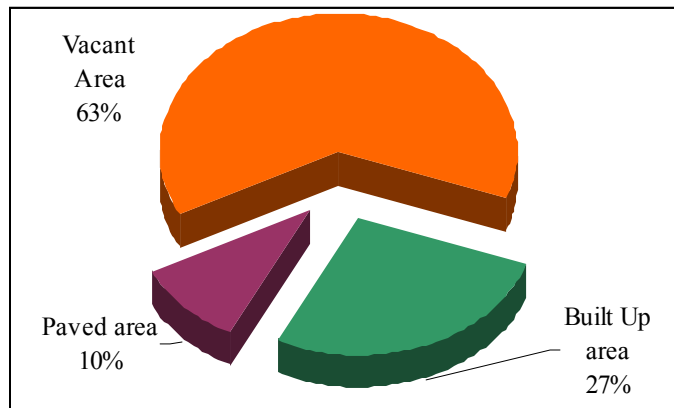


Figure 9: Coverage Pattern at Sannidhanam

2.7.1.1 Accommodation Area

All major accommodation facilities which include both permanent and temporary structures (*Viri's*) are laid out in an area beyond the temple towards the northern and western side. Almost 80percent of temporary facilities namely, *viri's* is located in this area. The highest concentration of accommodation facilities is visibly located along the route to Pandithavalam. Accommodation facilities developed are more fragmented and dispersed all over the area without planning or adherence to traditional principles. This fragmentation may be one of the major causes for the stress that is felt on infrastructure in these areas. Such a spread of accommodation almost throughout the entire Sannidhanam area necessitates spreading out of infrastructure, which would eventually demand more land and other resources.

The density of construction at Sannidhanam is so high that for undertaking any landuse modification without more demand for land, demolition of some of the existing structures would become a necessity. However, the fragile environment would suggest lesser intrusions or demolition activities. A judicious spread of such demolition over a cause of the planning time frame is required to ensure the restoration of Sabarimala to its place of pride as a religious precinct suited to the environment, and at the same time catering for the basic requirements of the pilgrims.

More over mixed land use is found all over the place with little or no exception. It can be said that more than 98percent of the structures in Sannidhanam are being used for multiple purposes. This is the result of adapting available spaces which were originally meant only for administration purposes for accommodating the officials and commercially exploiting every piece of land for at the ground level and using upper floors for accommodation purposes. During peak periods, when all available accommodation facilities are filled up, every inch of convenient space accommodates the pilgrims. As of now about 52percent of the total area used for accommodation facilities has permanent arrangement where as 48 percent is housed in temporary structures such as *Viris*. But an undemocratic allocation of the scarce resource namely 'space' is evident here. It is observed that around 46 buildings (39 percent of total permanent buildings) with a total of around 1000 rooms provide lodging of permanent nature. Each room with an area of 15 to 20 sq. m accommodates 1 to 5 persons for an average stay of a day. Considering an average occupancy (3 pilgrims per room per day), it could be inferred that these buildings together provide average accommodation for 3000 pilgrims a day. It could be inferred

that while 99.5 percent of the pilgrims staying over at Sannidhanam get a space of 2.5 sq. m per pilgrim in *virī* (including circulation area) or in available open areas and around 0.5 percent of the ‘preferred’ pilgrims gets a minimum area of 15 sq. m per pilgrim.

2.7.1.2 Commercial area

Most of the commercial establishments such as shops and hotels are located along the main pilgrim corridor in and around the Sanctum Sanctorum and Malikappuram. Around 67percent of the existing commercial establishments function in permanent structures and semi permanent structures.

2.7.1.3 Manufacturing area

For large scale manufacturing of *Prasadam* (namely, *Appam* and *Aravana Payasam*) a large-scale facility was developed on a BOT basis, in 1990’s just abutting the temple. The location of the Appam Aravana Complex and associated diesel tanks in close proximity of the temple has been identified as a threat to the safety of the pilgrims. More over, positioning the complex at this location has also resulted in conflict between pilgrim circulation and goods transportation. The temple authorities are considering a proposal for its relocation to a more secured location away from pilgrim circulation or gathering areas. However, the site for relocation should not compromise the safety aspects, religious conviction and traditional temple *vasthusasthra* practices.

2.7.1.4 Service/Amenity area

Here the service/amenity areas are those areas, which are presently designated for providing sanitary and comfort facilities for pilgrims. Most of the service facilities are located along the periphery at Sannidhanam. Services are randomly distributed all around the place, with no much consideration accorded for sitting.

2.7.1.5 Assembly area

Assembly areas at Sannidhanam are in the form of waiting shed, *nadapanthal*, queue complex, flyovers etc. Most of these facilities are located on the main pathway to the Temple and in and around the temple precinct.

2.7.1.6 Circulation area

Sannidhanam has a pedestrian circulation system consisting of elaborate network of pathways criss-crossing the whole area. About 10percent of the total area constitutes the circulation area. Most of the pathways in Sannidhanam area have concreted surfacing and at places, rubble stepping. A limited area towards the southern part of Sannidhanam allows tractor movement for transporting goods to Sannidhanam area.

2.7.1.7 Open area

It is very difficult to locate open spaces within the Sannidhanam. The only organized and well maintained open spaces are Bhasmakulam area and the Sabari garden. Lack of such open spaces also acts as a limiting factor for accommodating pilgrims for viewing the Divine light “*Makarajyothi*”.

Sannidhanam is full of incompatible land uses which do not go hand in hand with the environment or the intended function of the place, posing environment pollution, accident hazard, and disharmony with the surrounding environment. For example the manufacturing zone at Sannidhanam, located at heart of the area abutting the Shrine is

highly susceptible to fire hazard. This being the core where the pilgrims have to pass through for *darshan* poses high safety hazard. Such incompatible land uses have to be relocated in order to provide better and safe functional area at Sannidhanam.

2.7.2 Structural Characteristics of Built Fabric at Sannidhanam

The existing building structures in Sannidhanam can be grouped under 3 major heads namely; Permanent structures: Structures with brick wall and RCC roof Semi Permanent structures: Trussed structures with brick or other type of partitions/walls and asbestos roofing, and Temporary structures: Mainly tents, sheds, and structures built with temporary materials. About 51percent of the total buildings are permanent in nature, 22percent are semi permanent structures while 27percent are temporary structures.

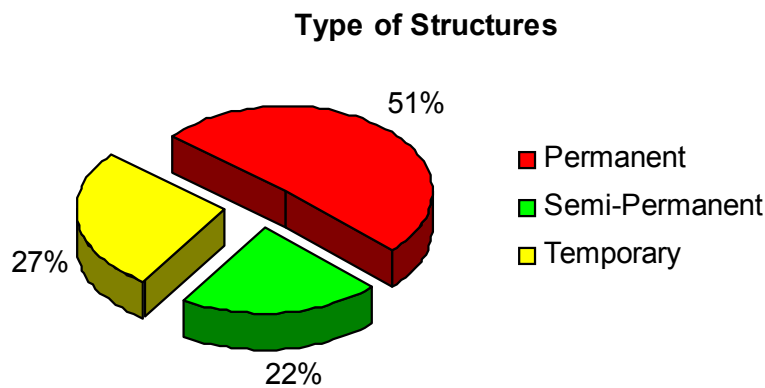
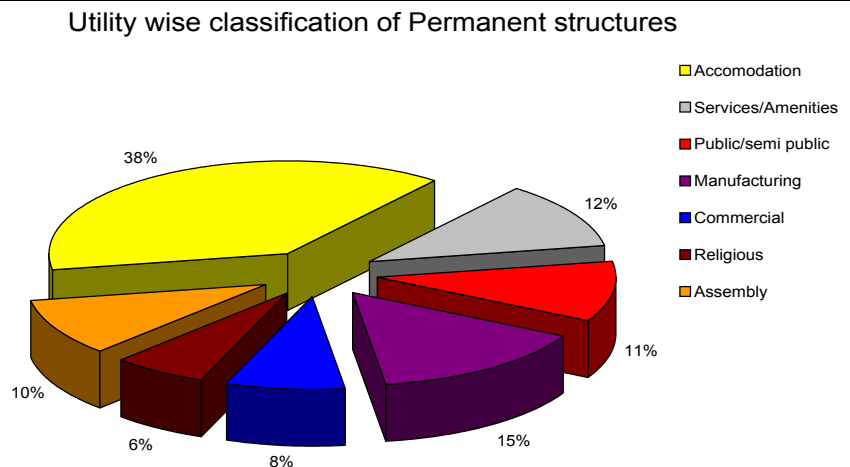


Figure 10: Typology of Structures at Sannidhanam

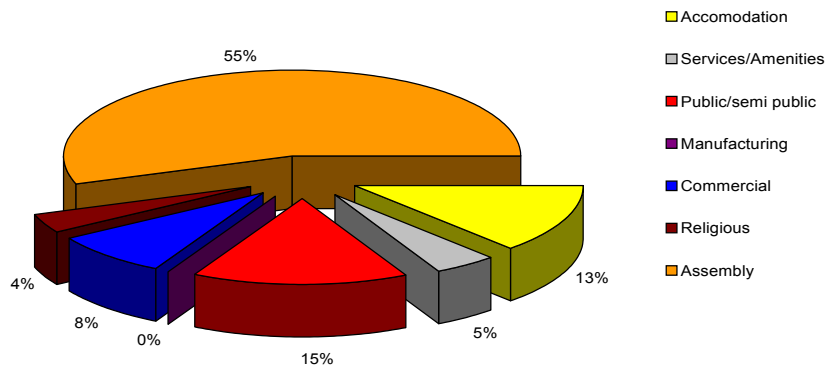
Utilization details

Of the total permanent structures available in Sannidhanam about 38 percent is towards accommodation, 15 percent towards manufacturing (Appam Aravana complex) 12 percent towards service, 11 percent towards public/semi public purpose, 10 percent towards assembly, 8 percent towards commercial and 6 percent towards religious requirements



Of the total semi-permanent structures available in Sannidhanam about 55 percent is towards assembly facilities, 15percent towards public/semi public facilities, 13percent towards accommodation facilities, 8percent towards commercial, 5 percent towards service facilities, and 4percent towards religious requirements

Utility wise Classification of Semi permanent structures



Of the total temporary structures available in Sannidhanam about 76 percent is towards accommodation facilities, 11percent towards commercial, 9percent towards service facilities, and 3percent towards public/semi public facilities

Utility wise classification -Temporary structures

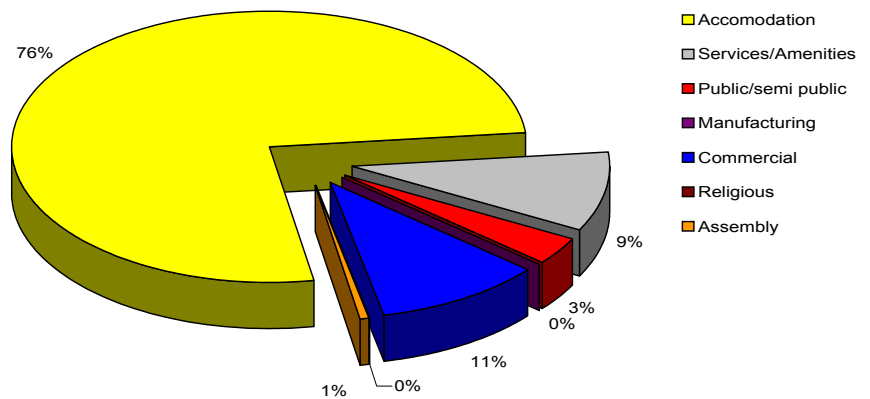


Figure 11: Classification according to Structure type and Utilization

It is also reported the area has witnessed tremors/earthquakes in the recent past. As explained in the landscape module of this master plan, this area is geographically weak and susceptible to tremors.

Structural classification of buildings under various landuses is depicted in the following figures.

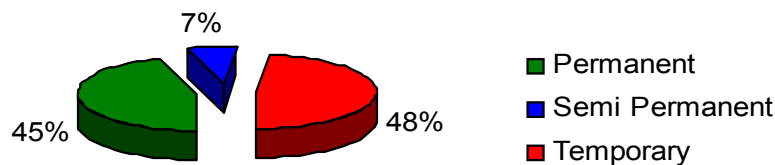


Figure 12: Structural Characteristics of Buildings used for Accommodation Purposes

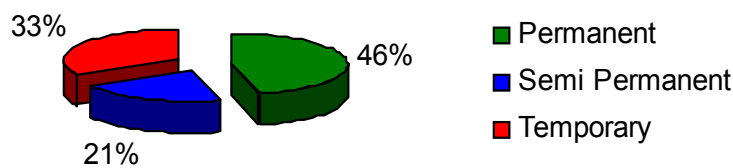


Figure 13: Structural Characteristics of Buildings used for Commercial Purposes

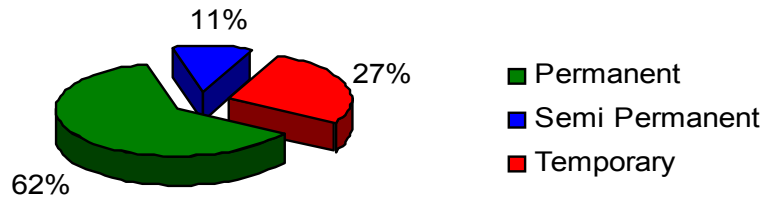


Figure 14: Structural Characteristics of Buildings used for Services

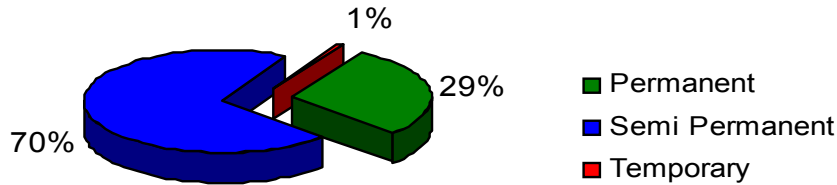


Figure 15: Structural Characteristics of Buildings used for Assembly Purposes

2.8 Evolutionary Characteristics of Built Fabric at Pampa

2.8.1 Growth Pattern of Pampa

Pampa is shaped by 3 different factors namely – vehicular accessibility, convergence of pilgrims from different routes and religious / ritualistic activities associated with the place. Pampa area development is linear in character that defines the importance of transportation routes and the main growth determinant namely, the linear alignment of the holy River. The Pampa area can be clearly divided into the 3 homogenous sections namely; Left bank or hill top side, Pampa Manalppuram or right hand river bank and the Cheriyanavattom side or Njonangar river side.

High intensity of activities is observed along the Pampa Manalppuram along with Thriveni, which is the venue for taking a holy dip in the scared river Pampa. Hence, most of the commercial activities are concentrated along this stretch. The Hilltop side is where the concentration of administrative and services related activities are observed while the Cheriyanavattom hosts pilgrim facilities catering to the pilgrims trekking down from Erumely.

Large scale constructions could be witnessed in the left bank side where many multi-storied structures catering to the administrative requirements, services and amenities (i.e. hospitals, power supply, fueling station, and canteen) are located. Most of the development here has taken place post 1980’s. The following figure depicts the development of Pampa area through the past four decades (after 1960’s)

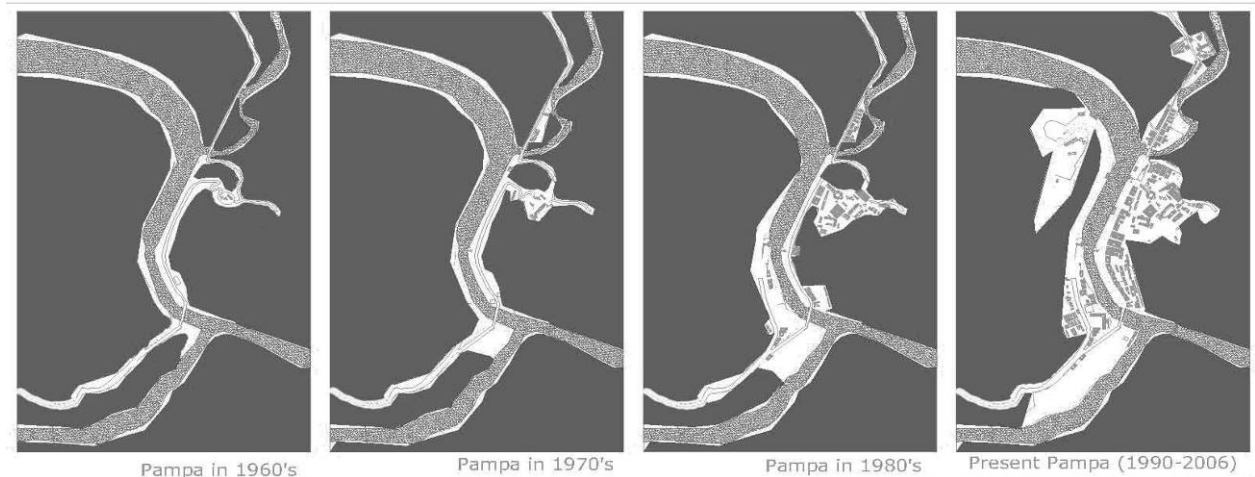


Figure 16: Growth of Pampa Thavalam



As it existed in 1950's and 60's ...

- No major construction
- Lush green vegetated area
- Only one hut like shed constructed of natural materials (wooden poles and coconut leaves and hey roofing) and wooden bridge across
- Only construction visible was the stepped ghats.
- Main activities here include dip in the holy River and other observances like *Pampa Sadya*, *Pampa Vilakku*



As it existed in 1970's ...

- Wooden bridge gave way to concrete bridge across Pampa at Thriveni – with bathing area formation all along the right hand bank
- Electric supply Pampa – electric poles and lighting in place
- Few more hut like structures came into existence
- The undergrowth and the tree cover reduced but had not depleted totally
- Main activity started becoming obscure while other activities like parking and commerce started flourishing



As it exists now ...

- New pedestrian bridge across Pampa
- Medium Rise - Maramath complex along with petrol pumps and police camp area came up along the left bank
- Hilltop parking and Thriveni parking ground were developed
- Devaswom and ABASS building came up along Pampa Manalppuram



- Strip lighting along the banks
- Large extent of temporary shops *viri* etc along Pampa Manalppuram side
- Sewage treatment plant and Electricity sub station came up in this area
- Space constraint for undertaking ritualistic observances, growing demand for parking area, high degree of waste accumulation

Figure 17: Pampa through Ages

2.8.2 Density of Development at Pampa

Due to development of newer and unplanned buildings along the Pampa River bank, in and around Ganapathy temple Complex and along the sides of access routes, the built density has gone up considerably. Available / useable vacant area is less than 10percent considering the physical characteristics of the terrain and the existing development pattern. It is observed that the development limits have extended into the area under forest jurisdiction. In order to contain the development sprawl so as to conserve the forest, it would become necessary to redevelop or restructure the settlement wherever feasible and to limit the extent of accommodation / stay at Pampa as the pollution increases with increasing duration of wait / stay at Pampa.

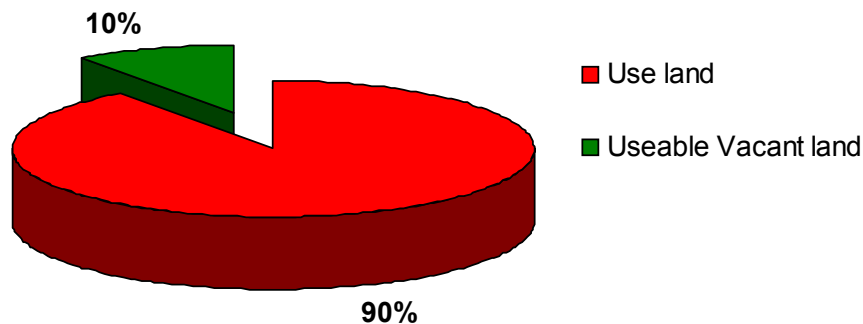


Figure 18: Usable Land v/s Total Available Vacant Land at Pampa

Due to high density of development and concentrated pilgrim activities in and around Pampa, Majority of the facilities and amenities here operate in unhygienic or crowded conditions. The increasing influx of pilgrims has overburdened the infrastructure available at Pampa. The existing ad-hoc development provides minimal scope for addition of new facilities without expanding its boundaries. But, expansion of boundaries would in turn have a deteriorating impact on the holy River and the forests around. It is observed that the area available for religious / ritualistic purposes is used for other landuses.

2.8.3 Functional Characteristics of Built Fabric at Pampa

Review of the topography reveals that the land profile becomes steeper as one moves away from the banks of the river. Development has occurred along the river side and in and around

the Ganapathy temple premises, which are the main foci / activity nodes. One of the important aspects with respect to Pampa is that the left side and the right side (temple side) lie in two different forest jurisdictions; the left bank area belonging to Ranni Forest division and right bank area in Periyar Tiger Reserve (PTR), though with less differentials ecologically.

Owing to rapid depletion of vegetation along the banks of the river and along the abutting hillocks, landslide and erosion are rampant in this area as exemplified by the many mishaps which have occurred in the recent past. This is an indicator of the extent of deforestation which is destroying the natural forest setting here and has its ramifications on the safety of the pilgrims who congregate here for various purposes. Considering these, it seems essential to formulate a detailed redevelopment plan for sustainable development of Pampa area.

2.8.4 Landuse at Pampa

Various landuses such as accommodation, services/amenities, assembly, circulation, public/semi-public, Religious, Mixed, and forest/open spaces occupy 8percent, 7percent, 3percent, 32percent, 12percent, 14percent, 4percent and 13percent of the available land respectively at Pampa. This is based on the Landuse survey and categorization exercise carried out at Pampa, which has a total developed area of about 50 acres. Land use maps for Pampa are attached as Maps 3 and 4.

Table 4: Land use Pattern at Pampa

S.No	Land use/Built space Utility	Zonal Area		Built up area	
		Sq.M	percent	Sq.M	percent
1	Accommodation	15554.87	7.55	4578.78	16.51
2	Services	15153.32	7.35	6204.54	22.37
3	Commercial	14515.91	7.04	9381.20	33.83
4	Circulation	66295.07	32.16		
5	Public semi Public	24078.45	11.68	3772.52	13.60
6	Assembly	5991.52	2.91	2085.33	7.52
7	Religious	28880.82	14.01	936.81	3.38
8	Mixed	8232.64	3.99	775.25	2.80
9	Open space	27416.07	13.30		
Developed area		206118.66	100.00	27734.45	100

Ref: Landuse Map attached for details

Built up area refers to plinth area of all existing buildings based on the detailed landuse and topographic survey maps.

Vehicular Access is limited up to Pampa Bridge beyond which the pilgrims have to walk / trek, across a wide stretch of paved pathways with numerous steps. There are two bridges at close intervals across Pampa River.

2.8.4.1 Accommodation Area

All major accommodation facilities which include both permanent and temporary structures (*Viri's*) are located near the River Pampa and Njonangar. Almost 95percent of temporary constructions are either commercial establishments or viri. The highest concentration of accommodation facilities/Viri is at Cheriyanavattom area. Facilities are unevenly distributed all around the place. This fragmentation of various landuses may be

one of the major causes for the stress that is felt on infrastructure in these areas and if this fragmentation of the landuses continues it would be very difficult to develop any effective service infrastructure here to the benefit of pilgrims.

Land Utilisation

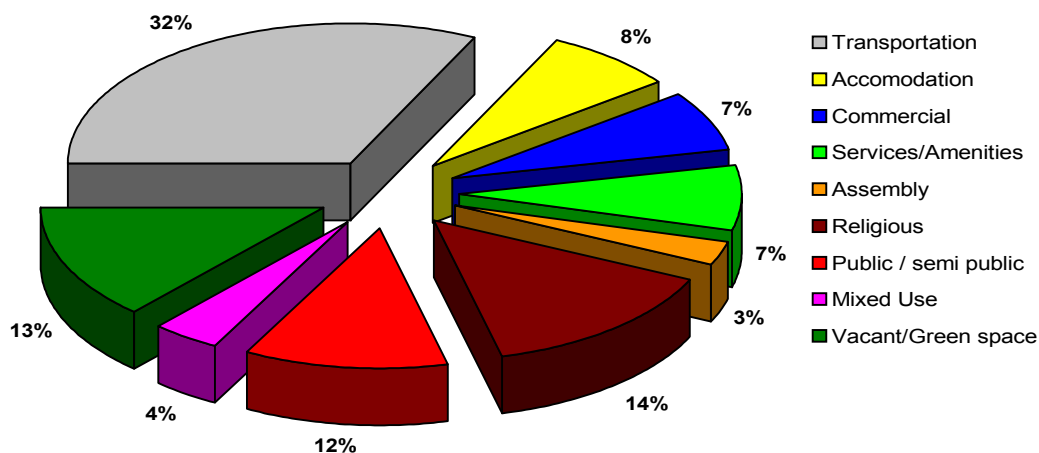


Figure 19: General Land Utilisation Pattern at Pampa

Many new permanent structures have come up in the vicinity of River Pampa in contrary to the traditional use of space here for religious observances. Thus replanning of the area will require demolition of such structures in the long run. More over mixed land use is found all over the place with little or no exception. During peak periods, when all available accommodation facilities are filled up, all available spaces are used by pilgrims to set up temporary structures spread there viri's.. Unplanned proliferation of such temporary structures so close to the river results in pilgrims using the river and its vicinity indiscriminately, ultimately resulting in extensive pollution of the river. As of today, about 35percent of the total accommodation facilities are housed in permanent structures (reserved for staff), whereas 57 percent is in temporary structures such as *Viri's* (available for pilgrims).

2.8.4.2 Commercial area

The commercial establishments consist of shops and hotels which are mostly located along Pampa Manalppuram and along the main access road on the left bank. Around 21percent of the existing commercial establishments function in permanent structures and semi permanent structures whereas majority of the commercial uses (about 79percent). are mostly housed in structures of temporary nature

Despite the temporary nature of these shops, their sizes are enormous and engulf most of the available area at Pampa. Also it is observed that they are not demolished after the season and remain in operation throughout the year.

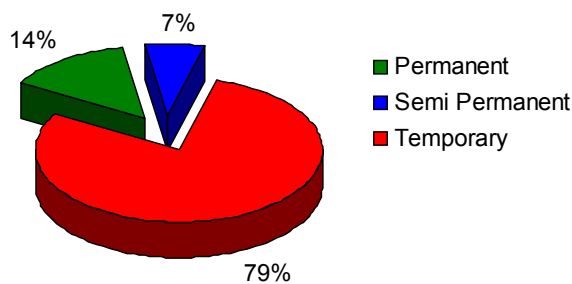


Figure 20: Commercial Building Characteristics Based on Structure Type.

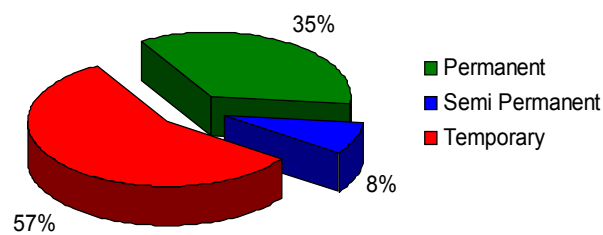


Figure 21: Accommodation Building Characteristics Based on Structure Type.

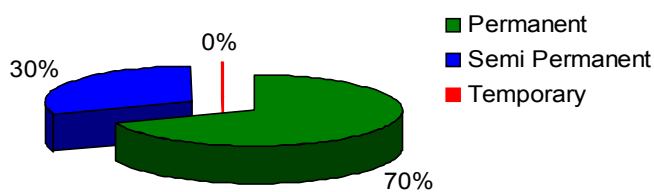


Figure 22: Public/semi public building characteristics Based on Structure Type.

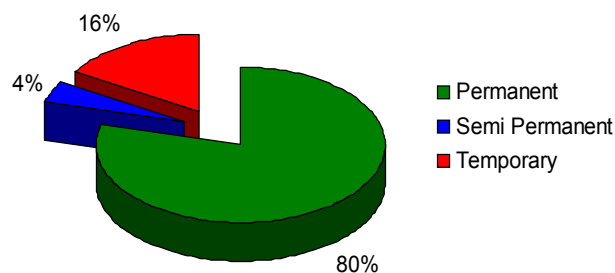


Figure 23: Service/Amenities Building Characteristics According To Structure Type.

2.8.4.3 Service/Amenity area

Service and amenity areas are generally screened by commercial areas, rendering them obscure to the pilgrims who are meant to be the ultimate users. Most of the services are located along the outer periphery of Pampa; towards Pampa Manalppuram and Cheriyanavattom side. Owing to the off-site sitting, most pilgrims find it convenient to use open areas near the facilities (such as rivers or forests) mostly for sanitation purposes. In addition, in case of higher demand and cost overheads for using the available services, they find it easier to move to the forests near the periphery.

2.8.4.4 Public/Semi public area

Public semi public areas at Pampa are mostly located along the right bank of river Pampa and are mostly permanent in nature.

2.8.4.5 Circulation area

Circulation in Pampa can neither be considered fully pedestrianised nor vehicular. Right bank of the river including hilltop parking area and Thriveni area shows higher density of vehicular movement. Vehicular – Pedestrian conflicts makes the movement difficult here during the season. Though the Manalppuram area is mostly pedestrianised, service and staff vehicles are allowed till Pampa Ganapathy Temple and tractors for goods transport are allowed right across till Sannidhanam. Another conflict situation created is due to the movement of Donkeys which are used for carrying goods, porters / head load workers who carry goods and dholis to transport ailing / aged pilgrims up to Sannidhanam. About 10percent of the total area constitutes the circulation area. Most of the pathways in Pampa have concreted or asphalt surfacing and at places there is rubble stepping.

2.8.4.6 Open area

A narrow stretch of open area along the bank of River Pampa is where maximum pilgrim activity is observed. Apart from this, Thriveni also has some extent of open space mainly utilized for parking purpose.

At Pampa, spread of various landuses is incompatible, inconsiderate to the environmental elements and haphazardly located. For example toilet blocks, septic tanks, and sewage treatment plant are at close proximity to surface water source i.e Pampa river which is the major source of networked water supply in the region, and is used by pilgrims as the source for bathing; thus posing hygiene and health issues. Similarly mixed uses such as hotels with fuel storage are clubbed with viri area risking the chances of fire.

2.8.5 Structural Characteristics of Built Fabric at Pampa

The buildings in Pampa also can be broadly classified into permanent, semi permanent and temporary. About 39percent of the existing buildings are permanent in nature, 11percent are semi permanent structures while 50percent are temporary structures.

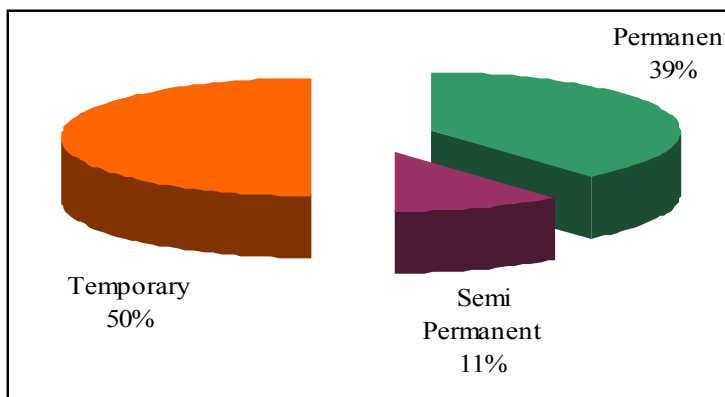
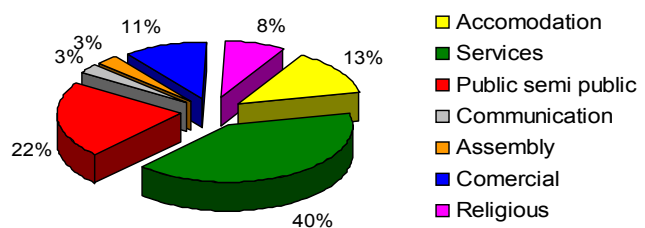


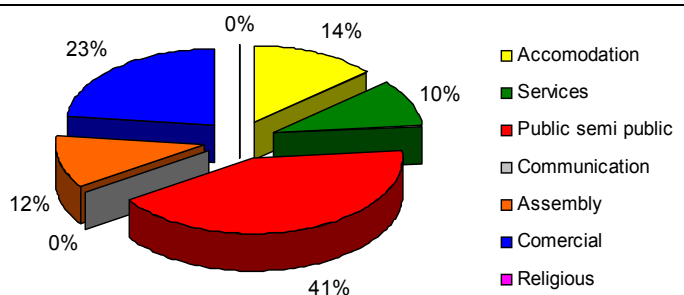
Figure 24: Built area Characterization According to type of Construction

Utilization details

Of the total permanent structures available in Pampa about 40 percent is towards service puposes, 22 percent towards Public/semi public activities, 13 percent toward accommodation, 11 percent towards Commercial, 8 percent towards religious structures, 3 percent towards communication and 3 percent towards assembly requirements



Of the total semi-permanent structures available in Pampa, about 41 percent is towards Public/semi public facilities mainly offices, 23 percent towards commercial facilities, 14 percent towards accommodation facilities, 12 percent towards assembly and 10 percent towards service facilities



Of the total temporary structures available in Pampa, about 55 percent is towards commercial facilities, 20 percent towards accommodation, 11 percent towards assembly, and 8 percent towards service facilities

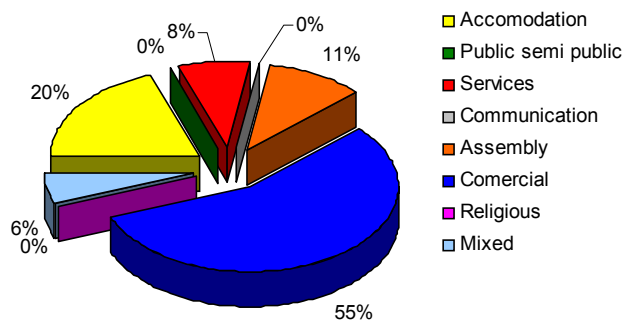


Figure 25: Classification of Landuses at Pampa according to Structure type and Utilization

It is also reported that some buildings have been partially destroyed during the tremors/earthquakes which have occurred in the recent past. As explained in the landscape module of this master plan this area is geographically weak and susceptible to tremors.

2.8.6 Analysis of the Built Fabric at Sabarimala

2.8.6.1 Sannidhanam

- Considerable land modification has taken place in around 75 percent of the total area as the topography is undulating here. Existing Construction practices never recognized the need to build around the natural features, without much modification to the features.
- Construction activities were mostly targeted at building guest houses / donor houses to provide accommodation for pilgrims. However, *viris* still continue as the largest available type of accommodation providing facilities for 99.5 percent of the pilgrims while only 0.5 percent of the pilgrims being provided accommodation in permanent built up structures.
- Almost 75 percent of the total development at Sannidhanam is of permanent nature
- Only 33 percent of the land at Sannidhanam is vacant (towards Pandithavalam and west of the temple complex) but are relatively sloping grounds where current construction practices would call for large scale land modifications.
- Building activities here do not follow any norm, standards or guidelines. Neither is it mandatory to follow any regulations nor to get approval for construction (except permission to build in forest area) from even the local body.
- Incompatible activity mixing is rampant which adds additional dimension of conflicts to the already existing problems here
- There exist no virtual boundary for development – the sprawl along irregular edges is gradually engulfing more of abutting forests which has resulted in gradual deterioration of forest environ in addition to fragmenting the forest region.
- Percentage of green / open spaces within the developed areas is alarmingly low

2.8.6.2 Pampa

- Mixed circulation system in Pampa results in pedestrian – vehicle, pedestrian – pedestrian and vehicle – vehicle conflicts. (Passenger transport, goods transport and service vehicles).

- There is no boundary for development – the sprawl along irregular edges is gradually engulfing more of abutting forest which has resulted in gradual deterioration of the forest environ in addition to fragmenting the forest region.
- Dense built fabric here has virtually diminished the area otherwise required for religious observances.
- Greenery especially along the river banks has totally vanished.
- Ad-hoc manner of development
- Very little vacant land (other than the Manalppuram along the banks of river) is available for any new initiative.
- Pampa is more of a transit area wherein people spend a maximum of 2 to 3 hours for various religious observances before proceeding to Sannidhanam.

3. DESCRIPTION OF THE 'BUILDING BLOCKS' OF SABARIMALA

A description of the main building blocks of Sabarimala is provided in this section:

These include:

- Temple complex and associated religious rituals and activities
- Base Camps
- Pathways/Trek routes
- Forest Cover

3.1 Core Area: The Temple

The temple is built on a hillock about 40 feet high. The Ayyappa temple commands a lofty view of the mountains and valleys with lush tropical forests all around.

The history of origin of the Sabarimala temple is shrouded in few legends as in the case of any other temple. It had been discussed that the Sabarimala temple does not possess any archeological, iconographical, architectural or epigraphical evidence to determine the period of its sacred origin. There is a mention about the temple in few versions of *Keralolpatti*, the traditional chronicle of the Brahmins. The chronicle mentions *Parasurama* to have built several Temples including the one at Sabarimala. But from the Pandalam Royal family traditions and archived records it can be recognized that the temple of Sabarimala which was a small granite structure, was sanctified in late 18th century⁴.

The ancient temple has been rebuilt after a fire in mid1950's. The newly built temple consisted of a sanctum sanctorum with a copper-plated roof and floor, golden finials at the top, two *mandapams*, the *belikalpura* which houses the altar, and the flag-staff. Replacing the earlier stone image of the deity is a beautiful idol of *Ayyappa* in *Panchaloha*, (an alloy of five metals), about one and a half feet tall. The existing structure of the sanctum sanctorum approached from the east through the *Pathinettampaddi* (the 18 holy steps) and from the west through the rear staircase.

The Lord Ayyappa Temple is a simple structure just like traditional Hindu temples in Kerala which are usually simple structures made of wood, brick and laterite stone, elevated about 4.2 m above the immediate surrounding without accessories like *prakara-s*, *parivaradevata-s* like *saptamatrika-s*, *bhairava*, *kshetrapala* and so on that the text of temple architecture (*Vastuvidya*) prescribes. However, the temple today has a golden flag staff and gold plated holy steps. The main sanctum hosting the idol of *Lord Ayyappa - Sreekovil* - is invariably a single storied building of a rectilinear plan. Walls and roofs of the *Sreekovil* are covered with intricate, beautifully embossed golden plates. There are two small shrines dedicated to *Nagaraja* and *Ganapathy* respectively, but without much textual sanctity for the positioning and placing. The holy eighteen steps (*Pathinettaampadi*) is a special feature of the temple. The temple with its courtyard is riveted with granite slabs into an elevated platform approached through the *Pathinettaampadi* in the east and western flights in the rear. Often, from afar, the only sign that marks the presence of the temple is a tall, ceremonial flag-mast. The shrine of *Valia Kadutha swamy* is on the left side and *Karuppa Swami - Karuppayi*

⁴ Gurukkal, Rajan (2000) Enclave Management Study, Periyar Tiger Reserve

Amma on right and near the base of *Pathinettaampadi* and the shrine of *Vavar Swami* is a bit away, facing the *Pathinettaampadi*.

The Sanctum has a granite base with walls of laterite stone masonry covered with lime plaster. The inner framework is of wood/timber. This timber framework supports a pyramidal roof covered with copper tiles and gold plated covering. This sloping roof has been devised so as to cope up with the almost year-round torrential rains that are a hallmark of Kerala's climate.

3.2 Immediate Vicinity Areas (Pampa, Nilakkal and Trek Routes)

3.2.1 Pampa

Pampa is the most important holy spot on the way to Sannidhanam. Road transport facilities are available only up to Pampa-Thriveni on the southern bank of Pampa River. Beyond this point all pilgrims have to trek up the hill to reach Sannidhanam. Thus it also forms the main halting point on the way to Sabarimala.

The holy Pampa River formed by the confluence of five smaller rivers, descends from the Sabarimala and meets Kakki River at Thriveni Sangamam - the meeting point or point of confluence of three rivers, which shows distinct characteristics of socio religious cultural ethos. It is believed that Pampa water purifies one from the curse and the evil and hence most of the pilgrims take a dip here before proceeding to Sannidhanam. Thus Pampa becomes the second main activity zone in Sabarimala other than Sannidhanam. Almost 80percent to 90percent pilgrims coming to Sabarimala pass through this place. There are two bridges across the river at Thriveni, one is a *pucca* concrete footbridge and the other is a motorable bridge. Traffic through the latter bridge is not permitted during festival seasons.

A description of various zones of Pampa is provided here:

Thriveni Sangamam – the area is located on the right side as one approach Pampa through the road. This place is specifically designated for ritualistic activities like "*Pitru tarpanam*" (offering to departed souls of forefathers) and parking. Only temporary shanty construction specifically for organizing the rituals is seen along the banks in this area and rest of the area is allotted for parking. This area is also a major location where people go in for open defecation. This is mainly due to non availability of good toilet facilities in its vicinity. Due to this, the area including the river gets highly polluted and is filled with unpleasant odour. This being the area at the entrance to Pampa and where rituals take place; renders an unpleasant image in the mind of the visitor.

Pampa Manalppuram- This is one of the most developed areas in Pampa. This consists of a long stretch of about 18 acres of land between River Pampa, Njonangar and the *Ganapathy* temple. This area is approached by two bridges across Thriveni. It is a well developed area with bathing ghats all along the banks of river Pampa and long stretch of shops facing Pampa which cater to various requirements of the pilgrims. There are lots of viri type accommodations along with toilet facility available at this place. But the main religious activities happen along the banks of the river and the *Maha Ganapathy* temple, which is located on the upper side of the north bank of the river. Small temples of *Sree Rama*, *Sree Anjaneya* and Goddess *Parvathy* are also situated in this temple premises. There is a big

Nadapanthal where the pilgrims take rest after worshipping these shrines; adjacent to the shrines which almost mask the whole area and the temple complex though it is located at a higher ground. To reach Pampa Maha Ganapathy Temple from Manalppuram, pilgrims have to climb around 102 steps. Else, they can travel up the road which runs along Njonangar to reach the temple premise. Breaking coconuts is the main ritual here. As a whole this area resembles a shanty settlement with high density of poorly constructed and temporary/semi permanent structures scattered all around with no proper planning.

Cheriyavattom - This area lies towards the western end of Pampa in between River Njonangar and River Pampa. Facilities are provided in this area by EDCs managed by the KFD, with the exception of the sewage treatment plant area. This place is one of the main locality through which the pilgrims trekking down from Erumely enters Pampa. Here, apart from the sewage treatment plant all construction is of temporary nature. The construction here does not conform to any known standards and is poorly constructed and managed. Sufficient toilets are not provided, thus forcing the pilgrims to resort to open defecation along the banks of Njonangar River, which gets highly polluted in turn.

The Hill top and the Maramath Complex - This area forms the main administrative core of Pampa. Many of the main service buildings are located in this area. Three hospitals are operational usually during the festival period apart from an information center. Fuel station, BSNL station, police camp office and TDB offices form the major land use in this area, which more or less remain functional throughout the year. At hilltop there exist parking spaces in four levels and electrical substation. Apart from this few shops along the main access road to hill top cater mainly to the requirements of the drivers and other support staff of the vehicles transporting the pilgrims.

Religious Activities: There are 5 main religious activities associated with Pampa, which transforms it into a hub of intense activity. These include those carried out almost every day during the peak season and those, which occur on a large scale on one or two days of importance. Those in the earlier category are the mandatory holy dip in the River, and *pithrutharpanam* while the latter category rituals include the Pampa *sadhya* (feast), Pampa *Vilakku* (which happens during *Makaravilakku* season) and the *Araattu Maholsavam* (during the Sabarimala festival).

Pampa Sadya (Feast): Pilgrim groups prepare feast with the provisions taken from their *Irumudi*. Thousand of pilgrims are fed at Pampa.

Pampa Vilakku: Pilgrims believe that Lord Ayyappan will be present at the banks of Pampa during sunset and they decorate their viri sheds / cottages with lights and candles. Small floats decorated with lights called *Pampa Vilakku* are set on sail in the Pampa River.

Araattu Maholsavam: The *Siveli vighram* (a smaller replica of the idol at the Sanctum Sanctorum) is ceremoniously brought in royal procession from Sannidhanam to Pampa. At the *Aarattu Kadavu* at Pampa, the idol is given an *abhishekam* and a bath by immersion in River Pampa by the head priest. Enroute Pampa and back, the procession is enthusiastically welcomed at many points including the Ganapathy temple at Pampa where special poojas are conducted. *Araattu* signifies the end of the temple festival or *Uthsavam*.

3.2.2 Nilakkal

Currently, the Sabarimala pilgrim's camp at Nilakkal rubber plantation area (called *Nilakkal Thavalam*) during the peak pilgrim season, utilise the facilities set up here temporarily. The area is now being transferred to TDB following the recommendations in the Report on the "Outline of the Master Plan for Sabarimala". Existing topography is undulating extending over 110ha. In addition to rubber plantation, the site houses two temples – *Mahadeva* Temple and *Devi* Temple, staff quarters and canteen ponds, toilets, parking areas and an overhead tank. Access to the site is from the main road between Pathanamthitta and Pampa, through an impressive gateway. There is a preliminary internal winding road network through the rubber plantation, which is being supplemented with an additional entry to the site.

Considering the concentration of pilgrims at Pampa and Sannidhanam, where available infrastructure and possibility to develop further facilities in a large scale are limited, it has been proposed in the 'Outline of the Master Plan for Sabarimala' to develop base camps and transit camps with adequate facilities for Sabarimala pilgrims. As a majority of the pilgrims use the vehicular route via Perunad and Nilakkal to Pampa, it has been proposed that a major base camp be developed at Nilakkal. In line with this many development works were initiated here which are presently in different levels of completion. The works undertaken include provision of pilgrim facilities including *Nadapanthal* and toilets, setting up of water supply and sewage network and improving the access and parking area.

3.2.3 Forest Trek routes

There are many major and minor routes of circulation, which pilgrims use to move around/reach Sabarimala. The major routes are those, which lead the pilgrim towards their ultimate destination Sannidhanam. To reach Sannidhanam the pilgrims invariably have to trek through forest pathways. The distance and the pathways vary according to pilgrim's choice. The minor routes are those network of pathways found in Sannidhanam which pilgrims and service personnel use to approach the buildings here. The main routes, including trek paths and roads that connect Sabarimala with the outside world are listed below.

- a) Main trek paths
 - Pampa – Sannidhanam (around 3 km)
 - Kozhikanam (Vallakkadavu) – Uppupara (Pulmedu) – Sannidhanam (Kozhikanam to Uppupara 10 km (Koop road exits – only jeeps and Buses ply here) and Uppupara to Sannidhanam (6km Trek Path))
 - Erumeli-Peruthodu River-Kalaketty- Azhutha River – Kallidamkunnu – Azhuthamedu – Inchappara kotta –Kariyilamthodu – Karimala – Pampa –Sannidhanam (around 40 kms trek path from Irumpoonnikkara)
 - Vandiperiyar – Mount estate – Sathram (Motorable road exits up to Sathram – 6Km) – Uppupara (Uppupara-Sathram 4km) – Sannidhanam (Uppupara-Sannidhanam 6Km)
- b) Motorable routes
 - Plappally- Nilakkal –Pampa (any vehicle can ply here) approx 20km
 - Pampa to Sannidhanam (Swamy Ayyappan Road and Chandranandan Road) tractor route which is almost parallel to the trek – path and intersects with trek path at Marakkootam) 4.5Km
 - Vallakkadavu - 4th Mile - Uppupara (16.5km - only jeeps and Bus ply here)
 - Vandiperiyar – Mount estate – Sathram (Motorable road exits up to Sathram - 6Km)

The trek route, Tractor route, Koop Road and the arterial roads connecting Pampa – Sannidhanam form a complex but unique circulation system at Sabarimala, which differentiate this place from any of the other religious location. The Plappally – Chalakkayam- Pampa road plays a key role in the total circulation system of Sabarimala, as it is the only motorable road leading to Pampa. The only other alternative way to reach Sabarimala is to trek down from Erumely (around 40 km) or from Uppupara (around 6km) or Sathram (about 12km). Vehicular access to Pampa is open throughout the year, but the vehicular access (only jeeps and buses) from Vallakadavu to Uppupara is a Forest Koop Road which is opened only during the peak pilgrim season. Pilgrims arriving at Pampa have to trek up the hill for a distance of around 3km to reach Sannidhanam along the dense forest.

3.1.1.1 Major Routes: Erumely - Pampa Route

General description: Till about 1980's the pilgrims taking to the forest route used to step directly into the forest immediately after Erumely, but now the pilgrims have to walk at least 8 km through public road before entering the forest at Irumpoonnikkara. At about 4 km from Erumely lies Peruthodu considered a sacred location where in pilgrims throw puffed rice "cone" into the water as an offering. This location was once considered the boundary that separate inhabited land from the forest but now village settlement extents from here up to Irumpoonnikkara, 4 km eastwards.

At Irumpoonnikkara there are three temples, dedicated to lord *Shiva*. *Sri Subrahmanya* and goddess *Balabhadra devi*. Pilgrims, after worshiping here enter the dense forest area. After a 3kms walk crossing many gentle forest streams, reach Arasumudikkotta, where there exists a small shrine devoted to the Guardian deities of forest. From here the pilgrims walk along the side of a river called Paarathode and after climbing few hill slopes and forest areas reach a place called Kalaketti, a sacred spot with the legendary temple of lord *Shiva*. This area also forms the first base camp settlement for pilgrims where they take rest and refresh themselves.

About 2 km from Kalaketti, is Azhutha, a place along the banks of the river known by the same name. This area forms the second halting place for the pilgrims. From Kalaketti to Azhutha there is a tarred road instead of rugged forest path. The river Azhutha is a tributary of river Pampa. Many of the pilgrims camp at this place during night. Here, basic facilities are provided by EDCs. At Azhutha the pilgrims have to wade through water and cross the river. As a ritual, pilgrims pick up a stone from river Azhutha when they cross the river and reserve it for throwing at Kallidumkunnu, still further ahead along the trek path.

From Azhutha to reach Pampa about 30km of dense forests and two mountain peaks, Inchappara and Karimala have to be covered. The pilgrim climbs two mountain slopes to reach these peaks. Another climb on the way to Sabarimala is the slope of the Neelimala peak, which is beyond the river Pampa.

Pilgrims have to climb about 3km along mountain side called Azhuthamedu, which culminates at Kallidumkunnu. Walking a short distance from Kallidumkunnu over level ground, pilgrims reach Inchappara, where there is a temple for the Guardian deity Sri Inchappara Mooppan. This place also forms a resting and refreshment area for the pilgrims. From here they have to climb down a steep mountain slope that ends in a valley

called Mukkuzhi, another resting place. At Mukkuzhi there is a temple of Sri Ganesha and Divine Mother.

From Mukkuzhi pilgrims have to trek about 11 km through thick foot-hill forest to reach the lofty mountain, Karimala. On the way there are few places for temporary halt with refreshments organized by EDCs. From the peak of Karimala, pilgrims eventually trek down to reach the banks of the stream Kariyilamthodu in the valley of the mountain Karimala. The pilgrims have to cross over this stream and walk next 3 km through the dense forests in the valley of Karimala from where they start their hike through one of the most arduous slopes in seven stages to reach the mountain top. At Karimala there are places for the worship of the Deities Vana Durga, Karimalanaathan and Kochu Kadutha, who was one of the Chieftains of Ayyappa. There are two ancient wells atop Karimala which are the major sources of drinking water for pilgrims. This location also forms a temporary halting station for pilgrims who refresh themselves and gather strength to continue their journey. From Karimala starts the adventurous climb down through very narrow and zigzag paths flanked by dense forests. At the end of the descent pilgrims step into Valiyanavattom; a valley of plain grass land interspersed with shrubs on the banks of Pampa. This area forms one of the biggest base camps where pilgrims take rest before proceeding to Pampa through Cheriyanavattom which is just 2 km away and ultimately to Sannidhanam.

Profile of the Trek route:

Photographs in Figure 26 present the actual nature of trek pathways.

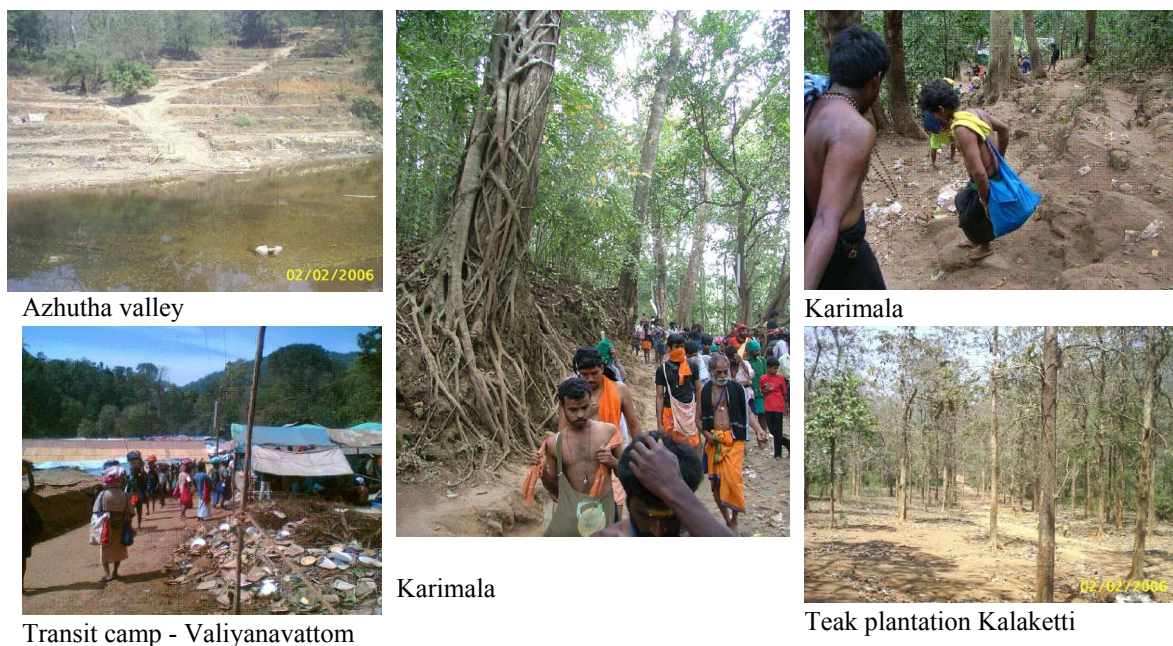


Figure 26: Glimpses of the Trekking Routes

The trek route passes through different places of different characteristics, which include plantation area, forest settlement areas and thick vegetated forest areas. The ground profile ranges from plain to moderately sloped area to very steep mountainous area. The trek path can be classified into three main land profiles namely – plain/gentle sloped land, rugged - undulating and steep -rugged land. Upon detailed topographical evaluation

it is seen that a total of about 40percent of the trek route is along plane gentle sloped area, 30percent through rugged and undulating area and about 30percent through steep and rugged area. Average width of the trek route varies from 2m to 5m at places.

3.1.1.2 Pampa to Sannidhanam Trek Route

From Pampa temple premises, foot of the steep Neelimala hills is at a distance of about 200 meters towards the western direction of the temple. There are two routes from here to climb Neelimala. One is the old conventional route of climbing the hills through the straight and very steep path enroute places of religious importance such as Appachimedu, Sabaripeedom and Sharamkuthy and the other is a pathway through the slopes of Neelimala with lesser gradient but about one more kilometer in length known as *Swami Ayyappan Road* constructed by Sri *Subramaniam Trust*. Both these roads meet at Marakkoottam (beyond *Sabaripeedom* in the first route). There after the road bifurcates; the one through Sharamkuthy and the other through the lower slopes of Sharamkuthy hills (*Chandranandan Road*) and meets again near the *Nadapanthal* at Sannidhanam.

During peak season the pilgrims are allowed to proceed to Sabarimala temple through Sharamkuthy road and return through the Chandranandan Road. A subway has been recently constructed at the entry point at Sannidhanam to prevent stampede and to facilitate smooth passage of pilgrims.

Traditional route: Over the course of time, the character of this trek path has been changed immensely. The stretch up to Marakkoottam is almost fully paved with concrete. More over the vegetation density along the stretch has reduced considerably from the condition when no light used to penetrate through the thick tree canopy as it exists along the traditional route from Erumely to Pampa. As of now almost 80percent of the trek path up to Marakkoottam and about 40percent of trek path from Marakkoottam to Sannidhanam is without any significant natural shade, which makes the journey of the pilgrims miserable and tiresome.

More over during the day time the concrete paving becomes so hot, that it becomes impossible to walk over it barefoot. There are numerous shops, hotels and halting/resting points lined up all along the trek path whether or not the facility is actually required by pilgrims all along. Parts of the route are provided with barricades / handrails.

Swami Ayyappan and Chandranandan Road – These roads came up in the 1960's, which opened out the vehicular traffic mainly, the tractor service up to Sannidhanam from Pampa. During peak pilgrim season, vehicular traffic is disallowed and this route becomes the return path for most of the pilgrims. (Refer Map 5: Existing land use detail along Traditional Trek Route)

3.2.4 Forest

Periyar Tiger Reserve: Western Ghats in Kerala is considered as a mega Biodiversity zone as it shelters unique and diverse fauna and flora. Several Wild Life Sanctuaries and two National Parks have been created in the Western Ghats area primarily to protect these natural resources. Periyar Tiger Reserve is one among them, which is a high priority protected area. The uniqueness of Periyar Tiger Reserve is that it has a 26 sq.km man-made lake (Periyar

Lake), the Periyar stream and Pampa and Kakki Rivers within its limits. Parts of Pampa, whole of Sannidhanam and Uppupara are located deep within this reserve forest.

Ranni Reserve Forest: This is a tropical wet Evergreen Forest with lofty, very dense / multilayered with evergreens, 40m or more high, with a large number of species, numerous epiphytes and few climbers. Parts of Pampa and Nilakkal area are located in Ranni forest. Many sections of the trek route from Erumely also pass through this division. Left bank of Pampa is located in the Ranni forest division while the right bank comes under the PTR.

4. DETERMINANTS OF DEVELOPMENT CHARACTER

In this chapter, elements which mostly determine the character and identity to Sabarimala and associated areas have been described. These include street pattern, landmarks, nodes, views and gateways

4.1 Street Pattern

4.1.1 Street Pattern at Sannidhanam

Sannidhanam has no vehicular movement within its domain. Streets are not well developed here but are formed by pilgrim pathways and many of the elements generally seen constituting a street are missing here.

Streets in Sannidhanam in general connect the pilgrim domain with the religious domain and also link different parts of its environs. These linkages support socio-cultural and religious interactions and exchange and all the vital functions in this area. Street design contributes significantly to the quality and character of a community since appropriately designed streets create safe, quiet and healthy environments.

Presently, Sannidhanam lacks a well-developed network of design streets, as till date development was carried out in an ad-hoc manner wherein the maximum preference was given to adding on facilities which have mainly come up to cater to the 'comfortable stay' of few pilgrims, while majority is left with bare minimum or no facilities. The present system also describes the landform which is quite undulating and as circulation was mainly pedestrian oriented much emphasis was not given for developing an elaborate and better oriented street network at Sannidhanam. The infrastructural efficiencies for effectively catering to pilgrim requirements and circulation within Sannidhanam, along with aesthetics have not been well conceived.

This generally translates into a battle between conventional suburban loops and cul-de-sacs, and traditional grid models but as a whole the pattern reflects a distorted organic pattern in nature. The irregular formation of street system also reflected the irregular plot formation, which lacks efficiency.

The goal of this study is to suggest street patterns that balance efficiency and quality, and reconcile functionality and aesthetics. This requires identification of the positive attributes of existing development and utilizing existing facilities and infrastructure and building upon it to the best of the satisfaction of pilgrims who are "the primary users and the main stakeholders".

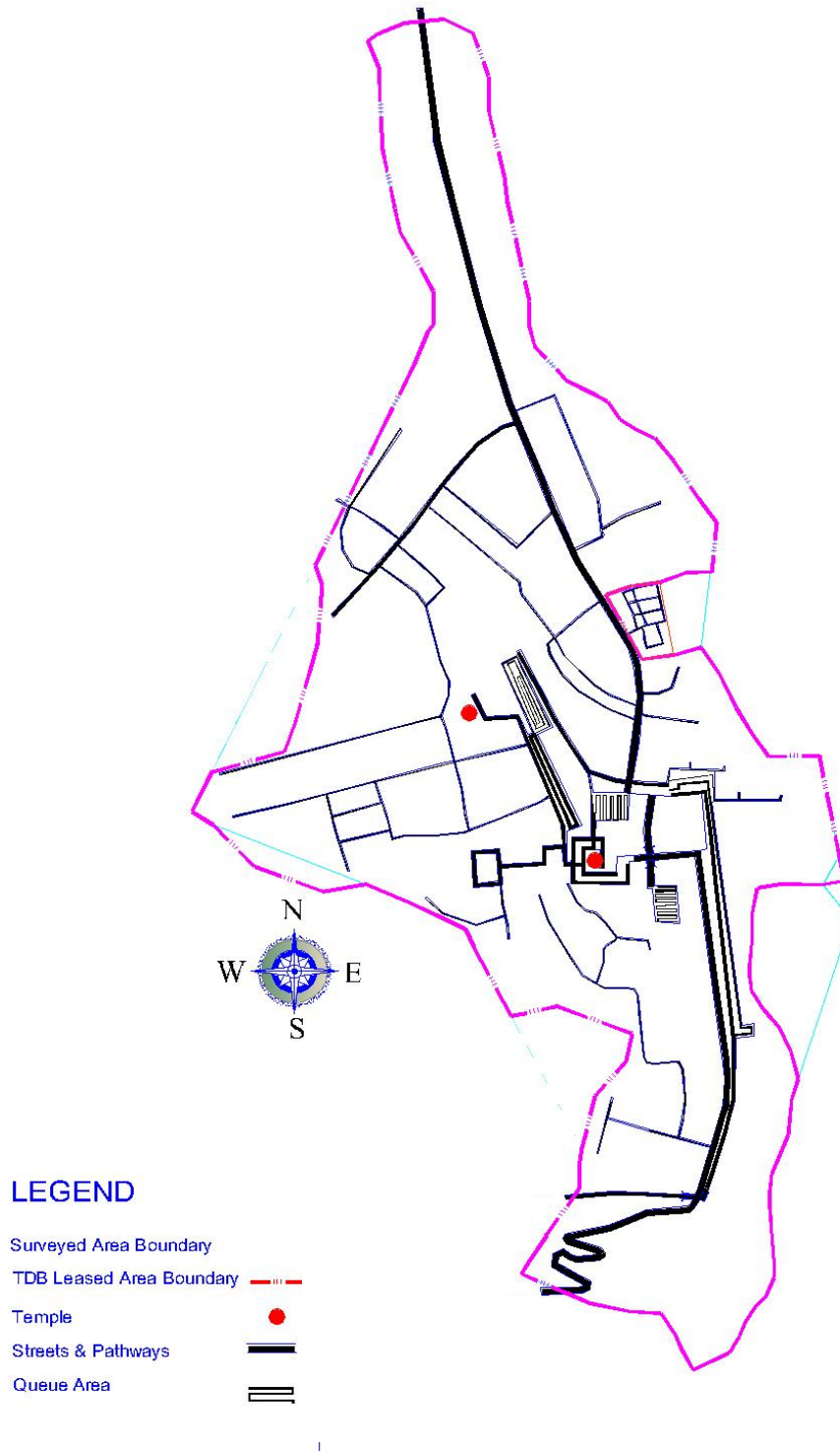


Figure 27: Street Pattern at Sannidhanam

Street quality: The perceived quality of a street depends on both physical and operational attributes, some of which are incidental, while others are designed. Street life, visual complexity, social status and intensity of use are incidental attributes dependent on culture and history. On the other hand, safety, security, comfort, and a sense of enclosure are functions of design. In addition, physical attributes, whether designed or incidental, may be

reinforced or undermined by operational attributes such as the level of maintenance and cleanliness. Taken as a whole, these attributes produce a memorable image and a pleasurable feeling in the user, expressed as sociability, walkability, and delight to the pedestrian.

The sociability of a street is critical to its quality in Sannidhanam. Informal contacts that develop into social-cultural networks are at the root of feelings of belonging and security, which are prime factors in pilgrim satisfaction. Street activity cannot be designed but it can be encouraged or inhibited by certain street characteristics.

Perception survey of pilgrims mentions about poor walkability at Sannidhanam. The amenities in Sannidhanam are generally beyond the five-minute walking distance desired by Pilgrims. Walkability implies comfortable access to amenities such as viri's, comfort stations, temple premises, retail stores and place of service. The presence of these amenities can be affected by a street pattern but clearly not determined solely by this. However, as it exists in Sannidhanam, discontinuous, indirect and confusing street patterns of loops and cul-de-sac compromise accessibility. In addition, collector and arterial streets are inhospitable and unsafe because of high pilgrim traffic volume, thus discouraging and hindering general movement. A new subdivision type that adopts a combination of loop, cul-de-sac and grid pattern and would create clearer and more direct pedestrian routes as suited for various usability levels need to be put in place here. Walkability demands both a conducive street pattern and, equally important, a proximate arrangement of land uses. However, it essential that basic character of street network should be maintained by planning out elements (such as steps, central trees, avoiding straight long streets etc) which discourage any vehicular movement immediately around the sanctum sanctorum area, except areas to be served with specialized waste carrying vehicles which are utmost necessary to tug away the waste containers which would be required to collect the solid wastes here.

As of now there exists no green space within the Sannidhanam boundaries. Only few trees in a very scattered formation are located here. To compensate this and to provide shade to the pilgrims waiting in queues the authorities have built covered pathways using 'green house net' and a covered /floored *Nadapanthal* housing other activities as well which have taken away the charm of the trek. View of the nature setting is always a source of delight and also creates a sense of identity of the place. Green spaces have been found to have socio-cultural and psychological benefits that explain the strong pilgrim preference and advocacy for naturally endowed sites especially in Sannidhanam. Green space provides visual relief and opportunity for relaxation, becomes a place for casual contacts and forms a haven for conducting religious rituals.

4.1.2 Street Pattern at Pampa

Pampa has limited vehicular movement within its domain, mostly along its main corridor during the pilgrim seasons where conflicts are common. Though the vehicular access up to Ganapathy temple premise is well developed, during the season the general vehicular traffic beyond Pampa Bridge is restricted. So, at Pampa we generally witness a dominant pedestrian engulfed street with sparse vehicular movement barring the service vehicles, which undertakes their rounds as per schedule creating chaos. The present street system formed at Pampa lacks many essentially identifiable elements generally seen constituting a street.

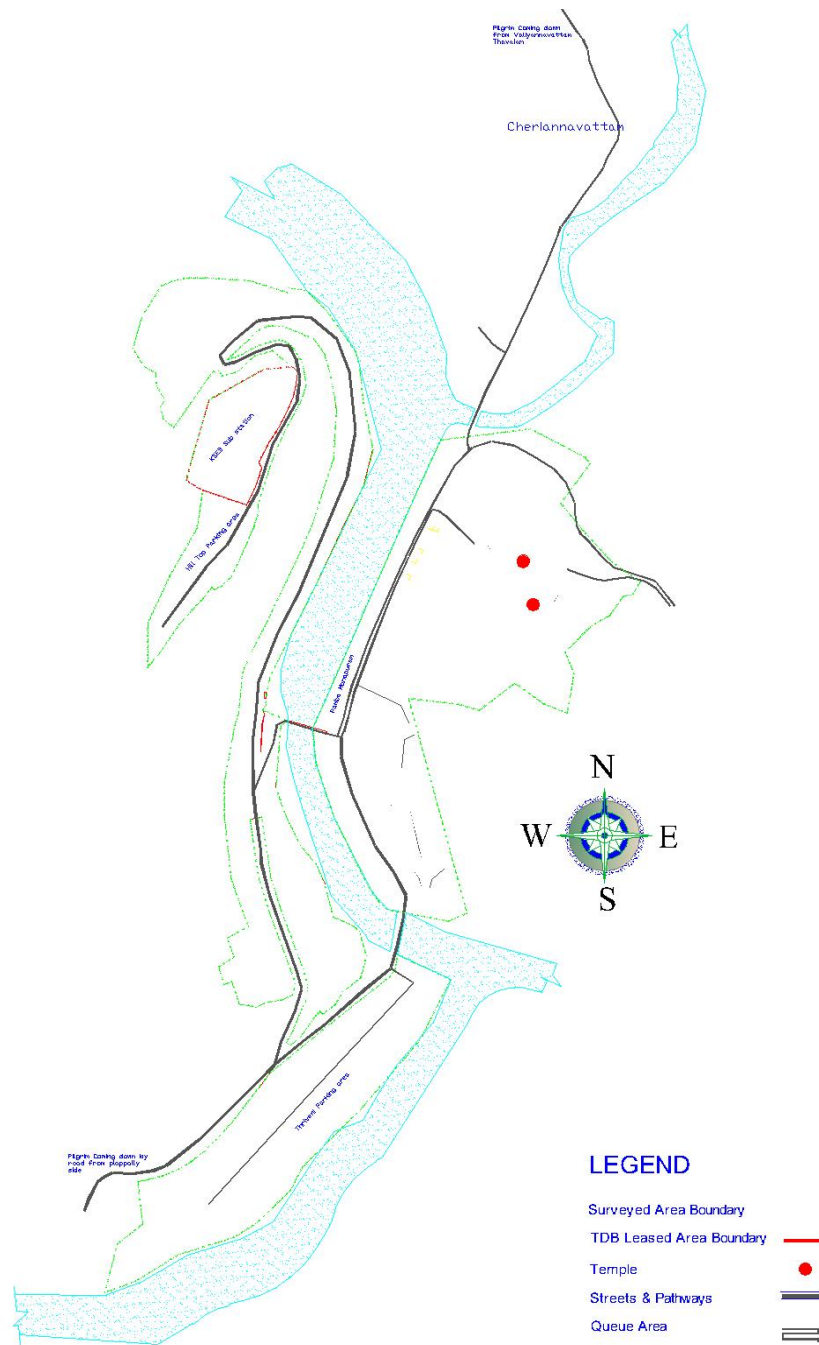


Figure 28: Street Pattern at Pampa

Streets in Pampa, in general connect the pilgrim activity domain along the Pampa River to the religious domain around Ganapathy temple and beyond by linking different parts of its environs and the forest trek routes. These linkages support socio-cultural and religious interactions/exchanges. Street design contributes significantly to the quality and character of the religious aspirations of the pilgrims as appropriately designed streets create safe, quiet and healthy environments along with a sense of place.

Presently Pampa lacks a well-developed street system. The development in Pampa had occurred gradually through ages along the banks of River Pampa, carried out in an ad-hoc

manner wherein the maximum preference was given for commercial developments. The concern for the infrastructural efficiencies for effectively catering to pilgrim requirements and traffic movement within Pampa, and aesthetics has not been well conceived.

In Pampa there exists no specific hierarchy of street system. Mainly most of the pilgrim and vehicular traffic are routed through two main corridors: one leading to hill side parking area and the other leading to Pampa Ganapathy Temple Premises. Both these road are paved (road up to hill parking is tarred with 8m wide carriage way and road from Pampa Bridge to Ganapathy temple is concrete paved with carriageway width of 8m. All the auxiliary routes such as trek routes and pathways culminate at these two main corridors.

The goal of this study is to suggest street patterns that balance efficiency and quality, and reconcile functionality and aesthetics. This requires identification of the positive attributes of existing development and utilizing existing facilities and infrastructure and building upon it to the best of the satisfaction of pilgrims.

Street quality - Perception survey of pilgrims clearly indicates the pilgrim's preferences for walkable areas without conflicts. The amenities in Pampa are generally located randomly with no definite norm or standards that it becomes many times difficult for pilgrims to locate them. More over due to lack of comfortable access to amenities such as viri, comfort stations, temple premises, retail stores and service areas; there exists a chaotic situation here during the peak seasons.

In Pampa the existing main collector and arterial streets are inhospitable and unsafe because of high pilgrim traffic volume and intense pilgrim activity, thus discouraging and hindering general movement. So, new street system, which has clearer and secluded direct pedestrian routes separating the activity space from movement space needs to be provided here. In addition, conflicts at this primarily religious site need to be reduced by keeping off as much vehicular accumulation here as possible. Service routes need to be well defined and secluded from main pedestrian movement areas. However, considering the accessibility of Pampa area through a road, it becomes essential to position service and emergency escape vehicles here. For pedestrian comfort, in addition to minimizing conflicts it becomes important to ensure pavements, which are natural and easy to walk on, pedestrian lighting and shade, which are suitable in a pedestrian precinct. In addition, walkability demands both a conducive street pattern and equally important, (visual and physical) accessibility to land uses.

As of now there exists no green buffer space along Pampa boundaries. Trees in a very scattered formation are located along the periphery. This makes the stay and walks along the Pampa streets most uncomfortable and enhances the hardship for the pilgrims.

4.1.3 Nodes

Nodes are points or strategic spots in an area into which an observer can enter, and which are the intensive foci along his path of travel. Primarily these nodes are in the form of junctions, places of a break in transportation, a crossing or convergence of paths, points of shift from one structure to another. In Sabarimala pilgrimage, there are numerous locations/ points which can be categorised into nodes namely Pampa Valley, Nilakkal, Pampa, Marakkootam, Uppupara, Valiyanavattom, Cheriyanavattom, and the like. All the base camps can come under the categorization of nodes. These nodes are the foci of Sabarimala region, which

radiate their influence as the pilgrimage progresses and symbolize the religious spirit of the region.

Certain points along the trek route from Pampa to Sannidhanam, also acts as major activity nodes. **Sharamkuthy** is a revered spot, located on the holy trail leading to Sabarimala. This place is home to a banyan tree named *Sharamkuthy Aal*. It is a custom for the devotees, who visit Sabarimala for the first time, to leave a wooden arrow on this tree. This place is witness to a festival called *Pallivetta*, which is held on the eve of the *Aarattu* ceremony, in which the idol of the deity is given a ceremonial bath. So Sharamkuthy acts as a node wherein very intense pilgrim activities are marked. Unfortunately here, the main element which determined the node namely, the religiously important Banyan tree itself is was severed few years back. Such an approach which gives priority to the goals of the administrators over and above the religious importance need to be arrested for sake of the religious aspirations and environmental wellbeing. In addition **Sabari Peedom along with Marakkoottam** forms loci of intense pilgrim activity wherein two streams of pilgrim inflow and out flow intersect each other.

4.1.4 Landmarks

Landmarks are another type of point-references, such as defined physical objects: building, sign, store, or mountain. Their use involves the singling out of one element from a host of possibilities. In Sabarimala there are only few elements that could be considered as landmarks. On a general scrutiny, apart from the imposing hills and mountain around, there is no significant imposing element that could be considered literally as a landmark. But on closer appraisal the Pampa Bridge and the Flag post of Temple at Sannidhanam can be considered the landmarks as these are the two main feature through which pilgrim not only identify the place but also orient themselves. The Temple which is located on a high plateau would have been the best expected landmark, if it were not masked by the flyovers and lofty structures all around. Karimala (specifically *Appachimedu*) and *Neelimala* could be considered natural landmarks along the Erumely trek route.



Figure 29: Flag post as the Predominant Landmark

Along the trek route from Pampa and Sannidhanam, *Appachimedu* is the major landmark. This place is marked by sharp descents on either side. These descents, filled with thick vegetation, are referred to as '*Appachi Kuzhi*' and '*Eppachi Kuzhi*.' The first time devotees to Sabarimala throw 'Ariyunda' - a sweet preparation made from rice - onto the depressions to please the 'lords of the gorges'.

4.1.5 Gateways

Primary, secondary and tertiary Gateways for Sabarimala region even transcend the district and state boundaries. However, the study, assessment and recommendations here are basically for the core area.

In Sabarimala, since there are multiple points of entry it is required to create multiple gateway points. The basic concept behind identification and development of gateways is to develop the area that acts as the main entry point to the Sabarimala region as a place that reflects the religious conviction and image of Sabarimala. These places will act as a stopper point from where pilgrims would mark their entrance into Sabarimala. So, the basic purpose can be summed up as:

- Transform Gateway area into a Regional Center with enhanced services, resting and cultural opportunities for the pilgrims.

- Creation of public spaces, transportation and pedestrian improvements, and projects to enhance the viability of the gateways as centers of pilgrim activity.
- Create a character for the area to make it identifiable as a special and distinct place.

The places that are best considered to be developed as primary gateways are Erumely, Sathram and Nilakkal, while secondary gateway can be provided at Pampa and tertiary gateways at Sharamkuthy and Pandithavalam from where the pilgrims set foot on to the Sannidhanam.

4.1.6 Scenic Corridors and Views

There are numerous scenic corridors in Sabarimala region along the routes taken by the pilgrims to reach the temple. These scenic views and settings make Sabarimala unique and are hence required to be preserved. All major/minor ways including pathways/trek routes that lead to Pampa and ultimately to Sannidhanam have scenic forest setbacks, providing a sense of place for the pilgrims. They preserve the natural setting, provide views of nearby landforms, and visually link to vista corridors and buffers adjacent natural forest from any negative impact due to pilgrim's activities.

Protection policy framework and strict design guideline need to be formulated. The Design Guidelines which are part of this Master Plan would provide an outline of the design expectations for all designated 'Scenic Corridors' and views in Sabarimala.

The need to develop scenic corridors and views is to

- To preserve or restore the natural forest setting along the roadway/pathways
- To buffer the forest from adverse affects of adjacent development
- To provide pilgrims with views of nearby mountains, washes and other natural features
- To support our religious conviction and image by providing vistas displaying the lush green forest setting surrounding Sabarimala.

Many Trek routes and roads in Sabarimala have stunning views of the Sabarimala forest skyline, Sabari mountain ranges and dense forest, as they overlook the landscape below. Some of the important corridors and view points in the Sabarimala region area as follows:

1. *Paanchalimedu* – from here the *Makarajyothi* is clearly visible. A lot of pilgrims congregate here during *Makaravilakku* to see the "divine light".
2. *Uppupara* – It is probably the only accessible location from where whole of Sannidhanam could be seen in totality. More over from here the *Makarajyothi* is also clearly visible. Pilgrims congregate here during *Makaravilakku* to view the *Makarajyothi*.
3. *Attathodu* colony corridor - along the main road leading to Pampa. From here one can have glimpses of Sannidhanam and clear view of *Makarajyothi*. So during *Makaravilakku* thousands of pilgrims congregate here. But due to adjacent deep valley formation and limited plain ground available, the number of pilgrims who can stand and witness the event is very limited. More over many temporary structures such as shops and mammoth billboards have come up along the roads, which scuttle further, the views from this location.
4. *Nilakkal* – It has been observed that certain elevated locations in Nilakkal offers commanding view of the area around, and hence need to be developed for *Makarajyothi* viewing / command points for security personnel. These places need to be identified and

marked and all the adjacent developments proposed in here should be developed accordingly without hampering the view.

5. *Cheriyavattom* – From here, *Makarajyothi* is visible but the extent of area to spread out and view is limited as shops and viris cover the entire area. More over service infrastructure such as incinerator and sewage treatment plant has also taken away considerable extent of land. Figure 30 presents the visual components of the Scenic Corridors.

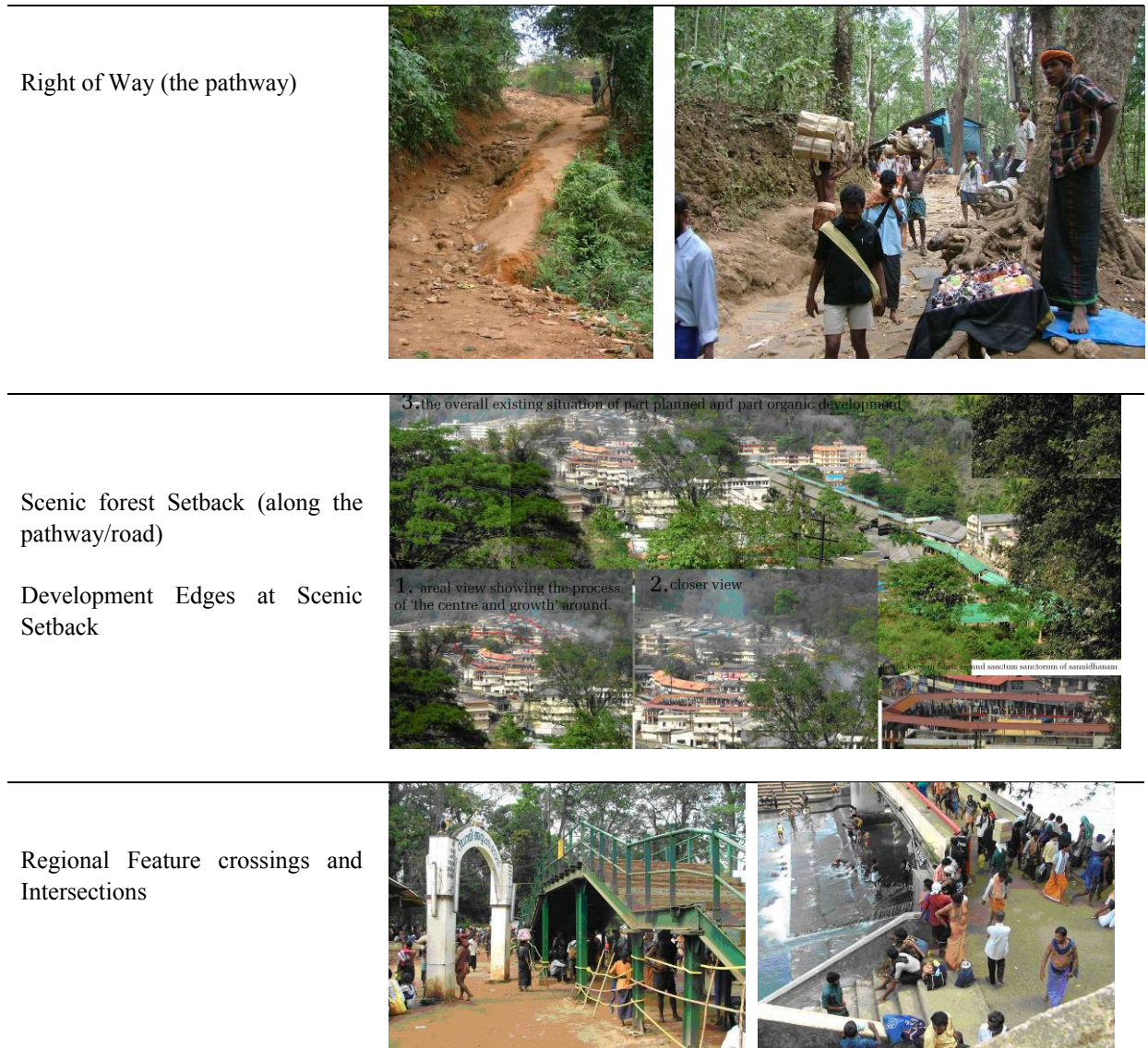


Figure 30: Predominant Views along the Corridors in the Present Context

4.1.7 Major Inferences

- The concern for the infrastructural efficiencies for effectively catering to pilgrim requirements and traffic movement within the Sannidhanam, along with aesthetics has not been well conceived
- The amenities in Sannidhanam are greatly scattered and generally beyond the five-minute walking distance desired by Pilgrims.

- The present street system formed at Pampa are lacking in many essentially identifiable elements
- High degree of vehicular (service, passenger and goods vehicles) – pedestrian conflicts
- Lack of clear service routes
- Lack of visual and physical access to essential facilities and landuses
- Poor overall street design, pattern, surfacing and hardware

5 DEVELOPMENT STRATEGIES AND PROPOSED INTERVENTIONS

After analyzing the historical, religious and contextual perspectives of Sabarimala, it is clear that our rich tradition and natural settings have not been accorded due consideration while considering and implementing development here. Various perceived and reported issues and related development strategies are discussed in detail in the following sections wherein if proper care and compliance to the recommendations is ensured, the image of the place could be transformed in a way which would suit the religious convictions and the context as a whole.

5.1 Issues and Strategies

I. Issue: Retrograding Identity and Imagibility of Sabarimala

- Gradual deterioration of physical environment
- Changing image of the place – rapidly getting urbanized and developing into an uncontrollable sprawl
- Lacks land use, height and density control
- No architectural control – traditional temple built-scape totally lost
- Views and vistas to and from the temple blocked

One of the major issues at Sabarimala is the gradual deterioration of physical environment of the place and its building blocks with increase unguided and uncontrolled development. Presently there are no building rules or development guideline or policy, which regulates the development in Sabarimala. Though there are standing guidelines regarding possible forms of development within a reserve forest not much have been done till date to enforce these. The main reason for this is the relaxation / special consideration given to the place of worship. But this has led to rampant unchecked development in Pampa and Sannidhanam that has resulted in a sprawl which is inconsiderate to the religious convictions as well as to the safety and facilities required for masses of pilgrims. This has transformed this place from a “forest temple image” as it was renowned in the past to that of present sprawl – an oasis of concrete buildings within the evergreen forest.

Sabarimala lacks landuse, height and density control, due to which the landuses are scattered and fragmented at Sannidhanam and Pampa. These have forced effective infrastructure development throughout the area and in many instances at inappropriate locations wherein during the season these facilities get overstressed. Rapid development has resulted in general change in the character of the place due to the differential treatment of façade of newer structures, which are completely opposite/not in accordance to the traditional built-scape of the area or are in complete mismatch in the context. So there is a strong felt need to have a strict control over landuse.

The absence of height control also disturbs the skyline or in other words the built-scape e.g. 5-6 storey buildings around have totally masked the temple. In addition lack of such control has resulted in the construction of a flyover dominating even the *thazhikkadam* of the temple within around 10 to 15m radius of the sanctum sanctorum. This is not only visually disturbing but also taboo considering the traditional and religious values and beliefs. Limited availability

of land and unplanned developments occurring over decades have forced high-rise constructions during the recent past to accommodate the ever increasing accommodation and service related demands from all quarters. If this trend continues the essence of the place with strong moorings on the natural forest-scape would be totally lost. Along with height, the density of built space should also be controlled by adding in greenery so as to reduce the vigor and command of built-scape on the forest-scape.

Strategies

- Formulate and enforce building bylaws, landuse, height and density control
- Formulate specific spatial development policy in line with traditional temple planning principles and establish clear guidelines for development
- Encourage heritage values, environmental considerations and religious convictions as a constructive basis for architectural ideas and development schemes.
- Delineating and declaring the immediate forest region abutting the Temple precinct and trek route as cultural heritage landscape for conservation
- Promote excellence in design by designing and developing open spaces as “Pilgrims places” for comfort and use-ability
- Promote building designs that are flexible for a range of uses, have a long-term life and are environmentally friendly
- Provide more significant greening and further develop open spaces
- Enhance the prominence of major entries to the Sabarimala as “gateways” and improve the identity of the place by reinforcing existing landmarks and nodes
- Encourage new developments at less environmentally sensitive locations.(promote more development at Nilakkal rather than in Pampa or Sannidhanam)
- Plan expansion areas carefully in order to avoid possible conflicts with areas/ objects of high cultural heritage value or of high environment concern. Use heritage and religious convictions as a constructive basis for architectural ideas and development schemes.

II. Issue: Lack of defined boundary and Transitions spaces for various activity zones

- Developmental sprawl
- Fragmented land use
- Lack of define zone or clear edges defining zones
- Lack of buffer space defining development margins

The land utilization patterns at Sannidhanam and Pampa presently are not governed by any landuse plan/zoning plan. So most of the land uses, which can be identified based on contingent activity existing presently, are fragmented and scattered all around the temple core. Present haphazard /ad-hoc development has resulted in building of infrastructures which are least prepared to cater to present or future requirements.

Sannidhanam and Pampa area totally embedded in thick evergreen forests. There are no spaces or margin properly defining the extent of development here. The available area here has been utilized though leaving unusable chunks of land, and the development is gradually spreading all around beyond the defined boundary. Such developments have greatly affected the forest vegetation along the periphery. So, to conserve the surrounding forests and to contain the sprawl it will be required to create a buffer space all along the periphery defining the development limit of these areas.

Strategies

- Defining the development margins: Keep a clear line between developed area and forest area to avoid the sprawl and encroachments into the forest area rather than relying merely on the 'jendas' or demarcating pillars used here.
- Integrate the forests surrounding Pampa, Nilakkal, Uppupara and Sannidhanam in the spatial development strategy for Sabarimala region.
- Formulate detailed Land use plan

III. Issue: Diminishing Heritage Character of the Temple

- Unchecked and unplanned structural extension and additions carried out for the temple complex
- Large buildings developed close to the temple complex
- Rapid increase in commercial activities in and around the temple precinct
- Depleting greenery around the Temple complex

Unchecked and unplanned extension carried out for the temple complex has completely changed the look and the character of the temple premises. Various new additions abutting the temple complex such as the Appam Aravana complex, the flyovers, the *Neyyabhishekam* queue complex, the office and treasury building have been constructed in the recent past. Most of these have been constructed in complete violation to the traditional temple planning norms – *Vasthusastra*. These constructions were carried out in the pretext of facilitating better access and satisfactory *darshan* to pilgrims, but have failed to reap the kind of success as expected. The pilgrim still complains of not receiving a satisfactory *darshan* and an overall chaotic situation exists at Sannidhanam specifically in and around temple complex during peak times. Maps 6 through 8 present the detail plan of existing Temple Complex with sectional elevations.

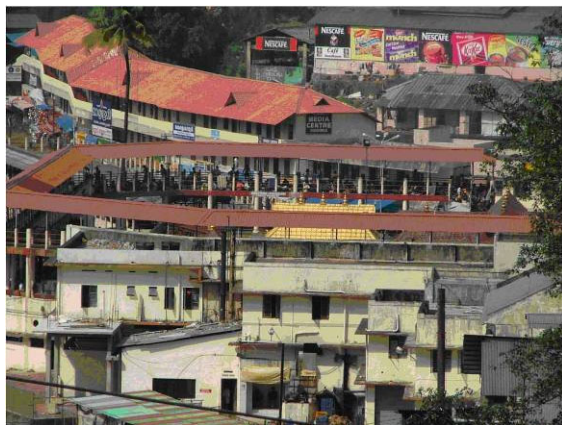


Figure 31 : Comparison of the Temple Complex of Today with that existed Three years back

Strategies

- To encourage the highest possible quality of architecture and design. New development proposals and improvement measures (including building alterations and extensions) should respect and reinforce the local character and identity, or seek to create a positive identity and create a strong 'sense of place'.

- Formulations of a specific development scheme for the temple complex in line with traditional temple planning principles – Vasthushasthra
- Formulate and enforce norms for building design which incorporate and follows the characteristic features of Kerala traditions in Temple planning and architecture.
- To regulate the land use and building activities around the immediate temple precinct
- The design of infill or gap site development in traditional religious areas should :
 - a. Respect the character of the surrounding area and adjacent buildings in terms of building line, scale/massing, modeling, elevational proportion and materials. The aim should be for a contemporary design that complements its context rather than attempting to replicate it. In exceptional cases of high conservation value traditional restoration or replication may be appropriate; and
 - b. Religious building developments should, in addition, meet the design criteria set out in the developmental guidelines.

IV. Issue: Wretched conditions of Shopping and Viri areas

- These resembles Shanty Settlements – temporary shacks, unplanned and unhygienic
- Encroached upon forests and space for other uses
- Cannot ascertain or guarantee structural safety or fire safety
- Reported Instances of use of wood extracted from forest for construction structure-impact on forest
- Located mostly along the peripheral areas, forcing pilgrims to resort to open defecation in the forests in the absence of facilities nearby
- Services and infrastructure below the "adequate" or minimum levels

Viri's are built by the local laborers in a crude way using basic materials such as bamboos / wooden poles and tin sheet/tarpaulin sheet roofing. Similar is the case of most of the temporary shops and hotels that come up during the season. Though shops and *viri* areas are designated and defined at the time of tendering itself, the built structures mostly intrude into spaces meant for circulation making the circulation space more cramped and congested. In addition to this there are no setbacks provided. There is no guarantee to the structural safety of most of the temporary structures as many times *viris* (multi storied) are over loaded with pilgrims. Most of the temporary structures are constructed in a closely packed formation utilizing the maximum extent of space possible and among them many structures are even multi-bunk bedded. This is a very dangerous situation with respect to fire safety as these structures are highly susceptible to fire and if it occurs the whole place will raze in the fire with virtually no barrier existing to prevent the spread. Fire possibilities are high as in most of the *viri* locations pilgrims resort to self-cooking. Another concern in *viri* is the health and hygiene condition existing here as most of these are located far off from (with respect comfortable accessibility) sanitation facilities which encourage the pilgrims to opt for open defecations in its vicinity. This propensity pollutes the whole environment here that in turn raises the health and hygiene issues for pilgrims visiting here. The pollution is further spread down to Pampa and through it to the whole region.

Most of the temporary built up areas has services and infrastructure below the "adequate" or minimum levels. The services in the context include circulation spaces, water supply, sanitation, electricity, and drainage. Water supply, for example, to individual *viri* or even group of *viris* are absent, only few public stand pipes and some hand pumps have been

provided at different locations. Informal networks for the supply of water also are in place. Similar arrangements are also made for electricity, drainage, toilet facilities etc.

However, since viris are still the most preferred accommodation for most of the pilgrims, it is hence essential to use available area to recreate the long forgone character of traditional viris, which were spread amidst the trees. This can be done by creating viri areas between trees/greenery induced into the existing layout of Sannidhanam and Pampa, using modular construction, adhering to minimal space standards, providing facilities at convenient distance for the pilgrims



Figure 32: Views of Viri and Shop Areas in Sabarimala

Strategies

- Identify the planning allocation requirements, decided regionally, for the number of temporary structures that can be built/ or is required in Sabarimala
- Formulation and enforcement of special building rules and guidelines for temporary structure construction.
- Adaptive management at the site-specific level combined with a process of ‘Adaptive Planning’ across sites to more fully integrate scientific knowledge into resource management integrating design, management, and monitoring to systematically test various options to bring about concrete and long-term solutions. (Attempt to foster “learning projects” should be made to bring out a sustainable and reliable solution)

V. Issue: Confusing Corridors (pilgrim /Commercial / Religious) and declining walk-ability and conveniences

- Distracting and unclear signage
- Building/structures obstructing or hindering the flow along various corridors
- Paving and street treatments worse: Insensitive corridor improvement measures such as concrete paving, removal of natural shade and provision of Nadapanthal or covered pathways, and the like.
- Rampant movement stream conflicts

- Movement conflict along corridors e.g. lack of front yard for shops on trek route or/main pilgrim routes
- Services and infrastructure below the "adequate" or minimum levels

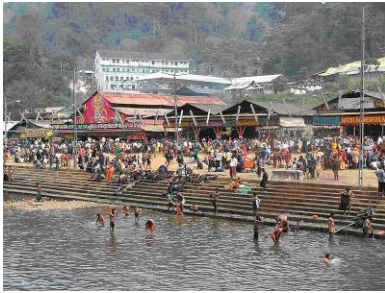


Figure 33: Religious Corridor



Figure 34: Commercial Corridors



Figure 35: Pilgrim Corridors

The activity spaces in Sabarimala can be divided into 3 major corridor spaces namely the pilgrim corridor (which basically refer to the trek path and the route taken by pilgrims to reach Sannidhanam), commercial corridors and service corridors.

Numerous hotels, shopping centers, and a growing number of accommodation buildings are congregated across the stretch along the river Pampa.

Strategies

- Provide paving that complements the unique character of Sabarimala's built and natural environment
- Design and pave streets in such a way as to respect heritage, conformity to the natural settings, convenience and safety of pilgrims.
- Formulate and enforce strict guidelines for signage

VI. Issue: Poor accessibility and circulation

- Orientation and navigability towards destinations is impossible for pilgrims
- Overwhelming number of pilgrims are currently unable to find a particular building or location within the Sabarimala –say Pampa and Sannidhanam
- Lack of facilities for directing Pilgrims from the surrounding network of roadways to the Sabarimala region
- Existing de-emphasizing signage at primary and secondary access points and lack of emphasis on development of the main entrances as the primary entrance to Sabarimala
- Parking areas are highly inadequate
- Roadways and pathways have minimum safety measures
- Comfort amenities and pilgrim facilities are limited along the trek routes and roadways
- Services and infrastructure below the "adequate" or minimum levels

Strategies

Road system

- Recognize the pilgrim traffic (pedestrian) function and give legibility to the temple settlement structure
- Design streets that are safe, attractive and integrated with the traditional temple pattern and character

- Segregate pilgrim and service accesses.

Pedestrians

- Promote Sabarimala as natural and safe trekking region
- Improve amenity along all pedestrian routes/Trek routes
- Improve the conditions and facilities at all basecamps/transit points

Parking

- Consolidate parking facilities off the main religious location
- Provide clear directional signs to major parking area from distributor streets and gateways – at Nilakkal, Sathram etc.
- Improve design and quality of parking facilities

Public transport

- Upgrade the railway stations and bus interchanges which are major public transport nodes
- Pursue opportunities to improve public transport services for Sabarimala

VII. Issues: Lack of sense of safe religious center

- Highly polluted area ; no organized or systematic waste management
- Lack of clear visibility of the area; narrow and winding lanes, huge structures and sign boards obstructing the view
- Insufficient safety barriers or buffers along the road, trek routes and even in settlement areas
- Unorganized built-up areas
- Insufficient locker facilities or cloak room facilities available for safekeeping of personal articles.
- Lack of clear orientation for pilgrims
- Lack of sufficient lighting

Haphazard growth of the built environment has produced an eclectic mix of architectural styles with associated outdoor spaces. Sitting decisions for new construction, either buildings or landscape elements such as roads and resting lots/ comfort spaces, has not been carefully considered. No effort had been made till date to assess the physical impacts on the landscape.

Strategies

- Support a harmonious mix of land uses
- Promote surveillance of public and private areas through appropriate location of activities
- Improve the quality and quantity of lighting
- Provide priority night routes for pilgrims between night spots, public places and transport
- Improve safety through good design and careful management
- Consider safety and security while assessing all developments and redevelopments
- Promote safety as the responsibility of pilgrim community, NGOs, CBOs and the authorities.

VIII. Issue: Depleting greenery

- Developed area has less than 10percent of green cover

- Almost 60percent of trek route from Pampa to Sannidhanam has lost its natural tree shades
- No considerations exist to conserve the trees; tree clearing, land modifications (cutting and leveling) and tendering out of construction takes place even before the designs are finalized.
- Lack of buffer space defining the development margins

Strategies

- Achieve a network of “greening” for a sense of continuity and to build a clear mental picture of the temple as a true ‘forest temple’
- Improve the aesthetics of the total settlement
- Provide planting for a more pleasant pilgrim environment with shade and improved microclimate
- Review the all existing and proposed design to accommodate the values of conserving and enhancing the greenery

IX. Issue: Lack of Sense of Invitation for the pilgrims

- There exist no clearly defined landmarks, node or gateways
- Lack of proper orientation
- Lack of perceptibility of the areas

Strategies

- Develop a sense of ‘welcoming’ religious centre and sense of arrival at the approach and entry points to Sabarimala
- Maintain base camps and enroute facilities in a clean and well maintained manner
- Provide a high level of amenity and comfort for pedestrians
- Ensure that appropriate and friendly signage is provided and maintained
- Improve facilities for pilgrim information, telephones and toilets

X. Issue: Poor provision of Street furniture’s

- Very poorly designed street furniture are placed along the trek routes
- Sitting of facilities and amenities are not in tune with the requirements
- Street furniture such as electric posts are seen obstructing the movement of pilgrims
- Pilgrims are seen using the steps along the trek route as resting areas which many time hinders the pilgrim movement.
- Existing street furniture are ill-maintained which make at least 30percent of it unusable.

Strategies

- Use a coordinated range of street furniture unique to Sabarimala
- Ensure that the street furniture match the need & the context
- Encourage pilgrims to rest in the resting places provided and not along the trek route which hinders the movement of others

XI. Issue: Poor and ineffective lighting

- Present practice is ad-hoc and high in energy requirement
- High intensity / focused lights affects the wildlife

- Lighting essentials to give proper direction to the pilgrims, as majority of them prefer to trek during the early morning and evening hours to escape the heat.
- Insufficient light at Pampa and Sannidhanam creates confusion and safety concerns
- Unlit areas turns out to be preferred spots of open defecation and pollution

Strategy

- Improve the quality and quantity of lighting to enhance safety
- Use lighting to enhance orientation, amenity and character
- Select lights that are energy efficient, economical, suitable to the wildlife and appropriate in design
- Provide an integrated approach to the provision of lighting

XII. Issue: Poor signage

- There exists no control or regulation over the signage. Erected at all possible locations in all possible dimensions and style, they pose danger to waiting / walking pilgrims and pose as a clear example of ‘privatisation of private space’
- Most of the signage do not match the context or the landscape
- Important signage in different languages to suit the pilgrims are found missing. Rather huge advertising signage which are out of context dominate the skyline
- Mammoth signage obscure the views and vistas of the place
- There exists no pattern or plan in the placement or location of signage
- Unnecessary duplication of signage, detracting from views and causing clutter
- No order seen in the use of colour, fonts, shape and size of signage.
- Large scale use of strident colours
- Cause visual intrusiveness as they obscure the building elevations

Strategy

- Reduce the clutter of signage
- Develop an ethnic “Sabarimala” style for all public signage
- Improve the quality of private signage
- Provide all essential signage required by the pilgrims to orient themselves rather than advertising signage

5.2 Proposed Interventions

5.2.1 Replanning Sannidhanam: Proposed Landuse and Zoning Plan

This section describes the proposed spatial development of Sannidhanam area. The plan so prescribed has to be followed to make possible the implementation of the development foreseen in the master plan so as to provide better pilgrimage experience, better identification as a religious precinct and better relation with the natural settings.

Concept for Development

The proposed Concept Plan (the report on the Outline of the master Plan for Sabarimala), has been accepted and agreed by all stakeholders. The concept plan for the development of Sabarimala emphasises decongesting Sannidhanam by shifting out non-essential activities out of Sannidhanam. Such activities include accommodation, commercial areas at Sannidhanam and parking, major accommodation activities and unregulated commercial activities at Pampa.

Along side, many new projects intended to provide essential pilgrim facilities and better management has been conceived at Sabarimala. It is proposed that when the new and improved facilities are added, the old and now obsolete facilities will have to be abandoned. As a result shifting out of various activities/uses such as pilgrim accommodation, commercial and other non-essential uses, which spread across vast extent in the existing layout, existing building/structures associated with these activities would become an additional liability. Such buildings will be required to be demolished in a phased manner, thereby opening up more open space for pilgrim movement and religious activities.

In short, redevelopment of Sabarimala is aimed at removing unnecessary landuses and buildings from Sabarimala and providing those facilities which are indispensable for the pilgrimage and the associated religious activities, thereby restricting the sprawl and its negative impact on the fragile forest setting which forms the crux of the Sabarimala.

For such a religious precinct, basic principles to be adhered to are those of traditional *Vasthusashtra*, the ancient text which formulates guidelines for development on the basis of set elements of the nature. These principles are adhered to in almost all the religious precincts in Kerala.

At Sabarimala, many of the buildings, including those in closest proximity to the sanctum sanctorum are against the principles of *Vasthusashtra* and completely unacceptable in a religious precinct. Pilgrim perception survey also confirms the non-acceptability of the pilgrims to the existing built and circulation situation at Sabarimala.

In the proposed plan, it is proposed that certain buildings and activities need to be removed from the area, certain others are to be added and certain areas are to be preserved.

The basic considerations for proposed demolition of structures at Sannidhanam area

- Structures which have become redundant due to construction of new facility/ activity shift considering the safety aspects
- Dilapidated structures
- Structure which grossly violate traditional temple planning norm/ religious convictions.
- Areas which are unsafe for use

The demolition plan has been staged concurrent to the new development proposed. The Stages so formulated are under immediate plan and long term or fixed period plans.

▪ ***Immediate Plan/ Immediate Stage (2006-2010)***

It has been envisaged in the concept plan that for pilgrim management and safety the immediate requirement at Sannidhanam would be to build queue complexes and a new *Appam Aravana* complex. Hence, in the immediate Stage *Appam Aravana* complex and queue complex are proposed to be constructed at Sannidhanam. It is expected that this will materialize in the following three-year period.

Appam Aravana Complex:

With construction of the new *Appam aravana* complex the existing complex abutting the *Mahasannidhi* can be done away with, which will assure some 'breathing space' in the core area. As the new *Appam Aravana* complex also plans shifting of *prasadam* counters, it will

help in removing the additional crowding here which will enhance the pilgrim circulation in and around the temple precinct. According to *Vastushastra*, and traditional temple architecture, *prasadam* should be made in any of the outer *prakarams* of the temple and hence, it is against the interests of the pilgrims to shift it out of temple area. Vasthu also prescribes that the new complex can come up either in N-W or N-E zone. Which ever is the location, it will necessitate demolition of some of the temporary, semi permanent structures and even permanent structures which are used for commercial, administrative, accommodation purposes here to make space for the new development.

In this plan, the specific location shown for new complex is in N-W zone towards the rear side of Malikappuram temple wherein as of today, many viri sheds, donor houses and toilet blocks are located. These structures need to be cleared to make way for the new construction. Permanent buildings proposed to be demolished may be modified and used for any purpose associated with the Appam Aravana Complex, if found suitable.

Queue complex:

It has been proposed in the master plan to shift pilgrim accommodation apart from what is minimum essential, out of Sannidhanam. Pilgrims would not be allowed to stay overnight in Sannidhanam (except for very few who may need to stay over for special *poojas*). The religious rituals and the time schedule of temple activities will necessitate some sort of lodging facility for the pilgrims were they can wait for their turn to have darshan. In this perspective the queue complex has been conceived where in all facilities for the pilgrim to take rest and wait for his turn would be provided. With the coming up of Queue complex all the temporary pilgrim accommodation provided now in the Sannidhanam can be completely removed.

In addition, all other immediate interventions at Sannidhanam, *Pampa* and along the trek route from Sannidhanam to Pampa, as proposed in Appendix iv of the Outline of the Master Plan for Sabarimala shall be implemented during this Stage.

Remodeling of Pampa can start during this Stage with the preparation of a detailed development plan especially for areas such as Thriveni and Manalppuram as most of the suggestions are easily executable and require demolition of mostly temporary structures. No further construction activities are proposed here except for redeveloping the area and remodeling the temple precincts during this Stage.

▪ ***Stage 2010-2015***

Redevelopment of Temple complex:

Developing the temple complex will require considerable time, as the reconstruction activities have to take care of the pilgrim seasons and patterns. Redevelopment of temple as per *Vastushastra* will require demolition of many of the structures used for commercial, administrative and residential purposes in and around the temple. For the same almost all structures within the 60m radius of *Mahasannidhi* need to be considered, as they are incompatible.

▪ ***Stage 2015-2020***

Redevelopment of Malikappuram Temple complex:

Redevelopment of Malikappuram temple as per *Vastushastra* will require reconstruction of many of the commercial, office and accommodation use structures around this temple. Almost

all non-religious structures falling within approximately 40m radius of Temple have to be demolished.

- **Stage 2020-2025**

- **Formation of Buffer space:**

Providing a buffer space around the temple complex is essential to regulate pilgrim circulation as well as to check the new developments abutting the temple complex. Such space will increase the safety aspects by reducing the probability of any hazard and enhance the provision and accessibility of services to pilgrims. For the Formation of this many of the structures coming in this zone have to be demolished.

- **Stage 2025 -2050**

- **Restructuring the whole settlement at Sannidhanam:**

As per the *Vasthu* recommendations the settlement is required to be replanned in total so as to develop Sannidhanam as a model temple settlement which not only respects the tradition but also gives due importance to the nature and the natural settings. One of the main requirements of *vasthu* is that the settlement be in rectilinear or square format. Ensuring this would also pave way for actual demarcation of activity zone around which a buffer may be developed and maintained. This would mean redefining the boundaries of Sannidhanam. In the proposed layout, it has been recommended to assimilate necessary adjoining area to regularize the boundaries of the existing irregular sprawl area which has developed towards the trek routes in such a way that the extent of final area available for use at Sannidhanam remains as it is, though certain other areas are assimilated and certain irregular areas are handed over back as forests. This prevents sprawl and promotes edge control. Restructuring within the area should start with ascertaining the development limit and drafting out of main street patterns at Sannidhanam. Such restructuring activities are expected to span to period from 2015 to 2050.

(Refer Maps 9 & 10: Redevelopment Plan of Sannidhanam)

5.2.1.1 Redevelopment of Sree Dharma Sastha Temple complex

- **Introduction**

As part of Master Plan for Sabarimala, it has been proposed to initiate the works to restore and upgrade the visual image of Sabarimala temple in addition to making space for pilgrim circulation around the temple and providing facilities and amenities to cater to the present context and requirements.

- **Title**

This Scheme may be referred to as the **Temple Complex Redevelopment Scheme**.

- **Redevelopment area**

This Scheme applies to the *Mahasannidhi* of *Sree Dharma Shasta* Temple at Sabarimala (including upper *thirumuttam* and lower *thirumuttam*) and an extent of 100 m around it (with *Sreekovil* as the focal point / fulcrum).

- **Need for the Scheme**

Evaluation of the existing built character and layout of the temple complex has brought it to the fore that, in and around the *Mahasannidhi* many new structures have been constructed in complete violation of even the basic norm of *Vastushastra* which

traditionally governs the planning in Kerala, especially in case of temple precincts. Structures that have been later added around Sanctum Sanctorum include the *Appam Aravana* complex (developed through private participation), treasury building, flyover etc which have totally masked the imaginability of the place (Maps 7 and 8). Some of the prominent elements of discord are discussed below

- The flyover constructed for circulation of the pilgrims at *Mahasannidhi* dominates above the Sanctum Sanctorum. This forces pilgrims to circumambulate above the deity at a proximal radius of the Sanctum Sanctorum.
- Other structures built abutting *Mahasannidhi* such as *Appam Aravana* complex, treasury / office building, guesthouses etc., are also in against the traditional principles as :
 - The constructions are inclined and not parallel to the walls of the *Sreekovil* walls
 - The height of these structures masks the *Sreekovil* and its *Thazhikakudam*.
 - These are constructed inside the Inner core of the Sanctum
- Later additions to the *Mahasannidhi* area are not in conformity to any known standards of temple planning
- Many activities/land-uses around immediate precinct of the temple are un-contextual
- There exist no fixed or defined orientation pattern at *Sannidhanam*
- Most of the patterns and directions of circulation are contrary to the pattern/practice with respect to Hindu customs as well as *Vastushastra*.

▪ **Specific scheme objectives**

The specific objectives of this Scheme are:

- To remodel developments in such a way that they respect and build on the existing natural settings of the Sabarimala;
- To ensure resolution of Pilgrim traffic and circulation issues so as to provide an acceptable pattern;
- To protect and uphold the cultural/religious heritage significance within the redevelopment area;
- To encourage the relocation of inappropriate uses and activities;
- To create a visually attractive area with appropriately scaled streetscapes and other elements, providing a diverse but unified builtscapes characterized by high quality design based on our traditional practices, and at the same time respecting the natural settings.

▪ **Development Requirements of the Religious Precinct**

The Sanctum Sanctorum and few religious structures around are in tandem with the traditional principles. But this adherence is limited to this area, whereas surrounding areas of this temple which was later provided with flag staff, gold coverings etc do not fall in line with the traditional principles.

In case of Kerala temples, it is required that the concept for developing / redeveloping the temple complex should be strictly according to formats such as the '*Panchaprakaram* format' prescribed in *Thanthra Samuchayam*.

▪ **The Proposal**

Temple to be developed as the one with “*Pancha Prakarams*” with *Balivattom, Pradakshinavazhi, Vilakkumadam, Sheevelippura and Puramathil*

Major recommendations in this perspective are the following:

- The platform approached by 18 steps, where Sanctum Sanctorum is situated should be a ‘Peedom’ of perfect rectangular shape as originally existed.
- All the buildings abutting the temple complex including the fly over bridge should be demolished and the temple complex structure should be reconstructed to conform to Panchaprakaram design.
- Existing elements in violation of traditional norms prescribed by Thantra Samuchayam which governs the temple planning in Kerala are
- Flyover in close proximity of SreeKovil is at a higher elevation than that of the Sanctum Santorum.
- Various non-confirming landuses as per traditional principles are located within various zones preceding the Sreekovil area in the upper thirumuttam.
- The Mahasannidhi area represent trapezoidal shape as a whole though ideally, the temple complex should have a rectilinear layout pattern
- All buildings in and around the temple complex should maintain the geometric orientation of the Sreekovil. (Alignment should be strictly along the north -south or east - west axes, as prescribed in Thantra Samuchayam)
- Building height should be restricted to a maximum of 2 storeys. No structure should be higher than that of Sreekovil at least within 150meters radius area around the temple.
- Nadapanthal should come up inside the outer core of the temple complex (refer the Plan)
- No building should be higher than the ‘Temple Thazhikkadam’
- A buffer space of 25 m radius is to be created around the temple complex
- On all cardinal points gateways/*gopuram* are to be erected in alignment to the outer wall of the temple complex, to mark the points of entry and exist.
- The main entry to the upper thirumuttam can be from east (i.e the pathinettampadi) or through the south entry stairs and the exit through the west or north stairs only.
- A platform at par level (no building of structure to go above this level) or the upper thirumuttam need to be constructed around to help pilgrim circulation.
- Proposed layout plan and Section has been provided in Volume 3: Vision Document and Development guidelines based on which the layout plan for associated / supporting areas at *Sannidhanam* has to be prepared.

▪ **Development Approval**

The designated boundary for this redevelopment area is within the leased area. This is a proposed scheme for redevelopment and need to be discussed and finalized in consultation with various stakeholders including the Temple Authorities, Government of Kerala, Department of Forests, and various experts on temple architecture, religious organizations and pilgrim groups in order to develop a consensus on the proposed layout activities before commencement of any work in this respect. In case any existing element listed in this plan falls within the heritage / conservation act, the authorities must submit necessary sanction documents and detailed plans to the respective authorities and get necessary sanctions.

▪ **Construction Operations and Scheduling**

Proposed redevelopment would result in increase in construction and demolition activities which will generate some noise and dust emissions and vibration for a short period that has the potential to affect the amenity of wildlife and inconvenience the pilgrims. Suitable methods need to be finalised in consultation with the Department of Forests and other

environmental experts as required. Detailed action plan needs to be prepared before commencement of activities prescribed herein.

The construction operation is expected to be staged out to be completed by 2015 so as to minimize the discomfort to the fauna and flora as well as to the pilgrimage. The activity chart and phasing of the proposed operations with respect to this redevelopment scheme would be as outlined below.

(Refer Map 12: Proposed Temple Redevelopment Layout plan)

Table 5 : Development Scheme for Temple Complex

S.No	Construction activities	Redevelopment activities	Time period	Remarks
1	<i>Appam Aravana</i> complex and construction of new stairs from all three side for access to <i>thirumuttam</i> (north, south and west)	Existing <i>Appam Aravana</i> complex abutting the <i>Mahasannidi</i> to be demolished after completion of the new complex before the start of the 2008-09 season (including all associated structures here)	2006-2008	Refer redevelopment plan and detailed layout plan
2	Restructuring of upper <i>Thirumuttam</i> Construction of new administrative block with treasury and all associated activities required	The existing administrative offices building, counters 7 treasury building abutting the <i>Mahasannidhi</i>	2009-2010	Refer redevelopment plan and detailed layout plan.
3	Construction of platform around the <i>Mahasannidhi</i> (except on east side)	Fly over and the existing <i>Neyyabhishekam</i> queue complex, dormitory and bank building to the west	2011	Refer redevelopment plan and detailed layout plan.
4	Formation of outer temple complex wall and <i>Nadapanthal</i>	The area occupied by stores and the <i>Vellanivedyam</i> preparation / distribution building (activities shifted to new complex)	2012 -2013	Refer redevelopment plan and detailed layout plan.
5	Formation of buffer space	In the area used by <i>Nadapanthal</i> , part of Shopping Complex in Malikappuram area, Maramath complex and guest houses.	2013-2015	Refer redevelopment plan and detailed layout plan.

After the completion of this scheme, similar detailed scheme needs to be taken up for Malikappuram temple at Sannidhanam and further activities to be carried out as per the proposed landuse / layout plans.

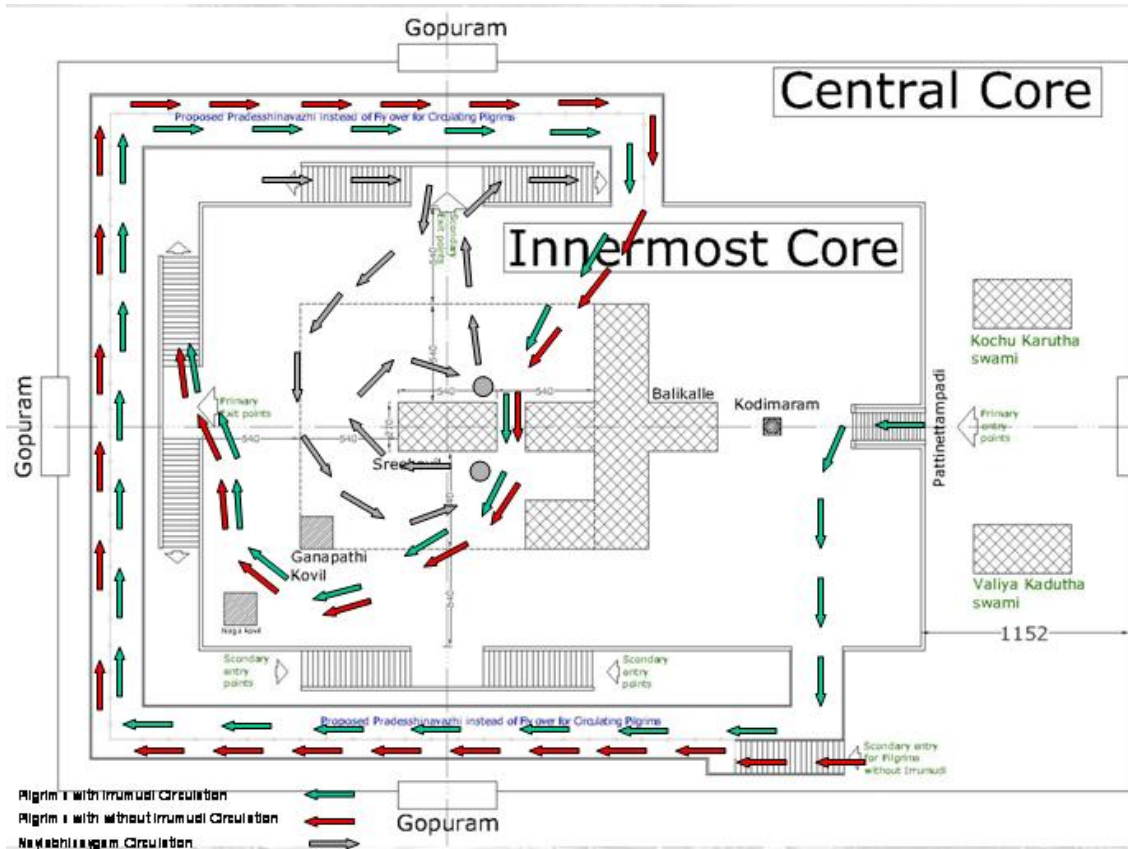


Figure 36: A Possible Circulation Pattern at Maha Sannidhi

General guidelines as per Vasthusasthra

Temples to be developed as the one with “*Pancha Prakarams*” with *Valivattom*, *Pradakhshinavazhi*, *Vilakkumadam*, *Sheevelippura*, *Puramathil*.

- The platform approached by 18 steps, where Sanctum Sanctorum is situated should be a ‘Peedom’ of perfect rectangular shape.
- All buildings in and round temple complex should maintain the geometric orientation of the SreeKovil. (alignment should be strictly along the north -south or east –west axis)
- Building height should be restricted to maximum of 2 storeys. No structure should be higher than that of Sreekovil at least in the defined areas. No building should be higher than the ‘Temple Thazhikkudam’
- Appam Aravana complex can come up in North East or North western zones.
- No waste dump or sewage treatment plant (solid –waste, sewerage, etc related activities) should be located in South west and north east zones.
- Official buildings should mainly come up in North or north east zone
- Residential buildings should only come towards the east or south east zone, according to Thanthra Samuchayam
- Store should come up in north zone
- Hospital should come up in north western zone (Vayu Kon)
- Nadapanthal should come up inside the outer core of the temple complex (refer the Plan)
- Water related activities including its storage and treatment should come up in north east zone. Underground water tanks should be planned in the North and the Northeast directions. Overhead tank should be on the West side. Tanks on the North or the East

zones are also permissible. But, underground or ground level water should never be stored in the West or the Southwest directions.

- Ground terrain should have gradual slopes towards the North and the East directions where ever possible.
- A bore-well or a constructed well for a water source should be located in the North or the Northeast directions. Ponds also should be in North East.
- During future development land should be divided into equal rectangular plots, preferably with breadth to length ratio of 1: 1.618. The longer side should be oriented along the North-South axis, while the shorter side along the East-West direction. Or length should not be equal to 1.75 to 2 times the width
- Trees should be planted in the South and West directions. Planting of trees in the North and East directions should be avoided.
- Toilets should be located in the South and the Western zone
- No Street should have width more than one fourth of the total widths of Temple complex. Streets should be parallel or perpendicular to each other so as to create rectilinear pattern
- Electrical power points should be located in the Southeast corner
- Roofs, if provided, should have slopes towards the East, the Northeast, and the North directions. Roofs slanting towards the South and the West directions are not advisable.
- Even viris should be aligned parallel to the Sreekovil walls

Table 6: Preferable Directions for Each Landuse as per Vaasthu

<i>Landuse</i>	<i>First location preference</i>	<i>Second location preference</i>	<i>Location to be avoided</i>
Accommodation	East	South East	North and North West
Commercial	North East	Or with Accommodation	
Hospital	North West		
Offices	North	North East	
Counters	South East		
Godown / Store / <i>Sadyalayam</i>	North		
Waste Management / STP			South-West or North-East
Water Tanks, Purification Plants	North east		
Fire related	North East, North West, South-East		

5.2.2 Proposed Landuse (2050) – Sannidhanam and Pampa:

Re-planning Sannidhanam (2050)

(Refer Map10: Proposed landuse map for Sannidhanam)

Table 7: Sannidhanam : Proposed Landuse 2050

<i>Landuse</i>	<i>Percentage of total area</i>
Accommodation	19percent
Mixed Zone	31percent
Utilities and Services	5percent
Temple zone	8percent
Pilgrim activity zone	4percent
Green zone	13percent
Transportation	16percent
Manufacturing	4percent

Re-planning Pampa (2050)

(Refer Map 11: Proposed landuse map for Pampa)

Table 8: Pampa : Proposed Landuse 2050

<i>Landuse</i>	<i>Percentage of total area</i>
Accommodation	4percent
Mixed Zone	25percent
Utilities and Services	14percent
Temple zone	3percent
Public Semi public	5percent
Pilgrim activity zone	9percent
Transportation	18percent
Parking	12percent
Green zone	10percent

5.3 Proposed Guidelines for Development

The principles followed for developing design and development related guidelines for Sabarimala are presented below. Please refer **Volume 3: Vision Document and Development Guidelines** for the Maps that have been referred in this Section.

- The Development of Sannidhanam should preserve its religious sanctity
- The topographic landscape setting of Sabarimala should be recovered, restored and interpreted.
- The religious and natural resources associated with Sabarimala and its vicinity should be recognized and protected and, where appropriate, should be explored resourcefully.
- The cultural elements of the Sabarimala precinct should be recovered and restored.
- New constructions or other elements introduced into the Sabarimala landscape should not mar in any way religious sanctity.
- The religious and cultural history of Sabarimala should be commemorated.
- The massing and design of new buildings and other structures at Sannidhanam and the temple core should be attuned to the traditions of Kerala and the environment.
- Views to and from the MahaSannidhi should be protected and enhanced.
- A system of walk ways and open spaces should connect the temple precinct with the adjoining landscape
- Pilgrim pathway system should link the paths/Trek route in the temple precinct, in/through surrounding built areas and forest land.
- New streets/pathways should give the temple precinct a new identity; enhance opportunities for interpretive views of the temple, in addition to improving access to the pilgrims.
- The dismantling/demolishing of the elevated structures/ill planned structures around the temple precinct over the years should be strongly supported.
- Pilgrim services and facilities should be provided adequately

Landuse / Zoning Categories and Regulations

Following are the required Landuse Zones:

1. Temple Zones

- Swami Ayyappan temple complex, Sannidhanam
- Malikappuram temple complex
- Pampa Ganapathy temple Premises
- Sathram Mahadeva Temple premises
- Mahadeva and Devi temple premises at Nilakkal

2. Redevelopment/Development Zones

- Sannidhanam – NE,NW,SE and SW zones
- Pampa Manalppuram, Thriveni, Hill parking area
- Trek routes
- Base camp – Nilakkal, Sathram, Erumeli, Vandiperiyar, etc
- Transit camps along trek routes
- Other areas

3. Residential/Accommodation Zones

- Pilgrim accommodation
 - i. Permanent
 - ii. Temporary
- Staff accommodation
 - i. Permanent
 - ii. Temporary

4. Mixed Zones

Pilgrim/religious activity zones

- Pampa Manalppuram and Thriveni
- Thiruvabharanam trek route
- Pilgrim corridor in Erumely (petta thullal)
- Marakkoottam
- Sharamkuthy
- Bhasmakulam
- Urakkuzhi

5. Service/amenity areas

6. Green areas

1. Temple Zone:

General Regulations for Temple Zone

Area Regulations

Temples to be developed based on “**Panchaprakara Principles**” with *Balivattom, Pradakshinavazhi, Vilakkumadam, Sheevelippura, Puramathil*, as this pattern enables sufficient open areas around the temple for various religious activities and pilgrim circulation.

The minimum sizes designated for the temple complex should be 116.10 meter (m) wide and 140.40 m long with a 25 m buffer space around. It is to be understood that these ***traditional principles have strong moorings on the topography and environment and are most suited for the climatic conditions and religious requirements.***

Permissible land uses

Main Land use category: Religious

Religious activities can cover any or whole of the area if so required.

Ancillary uses: Such administrative purposes which cannot be located away from the area, queuing facilities, *prasadam* preparation (manufacturing), treasury and ticket counters, utilities (all activities closely associated with religious activity and included in the detail scheme listing)

Ancillary uses are allowed to cover a total built up area of upto 1000 sq. m or 10percent of the total built-up area of the zone, to which ever is lower for sanction purpose.

For ancillary uses to be a part and parcel of the total temple complex, they need to be planned in accordance to traditional *Vasthu principles*, which governs temple planning and in no circumstances should be constructed, unless so specified by the *Vastusashtra*. The locations, orientation, sizes and shapes also should follow the specifications in the Vastushastra and no deviation what so ever should be permitted.

All structures including bridges (but no bridge or flyovers higher than *sreekovil*), queue complexes, *Nadapanthal* etc for circulation of pilgrims within the Sanctum Sanctorum, which conform to traditional temple planning norm, are allowed to be constructed in central zone or the outer zone of the temples as ancillary uses, but no such structure or elements are allowed inside the inner most core consisting of *Sreekovil*, *Mandapam*, *Kodimaram* and *Ganapathy Kovil* in case of *Sree Dhrama Sastha* Temple or with respect to any temple falling under the preview of Sabarimala Master Plan .

Plan and Building Regulations

The temple layout should be in accordance with the *Panchaprakaram* Layout based on *Thanthra Samuchayam*. The total and exact extent of temple premises is specified in the detail scheme note. But in general, all constructions and developments have to follow the measurements and proportions as prescribed in the *Thanthra Samuchayam*. (Refer the temple development scheme for details)

Land development should be strictly rectilinear in pattern with proportions prescribed by Vastushastra and Thanthra Samuchayam.

A buffer equal to the one fifth of the total width of the temple complex or 25 m which ever is more, for main shrine and 10m for others, should be provided all around the temple complex.

Height Regulations

No structures (except flag post “*kodimaram*”) what so ever should be higher than the Sanctum Sanctorum/Sreekovil at least within the temple zone. To be precise, no building should be higher than the ‘Temple Thazhikkadam’.

Specific Regulations for Temple Zones

Sree Dharma Sastha temple complex

- Maximum height that can be conceived for any building or structures within the temple complex or in the immediate vicinity (150m all around) will be governed by the existing height of the Sreekovil Thazhikkudam. No building what so ever should mask the view of Sreekovil and Kodimaram from any position in Sannidhanam.
- No construction other than the existing buildings is allowed in the central core.
- All existing structures which are not in accordance to the principles specified in Thantra Samuchayam should be relocated or demolished
- Additional construction works should not be carried out in the central core, with exception of carrying out of regular / routine maintenance of the structures as per predetermined schedule or as and when required from the perspectives of safety of the structures and safe pilgrim movement and for provision of temporary structures required for religious / pilgrim's purposes during the season.
- Streets and buildings should orient towards the temple which is the main landmark and should be placed as per the layout suggested by Vasthu
- Nadapanthal should come up in outer core Pradakshinapadam of the temple complex
- Entry to the temple complex should be allowed from East and South Nada /Gateway/staircase only and exist from North and West Nada/Gateway/staircase.
- Hard paving should be avoided where ever possible and where provided should be with proper shading to enable pilgrims to walk during day time. Such hard paving should not be used for more than 30percent of the total area devoted for circulation. Hard paving liable to be affected by moss should not be permitted in areas normally hit by rain or water. Soft paving using brick, terracotta, etc in an open jointed form, interspersed with/without grass should be encouraged.
- Minimum of 25 m buffer should be created around the temple

Malikappuram Temple Complex

- Replanning/development of the temple complex should be in accordance to Panchaprakaram based on Thantra Samuchayam
- Minimum of 10 m buffer space should be created around the temple complex during replanning.

Pampa Ganapathy temple premises

- Replanning/development of the Temple complex should be in accordance to Panchaprakaram based on Thantra Samuchayam
- Minimum of 10 m buffer space should be created around the temple complex on replanning.
- All existing structures which are not in accordance to the principles specified in Thantra Samuchayam should be relocated or demolished.
- All the buildings at least within 100m radius of the temple should follow the same orientation that of Ganapathy temple. But the buildings coming up along the Pampa river side can be oriented with respect to the access way and streets here.
- No building in Pampa should be higher that the Ganapathy Sreekovil (in the immediate precinct 200 m radius) or mask the view of the temple from possible points along the Pampa Manalppuram, Hilltop or Thriveni Bridge sides.

Sathram Temple premises

- Replanning/development of the temple complex should be in accordance to Panchaprakaram based on Thanthra Samuchayam
- Minimum of 10 m buffer space should be created around the temple complex on replanning.

Mahadeva and Devi temple premises at Nilakkal

Replanning/development of the temple complex should be in accordance to Panchaprakaram based on Thanthra Samuchayam

Minimum of 10 m buffer space should be created around the temple complex on replanning. Building should within the 200 m radius of temple should not be higher that 10m or 2 storey which ever is less.

Building within 100m radius of temple should not be more than 5 metres or 1 storey which ever is less.

2. Base District zones: Represented by Symbol BD**Definition of the zone**

The Sabarimala Master Plan has integrated principles of Redevelopment of Sannidhanam and Pampa into the development goals and policies for Sabarimala in a long-term perspective. Various base zones have been established that allow a mixture of land uses and a gradual transformation of landuses to the prescribed one which may be different or similar to that of present times. In this context Redevelopment zone provides the standards for growth for the designated areas where it overlays the proposed landuses.

This zone comprises of approximately 60 acres in Sannidhanam (in between E-W and S-N Axis other than demarcated as temple zone, forest area and buffer zone) and about 20 acres in Pampa area comprising of Pampa Manalppuram, Thriveni, Cheriyanavattom and hilltop and is coded as Base District Zone in the map.

In addition, planning for Nilakkal also is proposed to be in these lines.

General Regulations**Area and Layout Regulations**

The minimum size of the any new subdivided plot cannot be less than 200sq.m. laid out preferably in a rectangular or square grid, avoiding angular disposition and shapes. Land development should be strictly in rectilinear pattern with proposition prescribed by *Vastushastra*.

Permissible land uses

- a) Main land use category:
 - Accommodation: Primary accommodation zone, Mixed accommodation zone, Unplanned/informal accommodation spaces (viris)
 - Green/open area: Open pilgrim activity areas, Gardens, multipurpose open space, water bodies
 - Public- semi public: Govt./Semi, Govt./Public offices, Cultural, Medical and health, social and religious, utilities and services, waste disposal sites

- Manufacturing: Only Special Prasadam manufacturing zone
- Transportation and communication: Transmission and communication, streets, pathways, Queue complexes
- Forest spaces
- Special areas: Old built-up areas, Heritage and conservation areas, areas of scenic value.

Territory Definition

The street network should be used as a means of territorial definition for a zone or zones and will signify its spatial existence as a territorial unit within each zone. The street network will act functionally in assisting the pilgrims to comprehend the relative position of area’s functional elements and ultimately the structure and form of Sabarimala. The street networks that define the territory will physically define the outer space unit, and consequently helps pinpointing the spatial quality of the territory.

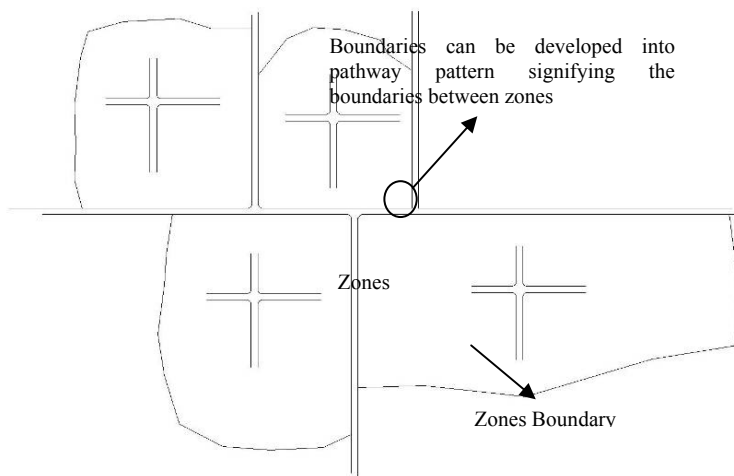


Figure 37: Possible Zonal Demarcation Patterns

Spatial Hierarchy

The spatial hierarchy principle of Vastushastra, which divides a territory into nine spaces each with its spatial quality, is proposed to be boldly demarcated by way of street network. The resulting spaces should have land uses and functions which in correspondence with its spatial quality.

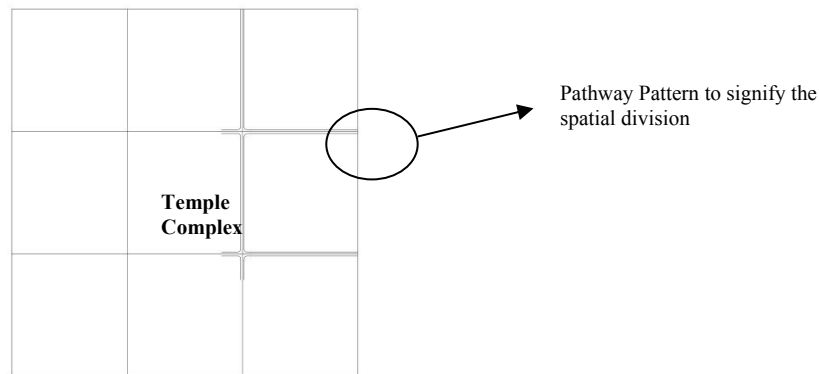


Figure 38: Pattern of Spatial Hierarchy through Street Network Layout

Crossroads

The crossroad has a special role in the Hindu rituals and ceremonies, for it is the place where all the forces from eight cardinal directions meet and are greeted by human beings. Thus, although not necessarily located in the center of the geographic area of the region, this crossroad is regarded as the navel of territory.

Religious rituals which have a spatial dimension such as settlement purification ceremony in a temple town start from the citizens' house yard, and subsequently move to bigger area of the neighborhood which gathers more crowd and ends up in the temple ground on the settlement scale. Hence, in the context of local street network system, the ceremony has a progression movement from the local street to the collector or Secondary Street and then the primary one. Such being the case, the designation of this crossroad as the highest order in the local street network system will certainly assist its role as the place to conduct some Hindu rituals and ceremonies and its existence as the center of the area, as well as –functionally speaking—the center of the settlement. Here, such cross roads can be areas where pilgrims gather for their semi-religious functions such as opening Irumudi or conducting bhajans.

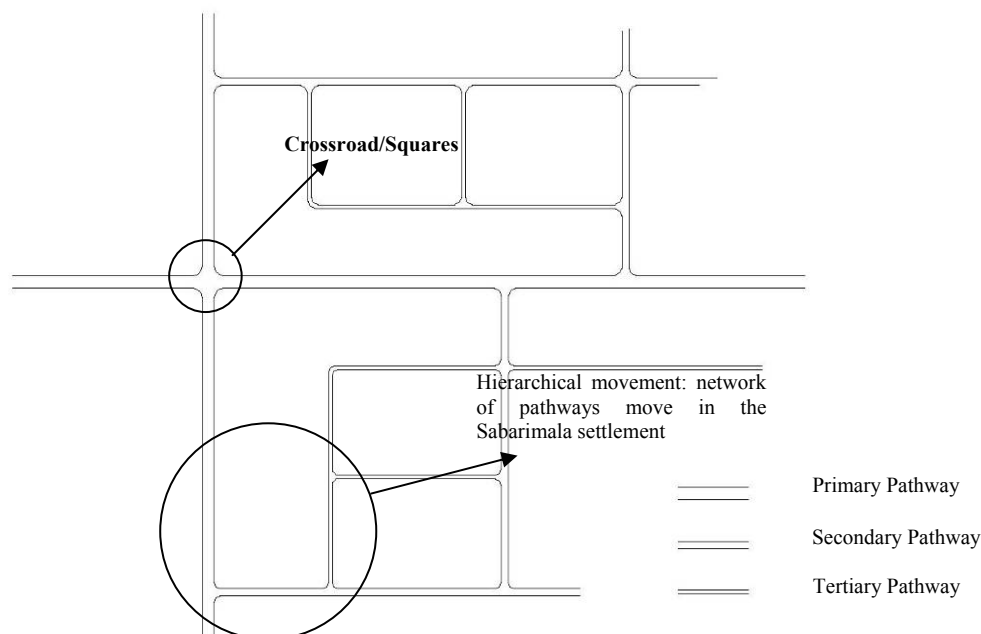


Figure 39: Suggested Pattern at the Crossroads

Use of space

Primary use of space is religious and the activities which support activities of the pilgrims are secondary. Landuses should be harmoniously mixed to mutually complement various uses. Such mixed use spaces should support religious and pilgrim activities. To support such places, they should be complemented with adequate open spaces, and also human-scale building forms and masses

Traditional-religious activity areas

Within the physical territory of a zone, the temple ground/Pampa Manalppuram, Thriveni, etc., are the important sites for Sabarimala pilgrimage-related rituals; and therefore is the

center of all the socio-religious activities. Such areas which simultaneously act as the landmarks and the nodes need careful planning consideration. Primarily, these areas are meant for religious activities and hence other uses must be minimal. Not more than 20percent of the space here should be allowed for other uses.

Further, provision of accommodation at these nodes would be purely for pilgrims, priests and essential staff of the establishments which provides pilgrim facilities and/or manage the area here.

Setbacks

The following shall be considered as the building lines, based on the width of the street within this zone.

For 5 m ROW streets: 3.0 m with exception for commercial and amenities where in it can be 1.5 m

For 10m ROW streets: 4.0 m with exception for commercial and amenities where in it can be 2 m

For 20m ROW streets: 5.0 m with exception for commercial and amenities where in it can be 2.5 m

Note:

Sloping roof projections or overhangs of not more than 1m are permissible

In the event of conflict between what proposed in the Base District zone standards and the particular Landuse zone standards, the Base District zone standard will precede and the said development has to conform to this alone.

Specific Regulations

- i. Sannidhanam – North-East, North West, South - East and South -West zones
 - The main arterial routes leading upto each nada (Gopurams) will have 20m ROW, the collector streets in each zone will have 10m ROW and the local streets will have 5m ROW.
 - Old existing landuses would be retained as long as alternative provisions are made with respect to the specified zone. But the alternative provision has to be made within the specified time period.
 - All streets should be pedestrianised with the pedestrian character ensured through steps, surfacing, central statues, congregating spaces etc.
 - All the utilities should be placed underground in suitable horizontal ducts with manholes at suitable intervals so as to facilitate easy repair and maintenance without much disturbance and resurfacing works.
- ii. Pampa Manalppuram, Thriveni, Hill parking area
 - The building orientation should be such that the shorter length is perpendicular to the existing major street on which it is located.
 - No building should be constructed within 50m from the banks of Pampa (with exception for small scale construction in the form of kiosks for requirements related to religious purposes and water supply i.e. pump house)
 - Rows of shading trees are to be planted on both sides in the shoulders of the pathways all along the main street at a minimum interval of 10meters. Trees of

- Ficus species or any other species suitable to the surrounding evergreen forests and with some religious significance may be permitted.
- The minimum width of the footpath should be 3 meters. Additional width of 2m should be provided in shopping areas to allow for activity spillovers.
 - All constructions should be modular.
 - At no place should the length of a temporary structure or continuous temporary structures be more than 15m.
 - Minimum parking space for service vehicles should be provided. The minimum parking requirement for each car and truck is as follows
 - Car/jeep: 3m x 6m (when individual parking space is required) and 2.5m x 5 m when community/group parking space is required)
 - Truck: 4 x 10 m
 - Ambulance: 3.5 x 7 m
 - Tractor: 3.5 x 7.5 m:
 - Fire Fighting Service Vehicle: 4 x 10 m
- iii. Trek routes
- Existing trees along the route are to be maintained. In no circumstance, should a tree be cut unless it is a cause of concern for pilgrim safety.
 - Rows of shade trees are to be planted and maintained on both sides all along the main trek route. These should be planted at a minimum interval of 10 m and with 1.5m setback from the edge. Trees of Ficus species or any other species existing in / suitable to the surrounding evergreen forests and with some religious significance may be permitted. Those which can attain wide spreading canopies and branching starting at around 2m to 3m from the base would be preferable.
 - At places where commercial uses are provided, they should be planned in such a way that allowed width of the route is not masked by spilled over activities from such areas. Design/siting of these units should be carefully carried out so as to segregate spillovers from the main pilgrim trek areas. The width should be increased by 1.5 m in shopping areas to allow for dead width. In case of longer adjoining shopping frontage or double loaded corridors a minimum of 6m should be maintained. In case, the single lane 3 meter trek path is insufficient to cater to pilgrim traffic multiples of such lanes with tree median in between should be provided.
 - All the utilities should be placed underground in suitable horizontal ducts with manholes at suitable intervals so as to facilitate easy repair and maintenance without much disturbance and resurfacing works.
 - Continuous concrete paving of the trek route should not be allowed. Concrete paving may be done only at locations where the slope of the ground is more than 1:2 or if the base consists of very soft mud. But in no case should the continuous - concrete paved stretch extend beyond 50m length.
 - No structure what so ever should be constructed on or over the trek route (natural shading should be maintained through out) except specific structures for resting, minimal commercial facilities and for queuing up of pilgrims.
- iv. Base camp – Nilakkal, Satram, Erumeli, Vandiperiyar, etc
- The building orientation should be such that the shorter length should be perpendicular to the existing major street to on which it is located.

- No building should be constructed within 50m of water bodies (with exception structures catering to religious customs and water supply i.e. pump house)
 - Rows of shading tree are to be planted on both side in the shoulders of the pathways/ roads all along the Main Street and secondary streets. Trees should be planted at a minimum interval of 10 meters.
 - The minimum width of the footpath should be 3 meters. Additional width of 2m should be provided in shopping areas to allow for activity spillovers.
 - The minimum right of way for all main roads in the base camp should be 12m and 9 m for secondary roads
 - Minimum parking space for service vehicles should be provided. The minimum parking requirement for each car and truck is as follows
 - Car : 3m x 6m (when individual parking space is required) and 2.5m x 5 m when community/group parking space is required)
 - Truck : 4 x 10 m
 - Tractor: 3.5 x 7.5 m
 - Ambulance: 3.5 x 7m
 - Fire Fighting Service Vehicle: 4 x 10m
 - All the utilities should be placed underground in suitable horizontal ducts with manholes at suitable intervals so as to facilitate easy repair and maintenance without much disturbance and resurfacing works.
- v. Transit camps along trek routes
- Transit camp to be provided only at an interval of 5 km or 1 hour walking distance which ever is more.
 - Transit facilities along the route should not hold more than 200sqm in area at a particular location
 - No artificial lighting should be provided to facilitate pilgrim movement during night
 - No permanent construction what so ever should be done in these areas
 - Specifically designated facility areas have to be maintained at these locations and main base areas if located within the forests should not be more that 1 acre in extent.
 - Clustering of amenities and services need to be done
 - All layouts should follow the pattern so described here even for temporary structures.
 - No multistoried temporary structure should be constructed; the maximum height for any given structure should be 3 meters.
 - Construction should be modular and construction members should be easy to dismantle, store and reassemble for use during the succeeding seasons.
 - Area not less than 2.5 sq. m. to be allocated per person per viri.
- vi. Other areas
- All other areas such as main activity areas in local body areas should conform to norms and standards prescribed by Kerala Municipal Building Rules (KMBR) for any construction to be undertaken and should respect any existing Master Plans drawn by competent authority designated for the purpose (Town Planning Department / Development Authority etc).

General calculations for regulations adapted for these areas is presented in Appendix (based on UDPFI guidelines)

3. Residential/Accommodation zones: Represented by symbol AA

Definition of the zone

This zone comprises of area in south-East and Eastern portion of Sannidhanam and defines as AA in the map.

General Regulations

Area and Layout Regulations

The minimum size of the new sub divided plot cannot be less than 200sq.m. Land development should be strictly in rectilinear pattern with proportions prescribed by Vastushastra. Every building should have direct access to a public street/ pedestrian way.

Further, no principal building shall be erected within a maximum distance of 7.5m from any other principal building.

The total extent for the zone shall consist of at least 5 hectares of contiguous area primarily located towards Southeast and eastern sides.

Density

The number of dwelling units needed in any Accommodation zone shall be determined by the authorities, but should assure compliance with other regulations. Under no circumstances, however, may the total number of dwelling units permitted exceed the maximum possible by either of the following whichever is less:

- The number obtained by dividing the total Zone area by the minimum lot size permitted in the zone existing at the time of the Accommodation Zone being enforced; or
- An average of no more than 40percent coverage of the any specified extent of land within the zone. (with exception only for ancillary use where in coverage can be upto 80percent but the total extent of this activities only constitute maximum of 10percent of this zone)

Permissible land uses

- Main land use category: Accommodation
- Ancillary uses such as commercial, amenity services and religious activity uses
- The ancillary uses are allowed upto 30sq.m or 10percent of the total built area which ever is less

Utility and road requirements

- There shall be provided within the planned Accommodation Zone, a sanitary sewage disposal system which shall be of sufficient size and design to collect and dispose of all sewage from all present and probable structures (both temporary and permanent) to be constructed within that zone, and shall be otherwise built and maintained in conformity with Standards prescribed by KPCB and / or CPCB.
- There shall be provided within the Planned Accommodation Zone a storm drainage system which shall be of sufficient size and design as will in the opinion of the Department of Public Works (PWD) and / or Kerala Water Authority (KWA) collect,

carry off and dispose off all predictable surface water run-off within that zone and shall be so constructed as to conform with KMBR (Kerala Municipal Building rules).

- There shall be provided within the Planned Accommodation Zone horizontal carriage ducts with manholes at suitable intervals so as to carry all the utilities underground to facilitate easy repair and maintenance without much disturbance and resurfacing works.
- There shall be provided within the Planned Accommodation Zone a potable water system, which shall be of sufficient size and design to supply potable water to all the structures to be constructed in that zone. There shall be provided a fire hydrant where required by the Fire department, of a type and in a manner prescribed by the regulations of the Fire safety standards and as prescribed in the National Building Codes.
- The dimensions and construction of roads and alleys areas within the Planned accommodation Zone, whether or not dedicated to the general use shall conform to all regulations been prescribed.

Height requirements

The height of any accommodation structure within such zone shall not exceed 10meters and the height of other structures (associated with ancillary uses) shall not exceed 5 meters.

Occupancy per building

No building may accommodate more than 100 persons.

Area of accommodation development

The area of accommodation development, including roads and other rights-of-way to directly serve accommodation facility, may not exceed forty percent (40percent) of the total land area within the Accommodation Zone.

Land conservation requirements

The requirement concerning conservation of land shall be as follows:

- Conservation land mainly in the form of green space provided in a planned accommodation Zone shall equal at least thirty percent (30percent) of the total area. Adequate number and specific type of trees shall be planted and cared for in this area. Species selection should be based on those trees found in the nearby forest areas that also have religious importance.

Setbacks

a) The following shall be considered as the building lines, based on the Width of the street within this zone.

For 5 m street	: 3.0 m
For 10m street	: 4.0 m
For 20 m street	: 5.0 m

b) The setbacks for ancillary use are as follows

For 5 m street	: 1.5 m
For 10m street	: 2.0 m
For 20 m street	: 2.5 m

Specific Regulations

Pilgrim accommodation

- **Permanent**
 - Pilgrim accommodation at Sannidhanam will be only for those who climb with *Irumudi* and want to conduct certain special *poojas* that would necessitate over night stay, for which prior booking has been done. (This provision need to be ascertained in consultation with *Thanthri/Mel Shanti* and religious heads)
 - All accommodation created at Nilakkal for pilgrim during season should be only dormitory type (90percent). The dormitory type will be that of 5, 10, 20 and 30 accommodation strength types. Double Room with attached facilities should only for 10percent of the pilgrims.
- **Temporary**
 - All temporary structures should be made of stable and structurally safe material only. Wood poles, bamboos, dried leaf sheets; etc, which is highly susceptible to fire, should be done away with. Sheets which conducts heat and succumbs / fails to fire should be done away with, especially within 100m of the temple.
 - No multistoried construction of temporary nature or fire prone semi-permanent is allowed.
 - Detailed layout plan and construction plan are to be formulated before the actual construction takes place.
 - Temporary structure should not be constructed abutting a permanent building.

Staff accommodation

- **Permanent**
 - In Sannidhanam only permanent stay facilities to be provided, no temporary (viri) accommodation should be permitted.
 - All accommodation for additional service staff during season should be only dormitory type.
 - All accommodation for resident staff should be room with attached facilities type.
- **Temporary**
 - All temporary structures should be made of stable and structurally safe material only. Wood poles, bamboos, dried leaf sheets; etc. which are highly susceptible to fire should be done away with.
 - No multistoried construction of temporary nature is allowed.
 - Detail layout plan and construction plan are to be formulated before the actual construction takes place.
 - No temporary structure should be constructed abutting a permanent building.
 - No strident colours / material should be used for construction.

4. Mixed Use Zone: Represented by symbol MZ

Definition of the zone

These zoning and development standards are intended to be implemented at Sannidhanam and Pampa.

Overlay Districts

In addition to the general conditions set forth herein that are applicable to all land classified as Mixed use zone, four overlay districts are also established: Pilgrim activity overlay, commercial activity, services and amenities and public and semi public overlay. The purpose

of the overlay districts is to add or amend certain use, development and/or design standards to mixed zone.

Permitted, Conditional and Prohibited Uses

All uses with respect to four overlay zones are permitted, provided one use do not contradict/mars the existence of the other use. All activities except that of provision of treatment plant facilities along with dump sites are prohibited in these areas. Accommodation is also not permitted in this zone apart from that for staff on duty what is clubbed with offices

The following uses shall be allowed as Permitted Uses:

- Hospitals
- Cultural centers/ assembly halls/ dining halls
- Media center, Radio, television, microwave and other communication antennas
- Queue complexes
- Commercial establishment –hotels shops etc.
- Administrative offices –office cum accommodation space
- Stores, stockroom
- Distribution counters
- Water supply tanks and pump houses
- Power supply stations

Pilgrim activity spaces General Development Standards

Frontage

Commercial uses should not have frontage towards the four main arterial streets and may be developed as inward facing courtyard structures

Floor area ratio

Commercial uses:

For only commercial uses, the Floor Area Ratio (F.A.R.) of all buildings on a lot shall not exceed 1.0. Maximum area for a single plot of commercial use shall not be more than 200 sqm. Distance between two commercial use clusters shall be a minimum of 100 m

Note: Individual commercial buildings shall be higher than single floor

Mixed-use:

For buildings hosting both commercial and residential uses, the F.A.R. of all buildings on a lot shall not exceed 1.5. The following shall also apply:

Maximum office floor area: All floor area exceeding a floor area ratio of 0.6 shall be developed for residential uses.

Minimum accommodation floor area: The commercial component of mixed-use projects shall have a minimum floor area ratio of 0.4.

Density

The maximum number of building units on a lot shall be one unit for each 200 square meter of lot area, not to exceed thirty-five (35) built units per net acre.

Minimum lot size, mixed-use projects

No projects containing both office and residential uses shall be permitted on lots with less than 1200 square meter of lot area.

Building Height

Commercial uses: For projects containing only commercial uses, no building or structure shall exceed a height of 10 m.

Mixed-use: For projects including both commercial and residential/accommodation uses, no building or structure shall exceed a height of 10ms. With respect to all other uses also maximum permissible height will be 10m. Only structures/ building exempted from these water over head tank and police watch towers which can be constructed to the height if so required.

Setbacks

a) The following shall be considered as the building lines, based on the Width of the street within this zone.

For 5 m street	: 3.0 m
For 10m street	: 4.0 m
For 20 m street	: 5.0 m

b) The setbacks for ancillary use are as follows

For 5 m street	: 1.5 m
For 10m street	: 2.0 m
For 20 m street	: 2.5 m

5. Pilgrim/Religious activity Zone: Represented by symbol PA**Definition of the zone**

The PA Zone is intended to prohibit intensive building development of those areas of the Sabarimala which could be called the “intense loci of pilgrim activity” (present and / or proposed) and where such development would adversely affect the pilgrim usage and natural environment; and to assure permanent open space for the traditionally followed Pilgrim activity areas.

General Regulations**Minimum plot size**

The minimum size of the new plot allocated for pilgrim activity should not be less than 2000 sq. m. Land development should be strictly in rectilinear pattern with proportions prescribed by *Vastushastra*.

Permissible land uses

- Main land use category: Open space/green space/activity space.
- Ancillary uses amenities and service: resting places and minimum commercials.
- The ancillary uses are allowed up to 500 sq. m or 25percent of the total plot area.
- No ancillary use category to be provided in independent building, all facilities to be clustered, in a central location where general and service accessibility is provided.

Setbacks

The setback so required for any construction within this zone is 3 m from the edge of any pathway or road, while roof overhangs or shades can extend a maximum of 1m from the outer wall.

Height requirements

The height of any building structure within such zone shall not exceed 3m while overhangs can dip to 2.5m at its outer most edge.

Circulation

The building cluster constructed in this zone should have a good circulation space which should not be less than 6m wide all around with free access from all directions.

Land conservation requirements

The area of conservation land mainly in form of green space or open space in a Pilgrim Activity Zone shall equal at least seventy percent (70percent) of the total area.

Specific Regulations

- *Pampa. Manalppuram and Thriveni*
 - Construction related to only religious requirement is permissible. Other than this, no buildings what so ever should come up in this zone.
 - Area to be well lit with soothing and proper directional lights which would not affect the wildlife
 - Sufficient locker facilities to be provided for pilgrims so that Pilgrims can abstain from going to the river with the plastic bottles / wastes and other unnecessary accessories.
 - Waste bins to be provided and collection of solid wastes from activities near the river to be enforced at regular required intervals.
 - No bins / other uses which let waste water / leachate into the river to be permitted at a distance of 50m, and if any such required as part of religious activities may be provided with sufficient non-permeable collection and final off site treatment and disposal arrangement.
- *Thiruvabharanam trek route*
 - Minimum 5 meter width of the trek should be maintained.
 - The trek route should be maintained in its natural state only. Paving in any form are not allowed.
 - Protective embankment can be constructed where ever found essential to prevent landslides. This should be using suitable ground bio-engineering techniques.
- Pilgrim corridor in *Erumely (petta thullal)*
 - Separate and secured walk way of minimum 4 meters should be created between the mosque and the temple.
 - Tree planting should be carried out all along the stretch where there exist intense pilgrim activities.
- *Marakkoottam*
 - All above specified norms should be followed here too.
 - As this is the starting point from where pilgrim enters the queue complex required

- open space here should be allocated for the pilgrims to congregate.
- Trees should not be cut and Natural setting should be maintained.
- Canopy to be ensured above congregating pilgrims.
- *Sharamkuthy*
 - All above specified norms should be followed here too.
- *Bhasmakulam*
 - No buildings should come up within 25 meters of this pond.
 - Good buffer space of 5 meters around the pond should be created.
 - Access to the pond should be only from its eastern side.
- *Urakkuzhi*
 - No construction should come up in this area apart from provision of protective railing and embankments.
 - An access way with minimum 5 meter ROW should be maintained with necessary utility provisions, without disturbing the trees and natural features.
 - All utilities and services should be placed underground.
 - Waste dumped within 100 m of this location is prohibited.

6. Service/Amenity Zone: Represented by Symbol SA

Definition of the zone

This zone comprises of the area to the west or south west side and defined as SA in the map.

General Regulations

Minimum plot size

The size of plot cannot be less than 2 hectare.

Permissible land uses:

- *Main land use category: Sanitation.*
- *Ancillary uses: Solid Waste Segregation, Recycling, Treatment and Disposal.*
- *The ancillary uses are allowed up to 0.5 hectare or 25percent of the total plot area.*

Maximum built-up area

The maximum built up coverage for administration and monitoring purposes permissible here is that of 5percent.

Height

Maximum height of any built structure in this zone should not be more than 5m. The dump pile in case of solid waste management should not be more than 1.5m in height.

Buffer

A buffer of green space of minimum 15 m depth is required to be provided all around the facility.

Land Conservation requirements

The requirement concerning conservation of forest land shall be as follows:

- The area of conservation land mainly in form of green space in the service area shall equal at least forty percent (40percent) of the total area
- Note: This space may however be used for functions connected with such services which can be performed in such spaces (eg: sprinkling treated waste water, drying waste cakes etc).
- No waste / pollutant from such areas should be allowed to traverse outside the buffer provided.

7. **Green Zone/forest Zone: Represented by Symbol GZ**

The system of development-restricted zone (greenbelt zone hereinafter) in Sabarimala is required to stop the development sprawl. It is expected that, by the provision of green zones disorderly and fragmenting expansion of Sannidhanam could be contained and ensured to be in tandem with the natural setting. It would also secure and preserve the natural environment in periphery and aspire to regain the identity of the forest temple

Definition and Intent of the zone

This zone comprises of area to periphery of the Sannidhanam settlement. The intent of the Green zone is to preserve in their natural state, all steeply sloped lands forming more or less continuous escarpments, poorly drained, and other lands having unique scenic or locational attributes for the purposes of watershed protection and erosion control, the preservation of existing forest vegetation and soil cover, the preservation of recognized wildlife habitat, the maintenance and improvement of esthetic amenities and pilgrim access, the protection of life and property from natural disasters or hazards, or any of these, and to preserve such lands and the natural drainage thereof from the indiscriminate cutting of trees, the removal or deposition of topsoil, sand, gravel or rock, or mining or development of any kind, except in accordance with a zoning amendment to accommodate an environmentally acceptable development proposal or an approved sector plan, vicinity outline plan, subdivision plan, building permit, or soil removal permit.

General Regulations

All uses permitted in this District shall be subject to the following regulations:

Permitted Uses

Subject to all other provisions of zone, limited pilgrim activities could be allowed here mainly for holding or dispersing the crowd during emergencies. But no constructions (temporary or permanent) what so ever will be allowed within this zone

Site Regulations

The minimum buffer area shall be 50 meters or 10percent of the width of the settlement, which ever is more, around the Sannidhanam.

Activities/built area created in the area newly designated under this zone prior to the date of adoption this master plan, regardless of area or dimensions, may be used for any of the uses for a maximum time limit of 5 years from the date of acceptance of the master plan. This time period provided is to facilitate proper relocation of the existing activities to respective zone as been prescribed. But in no case any addition or expansion of the same would be allowed even during the specified 5 years. Beyond which the structure has to be fully demolished and removed form the location.

8. Specific Regulations for Selected Amenities / Areas

The main areas regulations have clear written rules and regulations for project realization, whereas large projects and zones in which consultation is required come under the “specific areas” marked with symbols on the map; these are:

- Large Public and Semi Public Infrastructures – *Appam Aravana* Plant, queue counters, *Sadyalaya*, etc
 - Large Queue management structures
 - Dedicated land uses
 - Scheme areas
 - Areas along the pilgrim routes

Planning Requirements for specific Infrastructure

Large public and Semi Public Infrastructure

Existing planned public and semi public use developments and proposed developments with large land component above 1.0 acre or as designated on the map through a boundary /symbol are classified into the large public and semi public infrastructures.

- All public and semi public buildings are expected to follow certain common color code and built pattern for ease of recognition.
- Maximum of 2 stories only shall be allowed for these types of buildings. These building should be located along the main arterial streets (ROW- 20m) or the collector streets (ROW-10m) only.

Large Queue Management Structures

- The total area under permanent construction should be minimized. Only service core to be constructed permanent and waiting area to be provided temporary roofing and grill partitions
- Maximizing service accessibility for pilgrims
- The circulation pattern would be such that to create one-way pilgrim movement only.
- The design should be such that it maximizes natural lighting, ventilation and safety
- Wherever there are no permanent constructions such as in case of queue cells ground covering should be with natural materials if necessary, that too open jointed.

Regulations

- Maximum ground coverage (of only permanent building area) shall not exceed 20 percent of the total land area.
- Maximum FAR: 1.00
- 3 percent of the area may be allowed for commercial use.
- The maximum height should not be more than 6m.

9. General Regulations Applicable To All Zones

Construction of Buildings

Minimum size of plot

Minimum size of a plot for building shall not be less than 200sq.m

Other Provisions

- The maximum permissible floor area includes the area of mezzanine floors also.

- No permanent boundary wall or fencing should be provided with exception for manufacturing zones and where ever it required for safety and security purpose.
- Running creeper or flowering creeper and tree to be planted all along the street. However species selection should be considerate enough not to bring in invasive species, alien to the region.
- Minimum 50percent of the total area of the given area (e.g. Sannidhanam, Pampa, Nilakkal) shall be under green cover. At least 100 trees per hectares have to be planted out of which at least 50percent shall be evergreen trees.

Set backs for all buildings other than buildings on residential plots to be as follows:

S.No.	Plot size (sq.M)	Front (in mts.)	(in mts.)	Rear(in mts.)	Side(1)in Mts.	Side (2)(in mts.)
1	Up to 400	3.0		1.5	0	0
2	Above 400 to up to 800	3.0		3.0	0	0
3	Above 800 up to 1200	4.5		3.0	3.0	0
4	Above 1200 up to 2000	6.0		3.0	3.0	3.0
5	Above 2000 up to 4000	9.0		6.0	6.0	6.0
6	Above 4000 up to 10000	15.0		6.0	6.0	6.0
7	Above 10,000 up to 20,000	15.0		9.0	9.0	9.0
8	Above 20,000 up to 40,000	20.0		9.0	9.0	9.0
9	Above 40,000 up to 10,00,00	25		9.0	9.0	9.0

Notes:-

- (1) Specific set backs shall be as per zonal plan prepared whenever such a plan has been prepared by the implementing agency.
- (2) In case the permissible coverage is not achieved within setbacks, the setbacks of the preceding category may be followed.

Features Permitted in the Setbacks of the Plots

Sl.No.	Features	Description
1	Decorative Column	Columns purely decorative and not load bearing shall be permitted in the setback if required as part of establishing / retaining a heritage character in the overall layout. Such columns of any material and any number shall be permitted but maximum size of each column shall not exceed 300mmX 300mm.
2	Buttresses:	Buttresses, any number, shall be permitted in setback up to maximum width of 750mm in setback
3	Moldings and Cornices, Statues and Murals:	Murals, moldings, Statues and cornices if provided along/ under any projection shall be permitted upto a maximum width 150mm over and above the maximum permissible dimensions of a projection or a canopy.
4	Planters and Sun Control Devices:	Projection in form of planters, cantilevered shades and other sun control devices shall be permitted in setback upto maximum width of 750 mm. Maximum depths of such planters shall not exceed 600mm.
5	Jali:	Jali of any material shall be permitted over projections which are primarily meant to cover certain extremely important wall / roof fittings. Maximum width of such jalis shall not be more than 75mm.

Sl.No.	Features	Description
6	Casing / Enclosure To Cover Rain Water Pipe	Casing / enclosure to cover rain water pipe of any material shall be permitted in setback up to depth of maximum 250mm and maximum width of 600 mm may be permitted.
7	Roof Overhangs	Sloping roofs

10. **Structural Safety**

The buildings / structures what so ever would be erected should be structurally safe. Considering the fact that the area is in a geographically weak plane susceptible to cracks, all old structurally unsafe buildings need to be phased out. For existing buildings, adequate precautions need to be taken to make them crack-proof. It should be enforced that all new buildings are safe and **earthquake resistant**. It is the responsibility of the implementing agency alone to ensure structural safety and get necessary approvals from authorities regarding the structural firmness. This is important as the area witnesses amassing of pilgrims in all possible corners during the peak days and buildings are positioned without any safety considerations.

11. **Rain water harvesting**

Provision for rainwater harvesting is mandatory for all new constructions.

12. **Water Supply, Sewerage and Drainage**

- In case of a plot for accommodations/stay purpose having dwelling units, the TDB or other responsible agency thereof shall be responsible to make lawful arrangements for potable water in the accommodation areas.
- The TDB or other responsible agency shall be responsible to provide drains in all respective zones to be used for rain water/storm water and in case of waste water closed sanitary drains to treatment plant areas, as may be required by the concern Authority.
- The TDB or other responsible agency shall be responsible to provide septic tank/Treatment of sewage with necessary dispersion trenches for disposal of human excreta in all area under its control in Sabarimala.
- The dispersion trenches of the septic tank if provided for a specific building shall be 15 meters away from the boundaries of the building.

13. **Electrification**

- The electric connection for the areas should be directly obtained by the user agency (here, TDB) from the appropriate authority (here, KSEB) responsible for distribution on such terms and conditions and at own cost as decided by the appropriate authority.
- Underground safe and secured transmission and distribution lines to be provided in all zones especially where high intensity of activity is expected.

14. **Solid waste Management**

Every Building irrespective of use/activity shall maintain a primary storage point preferable along the service access, wherein the segregated biodegradable and non-biodegradable waste are stored separately. The detailed directions in this regard shall be followed as specified in the solid waste management report. The space for collection of garbage, in plots, shall be so conveniently located from where collection and transportation will be undertaken to its final treatment location.

15. Style, Colour and Material

As much as possible, traditional Kerala architectural style should be recreated. This should essentially be so in the scheme areas. Roofing pattern, relationships between built and un-built open spaces should follow traditional Kerala style.

Colours used should not be offensive. Same colours should be used for utilities and infrastructure provided of same type around the area. As much as possible, earthly and natural colours should be used.

Materials, especially those used for paving should be as much as possible natural materials or earth based materials like stones, terracotta etc with due consideration to the load expected and should be used in an open jointed manner to allow percolation.

These guidelines have been consolidated in Volume 3 of this Master Plan Report (Vol 3: Vision Document and Development Guidelines)

Compiled list of interventions, their phasing and the land required for implementation has been provided in the following table.

ANNEXURES

Annexure 1: Primary Surveys and Terms of Reference for Imagibility Study

Primary Surveys

Pilgrim Perception Survey

Scope:

Planning for all present and future developmental requirements at Sabarimala necessitates an accurate assessment of the need and demand of pilgrims visiting the Sabarimala shrine during the peak pilgrim season in the month of November, December and January. This data is the most critical input based on which conspicuous approach could be derived for Master Plan preparation which would ultimately address all issues and problems in its righteous way.

The study was undertaken in order to ascertain the Pilgrim Characteristics, Movement pattern, Transit requirements of the pilgrims during the peak season, ascertain the needs and demands of the pilgrims / people with respect to developments related to Sabarimala, and bring out detail checklist of development requirements related to Sabarimala and to prioritise it based on pilgrim's expectations.

Questionnaire surveys were carried out at main modal interchange points so as to capture the retreating pilgrims, after the holy visit. Main Modal interchange points included:

1. Railway Stations: *Ernakulam, Kottayam, Alapuzha, Chengannur, Thiruvalla*
2. Towns and Cities / Places: *Ernakulam, Kottayam, Erumely, Vandiperiyar, Alapuzha, Trivandrum, Kollam, Pathanamthitta, Kumily, Thrissur, Palakkad*
3. Other Places / Areas : *Nilakkal, Sathram, Uppupara, Vadasserikkara, Pandalam, Kaladi, Guruvayur, Chottanikkara, Vaikom*

Objective: To capture the Architecture, Vista, skyline, characteristics etc of built form and its relevance to the activities at Pampa and Sannidhanam. This would involve detailing out the following:

1. Buildings in the streetscape
 - Street front buildings
 - Corner buildings
 - Street views and vistas
 - Adjacent buildings
 - Area character
 - Historic/Religious significant buildings
 - Site elements
 - Roof design
2. Pedestrians/Pilgrims in the streetscape
 - Street-front pedestrian/Pilgrim areas
 - Weather protection
 - Pedestrian amenities
 - Building entrance

- Walkway identification
 - Pedestrian links
 - Walkways /Trek routes
 - Vehicular barriers to pedestrian areas
 - Public passageways
 - Consistent grade
3. Vehicles in the streetscape
- Access lane
 - Lane identification
 - Service and delivery
 - Turning areas
 - Parking lots
 - Automobile display
 - Parking convenience
 - Bicycles
 - Vehicle ramps
 - Lighting for parking areas
 - Area standards
4. Landscaping in the streetscape
- Tree preservation
 - Uses of landscaping
 - Landscaping the streetscape
 - Plant selection if any
 - Size and quantity of plantings
 - Fences and walls
5. Signs in the streetscape
- Integration
 - Character
 - Building identification
 - Illuminated signs
6. Site services in the streetscape
- Existing site services
 - Site service design
7. Relationship between Solids and voids
8. Other elements/features such as water bodies, religiously important special elements etc.,
9. Element to be preserved
10. Element to be enhanced
11. Elements of which characteristics can be taken as the model for future development
12. Detail sketch depicting the features of Sanctum sanctorum
13. Variation in vista during day and Night
14. Canopy/foilage usages
15. Religious/Ritual importance accentuation

This is basically a critical evaluation of the architectural precedence presently existing in Sabarimala and to bring out the need for controlling those. The focus of the study will be recording and representing all existing characteristics using appropriate means (sketches, photos, etc) of containing and showcasing the existing situation in a holistic manner. The objective of the assignment is to formulate design to be improved upon at Sabarimala to demarcate for reconstruction – those building/elements that mars the religious/historical importance feel of the place, is intended

The above said and any additional information documentation as required is expected to bring out a comprehensive report on imagibility of the area.

Annexure 2: Terms of Reference and Details for Landuse Updation Survey

Scope of the work

1. Updating the existing map – identification of all building, its use and the height (No. of stories), roof characteristics, plotting of any new structure that might have come up. (Layout map of the area will be provided)
2. Identification of all temporary structure and collecting details with respect to its use at Pampa and Sannidhanam.
3. Identification of major service line at Pampa and Sannidhanam– water supply line, electricity supply line, Sewage plumbing lines, etc. (approximately plot the alignment of these service lines at Pampa Sannidhanam)
4. Identification and classification of areas according to the activities at Pampa and Sannidhanam.
5. Major route mapping of pilgrim (circulation pattern of pilgrim) at Pampa Sannidhanam.

This is basically a critical evaluation of the Characteristics of Land development presently existing in Pampa and Sabarimala and to bring out the need for controlling these. The focus of the study will be recording and representing all existing Landuse and activities mapping which will contain all existing aspect with respect to landuse and can present the land development aspects at Pampa and Sannidhanam. The objective of the assignment is to formulate Developmental measures to be improved upon at presently haphazard development pattern at Sabarimala, which mars the religious/historical importance feel of the place.

The above said are just the indicatives of the work to be undertaken and should not be considered as the limitation factor for bringing out a comprehensive report/Detailed Drawing on landuse and on activities of the area.