Infrastructure Development of Village

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Abstract—: ***The aim of project is to develop the village with urban facilities. A team of project is find the problem or need of a village in terms of physical or social infrastructure and to design that facility with efficient engineering solution which include the design proposal and estimate cost to facilitate the require facility for the future growth of village***

Keywords-
- ***Infrastructure***
- ***Development***
- ***Urban***
- ***Fringe Villages***
- ***Villages***
- ***Zadeshwar***

I. INTRODUCTION

Rural settlements engulfed in urban limits during the process of development, and also those located in the fringe areas of large cities, can be termed as urban villages. These settlements areas are a rural because they have been so in the past and they are urban because of they are now located in the intense influence area of a large city or within the urban limits and have a majority of their workforce engaged in non-agricultural pursuits. The process of transformation of these villages is not sudden. In fact, the level of transformation of an urban village is a function of the stage in the development of a city, in general and the immediate surroundings where the rural centre is located, in particular. The level keeps changing with time.

The urban areas are expanding significantly towards its fringe areas and the more and more villages accommodates rapidly over a period of time and the issues of urban villages regarding the haphazard physical development and infrastructure services and finally to the quality of life of the villagers increases. The “Fringe Villages” gradually shift towards an area under the stress due to the remarkable growth of population, built structures and increasing demand of the land. The issues can be solved at an institutional level. It is very significant to study the appropriate method of planning and management to solve the problems which can lead these villages have the better quality of life.

II. SCOPE OF THE STUDY

The study will focus the development trend, intensity of growth of the village, and find out the problems related to the physical development of the area, infrastructure services, and the administrative systems of the village. Project proposal and sustainability aspect aren't considering in micro level, it is only guide the way.

Manuscript received April, 2014.

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The study of village gives the reason where there is need of sustainable facilities like infrastructure facilities, pure drinking water, road network, schools, electricity, sanitation, Primary health center, etc. are available or not.

III. METHODOLOGY / STUDY FRAME

To achieve the aim by passing through the objectives, the study will be done in the following Methodology, described as follows:

❖ ***Literature study*** :

The various theories and case studies to be referred to the understanding of various issues related to the urban, to define the “Fringe villages”, to study the various issues of “Fringe villages”

❖ ***Field Visit*** :

The field visit will be starts from collection of revenue maps and ‘gametal’ maps if possible along with the map and other basic information of the study areas.

Then visit to the various authorities to know the basic information on that village and the mechanism of governance in the village, and the information regarding the infrastructure facilities planning, Operation, Maintenance and the development control regulations.

❖ ***Primary Survey and Interview :***

The primary surveys such as household surveys, questionnaire survey, to know the real status of the infrastructure services and quality of life they are living in the particular area and the major problems and issues they are facing, questionnaire survey of the real estate developers to know the scope and trend and scope of the development and status of the market and demand of that place. The study of the existing situation of infrastructure services and other physical feature will be included in it. Meeting and Interviews of the key persons, expertise and Government regarding the existing situation, limitations and constraints, also possibilities of different Government approaches, Acts and schemes.

❖ ***Primary Data Analysis :***

A gap analysis form is used for finding a requirement of village as per government norms. A data collected during village survey is also used for an analysis government data on paper data.

❖ ***Issues findings, development of Strategy*** :

Strategy Formulation:

From the above study in the detail of the literature review, situation analysis, study of the existing institutional framework, primary and secondary data analysis and mapping the best appropriate strategy to be formulated with possible recommendation, implementation strategy and allocating the roles and responsibilities of the different local bodies

❖ ***Final Proposal:*** Strategic theme based proposal for Fringe villages from analysis in the form of R-Urban Town.

IV. STUDY AREA

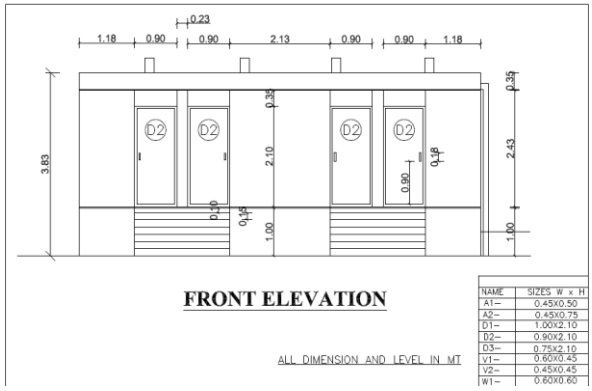
The village is located in Bharuch District in Gujarat State. ZADESHWAR is located 2km distance from its District Main City Bharuch. The village is surrounded with greenery; the weather remains frequently nice and cold winds flowing day-night. November weather is bit hot. From December to February climate remains cool. The weather of Bharuch district is hot and dry-starting from mid-march till mid-June, during mid-summer weather remains hot and dry. While from mid-June till end of September weather remains humid and can be considered pleasant

V. DESIGN PROBLEM

- Sanitation Problem
- Public Community Hall
- Primary Health Center
- Public Library

VI. ECOSAN TOILET

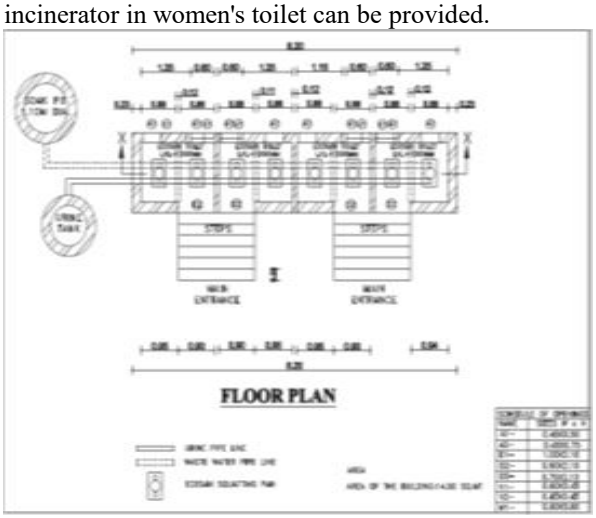
❖ Ecosan toilets can also be constructed at community level in densely populated areas where space for promoting household ecosan toilets is a constraint.



❖ Either a large scale community ecosan toilet complex or a decentralised row type ecosan toilet unit can be promoted in such scenarios. Row type units have an advantage as these can be easily maintained by few families (3 – 4 numbers) who would use the toilet.

❖ A large community complex would require a very systematic maintenance routine.

❖ Community ecosan toilet complex also must be made accessible to people with special needs. Therefore, provisions like ramp and toilets which can accommodate wheel chair must be provided. Other provisions like incinerator in women's toilet can be provided.



❖ A community ecosan toilet complex for a village with a population of 500 has been considered in this section. A row ecosan toilet with four toilet units has been designed for the use by 12 families (i.e. one toilet for three families) with a total of 50 members

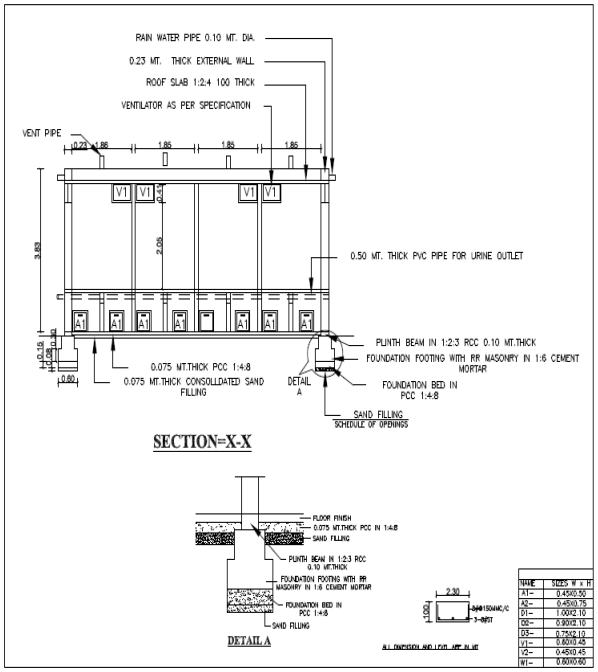


Table 1:GAP ANALYSIS

Facilities	*Planning Commission/UDPFI Norms*	*Village Name:*	*Zadeshwar*	
		Population:		*28148*
		Existing	*Required as per Norms*	*Gap*
Social Infrastructure Facilities				
Education				
Anganwadi	*Each or Per 2500 population*	*6*	*12*	*-6*
Primary School	*Each Per 2500 population*	*5*	*12*	*-7*

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication

Secondary School	*Per 7,500 population*	*2*	*4*	*-2*
Higher Secondary School	*Per 15,000 Population*	*2*	*2*	*0*
College	*Per 125,000 Population*	*1*	*0*	*1*
Tech. Training Institute	*Per 100000 Population*	*0*	*0*	*0*
Agriculture Research Centre	*Per 100000 Population*	*0*	*0*	*0*
Medical Facility				
Govt/Panchyat Dispensary or Sub PHC or Health Centre	*Each Village*	*0*		*0*
PHC & CHC	*Per 20,000 population*	*0*	*2*	*-2*
Child Welfare and Maternity Home	*Per 10,000 population*	*1*	*3*	*-2*
Hospital	*Per 100000 Population*	*0*	*0*	*0*
Public Latrines	*1 for 50 families (if toilet is not there in home, specially for slum pockets & kutcha house)*	*132*	*141*	*-9*
Physical Infrastructure Facilities				
Transportation		*Adequate*	*Inadequate*	
Pucca Village Approach Road	*Each village*	*yes*	*no*	
Bus/Auto Stand provision	*All Villages connected by PT (ST Bus or Auto)*	*1*	*0*	*1*
Drinking Water (Minimum 70 lpcd)		*Adequate*	*Inadequate*	
Over Head Tank	*1/3 of Total Demand*	*3.6lac cap*	*3.75303 lac cap*	
U/G Sump	*2/3 of Total Demand*	*12lac cap*	*7.50613 lac cap*	
Drainage Network		*Adequate*	*Inadequate*	
Open		*yes*	*no*	
Cover		*yes*	*no*	
Socio- Cultural Infrastructure Facilities				
Community Hall	*Per 10000 Population*	*1*	*3*	*-2*
community hall cum Public Library	*Per 15000 Population*	*1*	*2*	*0*
Cremation Ground	*Per 20,000 population*	*2*	*2*	*0*
Post Office	*Per 10,000 population*	*1*	*3*	*-2*
Gram Panchayat Building	*Each individual/group panchayat*	*1*	*1*	*0*
APMC	*Per 100000 Population*	*0*	*0*	*0*
Fire Station	*Per 100000 Population*	*0*	*0*	*0*
Police post	*Per 40,000Population*	*1*	*1*	*0*

Table 2: ECOSAN TOILET

Design details	*Row Ecosan Toilets*
No. of users	*50 users (12 families)*
Average volume of desiccated material	*0.25 litres/person/day*
Size of faeces collection chambers *_ Volume of chambers needed considering 15% usage of toilets* *_ Total volume of chambers provided*	*= 50 x 300 days x 0.25 l/p/d* *= 3750 litres* *Providing 4 toilets with chambers of* *1.31 m length x 0.87 m width x 0.90* *m height* *= 4 x 1.31 m x 0.87 m x 0.90 m x* *1,000 litres* *= 4,102 litres*
Size of chamber access hole	*450 mm wide x 500 mm high*
Size of urine collection tank	*500 litre capacity tank*
Vent pipe	*100 mm dia connecting both tanks* *_ 500 mm above roof level* *_ Cowl on top*
Toilet size (floor area)	*1.85 m length x 1.3 m width*
Soak pit for waste water Disposal	*1.0 m dia and 1.00 m deep*
Floor and wall tiles	*Only cement finish*
Door	*0.90 m x 2.1 m*
Roof	*RCC roof over toilet and urinal areas*
Super structure	*Walls with bricks (230 mm thick for all outer and main load bearing walls and chambers, and 115mm thick for interior walls)*

Table 3:COST AND AREA

Total cost	*175373.2RS*
Total building area in sq.m	*14.15*
Total cost per sq.m	*12393.86RS*

VII. CONCLUSION

India has a number of villages. This is useful for find the actual requirement of villages and how to meet overall development of village is possible in easy and practical way. In this way there is over all development of India.

ACKNOWLEDGMENT

We take this opportunity to express a deep sense of gratitude to Mr NareshKumar Bhagwandas Patel (Respected Sarpanch of Zadeshwar Village) and Panchayat Office of Zadeshwar Village for their cordial support, valuable information and coordination, which helped us to understand the current scenario of Zadeshwar Village.

We would like to express our appreciation and gratitude to respected Taluka Panchayat Office of Bharuch Taluka and TALUKA DEVELOPMENT OFFICER. for their contribution and support by giving valuable information about Zadeshwar Village which helped us during Techno-economic survey.

We would also like to express our appreciation and gratitude to Respected DISTRICT DEVELOPMENT OFFICER of Bharuch District and Bharuch Jilla Panchayat Office for their valuable coordination and support.

We are obliged to staff members of CIVIL ENGINEERING DEPARTMENT of Government Engineering Collage, Bharuch .

REFERENCES

1. Bharuch District Panchayat Office, Gujarat Government.
2. (http://bharuchdp.gujarat.gov.in/bharuch/english/yojnao/index.htm)
3. ZADESHWAR Gram Panchayat Office.
4. A document given by the Panchayat office of ZADESHWAR village
5. National Building Code, 2005
6. Ecological Sanitation Practitioner's Handbook
7. General Development and Control Regulations Vol.III (GDCR) published by BAUDA (Bharuch & Ankleshwar Urban Development Authority)