



International Journal of Advance Engineering and Research Development

Applications of Nanotechnology In Civil Engineering-2019.

Volume 6, Special Issue 01, Feb.-2019.

VISHWAKARMA YOJANA: AN APPROACH TOWARDS RURBANISATION - A CASE STUDY ON PALDI VILLAGE, GUJARAT

Aditya Saraswat¹, Rahul Patel², Jitendra P Vankar³

^{1&2}UG Student, ITM UNIVERSE

³Assistant Professor, ITM UNIVERSE

Abstract — The desire of people for better living standards and lifestyle has led to migration from villages to cities. This can be reduced by providing the required facilities in villages. “Vishwakarma Yojana : An Approach towards Rurbanisation “ is an initiative taken by Government of Gujarat which is undertaken as a project scheme by Gujarat Technological University. Rurbanisation refers to development of villages by maintaining the Rural Soul. Paldi village was selected for this purpose. Under this technoeconomic survey of the village was done and necessary data was collected, by referring to UDPEI norms Gap analysis was done and required designs was proposed .These designs include Dairy, Community Hall, Elevated Storage Reservoir, Public Toilet , Rainwater Harvesting, Drinking water pond for animals.

Keywords- Rural soul, Infrastructure facilities, Design to delivery, Socioeconomic development, Sustainability.

I. INTRODUCTION

Most of the India lives in its villages. Of the 121 crore Indians , 83.3 crore people live in 640867 villages i.e. rural area. Therefore it is necessary that the villages of India do not get deprived of all the facilities and the quality of life that is being enjoyed by people living in cities. Due to lack of infrastructural amenities, villagers have started migrating towards cities in search of better opportunities. Village development does not only refers to infrastructural development but also aims at reducing unemployment, illiteracy and providing an atmosphere of harmonious social life.

According to Gandhiji “An ideal Indian village will be so constructed as to lend itself to perfect sanitation. It will have cottages with sufficient light and ventilation built of a material obtainable within a radius of five miles of .The village lanes and streets will be free of all avoidable dust. It will have wells according to its needs and accessible to all. It will have houses of worship for all; also a common meeting place, a village commons for grazing its cattle, a co-operative dairy, primary and secondary schools in which industrial education will be the central fact, and it will have panchayats for settling disputes. It will produce its own grains, vegetables and fruit, and its own khadi.”

The vision of Vishwakarma yojana is to reduce and remove the rural urban divide through infusion of urban patterns and services in rural system. This can be achieved by considering various aspects such as Physical, Social, and Renewable infrastructural facilities .This requires study of village with respect to delivery of basic needs, to aim at Reimagining, Redesigning, Rejuvenating and strengthening the community life.

The present study deals with recognizing the needs of the village community and providing engineering solutions mainly in the form of Physical , Social , Socio-cultural , sustainable and smart infrastructure.

III.METHODOLOGY

In the initial phases of project we studied various concepts related to village development and its objective and need. Then we selected Sankheda Village of Chhota Udaipur district visited it , conducted survey and got an idea of how a village should be. Then we visited Paldi village and performed the techno economic survey , under this social, socio-economical and physical information was collected by interacting with members of panchayat and some villagers regarding the prevailing condition of village. We also asked them about some suggestions that can may prove to be useful to them. After studying and analyzing the data collected Gap analysis was performed and various design proposals and their estimate was done.

A. Objective of study

- Upgrade the basic utilities as per urban standards.
- Provide sustainable civil designs for the village.
- Redesign
- To analyze the current condition of village

Organized By: ITM Universe, Vadodara.

III. Study Area Details



Gram Panchayat	Paldi
Block/Tehsil	Waghodia
District	Vadodara
State	Gujarat
Pincode	391510
Area	5.73km ²
Population	1260
Households	249
Nearest Town	Halol
Population Density	220 per km ²
Village code	519934

Fig 1. Satellite view of Paldi village

About Paldi:

Paldi is a medium sized village which is located in waghodia taluka of Vadodara district, Gujarat. It is located 31 km towards east from district headquarters Vadodara and 132 km from state capital Gandhinagar .Nearest town to paldi village is Halol which is 17km away. Panch delva (2km), Bodidra (2km), Asoj (3km), Abhrampura (4km),Jarod (4km) are the nearest villages to Paldi.

The total geographical area of Paldi village is 5.73km².

As per Census 2011, Paldi has total population of 1260 people.

Physical & Demographical Growth:

It has 249 families which brings the population as 1260. Out of this 650 are males and 610 are females as per population Census 2011. Sex ratio of Paldi is 938 which prove to be higher than the sex ratio of Gujarat which is 919.

Total 37% (278) population in the village is engaged in main or marginal works. Out of which, 55% are male and 17% are female. The Literacy rate of Paldi village is 83.18% which is higher than Gujarat which has a literacy rate of 78.03%.

IV. Data Collection

Data collection is generally carried out in 2 phases :-

- A. Primary data collection
- B. Secondary data collection

A. Primary data Collection

Primary data collection involves visit of the village and observing the current village conditions like water supply, sanitation , waste disposal , road condition etc. Data is collected in the form of photographs Interaction with talati, sarpanch and villagers is done and rural issues and conditions are discussed.



Fig - anganwadi(Inadequate)



Fig- Ground



Fig- primary school



Fig - current road condition(RCC)

B. Secondary Data Collection.

Secondary Data collection includes survey of village by a technoeconomic survey form which requires collection of, geographical, demographical occupational, infrastructural data about road network, water supply, educational facilities, health facilities. This data can be obtained from the gram panchayat officials .We have observed that there is no proper water storage facility like ESR, sump etc. It was also observed that there was no public toilet facility, community hall, waste management system .Health facilities such as PHC, Clinic, Subcenter were also absent.

V. Gap Analysis

VILLAGE GAP Analysis					
Village Facilities	Planning Commission/ UDPI Norms	Village Name:	Paldi		
		Population: 1260			
		Existing	Required as per Norms	Smart Village / Cities / Heritage Future Projection Design	Gap

Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	1	1		0
Primary School	Each Per 2500 population	1	1		0
Secondary School	Per 7,500 population	0	0		0
Higher Secondary School	Per 15,000 Population	0	0		0
College	Per 125,000 Population	0	0		0
Tech. Training Institute	Per 100000 Population	0	0		0
Agriculture Research Centre	Per 100000 Population	0	0		0
Skill Development Center	Per 100000 Population	0	0		0
Health Facility					
Govt/Panchayat Dispensary or Sub PHC or Health Centre	Each Village	0	1		-1
Primary Health & Child Health Center	Per 20,000 population	0	0		0
Child Welfare and Maternity Home	Per 10,000 population	0	0		0
Multispecialty Hospital	Per 100000 Population	0	0		0
Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum pockets & kutch house)	0	1		-1
Physical Infrastructure Facilities					
Transportation		Adequate / Inadequate			
Pucca Village Approach Road	Each village	Adequate			
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	Inadequate	1		1
Drinking Water (Minimum 70 lpcd)		Adequate / Inadequate			
Over Head Tank	1/3 of Total Demand	Inadequate	1		-1
U/G Sump	2/3 of Total Demand	Inadequate	1		-1
Drainage Network - Open		Aadequate			
Drainage Network - Cover		Adequate			
Waste Management System		Inadequate			
Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	0	1		1
community hall and Public Library	Per 15000 Population	0	0		0
Cremation Ground	Per 20,000 population	0	0		0
Post Office	Per 10,000 population	1	0		0
Gram Panchayat Building	Each individual/group panchayat	1	1		0
APMC	Per 100000	0	0		0

	Population				
Fire Station	Per 100000 Population	0	0		0
Public Garden	Per village	0	1		-1
Police post	Per 40,000Population	0	0		0
Shopping Mall					
Any Smart Village Facility					
Technology					
		ESR cap	0		
		Sump cap	0		
		Lat	0		

VI. DESIGN PROPOSALS

After performing the gap analysis based on UDPFI norms following social, physical ,renewable amenities have been proposed as the primary requirements of the village which needs to be implemented. Apart from these design and estimate for maintenance of Anganwadi was also provided.

Sr no.	Category	Design proposals
1.	Physical	Public toilet
2.	Social	Dairy
3.	Socio-cultural	Community hall
4.	Sustainable	Elevated storage reservoir
5.	Smart Village Design	Rain water harvesting
6.	Heritage design	Drinking water pond for animals

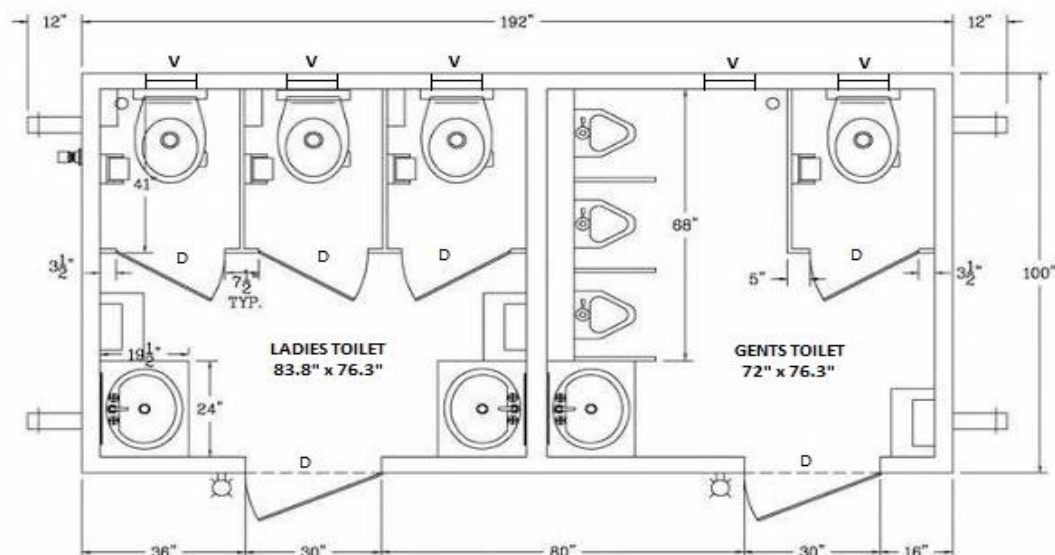


Fig- Plan of public toilet (for male and female)

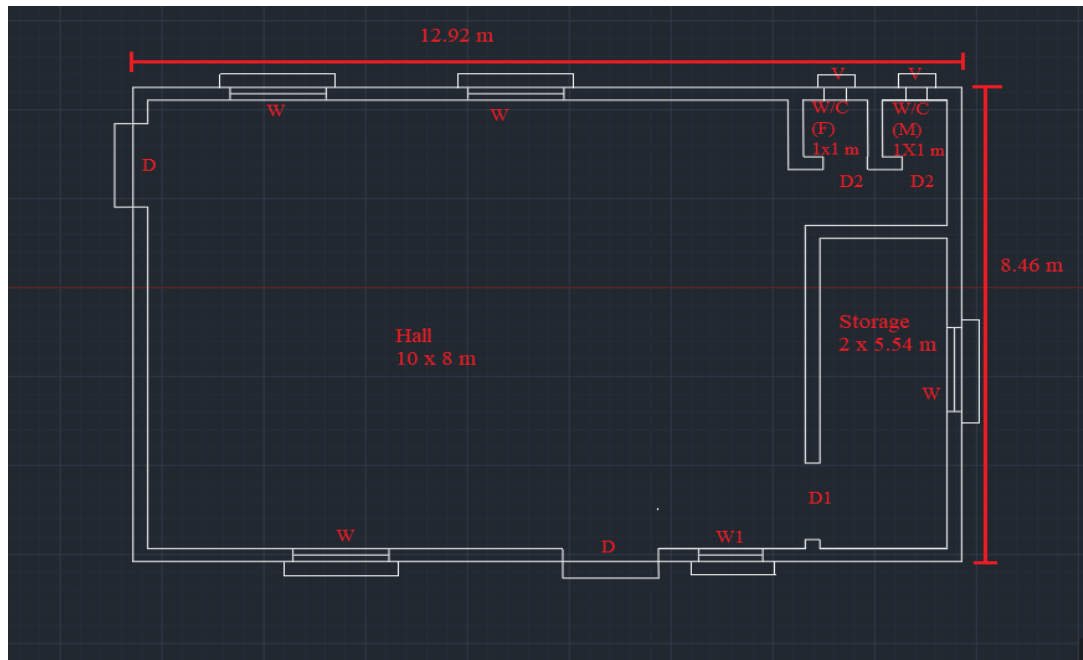


Fig - suggested plan of community hall

REFERENCES

- [1] www.onefivenine.com
- [2] www.census2011.com
- [3] www.indikosh.com
- [4] www.wikipedia.com
- [5] GTU guidelines and briefings
- [6] URDPFI norms
- [7] <http://www.mkgandhi.org/revivalvillage/index.htm>
- [8] bhuvan.nrsc.gov.in
- [9] <https://bvbhatt.com/category/be-courses/vishwakarma-yojana-of-gtu/>
- [10] http://vy.gtu.ac.in/index.php?option=com_content&view=article&id=1&Itemid=10
- [11] <http://rural.nic.in/netrural/rural/index.aspx>
- [12] Rural Entrepreneurship: A Catalyst for Rural Development, International Journal of Science and Research (IJSR)ISSN (Online): 2319-7064 by Kushalakshi1 and Dr. A. Raghurama, Rural Development through E-Governance Initiatives in India, IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668 by Ambika Bhatia and Chhavi Kiran