

Master Plan for Rural Development at Panthapara Tribal Colony, Kerala

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ABSTRACT: One tool to provide suitable conditions in rural area is a master plan that provides special physical organisation. Master plan comprises changes in rural areas on the physical, social and economic dimensions. Its main goals are to improve village life and persuade residents to stay in rural areas preventing their migration to urban areas. Other goals of implementations of master plans are the construction and modification and improvements of streets and intersections, sidewalks, developments of green space, construction and modification of water supply, if needed construction and modification of disposal networks etc. This study focuses on the various problems faced by the inhabitants of Panthapara tribal colony, Kuttampuzha village in Ernakulam District, Kerala, India on various aspects like water supply, transportation, residential conditions, sanitary facilities etc. and makes a master plan for the area with various development options.

KEYWORDS: Master plan, Rural areas, Developments.

I. INTRODUCTION

A Master plan can be defined as the long term perspective plan for guiding the sustainable planned development of the city. The term Master Plan is also used to indicate the arrangement of various components or units of a town in such a way that the town as such attains the significance of a living organism. In the preparation of environmentally compatible urban or rural development plan, it is a pre-requisite to understand the linkages and interactions that exist between different components of the urban or rural environment.

Rural development aims at finding the ways to improve the rural lives with participation of rural people themselves so as to meet the required needs of the rural area. The outside may not understand the settling, culture, language and other things prevalent in the local area. There is a large variety of rural development approaches used globally in water supply, power, garbage collection, education, health etc.

A tribe is viewed developmentally or historically, as a social group existing outside of the development of states. A tribal group as a people, depends on their land for livelihood, who are largely self-sufficient and not integrated into the national society. They are products of different historical and social cantons. Despite Government initiatives and development projects the existing Socio-economic profile of the tribal communities is low compared to the mainstream population. All forms of social exclusion and a high degree of deprivation are the major problems faced by the tribal community in Kerala.

We selected the rural settlement Panthapara tribal colony in Kuttampuzha, Kothamangalam taluk, Ernakulam district, Kerala as the area for our research. This is because this colony is the only place in Kerala where tribal colony people are clustered together where no development prospects are seen. The colony is extended over an area of 170 acre and there are 67 families. Lack of transportation, electricity, water supply and lack of vicinity of educational institutions are major problems over there. It is an irony to point out the amidst all the development indices of urban development like metro, sky-city, smart-city etc., the tribal of the Kothamangalam taluk in the outskirts of cochin are

marginalised and kept away from all the mantras of development.

II. METHODOLOGY

For doing planning and development research it is essential to do a general visit to the site to fix the project methods.

As per the specialities of the land are and the community, we adopted two methods for surveying. Combined home survey and direct data collection is used for population survey because the people are uneducated tribal people. The map and other data are obtained from the authorities.

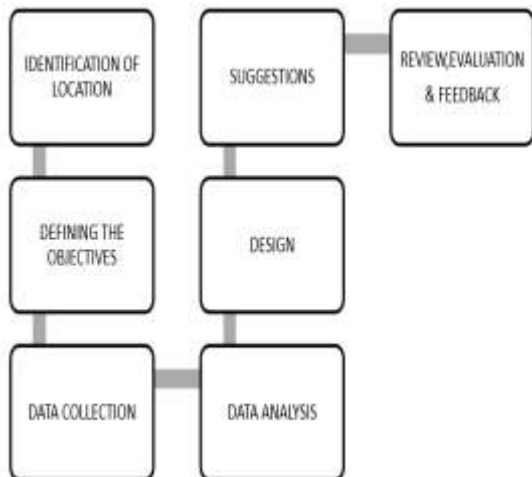
SURVEY MECHANISMS

1. Home survey

2. Direct analysis

i. Home survey: We had conducted home survey in the colony and collected data regarding population, education, occupation, etc. and we interacted with the inhabitants to understand the problems faced by them.

ii. Direct data collection: Along with home inferences, we collected data from direct observation by visiting each houses and plots. It became beneficial in understanding the people way of life, sources of water, conditions of the house, availability of electricity, sanitation facilities, transportation facilities etc. Also we got information from the Forest Division Officer



III. SOFTWARE USED

AUTOCAD

AutoCAD is a computer-aided software drafting program. It is used for a number of applications like creating blueprints for buildings, bridges and computer chips to name a few. AutoCAD is 2D and 3D computer aided drafting software application. It is commercial software.

IV. PRESENT SCENARIO

The inhabitants of Panthapara colony come here in 2014 from various tribal settlements located in interior forest areas of Edamalayar Range of Malayattoor Forest Division. The human animal conflict issues, remoteness of the areas and poor infrastructure facilities were the reasons that forced them to shift to Panthapara teak plantation.

Sixty seven families from Variam settlement settled in the Urulanthanni teak plantation (Panthapara) in Kuttampuzha Range of Malayattoor Forest Division during 2013-14 with temporary shed and started habitation. Two acres of forest land is provided to each of the 67 families i.e., in total 134 acres for all the families and also 20% of forest areas (26.80 acres) in the same location are provided for their common development activities.

From the data collected we arrived at the conclusion that the following are the major problems faced by the inhabitants.

ROAD NETWORKS

The area has poor transportation facilities and is provided with un-surfaced roads. The movement of vehicles is very difficult through these roads and it makes a major concern during emergency conditions like hospital cases, forest fire or other natural calamities. The houses in various plots are scattered in the whole area without any approach roads. So there was lack of easy access to various houses within the settlement as well as lack of well-planned road system connected to the nearby villages and towns.



Fig.1 Existing Road Networks

WILDLIFE ATTACK

Wildlife attack by elephants is a major problem encountered by the inhabitants. Hence solar fencing has to be provided along the boundary of the colony



Fig.2 Elephant attacked Area

HOUSING

The prevailing conditions of the houses are very poor. The houses are constructed by the inhabitants themselves with locally available materials. These houses must be re-constructed every year since they get completely damaged by the end of the rainy seasons. The roofs are made with asbestos sheets and the walls are constructed with bamboos. This results in major problems like lack of adequate strength and poor resistance to weather and wildlife attack. Further, inadequate ventilation and leakage during rainy season adds to the problems.

All the houses are therefore kutcha in nature and the toilet facilities provided are detached for every house and are in poor conditions. Therefore well planned and well-constructed houses are crucial to change the insecure and unhealthy living conditions of the inhabitants



Fig.3. present house condition.

WATER SUPPLY

The settlement has poor water supply facilities. Some of the houses draw water from the Panchayath water supply. While the water required for various purposes in rest of the houses are met from temporary or permanent wells. The number of permanent wells is less and most of the inhabitants depending on temporary wells or shallow pits face major difficulty in finding water even for basic needs. Thus a water tank and pipeline system was necessary.

NUMBER OF FAMILY MEMBERS	TYPES OF HOUSES
<=4	1 BHK
>4	2 BHK



Fig. 4 Available water supply condition

ELECTRIC SUPPLY

The settlement is not provided with any electric supply facilities and hence planning of electric supply distribution is important.

V. NEW PROPOSALS

From the various studies conducted, it can be concluded that the region lacks many facilities. New proposals have been made for the development and well-being of the people. By the implementation of these proposals, economic status can also be improved.

The proposals which we are planning to provide in Panthapara Tribal colony are as follows:

1. 1 BHK HOUSE
2. 2 BHK HOUSES
3. PRIMARY SCHOOL
4. PRIMARY HEALTH CENTER
5. SOLAR FENCING
6. ROAD NETWORKS
7. ELECTRICITY
8. STREET LIGHTS
9. COMMON WATER TANK

1. HOUSES

Area depends upon the number of family members so that enough space is available for each individual and wastage of space can be avoided. For this we prepared 2 types of plans, one BHK house and two BHK house based on the total numbers of family members. The total proposed area for 1BHK house is 25 m² and its estimate will be Rs.

2,75,000. The total proposed area for 2BHK house is 32.5 m² and its estimate will be Rs. 3,25,000.

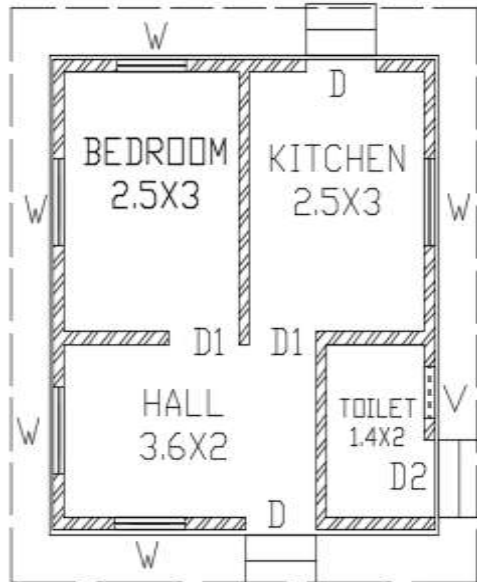


Fig.5. Plan of One BHK House

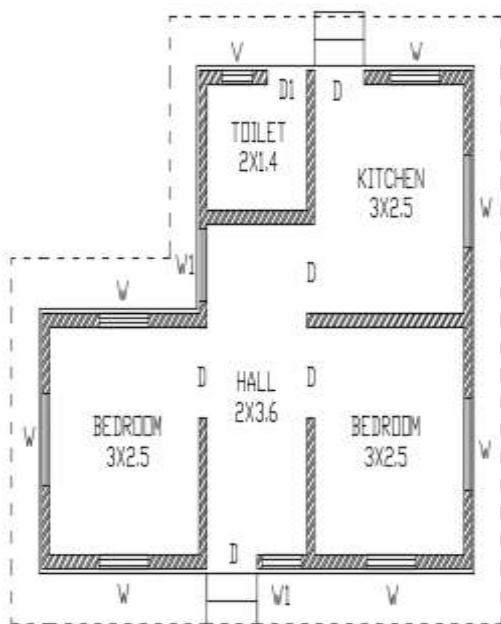


Fig.6. Plan of 2 Bedroom House

Sanitation Facilities

Proper sanitation facilities are provided. Attached toilets with entry from outside are provided as the tribal people are not accustomed to proper use and maintenance of the toilets. This can avoid health problems. In future, if needed then they can provide entry to the toilet from inside..

Simplicity and Economy

We adopted a simple plan facilitating easy construction and we preferred concrete blocks for construction. Also, a reduced wall thickness of 15cm is adopted. Plans are proposed so that the future expansion of one bedroom house to two and three bedroom house can be easily done with minimum cost.

2. WATER TANK

There is a non-uniform availability of water among various houses in the settlement area. It has been observed that some families have access to permanent wells whereas others are constantly struggling to get water for their daily needs. In order to tackle this major crisis of water scarcity in the colony, a water tank has been designed which can be located at the area provided for common development activities. Thus water can be distributed to all the houses through proper pipeline distribution from the tank of suitable capacity. The capacity of proposed circular elevated water tank having diameter 4m is 25m³

3. ROAD NETWORK

Development of an area depends on the connectivity of various places with adequate road networks. But one of the major problems faced by people in Panthapara tribal colony is lack of transportation facilities. So we prefer a 3m width cement concrete pavement over the road networks due to the following features:-

- Concrete surface are created using a concrete mix of Portland cement, coarse aggregate, sand & water.
- Concrete (cement) is produced from abundantly available limestone.
- Concrete roads have a long service life of 40 years and during this service life concrete road do not require frequent repair or patching work.
- Concrete roads do not get deflected under wheels of loaded trucks.
- A vehicle when run over a concrete road, consumes 15-20% fuel than that on asphalt roads.

Steps of Construction of Pavement

- Preparation of subgrade & sub-base
- Place of forms
- Batching of material and mixing
- Transporting and placing of concrete
- Compaction and finishing
- Floating and straight edging
- Belting, brooming and edging
- Curing of cement concrete

Methods of Construction of Concrete Pavements

- Alternative bay method: concrete pavement slab are laid in whole width of pavement in alternate bays.
- Continuous bay method: concrete pavement slabs are laid continuously only on one bay and another bay is open for the traffic.

4. ELECTRIC SUPPLY

Electricity is another basic requirement. Presently electricity is not available in the colony. So we suggest a transformer at the starting of the tribal colony and electric supply is distributed to various houses. Electric posts are placed at an interval of 90m along the road sides. Three phase lines are drawn from the transformer and then single phase lines carry electricity to each house.

5. SOLAR FENCING

The solar perimeter security electricity fence system is a modern day alternative to conventional methods of fencing to protect the crops and property. Solar fence is an effective way to reducing losses caused by animals. To prevent the entry of wild animals solar fence work can be provided around the area. When an animal or human being comes into contact with solar fence, they receive a sharp, short, painful but safe electric shock. The shock does not cause any physical damage. The proposed length of solar fencing is 1.7 km and its estimated cost is Rs. 4,25,000.00.

6. SOLAR STREET LIGHTING

Solar street lights are to be provided in the colony along the road side at a distance of 30m apart. Solar street lights are raised light sources which are powered by the photovoltaic panels generally mounted on the lighting structure or integrated in the pole itself. The photovoltaic panels charge a rechargeable battery, which powers a fluorescent or LED lamp during the night. Most solar panels turn on and turn off automatically by sensing outdoor light using a light source.

VI. OTHER AMENITIES

1. Nursery School

A plan for the nursery school for the kids in the settlement has been prepared with the aim of providing a safe and warm environment for the kids to learn and develop.



Fig 7. Plan of Nursery School

2. Primary Health Centre

The tribal inhabitants depend on a health centre situated 5 km away from the colony for their various medical requirements and it is the near most facility available. Hence there is a crucial demand for a primary health centre within the colony and it can be provided at the common area allotted.

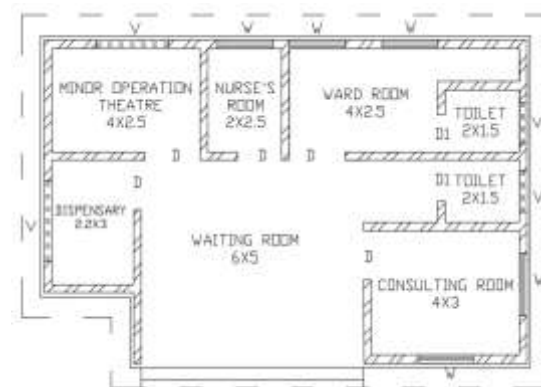


Fig8. .Plan of Primary Health Centre



Fig. 9. Proposed Master Plan

VII. CONCLUSION

Tribal people are an inevitable part of Indian population. So, for the overall economical and infrastructure development of the country, we have to give due importance to the tribal development. But the present condition is such that they even lack the basic standards of living. Hence through this project, we have aimed at the overall development of tribal settlement a by analysing their actual problems by conducting various surveys. We prepared a master plan with highlighting features such as water supply system, protection from wildlife attack, electric supply etc. The various benefits for the Panthapara tribal colony through the implementation of master plan are:-

- The housing conditions are improved very well.
- By the provision of water tank, water scarcity is reduced to a considerable limit.
- With the help of solar fence work along the boundary, the area is protected from wild life attacks.
- By the provision of basic requirement like electric supply, the quality and safety of the life of inhabitants is improved.
- Provision of good transportation facilities plays a major role in the development of the area by fast, dependable and efficient movement of goods and people.
- By providing amenities like street lightings, primary health centre, nursery school etc. the living conditions of the tribal people is improved.

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