DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII
AN APPROACH TOWARDS RURBANISATION
Kharedi Village

Dahod District

PREPARED BY

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
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Government Engineering College Dahod

NODAL OFFICER NAME

Prof. D.K OZA

YEAR:2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmedabad– 382424 Gujarat

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CERTIFICATE

This is to certify that the following students of Degree/Diploma Engineering successfully submitted

Detail Project Report for,

VILLAGE - Kharedi

DISTRICT - Dahod

Under

VishwakarmaYojana: Phase-VIII

In partial fulfillment of the project offered by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

During the academic year 2020-21.

This project work has been carried out by the under our supervision and guidance.

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Date of Report Submission:	
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College Name:	**Government Engineering College Dahod**
College Stamp:	

ABSTRACT

Vishwakarma Yojana is one such initiative towards Rurbanization of villages by Government of Gujarat that hinders such migrations. This Yojana aims at developing the village by providing all the urban facilities that a city may have, yet maintaining the Rural soul. This can be achieved by considering various aspects such as Physical, Social, and Renewable infrastructural facilities. The concept of Rurbanization at regeneration and revitalization of both the physical as well as social environment in villages through a judicious and economic consumption of resources is the thought for betterment or the villages. It is designed to reduce and remove the rural-urban divide and to lead to process of rural transformation that is not exploitative. Vishwakarma Yojana is an approach towards Rurbanization, it has been proposed to provide the benefit of real world experience to engineering students and apply their technical knowledge in the planning, development and management of rural infrastructure facilities. Rurbanization means urban facilities and amenities in rural area, developing village with help of rural soul and urban amenities. In this village on one hand some essential infrastructural facilities like Water Supply, Road Network and electricity, primary school, secondary and higher secondary school etc. have been good and sufficient on the other hand lacking of infrastructural facilities like drainage, public toilet, and public garden.

The name of the allocated village is Kharedi located in Dahod taluka of Dahod district. This village has comprises of 1031 houses. It has a total population of 6463 with 3188 female population against 3275 males according census 2011 data. The main aspects for development of this village are sewage, public toilets, community hall, etc. Some of the physical infrastructure like dairy, panchayat building, primary school, and well exist in the village and are properly maintained and utilized. More over Water tank is present but in bad condition.

In part 1 on the basis of survey data, which we have collected from kharedi village and interaction with villagers, Sarpanch and Talati, we have finalized some designs for the further development of the village as, Community hall, Pharmacy Store, ATM, Village entrance gate, Supermarket. By introducing above mentioned amenities all the facilities can be made available to villagers which may reduce the migration. This will sustain the culture of cooperative living. Socioeconomic development will occur giving a sense of livelihood to the dwellers yet maintaining the essence of a village. And in part 2 we have decided some designs for future scope of the village development as, Rain water harvesting, ATM, Public garden, Solid waste management, Skill development center and Solar street lights and dustbins.

Key Words: Rurbanization, Infrastructure facilities, Socioeconomic development, Sustainability, Rural Development, etc

ACKNOWLEDGEMENT

We are highly indented to **Gujarat Technological University**, Ahmedabad for providing us such opportunity to work under Vishwakarma Yojana to get real work experience and applying our technical knowledge in the development of Villages.

We wish to express our deep sense of gratitude to **Prof.(Dr.)Navin Sheth**, **Hon'ble Vice Chancellor, Gujarat Technological University-Ahmedabad**, for his encouragement and giving us the wonderful project.

We also express our gratitude to **Dr. K.N.Kher**, **Registrar, Gujarat Technological University-Ahmedabad** for giving us complete support.

We express our sincere thanks to **Commissioner of Technical Education, Gujarat State** for appreciating and acknowledging our work.

We express our sincere thanks to **DDO, TDO, Sarpanch, Talati and staff members of Ahmadabad** District for providing us with requisite data whenever we approached them. Especially our thanks are to all villagers and stake holders for their support during Survey.

We are also thankful to our **Prof.(Dr.) P.K Bhrambhatt Principal**, faculties of our colleges for their encouragement and support to complete this project work.

An act of gratitude is expressed to our internal guide / Evaluator / Nodal Officer, **Dr./Mr./Mrs. Prof. D.k. Oza from college** for their invaluable guidance, constant inspiration and active involvement in our project work.

We are also thankful to all the experts who provided us their valuable guidance during the work. We express our sincere thanks to, **Dr. Jays Decker, Hon'ble Director of Vishwakarma Yojana project and Principal, V.V.P Engineering College and Core Committee member of Vishwakarma Yojana project Prof(Dr.) Jigar Sevalia**,Professor, SCET, Surat, **Prof.K.L.Timani,** Associate Professor,VGEC, **Prof.Rena Shukla**,Associate Professor, LD Engineering College, **Prof.Y.B.Bhavsar,**Associate Professor,VGEC,**Prof.Jagruti Shah**, Assistant Professor, BVM Engineering College for providing us technical knowledge of this project work.

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Above all we would like to thank our Parents, family members and Friends for their encouragement and support rendered in completion of the present this work.

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ABBREVIATIONS

SHORT NAME / SYMBOL	FULL NAME
UDPFI	URBAN AND REGIONAL DEVELOPMENT PLANS FORMULATION AND IMPLEMENTATION
C.C.	CEMENT CONCRETE
N.G.O.	NON-GOVERNMENT ORGANIZATION
N.R.E.P	NATIONAL RURAL EMPLOYMENT PROGRAMME
TRYSEM	TRAINING RURAL YOUTH FOR SELF-EMPLOYMENT
RLEGP	RURAL LANDLESS EMPLOYMENT GUARANTEE PROGRAMME
JRY	JAWAHAR ROZGAR YOJNA
JGSY	JAWAHAR GRAM SAMRIDDHI YOJNA
DPAP	DROUGHT PRONE AREA PROGRAMME
DDP	DESERT DEVELOPMENT PROGRAMMED
FFWP	FOOD FOR WORK PROGRAMMED
DWCRA	DEVELOPMENT OF WOMEN AND CHILDREN IN RURAL AREAS
EAS	EMPLOYMENT ASSURANCE SCHEME
SGSY	SWARNAJAYANTI GRAM SWAROZGAR YOJNA
PMRY	PRIME MINISTER‘S ROZGAR YOJNA
JPRGY	JAI PRKASH ROZGAR GUARANTEE YOJANA
Lit.	LITER
Kg.	KILOGRAM
SWOT	STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS ANALYSIS
PHC	PRIMARY HELTH CENTRE
APMC	AGRICULTURAL PRODUCE MARKET COMMITTEE

1. Ideal village (THAMNA) visit from District of Gujarat State

1.1 Background & Study Area Location

Thamna village is located in Umreth Tehsil of Anand district in Gujarat, India. It is situated 3km away from sub-district headquarter Umreth and 27km away from district headquarter Anand. As per 2009 stats, Thamna village is also a gram panchayat.

The total geographical area of village is 1212.78 hectares. Thamna has a total population of 5,147 peoples. There are about 1,064 houses in Thamna village. As per 2019 stats, Thamna villages come under Umreth assembly & Anand parliamentary constituency. Umreth is nearest town to Thamna which is approximately 3km away.

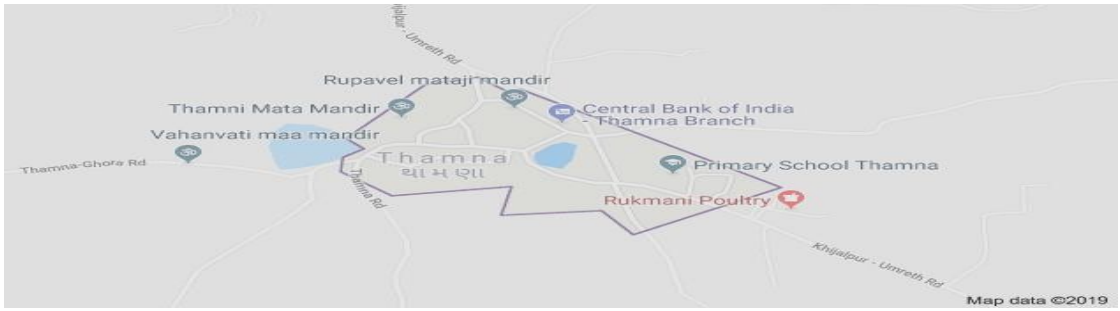

FIG.1 THAMNA VILLAGE MAP

Locality Name : Thamna (થામણા)

Taluka Name : Umreth
District : Anand
State : Gujarat
Language : Gujarati and Hindi
Current Time 03:07 PM
Date: Friday , Nov 06,2020 (IST)
Time zone: IST (UTC+5:30)
Elevation / Altitude: 44 meters. Above Sea level
Telephone Code / STD Code: 02831
Pin Code: 388215
Post Office Name: Thamna (Anand)

Study area mainly includes the study of the village Thamna which is located in Umreth taluka in Anand district of Gujarat state. it is about 9km from godhra. it is 44 m above sea level.the vishwakarma yojana is aimed to rurban development of the village. For that purpose study area is decided for taking detail information of the village. The study area includes education, health and

safety, transportation facilities, social life etc. Education includes various facilities like anganwadi, primary school, secondary school, higher secondary school, etc. medical facility includes study of gov. / Panchayat dispensary, health centre, phc & chc, child welfare, etc. drainage facilities includes the open drainage & underground drainage system facilities etc.

1.2 Concept: Ideal Village, Normal Village

1.2.1 Objectives

- To get insight into the socio-economic and cultural realities of rural life.
- To understand the dynamics of various village level institution in addressing the developmental work.
- To understand the status of women; their contribution and the role played by them in developing rural entrepreneurship.
- To understand the dynamics of social structure, infrastructure, resources, and various intervention on the villagers and how it effects them.
- To blend class room learning with the field experience.
- To know the present position of the village respect to ideal village.
- To know the required facilities in village e.g. public toilet, bus stand, approach road, village internal roads, banks, etc.
- To know the growth of village.
- Basic physical infrastructure- sewerage, Drainage, Solid Waste Management, Water Supply and Transport should be focused as Priority and should be provided.
- Basic Social Infrastructure-Health Facilities and Education Facilities should be provided and Ensure Proper Delivery of Facilities to Village Dwellers.
- Efficient mass Transportation Systems to Improve connectivity between Urban and Rural areas.
- To reduce Migration from Rural to Urban areas due to Lack of basic services and sufficient Economic Activities in Rural areas.
- To provide Electricity Connections like Solar Street Lighting that is Energy Efficient and
- Eco- Friendly.

1.2.2 Example / Live Case studies of ideal village of India/Gujarat

We have visited Thamna village that has been declared as an ideal village of INDIA.

An ideal village has very good drains so that the dirty water of the village is properly drained away.

Dwelling-houses:

The dwelling-house in an ideal village are very neat and clean. The dwellers of these houses

look to the house sanitation and house-drainage. The houses have sufficient windows to let in light and air. All the houses are roofed by good tiles at least.

The dept. Sarpanch, Mr. Chandra Kant Patel has played an important role in the development of this village in the last 24 years of his tenure. Before 2004 it was any other ordinary village of Gujarat facing the problem of drinking water, sanitation, poor infrastructure and maintenance of the same. Due to his work, Thamna village has been recognized by MoRD as well as state Chief Minister, Mr. Narendra Modi.

Initially clean drinking water was a problem. Now the village has its own mineral water plant. The water is supplied to all the households at nominal charges and even BPL families get it free of cost. These mineral water plants also outsource the water to other villages. Panchayat has its own tanker which supplies water on special occasions.

There is anganwadi, 1 to 12th English & Gujarati Medium School in Thamna village and Notebooks and uniforms are provided to the students at the School. Higher education is provided to the student in the school which is provided only in certain villages

It is interesting to know how people were motivated to pay taxes by giving them dustbins as a gift. This has also improved cleanliness in the village at the same time increasing tax collection.

Level to 90 %. Every morning and evening a trolley collects waste from the households.

Door to door waste is collected inside the village So that people do not throw waste/garbage in the open area and not spread the disease.

There are clean roads made of cement concrete. There are street lights everywhere in the village. According to the 2011 census there are 5147 total populations of which 2599 Male and 2548 Female.

In the last 6-7 years, there have been no cases of infant mortality, maternal deaths and female suicides which were very common earlier. There are two hospitals, one is private and one is government there is also PHC, child welfare, & Maternity Homes

Census	Population
2001	4689
2011	5147

Table 1.:- Population Detail of Thamna Village

1.2.3 The Idea of a model Village

An ideal village has good system of sanitation and drainage. Because filth and rubbish of the village should be regularly removed away into the compost.

Food and fodder:

The villagers grow food for them and fodder for their cattle. They eat fresh and healthy food. They grow good grass for fodder and also leave sufficient land for pasture.

Drinking water:

An ideal village should have good supply of drinking water. There are enough tube-wells in an ideal village. There are separate ponds for men and cattle.

Agriculture and Industry:

People of an ideal village are good farmers and good artisans. They grow food crops, commercial crops and oil-seeds. They take up improved method of farming. They do all kinds of home-industry including spinning and weaving.

Educational facilities:

There are Primary schools, High schools and craft schools in an ideal village. Primary education is free and compulsory.

Clinical facilities:

In an ideal village, there are clinical facilities for men and the domestic animals. Hence, there are dispensaries and veterinary dispensaries.

Other facilities:

We can find post-office, public library, playground, gymnasium and club-house there.

People:

People of an ideal village are very neat and clean. They are quite enlightened. They have a sense of discipline and co-operation. They have a spirit of service and sacrifice. They follow the principles of plain living and high thinking. They are never idle. They are active and cheerful. Constant labour is their chief motto.

Conclusion:

An ideal village makes all possible provision for the all-round development of her people. It is our main duty that we should lift every village of India to much higher level. The idea of an ideal village will certainly help us in discharging our duty.

1.2.4 Ancient History Civil concept about Indian Village / Foreign Countries Perspective and its Development

"The soul of India lives in its villages," declared M. K. Gandhi at the beginning of 20th century. According to the 2011 census of India, 68.84% of Indians (around 833.1 million people) live in 640,867 different villages. The size of these villages varies considerably. 236,004 Indian villages have a population of fewer than 500, while 3,976 villages have a population of 10,000+. Most of the villages have their own temple, mosque, or church, depending on the local religious following.

History of Indian Villages India is a vast country with a majority of its total population living in the villages. The Indian society is predominantly divided into two divisions like the rural society and the urban society. Villages have always been an integral part of society in India. No specific timeframe can be mentioned about the conception of villages in India. However, the concept of village was not present there in the ancient period. The Indus Valley civilization is so far known to be the ancient civilization in India and it mainly comprised two cities of Harappa and Mohenjo-Daro. However, the concept of village seems to be absent during this era.

The Integrated Rural Development Programmers signifies a programmed for improving the living standards of the poorest of the poor living in rural areas and for making the process of rural development self-sustaining. Initiated in 1978-79, the programmer was extended to all development blocks in the country in 1980- 81.

For the development of the village, the government has issued various schemes such as

1. NREP:

National Rural Employment Programme was launched in October, 1980 as a centrally sponsored scheme on 50:50 sharing basis between centre and states. Generating additional gainful employment opportunities, creating durable community assets and improving the overall quality of life in rural areas constitute the three -fold objectives of the programed. The programmed is implemented through DRDA. It has been merged with the Jawahar Rozgar Yojna from April, 1989.

2. TRYSEM:

The scheme of Training Rural Youth for Self- Employment was initiated in August, 1979, with the primary objective of providing technical skills to the rural youth to enable them to seek employment in fields of agriculture, industry, services and business activities.

Only youth in the age group of 18 – 35 and belonging to families living below the poverty line are eligible for training. Priority is given to persons belonging to SCs and STs, ex-servicemen and women. The effectiveness of the scheme is affected by several factors such as inadequate

coverage, low level of skill, inadequate stipend given to the youth etc.

3. RLEGP:

Rural Landless Employment Guarantee Programme was launched on 15th August, 1983 to generate additional employment in rural areas particularly for the rural landless workers. Under this scheme employment is given to at least one member of every landless family up to 100 days in a year. So far as this programme is concerned, preference in the employment is given to the landless laborers, women, SCs and STs.

Financed exclusively by the Central Government, the programmed undertakes several activities such as construction of wells, roads, houses, social forestry etc. Several factors like absence of systematic selection of workers, failure to guarantee minimum of 100 days of employment to workers and malpractice by the contractors stand in the way of the successful functioning of this programme. Like NREP this programmed has now been merged into the JRY.

4. JRY:

Jawahar Rozgar Yojna was launched in April, 1989. It is pre-eminently a wage employment programme. Under the scheme, it is expected that at least one member of each poor family would be provided with employment for 50 to 100 days in a year at a work place near his / her residence. About 30 per cent of the jobs under this scheme are reserved for women. The scheme is implemented through Village Panchayats. It covers 46 per cent of our population.

The overall impact of the JRY in generating employment has been much below the target laid down. JRY has helped the weaker sections to acquire a house or provided access to drinking water or improve sanitation, but yet much remains to be done to make a perceptible improvement in the quality of life. Obviously, this necessitates larger devolution of resources – both financial and human.‖ At present Jawahar Rozgar Yojana is not in operation.

5. JGSY:

The Jawahar Gram Samriddhi Yojana is the restructured form of Jawahar Rozgar Yojna. This scheme is in operation from 1999. It is implemented only at the village level to create village infrastructure and generates employment opportunities to alleviate poverty. The cost of this programme is shared between the centre and the states in the ratio of 75: 25.

6. Anthodia Programmed:

Antyodaya means the welfare of a person standing at the end of the queue. In other words, the programme is oriented to uplift the poorest of the poor in the countryside. The scheme was introduced during the regime of Janata Government in 1978. So far as the operation of this programme is concerned, every year five poorest families of every village are identified and selected. Efforts are made for the economic betterment of these families.

7. DPAP:

The Drought-Prone Area Programme was launched at the time of the mid-term appraisal of the Fourth Five Year Plan for drought prone areas. Reducing the severity of the impact of drought,

stabilising the income of the weaker sections of the rural community and restoring the ecological balance constitute the basic objectives of the programme.

During the Fourth Plan, DPAP was purely a central sector scheme with 100 per cent financial as- sistance from the centre. From the Fifth Plan onwards, this scheme has been operating with funds being shared between the centre and the states on a 50: 50 ratio. As of 1996 – 97, the programme was in operation in 947 blocks of 155 districts in 13 states.

8.DDP:

The Desert Development Programmed was launched in 1977 – 78 on the recommendation of the National Commission on Agriculture in the hot desert areas of Rajasthan, Haryana and Gujarat, and the cold desert areas of Jammu and Kashmir and Himachal Pradesh. It was a central sector scheme with cent per cent financing by the center.

However, with effect from 1979-80, it has been operating as a central sector scheme with funds being shared between the center and the states on a 50: 50 ratio. As of 1996- 97, the programmed was in operation in 227 blocks of 36 districts in seven states.

9.FFWP:

The Food for Work Programmed was launched in April, 1977. It aimed at making wage payment in food grains at subsidized prices to the ruralizes living below the poverty line. FFWP was implemented by the development administration, without any help from labor contractors. Huge buffer stock of food grains at the disposal of the government prompted it to start this scheme. FFWP continued till 1980.

10. DWCRA:

The scheme of Development of Women and Children in Rural Areas was introduced in 50 districts in 1982-83. The major thrust of DWCRA is to improve the socio-economic status of rural women through the creation of income- generating activities in a district on a self-sustaining basis.

11.EAS:

The Employment Assurance Scheme was launched in 1983 and expanded in phases to cover the whole country in 1996. It aims at providing 100 days of employment to two members of a rural family in a year. The secondary objective is the creation of

economic infrastructure and community assets for sustained production and employment generation. The expenditure under EAS is shared between the centre and the states on an 80: 20 basis.

12. SGSY:

The Swarnajayanti Gram Swarozgar Yojana was launched in April 1999 replacing earlier

programmes like the IRDP, the TRYSEM etc. This programmed is instrumental in the setting up of a large number of industries through bank credit and subsidy. It plays an important role in enabling the poor families to rise above the poverty line in three years.

The Prime Minister‘s Rozgar Yojana is a self- employment programme for the educated unemployed youth. This programme has been implemented since October 2, 1993 to provide employment opportunities to the educated unemployed youths in the country.

The minimum qualification required under the scheme is matriculation (passed or failed) or having undergone a government sponsored technical course for a period of six months or ITI passed. In this scheme the youth between the age of 18 and 35 belonging to families having income less than Rs. 25,000 per annum are provided assistance.

The educated unemployed entrepreneurs are given subsidy of 15 per cent subject to a ceiling of Rs. 75,000 each for starting small projects. They are required to bring 5 per cent of the project cost as margin money. Each entrepreneur is eligible for a loan upto Rs. 1 lakh. A reservation of

22.5 per cent for SC/ST and 27 per cent for Other Backward Classes has been provided. Preference is given to women.

13. JPRGY:

The Jai Prakash Rozgar Guarantee Yojana has been launched in 2002 to provide employment guarantee to the unemployed in the most distressed districts of the country.

14. NSAP:

The National Social Assistance Programme was conceived by the central government to provide social assistance to poor households. The programme came into force from 15th August 1995 and includes three schemes as its components such as National Old Age Pension Scheme, National Family Benefit Scheme and National Maternity Benefit Scheme.

15. Rural Housing Scheme:

Indira Awas Yojana was launched by the government in 1985. Under this scheme house is given free of cost to SC/ST families and free bonded labourers. The cost norms under IAY have been changed from time to time. With effect from 1st August 1996, the ceiling of assistance for house construction under IAY is Rs. 20,000 per unit in the plains, and Rs. 22,000 per unit in hilly and other difficult areas.

The scope of IAY has been extended to include non-scheduled rural poor. Under the Ninth Five Year Plan, Samagra Awas Yojana has been launched to ensure integrated provision of shelter, sanitation and drinking water to poor rural households.

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1.3 Detail study (Socio economic, physical, demographic and infrastructure details) of Ideal village

Socio economic:

The main occupation of villagers is farming. In monsoon 70% or more of villagers are engaged in farming and in other season they work as labour and mason in nearby cities. Only 5-6% villagers have government job as a doctor, teacher, police and clerk.

Occupational Details

NAME OF THREE MAJOR OCCUPATION GROUPS IN VILLAGE	1.	FARMING
	2.	LABOUR
	3.	GOVERNMENT JOB

TABLE 2:- OCCUPATION DETAIL OF THAMNA VILLAGE

Demographic Details

1 The population of Thamana is 4690 as per 2001 census data and 5147 as per 2011 census data.
2 No. of household is 1012 as per 2001 census data and 1214 as per 2011 census data.
3 No. of male is 2367 as per 2001 census data and 2599 as per 2011 census data.
4 No. of female is 2322 as per 2001 census data and 2548 as per 2011 census data

Sr. No.	Census	Population	Male	Female	Total House holds
I	2001	4689	2367	2322	1012
Ii	2011	5147	2599	2548	1214

TABLE 3:-DEMOGRAPHIC DETAILS OF THAMNA VILLAGE

Physical Infrastructure facilities

Sources of drinking water: There are four bore wells within the village. Water is supplied to the people of the village through a pipeline. Overhead tank and underground water tank is available in village. Purification system is available for drinking water purpose. Over head water Tank capacity is 50,000 lit.

FIGURE : 2 OVERHEAD TANK

Drainage Facilities: There is underground drainage system in the village. So, the rain water can be easily drained off. Rain water is released inside the lake through underground drainage.

FIGURE : 3 UNDERGROUND DRAINAGE

FIGURE :4 BUS STOP PHOTO

Road Network & Transport Facility: There is a paved road for entering the village. All the roads in the village are made of cement concrete. Work is also underway to construct some roads within the village. Street lights are located on all roads.SH is located at a distance of 5 km from the village. There is no Railway station within the village but 5 Km away in umreth. There is also the convenience of private vehicles to get out the village. There is also bus stop within the village.

FIGURE :5 THE ROAD TO THE VILLAGE THAT IS STILL UNDER CONSTRUCTION

FIGURE : 6 DIISPOSAL OF WASTAGE

Disposal of Wastage: For cleaning purpose, Gram Panchayat provides vehicles –Tractors and Auto-rickshaw. They take garbage from home to home. This collected wastage and garbage is dumped 2 km outside the village.

Housing Condition: There are more than 70% of the pucca houses within the village.

Social Infrastructure facilities

Hospitals: There are good facilities for primary treatment in the village. There are 2 hospitals in village. Here are also Ayurvedic doctors they are doing private practice.

FIGURE ; 7 HOSPITAL

Education Facilities: Education is the mainly focused in the village. Therefore there are 3 schools in Thamana. It includes primary schools, secondary schools and higher secondary also. There are 4 Anganwadi in village also. We visited some schools of the village. The schools are also having computer lab and library. There is no college within the village. Science college is located 8.3 Km from the village.

FIGURE :8 PRIMARY AND SECONDARY SCHOOL

Other Facilities:

Post Office: There is also post office and telephone exchange.

FIG.:9 POST OFFICE

There is also an institute available in Thamna village.

FIG.EDUCATION INSTITUTE

1.4 SWOT analysis of Ideal village

Strength	Weaknesses
1. Basic physical infrastructure	1. Storm water network
• Water supply	2.Waste of water
• Transport	
• Sewerage	
• Solid waste management	
• Telecommunication	
2. Basic social infrastructure	
• Health facilities	
• Education facilities	
• Community hall	
• Recreational facilities	
3. Quality of housing	
4. Better connectivity	
5. Mass transport facilities	
6. Public transport facilities	
7. Door to door solid waste Collection	
8. Wells	
9. Street lightening	
10. C.C.T.V. camera	
11. N.R.I. housing	
12. Post office	
13. Banking facilities	Threats
14. Temples	1. water crisis
15. Reverse osmosis plant	2. Growth of population
Opportunities	3.Shortage of Water
1. To making Wi-Fi free zone	
2. Use modern technology	

TABLE 4 SWOT analysis of ideal village

1.5 Future prospects ofvillage

For future prospect, the village Thamana can use more advanced technologies for agricultural prospect and for other requirements also. They can make the village Wi-Fi zone and can improve the computer labs in the schools. They can also provide biogas plant in the village. There should be police station in the village for the safety purposes. The main sources of water within the village are bore well as there is no river or dam in the village. This water is used for farming, Drinking, bathing, washing, but due to increasing population and industries, there will be shortage of water so that rain water should be stored in the village and water wastage should be minimized

1.6 Benefits of the visits of Ideal village

By the visit of the village Thamana, we got an idea about an ideal village. We had seen many kind of new technologies which can be used in village that are being used in the urban area. By this visit of Thamana, it improved our communication skills and we knew how to interact with the different peoples. Looking at the ideal village, we know what a village really should be like

1.7 Civil aspects required in Ideal village / Smart village

About Civil aspects required in Ideal village, The road construction have to be repaired and the infrastructure of old government buildings to be repaired or maintenance s to be required.

2. THAMNA VILLAGE LITERATURE REVIEW

2.1 Introduction: Urban & Rural

An urban area, or urban agglomeration, is a human settlement with high population density and infrastructure of built environment. Urban areas are created through urbanization and are categorized by urban morphology as cities, towns, conurbations or suburbs. In urbanism, the term contrasts to rural areas such as villages and hamlets and in urban sociology or urban anthropology it contrasts with natural environment. The creation of early predecessors of urban areas during the urban revolution led to the creation of human civilization with modern urban planning, which along with other human activities such as exploitation of natural resources leads to human impact on the environment.

The world's urban population in 1950 of just 746 million has increased to 3.9 billion in the decades since.[1] in 2009, the number of people living in urban areas (3.42 billion) surpassed the number living in rural areas (3.41 billion) and since then the world has become more urban than rural.[2] this was the first time that the majority of the world's population lived in a city.[3] in 2014 there were 7.2 billion people living on the planet,[4] of which the global urban population comprised 3.9 billion. The population division of the united nations department of economic and social affairs at that time predicted the urban population would grow to 6.4 billion by 2050, with 37% of that growth to come from three countries: china, India and Nigeria.

Urban areas are created and further developed by the process of urbanization. Urban areas are measured for various purposes, including analyzing population density and urban sprawl.

Unlike an urban area, a metropolitan area includes not only the urban area, but also satellite cities plus intervening rural land that is socio-economically connected to the urban core city, typically by employment ties through commuting, with the urban core city being the primary labor market. In general, a rural area or countryside is a geographic area that is located outside towns and cities.[1] the health resources and services administration of the
u.s. Department of health and human services defines the word *rural* as encompassing "...all population, housing, and territory not included within an urban area. Whatever is not urban is considered rural."[2]typical rural areas have a low population density and small settlements. Agricultural areas are commonly rural, as are other types of areas such as forest. Different countries have varying definitions of *rural* for statistical and administrative purposes.

2.2 Importance in rural context

An ideal village should have the following facilities:

A) Physical Facilities:

i) Road Facilities:

An ideal village must have good road facilities that the people can easily move from one place to other. The roads linking with the other nearby village or town or city must be provided.

ii) Dwelling Houses:

The dwelling-house in an ideal village is very neat and clean. The dwellers of these houses look to the house sanitation and house-drainage. The houses have sufficient windows to let in light and air. All the houses are roofed by good tiles at least.

iii) Electricity:

The electricity should be supplied 24 hours. The village should have good facilities of electricity because most of the work now a days depends on electricity.

B) Social Facilities:

i) Sanitation and Drainage:

An ideal village has good system of sanitation and drainage. Because filth and rubbish of the village should be regularly removed away into the compost pits. An ideal village has very good drains so that the dirty water of the village is properly drained away.

ii) Food and fodder:

The villagers grow food for them and fodder for their cattle. They eat fresh and healthy food. They grow good grass for fodder and also leave sufficient land for pasture.

2.3 Ancient Villages / Different Definition of: Rural Urban Villages

The world is transforming rapidly. Hereto isolated rural areas are getting connected through the networks of communication. The process of linking initiated by colonization has gained momentum in the second half of the twentieth century. End of colonial era left the world closely linked than ever before. Newly liberated nations busied themselves in reconstruction and reformation of their impoverished rural agrarian societies. Urbanization is a process of rural transformation. It is not yet caught attention urban planners but it is a prominent development process commonly witnessed in developing countries. Predominantly rural agriculture economy,

forms of settlements, lifestyles, and social attitudes are changing and new rurban form is

emerging. This paper describes some of the salient features of the process of urbanization, indicates its origin, and discusses some of the effects the process has brought about. By borrowing metaphor from biology, one can describe suburban sprawl as process of grafting urban lifestyle on rural space. Urbanization is a process of altering rural forms with pre-selected urban patterns and lifestyles, which creates new genetically altered rurban forms.

This paper is primarily based on Indian examples. Briefly described here are examples of two small but significant villages from the State of Maharashtra and examples of two important states in India with their emphasis on different aspects of urbanism. Introduction of modern agriculture in Punjab and policy of social change followed in Kerala are prominent but qualitatively different examples of urbanization process.

2.4 Scenario: Rural / Urban India & Gujarat as per Census 2011 and latest population

Agenda of census of India is to release of provisional population totals-Rural urban distribution.

Population(incrore)

	2001	2011	DIFFRENCE
INDIA	102.9	121.0	18.1
RURAL	74.3	83.3	9.0
URBEN	28.6	37.7	9.1

Table 5 Population of Rural and Urban areas as per census 2001 and 2011

For the first in since independence, the absolute increase in population is more in urban areas that in rural areas.

Rural-Urban Distribution: 68.84% & 31.16

Level of urbanization increased from 27.81% in 2001 census to 31.16% in 2011 Literacy rates (in %)

	2001	2011	DIFFRENCE
INDIA	64.8	74.0	+9.2
RURAL	58.7	68.9	+10.2
URBEN	79.9	85.0	+5.1

Table: 6 Literacy Rates in Rural and Urban areas as per Census 2001 and 2011

The improvement in literacy rate in rural area is two times that in urban areas.

The rural urban literacy gap which was 21.2% points in 2001, has come down to 16.1% points in 2011.

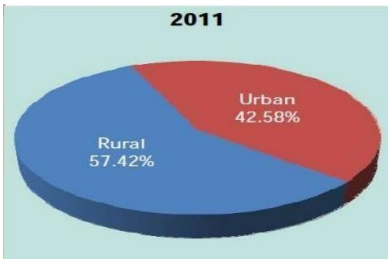
Literacy Rates (in %)

	2001	2011	DIFFRENCE
MALE			
INDIA	75.3	82.1	+6.8
RURAL	70.7	78.6	+7.9
URBEN	86.3	89.7	+3.4
FEMALE			
INDIA	53.7	65.5	+11.8
RURAL	46.1	58.8	+11.8
URBEB	72.9	79.9	+7.0

TABLE: 7 LITERACY RATES IN RURAL AND URBAN AREA AS PER THE MALES AND FEMALES

Gujarat Census: -

Fig.10 – Population Ratio



RURAL URBAN IN GUJRAT

Population of Gujarat:

POPULATION	2001	2011
MALE	26,385,577	31,491,260
FEMALE	24,285,440	28,498,432
TOTAL	50,671,017	60,439,492

Table 8 Population of Gujarat

2.6 Various Measures for Rural Development:-

Rural development is the national necessity and it has following measures.

1. To develop rural area as whole in terms of culture, society, economy, technology and health.
2. To develop living slandered of rural mass.
3. To develop rural youths, children and women.
4. To develop and empower human resource of rural area in terms of their psychology, skill, knowledge, attitude and other abilities.
5. To develop infrastructure facility of rural area.
6. To provide minimum facility to rural mass in terms of drinking water, education, transport, electricity and communication.
7. To develop rural institutions like Panchayat, cooperatives, post, banking and credit.
8. To provide financial assist to develop the artisans in the rural areas, farmers and agrarian unskilled labor, small and big rural entrepreneurs to improve their economy.
9. To develop rural industries through the development of handicrafts, small scaled industries, village industries, rural crafts, cottage industries and other related economic operations in the rural sector.
10. To develop agriculture, animal husbandry and other agricultural related areas.
11. To restore uncultivated land, provide irrigation facilities and motivate farmers to adopt improved seed, fertilizers, package of practices of crop cultivation and soil conservation methods.

2.7 VARIOUS GUIDELINES / NORMS FOR VILLAGES FOR THE PROVISIONS OF DIFFERENT INFRASTRUCTURE FACILITIES:

Facilities	Planning commission/UDPFI Norms	Required as per norms
Education		
Aganwadi	Each village	1
Secondary school	Per 7500 population	2
Primary school	Each village	1
Higher secondary school	Per 15000 population	0
Collage	Per 125000population	0

Tech training institute	Per 100000 population	0
Agriculture research center	Per 100000 population	0
Medical facility		
Gov./panchayat or sub PHC or health center	Each village	1

TABLE 9 DIFFERENT INFRASTRUCTURE FACILITIES

2.8 Sustainable Village Development concept

Development is the organizing principle for sustaining finite resources necessary to provide for the needs of future generations of life on the planet. It is a process that envisions a desirable future state for human societies in which living conditions and resource-use continue to meet human needs without undermining the "integrity, stability and beauty" of natural biotic systems. Sustainable development is a process for meeting human development goals while sustaining the ability of natural systems to continue to provide the natural resources and ecosystem services upon which the economy and society depend. While the modern concept of sustainable development is derived most strongly from the 1987 Brundtland Report, it is rooted in earlier ideas about sustainable forest management and twentieth century environmental concerns. As the concept developed, it has shifted to focus more on economic development, social development and environmental protection. Sustainable Development is the development with consumption of resources in such a way that may not cause the unavailability of resources for the future generation.

2.9 Other Projects / Schemes

In other projects for the development of the rural area is the Public Private Partnership (PPP). Public-Private-Partnership - The Concept:

Public-Private-Partnership or PPP is a mode of implementing government programmes/schemes in partnership with the private sector. The term private in PPP encompasses all non-government agencies such as the corporate sector, voluntary organizations, self-help groups, partnership firms, individuals and community based organizations, PPP, moreover, subsumes all the

objectives of the service being provided earlier by the government, and is not intended to compromise on them. Essentially, the shift in emphasis is from delivering services directly, to service management and coordination. The roles and responsibilities of the partners may vary from sector to sector. While in some schemes/projects, the private provider may have significant involvement in regard to all aspects of implementation; in others s/he may have only minor role.

- The potential benefits expected from PPP could be mentioned as below:
- Cost-effectiveness- since selection of the developer/ service provider depends on competition or some bench marking, the project is generally more cost effective than before.
- Higher Productivity- by linking payments to performance, productivity gains may be expected within the programme/project.
- Accelerated Delivery – since the contracts generally have incentive and penalty clauses vis-a-vis implementation of capital projects/programmes leads to accelerated delivery of projects.
- Clear Customer Focus - the shift in focus from service inputs to outputs create the scope for innovation in service delivery and enhance customer satisfaction.
- Enhanced Social Service- social services to the mentally ill, disabled children and delinquents etc. require a great deal of commitment than sheer professionalism. In such cases it is

  Community/Voluntary Organizations (VOs) with dedicated volunteers who alone can provide the requisite relief.
- Recovery of User Charges- Innovative decisions can be taken with greater flexibility on account of decentralization. Wherever possibilities of recovering user charges exist, these can be imposed in harmony with local conditions.

3. Punsari Village Concept as per your Idea and its Visit

3.1 Introduction : Concepts, Definitions and Practices:-

Smart Village is a concept adopted by national, state and local governments of India, as an initiative focused on holistic rural development, derived from Mahatma Gandhi's vision of Adarsh Gram(Ideal Village) and Swaraj (Self Reliance). Prime Minister Narendra Modi launched Sansad Adarsh Gram Yojana (SAGY) or SAANJHI) on 2 October 2014, Gandhi's birthday, in addition to Smart Cities and Digital India, as a development programme for India. The Parliamentarian's Model Village Scheme main goal is for each Member of Parliament and Minister to adopt a rural village and develop it into a model by 2019 under the SAGY guidelines.[7][6] The vision of SAGY is a integrated village development plan, encompassing Personal, Human, Social, and Economic dimensions.

Making a city –smart is evolving as a strategy to ease the problems generated by the urban population growth and speedy urbanization. Yet little hypothetical research has sparingly discussed the phenomenon. To close the gap in the literature about smart cities and in response to the increasing use of the concept, this paper proposes an agenda to understand the concept of smart cities. Based on the exploration of a wide and extensive array of literature from various disciplinary areas we identify eight critical factors of smart city initiatives: management and organization, technology, governance, policy context, people and communities, economy, built infrastructure, and natural environment.

- Strategic planning
- Mobility
- Hackathon
- Wi fi
- E – government
- E – transportation
- Technological resiliency
- Cyber defense

- Renewable energy

3.2 Vision-Goals, Standards and Performance Measurement Indicators

Sr no.	Parameter	Benchmark
A.	Transport	□ Maximum travel time of 30 minutes in small & medium size cities and 45 minutes in metropolitan areas. □ Continuous unobstructed footpath for 2 m wide on either side of all street with Row 12 m more
		□ Dedicated and physically segregated bicycle tracks with width of 2 m or more, one in each direction, should be provided on all streets with carriage way larger than 10 m rt within 800 m (10-15-minute walking distance) of all residences in areas over 175persons / ha of built area
B.	Spatial Planning	□ 175 persons per Ha along transit corridors. □ 95% of residences should have daily needs retail, parks, primary schools and recreational areas accessible within 400m walking distance. employment and public and institutional transport units to be occupied by economically weaker sections in each Transit Oriented Development Zone 800m from Transit Stations □ At least 30% residential and 30 commercial/institutional in every TOD Zone within 800m of Transit Stations.
C.	Water Supply	supply connections □ 135 liters of per capita supply of water □ 100% metering of water connections □ 100% efficiency in collection of water related Charges
D.	Sewerage & Sanitation	separate toilets for girls □ 100% households should be connected to the waste water network of waste water Network
E.	Solid management	are covered by daily door- stepCollection system. □ 100% collection of municipal solid waste □ 100% segregation of waste at source, i.e. biodegradable and non-degradable waste 100%

Table10 vision goals, standard and performance measurement indicator

3.3 Technological Options

- Smart energy
- Smart mobility
- Smart infrastructure
- Smart public services
- Smart care

3.4 Road Map and Safe Guards

To become a digital city, governments will need an appropriate set of solutions this Will help them advance to the next stage of ICT maturity. The more a city takes advantage of the potential offered by ICT in terms of the provision of digital services and an integrated urban network, the higher its level of ICT maturity. In many ways, this is easier for newer cities in emerging markets, which are just now investing in urban infrastructure.

For example, Lusail City in Qatar, Masdar City in the UAE, and Songdo in South Korea are all making digital technology, networks, and apps a central part of how they operate and interact with citizens. By contrast, existing — or brownfield — metropolitan areas face clear challenges in moving up the ICT maturity ladder, as they need to modernize their existing infrastructure with embedded sensors and control systems and retrofit old buildings — a complicated and expensive process.

Indeed, in some cases it is impossible as the buildings cannot accommodate new technologies. However, becoming a digital city is not so stark a choice that urban authorities either achieve this revolution or fail. Rather, even taking small steps, particularly for established cities, toward becoming more digitized and offering enhanced digital services provides a variety of benefits. In some cases, established cities can use the disruptive power of digitization to leapfrog some of the obstacles.

3.5 Issues & Challenges

Funding: One of the biggest challenge is having a streamlined funding for the development of smart cities. It was decided that each Smart City will receive 500 Crore over the period of 5 years by Central Government. But this amount won‘t be sufficient. To match the contribution of central government there should be some contribution from the state government too in order to create sustainable funding to take the smart cities from pilot phase to execution and thencompletion. There are many private firms that are providing funding but it requires to be in proper process.

Technology: There are certain technologies that are a part of the project and it is expensive to use them. Because of the advancement, some technologies are borrowed from other countries which makes it more expensive. This hinders the success of smart city project. Another challenge is in the discovery of technology and the need for a medium that can bring technology users and creators together to adopt faster platforms.

Problem of regulation and governance: Owing to a large set of investors, the list of stakeholders in the project is growing. In case of any legal issues, there is a strong need of separate legal framework in the stages of smart city mission. When the project is big there is a need of effective communication between central government, state and local governments. Apart from this, there is also a need of statutory bodies to provide quick approvals so that no resources and time goes

waste.

3.6 Smart Infrastructure-intelligent traffic management

Responds intelligently to changes in its environment, with the ability to influence and direct its own delivery, use, maintenance and support.

Smart Information and Communications Technology (smart ICT) has the potential to transform the way we plan and manage infrastructure. New developments in computer hardware, new applications and software are changing the face of the infrastructure sector, and society more generally; driving greater efficiency, increasing productivity, and greatly simplifyingconstruction processes and life-of-assetmaintenance.

- Smart building
- Smart mobility
- Smart energy
- Smart waste management
- Smart health

3.7 Cyber Security

Cyber security in the context of Smart Cities is a hot topic. The objective of Smart Cities is to optimize the city in a dynamic way to offer a better quality of life to the citizens through the application of information and communication technology (ICT). The range of areas where cities can become smarter is extensive: it is an evolution of –Connected Cities with the prevalence of data exchange at a larger scale.

The benefits of Information and Computing Technologies (ICT) in a Smart City and of the Internet of Things are tremendous. Smart energy meters, security

devices, smart appliances for health and domestic life: these and more offer unprecedented conveniences and improved quality of life. City infrastructures and services are changing with new interconnected systems for monitoring, control and automation. These may include water and sanitation to emergency responders and disaster recovery. The Sarpanch aims at getting Wi-Fi connectivity in the entire village so that the villagers can use unlimited internet once they purchase the modem from the panchayat office.

Methodology

Several paradigms and categorical structures may be applied in analyzing the benefits and detriments of this data environment. An applicable paradigm used for this analysis is that of IBM that the Smart City, its components and its citizens are

- Instrumented
- Interconnected
- Intelligent.

3.8 District Cooling and Heating

In the Northeast, air conditioners are almost crucial pieces of equipment for home comfort. However, it can be difficult to find the right air conditioner for your home, one that will provide enough cool air in the summer to cool your home without driving your energy costs through the Vishwakarma Yojana: phase VII, Village: Punsari, District: Sabarkantha roof. We can help! At Hammond Services, we can help you choose the perfect air conditioner for your home, install it professionally, and even maintain/repair it in the years ahead.

3.9 Strategic Options for Fast Development

The strategic components of area-based development in the Smart Cities Mission are city improvement (retrofitting), city renewal (redevelopment) and city extension (Greenfield development) plus a Pan-city initiative in which Smart Solutions are applied covering larger parts of the city. Below are given the Deion‘s of the three models of Area-based smart city.

development:

Retrofitting will introduce planning in an existing built-up area to achieve smart city objectives, along with other objectives, to make the existing area more efficient and livable. In retrofitting, an area consisting of more than 500 acres will be identified by the city in consultation with citizens. Depending on the existing level of infrastructure services in the identified area and the vision of the

residents, the cities will prepare a strategy to become smart. Since existing structures are largely to remain intact in this model, it is expected that more intensive infrastructure service levels and a large number of smart applications will be packed into the retrofitted smart city. This strategy may also be completed in a shorter time frame, leading to its replication in another part of the city.

3.10 India's Urban Water and Sanitation Challenges and Role of Indigenous Technologies

Swachh Bharat Abhiyaan was launched by Hon'ble Prime Minister of India on 2nd October 2015, which caught attention of everybody not only in India, but also in the world. The government has taken various steps to create awareness among the masses for keeping the area surrounding them neat and clean. Government is also paying special attention for cleaning of rivers, railway stations, tourist destinations and other public places.

The BARC is playing a pivotal role in the development of these technologies. Some of these technologies are as follows:

Environment friendly Plasma technologies:

Solid waste dumping sites or landfill sites need more amount of land which is not available in urban areas. Incineration of solid waste pollutes the environment if the incinerators are not designed or operated properly. Thermal Plasma Technology is ideally suited for waste treatment. By plasma technology Hazardous & toxic compounds are broken down to elemental constituents at high temperatures; Inorganic materials are converted to Vitrified Mass; and Organic materials are Pyrolysed or Gasified, converted to flue gases (H2 & CO) & Lower hydrocarbon gases when operated at low temperature (500 – 600OC). Disposal of carcass is also being thought of using plasma pyrolysis.

Unique Multi Stage Biological Treatment Solution:

Multi Stage Biological Treatment Solution (MSBT) can be implemented on existing STP which are not able to process Sewage to optimum efficiency. MSBT can be implemented as a modular or container on the banks of rivers on Drains/Nalas which discharge waste water to the river. It can also be implanted in small urban societies and housing complex for better water management. Benefits of MSBT are: No Surplus of Organic Sludge, No Odour problem, drastic reduction of Electrical Power usage which minimizes operating costs, No need for return sludge pumping (minimizing electromechanical component which ultimately reduces operating cost).

3.11 Initiatives in village development by local self-government

This is 8 years back when district administration stitched up funds from various heads of the district development fund ? and started focusing on development of village (lowest administrative unit) named Punsari, Gujarat State (province) India. generally when we listen to the word village the first impression which strikes our images is, mud houses, narrow potholed roads , no drainage and drinking water facilities with socially backward and unconnected people, but Punsari is different story altogether . Punsari has been constructed as a ?model village" by the intervention of state government and its young headman, Himanshu Patel. He proudly states that his village offers "the amenities of a city but the spirit of a village?. Narendra Modi, Present Prime Minister of India and former chief minister of Gujarat has sent officials to study Punsari and its development model and prepare a project for creating model villages all over the country. The village has also been visited by "more than 300 officials" from all over India who want "to learn how they can replicate our model in their states", Mr Patel proudly claims that the village has public announcement systems, CCTV cameras to provide 24/7 security for villagers, free WiFi connectivity at public gathering places, portable drinking water at affordable price, mobile library, two primary schools with WI Fi connection and projector facilities, gaming zones and internet café for students and children and other basic facilities like health , education drainage, are on par with urban standards Punsari makes a perfect case study as the local self-governance model and this can be a role model for rural India with respective changes accordingly to the local demands. I would discuss the transformative challenges in convincing the villagers and bringing the best practice out of it and its impact on rural development.

3.12 Smart Initiatives by District Municipal Corporation e.g. Solid Waste Management or any other

Urban India faces an enormous challenge: managing its gigantic load of solid waste. It is not just a public health issue, but also turning out to be a serious law and order problem as people resort to violent methods to protest waste being dumped in their backyard. But cities simply do not have the space or the wherewithal to dispose of waste. The challenge is going to be tougher. With India's urban population growing at 3-3.5 per cent annually, the waste generated by cities is expected to increase by 5 per cent every year. How are our cities managing this challenge? A survey by Delhi-based non-profit Centre for Science and Environment (CSE) attempts to find this out. In a unique method, CSE first solicited nominations from people and environmentalists on cities they think are managing their wastes well. Once the list of nominations was ready, researchers visited these cities to comprehensively analyse their waste management practices.

3.13 Any Projects contributed working by Government / NGO / Other Digital Country concept

Sarpanch Himanshu Patel (29) told TOI, ‑He (Goyal) will study the way we have harnessed state and national level developmental schemes to create infrastructure in the village which rivals the best in any part of the country.‖ Patel said the visit is prompted by the PMO as there are plans that similar model villages can be recreated – at least one in each district of India.

Punsari makes a perfect case study as the village has not benefitted from NRIs and has instead relied solely on funds from central and state-sponsored developmental schemes in the past eight years.

The village panchayat pays an annual premium of Rs 25 lakh against insurance for each of the 6,000 villagers who have a cover of Rs 1 lakh and a mediclaim policy of Rs 25,000. The schools have zero dropout rates since 2006 and a reverse osmosis plant supplies 20-litre cans to houses for a token amount of Rs 4.

The village panchayat had a capital of Rs 25,000 seven years ago. Today, the deposits have soared to Rs 45 lakh. ‑The model can be easily replicated in India. It only takes smart ..

FIG 11: GATE OF PUNSARI VILLAGE

FIG 12: PUNSARI GRAM PANCHAYAT

FIG3.13: PUNSARI PRIMERY SCHOOL

FIG 14: PUNSARI PHC

FIG 15: PUNSARI LIBRERI

4. ABOUT KHAREDI VILLAGE

Introduction

Fig 16 & 17- Land Map & Location Map

4.1.1 Introduction About KHAREDI Village details

Kharedi is a Village in Dahod Taluka in Dahod District of Gujarat State, India. It is located 5 KM towards North from District headquarters Dahod. 6 KM from 199 KM from State capital Gandhinagar

Kharedi Pin code is 389151 and postal head office is Dahod., Ukardi (2 KM) , Dungarpur (to) (3 KM) , Delsar (4 KM) , Raliyati (dahod Kasba) (4 KM) , Sakarda (4 KM) are the nearby Villages to Kharedi. Kharedi is surrounded by Dahod Taluka towards South , Garbada Taluka towards South , Jhalod Taluka towards North , Limkheda Taluka towards west .

Dahod , Jhabua , Godhra , Rajgarh are the nearby Cities to Kharedi.

Demographics of Kharedi
Gujarati is the Local Language here.

Politics in Kharedi
Bharatiya Janata Party , BJP , INC are the major political parties in this area.

Population

Census Parameter	Census Data
Total Population	6463
Total No of Houses	1031
Female Population	3188
Total Literacy rate %	61.59%

Female Literacy rate%	46.41%
Scheduled Tribes Population	5917
Scheduled Caste Population	284
Working Population	3079
Child(0 -6) Population by 2011	1281
Girl Child(0 -6) Population by 2011	596

TABLE 11 CENSUS DATA

4.1.2 Justification/ need of the study

Vishwakarma Yojana is one of the initiatives towards Rurbanization by Government of Gujarat, which was allotted as a pilot project to GTU. The students and Faculty Members meet all the stakeholders in a village, survey the existing facilities. Then they re-imagine and re-design the whole of the infrastructure of the village. The students and Faculty Members meet all the stake- holders in a village, survey the existing facilities. Then they re-imagine and re-design the whole of the infrastructure of the village. The students use their engineering skills to prepare detailed project reports for the infra-structure as a part of their Final Year project work.

4.1.3 Study Area (Broadly define)

Khardi is a Village in Dahod Taluka in Dahod District of Gujarat State, India. It is located 5 KM towards North from District head quarters Dahod. The total area of the village of Kharedi is 1150.31 hectares with 6463 population.

4.1.4 Objectives of the study

The main objectives of project work are

1. To provide basic amenities in the village, like transportation, sanitation, educational, health care facilities
2. To reduce migration from rural to urban.
3. To promote integrateddevelopment.
4. Toprovidesustainabledevelopment.
5. To propose the comprehensive planning suited for ideal village.

- Creation of Infrastructure: To provide connectivity, civic and social infrastructure with provision of alternative Economy generation is the key pillars that the concept.
- Basic Physical Infrastructure: To provide Water Supply, Transport, Sewerage and Solid Waste Management should be the priority on it. To provide internal roads within village, Efficient Transportation systems to improve connectivity between urban and rural areas, Public transportation facilities that need to be developed like bus stops, transport depot etc.
- Basic Social Infrastructure: To provide Health and Education facilities should be provided and ensure proper delivery of facilities to village houses. Promote development of rural areas with provision of quality housing, better connectivity, employment opportunities and supporting physical and social infrastructure. To Reduce migration from rural to urban areas due to lack of basic services.

4.1.5 Scope of the Study

- By the analyzing the present conditions we can improve the basic amenities and facilities like agriculture facilities, milk cooperative facility, education facility.
- To Improve life style of villagers by helping them to develop their skill by assisting them in implementing income generating activities in close coordination and cooperation with national and international organizations.
- From the Gap analysis, development tactics for village development will be proposed and planning suggestions for physical infrastructure, social infrastructure and renewable energy source will be suggested for the village. This study will focus on the development of the village.

1. Sustainability:
   - Clean drinking water
   - Sanitation
   - primary& secondary education
   - Drainage
   - Electricity Solid waste management
   - utilizing renewable source
   - Housing& livelihood
   - PHC
2. Technology:
   - Irrigation facilities
   - Delivery of government services
   - Telecommunication & internet facilities
   - ATM Machines
3. Connectivity:

- Physical connectivity to towns and other places through roads
- Easy and cheap means of transportation
- Financial connectivity

4.1.6 Methodology Frame Work for development of your village

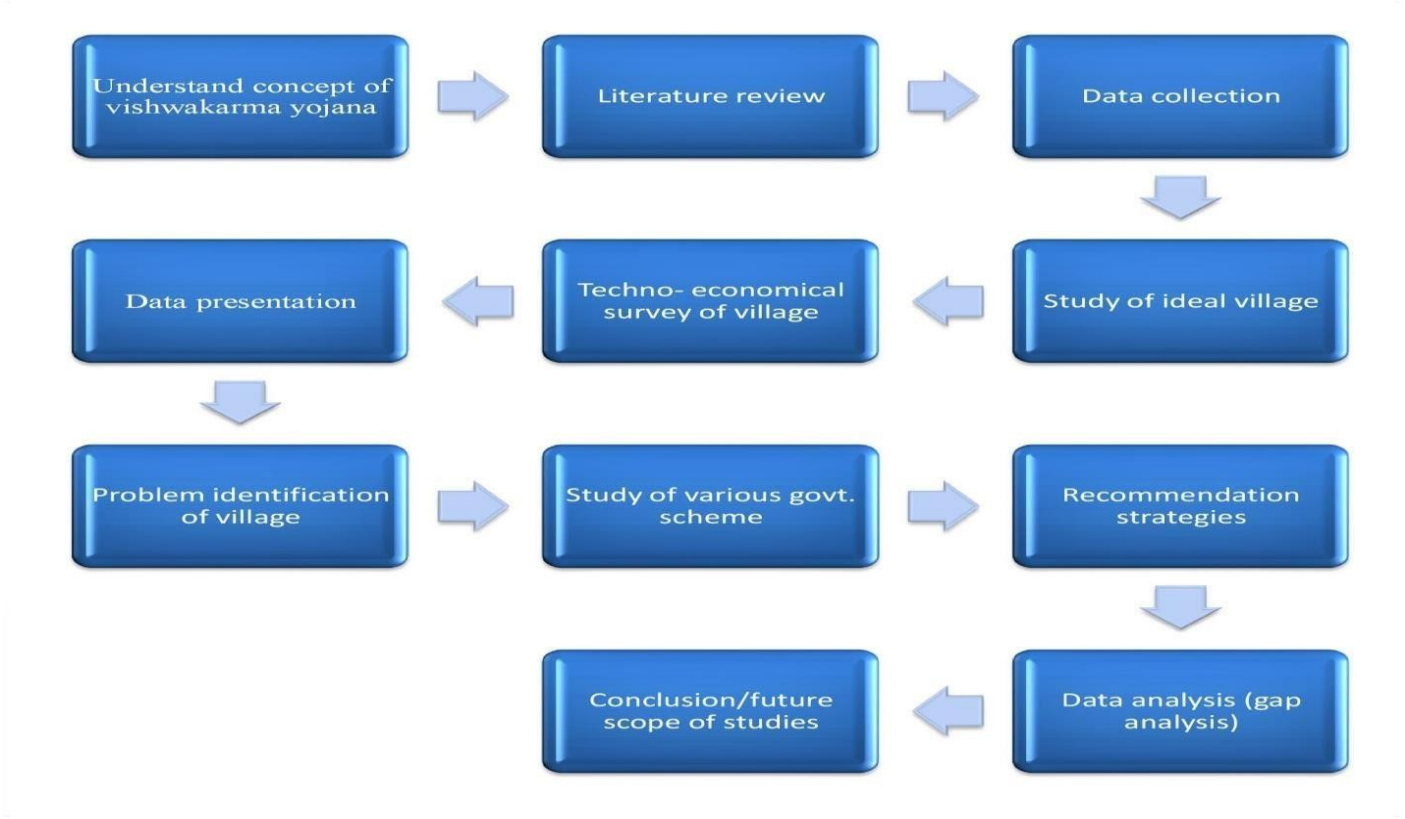


FIGURE: 18 METHODOLOGY FRME WORK

4.1.7 List of Objects Available related to Civil

- ☐ Overhead Water tank
- ☐ Bus stop
- ☐ Education Facilities
  - Aanganwadi Primary school
  - Secondary school
  - Higher secondary school
- ☐ Post office

- ☐ Panchayat building
- ☐ Milk co-operative Society
- ☐ Road network

4.2 KHAREDI village Study Area Profile

4.2.1 Study Area Location with brief history land use details

Country	India
State	Gujarat
District	Dahod
Taluka	Dahod
Nearest town	Dahod
Area	1150.31hect.
Government	Gram panchayat
Population	6463(as per census 2011)
Time zone	IST (UTC+5:30)
Pin code	389151

TABLE 12 STUDY AREA LOCATIONS

4.2.3 Physical and demographical growth

Physical Growth

- ICDS(Anganwadi)
- primary school
- Announcement speakers
- Street lights
- Bus stand
- Water tanks

Census Parameter	Census Data
Total Population	6463
Total No of Houses	1031
Female Population	3188
Total Literacy rate %	61.59%
Female Literacy rate%	46.41%
Scheduled Tribes Population	5917
Scheduled Caste Population	284
Working Population	3079
Child(0 -6) Population by 2011	1281
Girl Child(0 -6) Population by 2011	596

TABLE – 13 DEMOGRAPHIC DATA OF DAHOD VILLAGE

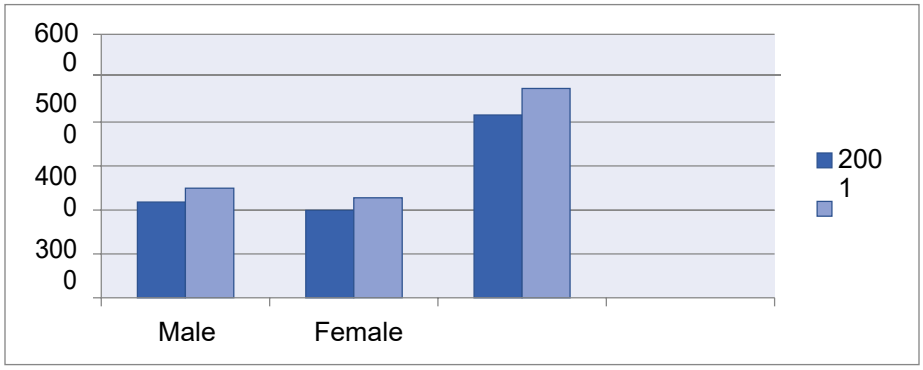


FIGURE: 19 PIE CHART

Brief history

Dahod village is situated in Dahod district. People of this village are living in very peaceful manner. This village having very proud history. Agriculture is the main profession of this village. Still the village is waiting for industrial development, education, drinking water and roads are the main concerns of this village. Young generation is attracted towards mobile, laptop these days. If banks and finance institutes proved loan and other financial support to the villagers, this

village will see the real development. Medical and health services must be improved.

4.2.4 Economic profile / Banks

About the economic profile of this village, many citizens' work interest is farming and labor work. The village doesn't have any better facilities regarding infrastructure but has good electrification system which distributed 24*7 hours for domestic use and 8 hours for agricultural use. Village does not have good drainage system because there is open drainage etc. Dairy and milk production is also the prime source of income.

The main occupation of villagers is farming. In monsoon 80-85% or more of villagers are engaged in farming and in other season they work as labour and mason in nearby cities. Although more than 80-85% of the villagers are engaged in agriculture but due to lack of irrigation facility production is not up to the mark.

4.2.5 Actual Problem faced by Villagers and smart solution

- In village road condition is not good so transportation of goods is not very well. so we need Road maintenance and construction.
- In village drainage facility is not available so we have to design a underground drainage
- There is no garbage disposal in the village so garbage in the village is increasing and causes and spread of the disease.
- Public toilet facility is not available in village so people do toilet at open places so we propose to do the design of public toilet.

4.2.6 Social scenario Preservation of traditions, Festivals, Cuisine

It was found that all the people of this village are not very much connected with today's technology environment rather than their main major working area. The major crops produced in the village are **Corn, Maize, Wheat.** The major population is get income through the farming and there are no other job opportunities. The education is limited to higher secondary school.

Marriage is a highly auspicious occasion in Indian culture. According to the Vedas, the Hindu scriptures, marriage is a sacred lifelong commitment between a man and a woman. It is considered to be the strongest of all social bonds and is the initiation into a lifetime of togetherness.

The Vedic wedding ceremony consists of prayers, invocations, and vows recited in Sanskrit, the most ancient surviving language. The Vedic wedding ceremony dates back to over five thousand years and is performed under a decorated

canopy, the mandap. The four pillars that surround the mandap represent the parents of the bride and groom. This signifies the important part they have played in raising their children to become the responsible adults they are today. The ceremony is performed before a sacred fire, or angina, which is the eternal witness of the marriage and all vows taken

Dahod Village people celebrate some of the unique festivals that reflect the rural charm and simplicity of the Dahod people. The village of the Indian states are special for their distinguished fairs and festivals, however, festivals like Republic Day, Diwali, Independence Day and Janmastami are celebrated nationwide. Besides the religious festivals cultural ones are also predominant in the Indian villages.

The typical Gujarati thali consists of rotli, dal or kadhi, rice, and shaak (a dish made up of several different combinations of vegetables and spices, which may be either spicy or sweet). The thali will also include preparations made from pulses or whole beans (called kathor in Gujarati) such as mung, black eyed beans etc., a snack item (farsaan) like dhokla, pathra, samosa etc. and a sweet (mishthaan) like mohanthal, jalebi, doodh pak etc. Gujarati cuisine varies widely in flavour and heat, depending on a family's tastes as well as the region of Gujarat to which they belong. North Gujarat, Kathiawad, Kachchh, Central Gujarat and South Gujarat are the five major regions of Gujarat that contribute their unique touch to Gujarati cuisine. Many Gujarati dishes are distinctively sweet, salty, and spicy simultaneously.

Despite having an extensive coastline providing wholesome seafood, Gujarat is primarily a vegetarian state due to the influence of Jain vegetarianism. Many communities, however, do include seafood, chicken and mutton in their diet.

4.2.7 Migrations reasons / Trends

Migration is a way to move from one place to another in order to live and work. Movement of people from their home to another city, state or country for a job, shelter or some other reasons is called migration. Migration from rural areas to urban areas has increased in past few years in India

Nowadays, many people decide to migrate to have a better life. Employment opportunities are the most common reason due to which people migrate. Except this, lack of opportunities, better education, construction of dams, globalization, natural disaster (flood and drought) and sometimes crop failure forced villagers to migrate to cities.

People who move from one place to another in search of work or shelter are called migrants. Most of the times migrants people are not skilled or educated therefore they usually employed as daily wagers (*workers who are paid at the end* of each day, for their services*).* Daily wagers do not get enough money for the survival of their families and suffering from many problems such as they do not have enough food to eat, sanitation, hygiene, a proper place to live etc.

Poverty makes them unable to live a normal and healthy life. Children growing up in poverty have no access to proper nutrition, education or health. Migration increased the

slum areas in cities which increase many problems such as unhygienic conditions, etc.

4.3 Data collection KHAREDI village (photograph/charts/graphs/tables)

4.3.1 Methods for data collection

The following data was collected by various means like:

- Office record of concerned office department like-R&B Department, Talati office etc.
- Interaction with Sarpanch, Upsarpanch, villagers etc.
- Visit to different parts of village

4.3.2 Primary survey details of survey

The Primary survey was conducted to identify the various general problems of the villagers by interacting with them and enquiring about the problems faced by them in daily life. They were asked to suggest the possible and desirable solutions for these problems as well as other infrastructural facilities they would like to have in their village.

Following questions were asked to the different age group and status of village people:

1. Do you have enough water supplies?
2. Which type of irrigation facility you are using? Is it enough?
3. Are you comfortable with your Road network facility?
4. What is your Sources of economy?
5. Which type of medical facility is available?
6. What is your primary need?
7. Which type of facility you want first?
8. Where you dispose your waste?
9. Are comfortable with available medical facility?

4.3.3Average size of the House-Geo-tagging of House

In village average size of houses is about 10x10 ft

Only ground floor is available in the village with no concrete slab

Geo-Tagging of House

As per the sarpanch and our survey there is no facility is available in the village people. have smart phone to make calls, to capture the video and for other communication.

4.3.4 No of Human being in One House

As per the sarpanch and our survey there are average 5 persons per household in village .

4.3.5 Material used locally in the village and material out sourced by the villagers

The construction of the houses was made of stone, cement, sand, bricks and concrete. In this village katchha houses are more than the pucca houses.

Out Sourced Material

Major economic option of the village is farming so there are no more locally material available like standard bricks, aggregates, concrete and reinforcements. So, this material is brought from nearest city for construction of the houses.

4.3.6 Geographical Detail

The total area of the village of Dahod is 1150.21 Hectares with population 6463.

Description	Details
Area of village in hect.	1150.31
Forest area in hect.	-
Agricultural area in hect.	182.109 hectares

TABLE 14 Geographical detail

4.3.7 Demographical Detail

Census Parameter	Census Data
Total Population	6463
Total No of Houses	1031
Female Population	3188
Total Literacy rate %	61.59%
Female Literacy rate%	46.41%
Scheduled Tribes Population	5917
Scheduled Caste Population	284
Working Population	3079
Child(0 -6) Population by 2011	1281
Girl Child(0 -6) Population by 2011	596

TABLE 15 DEMOGRAPHICAL DETAIL

4.3.8 Occupational Detail

In this village **80 to 85 %** people connected with **agriculture** activities. it is the villages main source of income. But village has the milk production business so that's a income of source too there are approx. **5 to 10 %** people are connected with **milk** production and other are doing labor work for money.

Occupational Details

NAME OF THREE MAJOR OCCUPATION GROUPS IN VILLAGE	**1.**	**FARMING**
	2.	**LABOUR**
	3.	**DAIRY**

TABLE 16. OCCUPATION DETAILS

4.3.9 Agricultural Details

Main source of income in this village is farming. Farmers use drip irrigation system to do farming. The main agriculture product **Corn, Maize, Wheat**..

4.3.10 Physical infrastructure facilities/Manufacturing HUB / Ware Houses

Paddy, Maize, Wheat and milk are the main manufacturing product of this village

4.3.11 Tourism development available in the village of attracting the tourist

No tourism in this village

4.4 Infrastructure Details (with existing village photography)

4.4.1Drinking Water / Water Management Facilities

For drinking Purpose 1 overhead water tank, 2 sumps and tube well and tap water available. Some people also use hand pump for water purpose
Water in the village is brought through the pipeline from dam.

FIGURE : 20 OVERHEAD WATER TANK

4.4.2 Drainage Network / Sanitation Facilities

No drainage system available in the village.

4.4.3 Transportation & Road Network

FIG. 21 ROAD NETWORK

For transport network Railway station, available within 4 km in Dahod. Bus stop is also available in village. Mainly people use local transport like auto rickshaw, Bus, chhakda etc.

Approach road of village is NH-56 is cement concrete road. Main road of village is Bituminous. Internal Street Road of Kharedi is of WBM road.

There is a bituminous road to get to the village. The village connects both SH and NH-56.

4.4.4 Housing condition

FIG. 22 KUTCHA HOUSE

FIG. 23 PUCCA HOUSE

There are **1031** households in the village. 80% households are kutcha and 20% are pucca.

4.4.5 Social Infrastructure Facilities, Health, Education, Community Hall, Library

Health facility:

FIG. 24 HEALTH CENTRE

There is one PHC is available in kharedi village and one small clinic is available for health facilities.

Education Facility:

FIG. 25 PRIMARY SCHOOL

FIG. 26 PRIMARY SCHOOL

For Education Purpose Primary School, Anganwadi , Secondary & Higher secondary school is available. For college education students goes to Dahod city.

4.4.6 Existing condition of public building

Public Library:

There is one library available in Kharedi

village. Community Hall:

There is one Availability of Community hall in Kharedi village

Other facility :
There is one post office, panchayat building, Mahila mandal, and Milk co-operative society available in the village

4.4.7 Technology Mobile/ WIFI / Internet Usage Details.

Kharedi village is not a Wi-Fi village. And school and panchayat building

has not Wi-Fi in their building. Approximately only 30-40 % people use technology or mobile or internet.

4.4.8 Sports Activity as Gram Panchayat

There is no sports activity in the village through the gram panchayat. But some kind of sport activity is organized by the village school

4.4.9 Socio-Cultural Facilities, Public Garden /Park/Playground /Pond/ Other Recreation Facilities

There is no availability of any socio-cultural facility like public library, public garden, cinema hall etc. inside the village so Socio-cultural Facility is required.

4.4.10 Other Facilities

- There is only one ICDS center in the village.
- There is no such special facility in the village which can be specified separately but as per the basic requirement, the facilities are available like transport facility, Water and electricity facilities, grocery store

4.4.11 Any other facilities

- Particularly the maintenance of the **road** within the village and the construction of the road is very much needed
- The village only has **ICDS** center as a health facility which also needs to be repaired maintenance.

4.5 Existing Institution like - Village Administration – Detail Profile:

There is milk production institution and animal care center is available. There is Mahila Mandal available in the village.

FIG. 27 GRAM PANCHAYAT

4.5.1 BachatMandali:-

This village does not have Bachat Mandali.

4.5.2 DudhMandali:

FIG.28 DUDH SHEET KENDRA

There is a milk congregation in this village. Therefore the people of the village easily deliver their milk to the buffaloes. Milk can be easily accessed in the market by transportation from the congregation.

4.5.3 Mahila forum:-

This village does not have Mahila forum.

4.5.4 Plantation for the Air Pollution: -

High concentrations of harmful gases and particles in our atmosphere negatively affect the health of humans, animals and plants Trees act as the earth's purification system by absorbing airborne chemicals and releasing oxygen. To tackle global air pollution, we need to halt deforestation and plant billions of trees and this village is planted.

4.5.5 Rain Water Harvesting: -

This village does not have Rain Water Harvesting.

4.5.6Agricultural Development: -

Agricultural development is the ability to develop some better system of agricultural production. ... The implements needed for plowing, weeding, and transportation are often a larger constraint for many farmers than the acquisition, training, and employment of animals.

4.5.7 Any Other:-

This village does not have any other facility.

5. Technical Options with Case Studies of the Existing Village

5.1 Concept (Civil)

5.1.1 Advance construction techniques / Practice and Quantity

The term 'advanced construction technology' covers a wide range of modern techniques and practices that encompass the latest developments in materials technology, design procedures, quantity surveying, facilities management, services, structural analysis and design, and management studies. Incorporating advanced construction technology into practice can increase levels of quality, efficiency, safety, sustainability and value for money. However, there is often a conflict between traditional industry methods and innovative new practices, and this is often blamed for the relatively slow rate of technology transfer within the industry. The adoption of advanced construction technology requires an appropriate design, commitment from the whole project team, suitable procurement strategies, good quality control, appropriate training and careful commissioning.

Advanced construction technologies are commonly described as including (amongst many others) advanced forms of:

- 3D printing.
- Materials.
- Building information modeling (BIM).

- Cladding systems.
- Computer aided design and computer aidedmanufacturing (CAD/CAM).
- Computer numerical control.
- Construction plant.
- Modern methods ofconstruction.
- Modular construction.
- Offsitemanufacturing.
- Pre-fabrication andpreassembly.

Drivers for Sustainability :

While India is preparing to tackle these growth plans with enthusiasm, it is imperative that the country should analysis and take into account the price that the future populations of the world and here will have to pay and the world in turn will have to pay, should this unprecedented growth take place without adequate thought to sustainability. Should we consume all our energy, materials, water resources without considering for the needs of our children and grandchildren, the future of the world and our nation is at peril. Obviously GHG emissions, climate change and sustainability are at stake. It is estimated that GHG emissions would increase from 2 billion tons to 6-7 billion tons of CO2in 2030.

Some of us may question why India must slow down her pace of development and pay for the sins of already developed and industrialized Western nations. Clearly, the OECD or the industrialized countries must take the lead in mitigating climate change, reducing greenhouse gas emissions, but also large developing countries such as India and China will also have to start to reduce their emissions over the next 20 to 30 years if we truly want to give our children a chance at a future. Developing countries with large emissions should have some responsibility, although differentiated and different from the industrialized world. While sustainable practices and products may be slightly unintuitive and perceived as counterproductive to the growth of GDP in the short-term, in the long-term, the future growth of the country depends on it.
Growth that is not sustainable is not true growth.

Recommendations :

In mapping out sustainable practices that India must adopt a "cradle to grave" analysis is required. And for this we need to have a total approach than a patch work point system or a grade based certification system.

In order to have a comprehensive plan for sustainable construction, every structure may be thought about based on the following parameters:

•Planning, design and specifications based on performance and service life
•Construction Practices
•Material Conservation and Selection

•Demolition and recycling
•Energy Conservation

5.1.2 Soil Liquefaction :

Soil liquefaction occurs when a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress such as shaking during an earthquake or other sudden change in stress condition, in which material that is ordinarily a solid behaves like a liquid.

In soil mechanics, the term "liquefied" was first used by Allen Hazen in reference to the 1918 failure of the Calaveras Dam in California. He described the mechanism of flow liquefaction of the embankment dam as : If the pressure of the water in the pores is great enough to carry all the load, it will have the effect of holding the particles apart and of producing a condition that is practically equivalent to that of quick sand... the initial movement of some part of the material might result in accumulating pressure, first on one point, and then on another, successively, as the early points of concentration were liquefied.

Type of soil causes liquefaction: Poorly drained fine-grained soils such as sandy, silty, and gravelly soils are the most susceptible to liquefaction.

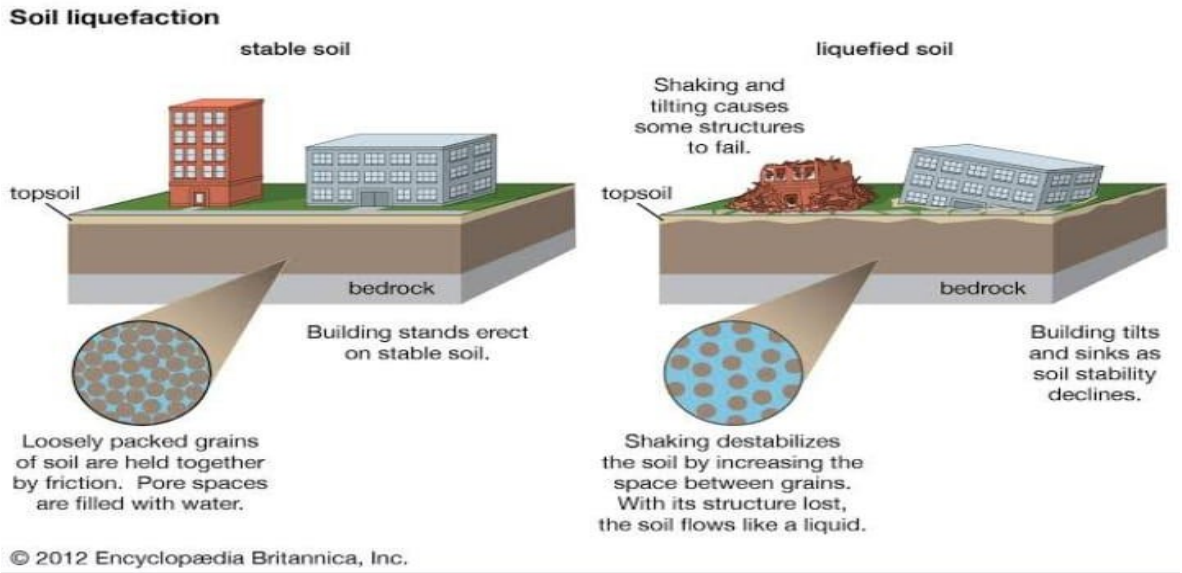


FIG.29 SOIL LIQUEFACTION

FIG.30 SOIL LIQUEFACTION

5.1.3 Sustainable Sanitation :

Sustainable sanitation is a sanitation system designed to meet certain criteria and to work well over the long-term. Sustainable sanitation systems consider the entire "sanitation value chain", from the experience of the user, excreta and waste water collection methods, transportation or conveyance of waste, treatment, and reuse or disposal. The Sustainable Sanitation Alliance includes five features (or criteria) in its definition of "sustainable sanitation": Systems need to be economically and socially acceptable, technically and institutionally appropriate and protect the environment and natural resources. The purpose of sustainable sanitation is the same as sanitation in general: to protect human health. However, "sustainable sanitation" attends to all processes of the system: This includes methods of collecting, transporting, treating and the disposal (or reuse) of waste.

FIG.31 SUSTAINABLE SANITATION

5.1.4 Transport Infrastructure / system :

Transport infrastructure consists of the fixed installations necessary for transport and includes roads ,railways, airways, waterways, and terminals.

Transport is vital to the well-functioning of economic activities and a key to ensuring social well-being and cohesion of populations. Transport ensures everyday mobility of people and is crucial to the production and distribution of goods. Adequate infrastructure is a fundamental precondition for

transport systems. In their endeavour to facilitate transport, however, decision-makers in governments and international organizations face difficult challenges. These include the existence of physical barriers or hindrances, such as insufficient or inadequate transport infrastructures, bottlenecks and missing links, as well as lack of funds to remove them. Solving these problems is not an easy task. It requires action on the part of the governments concerned, actions that are coordinated with other governments at international level.

FIG.32 TRANSPORT INFRASTRUCTURE

5.1.5 Vertical Farming :

Vertical farming is the practice of growing crops in vertically stacked layers. It often incorporates controlled-environment agriculture, which aims to optimize plant growth, and soilless farming techniques such as hydroponics, a quaponics, and aeroponics. Some common choices of structures to house vertical farming systems include buildings, shipping containers, tunnels, and abandoned mine shafts. As of 2020, there is the equivalent of about 30ha (74 acres) of operational vertical farmland in the world. The modern concept of vertical farming was proposed in 1999 by Dickson Despommier, professor of Public and Environmental Health at Columbia University

The main advantage of utilizing vertical farming technologies is the increased crop yield that comes with a smaller unit area of land requirement. The increased ability to cultivate a larger variety of crops at once because crops do not share the same plots of land while growing is another sought-after advantage. Additionally, crops are resistant to weather disruptions because of their placement indoors, meaning less crops lost to extreme or unexpected weather occurrences. Because of its limited land usage, vertical farming is less disruptive to the native plants and animals, leading to further conservation of the local flora and fauna. Vertical farming technologies face economic challenges with large start-up costs compared to traditional farms. In Victoria, Australia, a "hypothetical 10 level vertical farm" would cost over 850 times more per cubic meter of arable land than a traditional farm in rural Victoria. Vertical farms also face large energy demands due to the use of supplementary light like LEDs. Moreover, if non- renewable energy is used to meet these energy demands, vertical farms could produce more pollution than traditional farms or greenhouses.

FIG.33 VERTICAL FARMING

5.1.6 Corrosion Mechanism, Prevention & Repair Measures of RCC Structure :

Mechanism:

In the case of Reinforced concrete structure the ingress of moisture or air may lead to corrosion of steel, cracking and spalling of the concrete cover thereby reducing durability of the concrete structure. Repair has been suggested as the protective solution for damaged structure due to corrosion. Corrosion of reinforcing steel is a significant economic and safety problem, preventing many buildings from attaining their design life. It is now a must look into field as corrosion of reinforcing steel is seen almost in every 10 out of 100 constructions within a life of 10 years. Nowadays the increase content of pollutants in the city atmosphere has very much affected the lifespan of RCC structures. The increased content of pollutants include a very high rates of Sulphates and Chlorides which when these mixes with rain water and falls over these structures and damages the visible parts.

5.1.7 Sewage treatment plant:

Sewage treatment plant is a plant where waste water is treated. Sewage treatment is the process of removing contaminants from municipal wastewater, containing mainly household sewage plus some industrial wastewater. Physical, chemical, and biological processes are used to remove contaminants and produce treated wastewater (or treated effluent) that is safe enough for release into the environment. A by-product of sewage treatment is a semi-solid waste or slurry, called sewage sludge.

The term "sewage treatment plant" (or "sewage treatment works" in some countries) is nowadays often replaced with the term wastewater treatment plant or wastewater treatment station .Sewage can be treated close to where the sewage is created, which may be called a decentralized" system or even an "on-site" system (in septic tanks, biofilters or a erobic treatment systems). Alternatively, sewage can be collected and transported by a network of pipe sand pump stations to a municipal treatment plant. This is called a "centralized" system (see also sewerage and pipes and infrastructure).

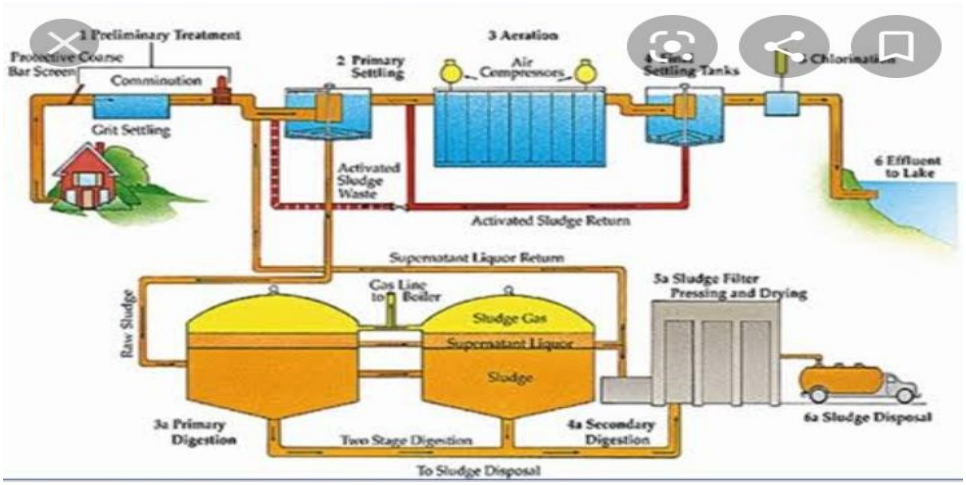


FIG. 34 SEWAGE TREATMENTPLANT

6.Swatchh Bharat Abhiyan (Clean India) :

Swatchh Bharat Mission (SBM), Swachh Bharat Abhiyan (SBA), or Clean India Mission

It is a country-wide campaign initiated by the Government of India in 2014 to eliminate open defecation and improve solid waste management(SWM). Phase 1 of the mission lasted till October 2019. Phase 2 will be implemented between 2020-21 and 2024-25.

Initiated by the Government of India, the mission aimed to achieve an "open-defecation free" (ODF) India by 2 October 2019, the 150th anniversary of the birth of Mahatma Gandhi. The objectives of the first phase of the mission also included eradication of manual scavenging, generating awareness and bringing about a behavior change regarding sanitation practices, and augmentation of capacity at the local level. The second phase of the mission aims to sustain the open defecation free status and improve the management of solid and liquid waste. The mission is aimed at progressing towards target 6.2 of the Sustainable Development Goals Number 6established by the United Nations in 2015.

The campaign's official name is in Hindi. In English, it translates to "Clean India Mission". The campaign was officially launched on 2 October 2014 at Rajghat, New Delhi by Prime Minister Narendra Modi. It is India's largest cleanliness drive to date with three million government employees and students from all parts of India participating in 4,043 cities, towns, and rural communities. At a rally in Champaran, the Prime minister called the campaign Satyagrah se Swatchhagrahin reference to Gandhi's Champaran Satyagraha launched on 10 April 1916.The mission was split into two: rural and urban. In rural areas "SBM-Gramin" was financed and
monitored through the Ministry of Drinking Water and Sanitation; whereas "SBM -urban" was overseen by the Ministry of Housing and Urban Affairs.

The government provided subsidy for construction of nearly 110 million toilets between 2014 and 2019,although many Indians especially in rural areas choose to not use them. The campaign was criticized for using coercive approaches to force people to use toilets. Many households were threatened with a loss of benefits such as access to electricity or food entitlements through the public distribution system.

6.1 Swatchhta needed in Kharedi village -Existing Situation with photograph:

We have done one survey on existing condition of village regarding swatchhta. The people are maintaining cleanliness of the village but in some streets there is no swatchhata because there are animal and their waste, mud, etc. The village pond has to need a proper maintenance. Other than these there are clean streets, main road and approach road.

6.2 Guidelines -Implementation in Kharedi village with Photograph:

According to Talati, Sarpanch and villagers, the people are cleaning their nearby area regularly and collect that waste and dispose it to out of the village and burn it. No daily basis waste collection is there in the Kharedi village.

6.3 Activities Done by Students for Kharedi village with Photograph:

Firstly we took a permission from village Talati and Sarpanch for doing one Swatchhta awareness camp and then we have done one activity of swatchhta awareness in the village and we have done an interaction with villagers and aware them about the importance of swatchhta in our life and told them to keep the village and infrastructure clean and safe. We have also done a cleaning of village street. We have suggested them for not dumping the waste in village streets and dispose it at right place. So that we have also proposed one design of Solid Waste Management as part 2 design in the Kharedi village.

7. Village condition due to Covid-19 :

With respect to COVID 19 pandemic, Ministry of Panchayati Raj, Government of India in close collaboration with State Governments has taken various initiatives. Close consultation and guidance of the State as well as District authorities is being maintained to ensure that lock down conditions are not violated and norms of social distancing are scrupulously followed to contain the spread of the disease. India has overtaken Brazil and become the second-worst affected country in the world by the corona virus pandemic, with more than 4 million cases. COVID-19 had mostly remained in India's cities, but the disease is now spreading to rural India– an area with over 850 million people and far worse health care. The reason for this shift appears to be migrant workers who have been returning to their villages since lockdown was eased at the end of June. The medical response to stop the spread and treat those infected has been inadequate, according to media reports. With one trained doctor for every 1,497 people, against the World Health Organization recommended one per 1,000, and public health expenditure for 2018 at just 1.3% of GDP, India faces an uphill struggle in dealing with the pandemic. While two-thirds of India's population lives in rural areas, there are almost four times as many health workers per person in cities. Most rural communities rely on untrained health workers. Over two-thirds of these rural health providers have no formal medical training, but remain the only option of medical support for most of the rural population.

7.1 Taken steps in Kharedi village related to existing situation with photograph :

During interaction with the Talati, he told us that quarantine place and home quarantine facility were implemented during the lockdown. According to Talati, Sarpanch and villagers; in the Kharedi village the sanitization process was done during the lockdown period when first case of covid 19 came in the village.

7.2 Activities Done by Students for Kharedi village with Photograph :

FIG.35 CURRENT SITUATION OF SCHOOL

FIG.36 SWATCHHATA DONE BY STUDENT

We have taken a permission from Talati and Sarpanch for doing one awareness regarding covid 19 in the Kharedi village and then we did awareness camp regarding covid 19. In that awareness camp we have distributed some face masks to the villagers for the protection against covid 19 and aware them about covid 19 situation in India and told them to take precautionary measures like wear a mask perfectly, wash hands regularly, maintain social distancing in public and avoid crowdy area & firstly make yourself home quarantined if you fill any COVID-19 symptom in your body.

8. Sustainable Design Planning Proposal (Prototype Design)-Part-I

8.1 Design Proposal

8.1.1 Sustainable Design : ATM

Here we have designed the ATM for our Kharedi village. The population of Kharedi village is 6463 as per 2011 census. So it is required to have one ATM in the village. The villagers have to go far from the village for cash requirement so that we have decided and finalized the design of ATM.

8.1.2 Physical design : Road Maintenance

The need to build a road arose because of the labor class in the village and the farming that it was necessity for the farmers to have their own road to sand there row material from world place to another if the road system is not right than the people associated with the sanction have to go long distance and their time and expenses are increase and they do not get their profit so it is difficult for them to run their own house. Therefore inflation increases in the country and inflation becomes the whole country.

8.1.3 Social Design : medical store

The need for medical has areisen because the people of the village are backward and poor people go to the cities to cure that illnesses and because of this poor class their care is not correct and so the health of the people of the village is eight risk and the disease is transformed into a major illness show people become victims of the disease and some need for medical. Thus government conducts surveys in the village through a civil engineering students through the Vishwakarma scheme and has medical and deigned medical needs

8.1.4 Socio-Cultural Design : Supermarket

Supermarket is a self-serviceshop offering a wide variety of food, beverages, and household products, organized into sections. It is larger and has a wider selection than earlier grocery stores.

8.1.5 Smart Village Design : Rain water harvesting

The need to build arose because the village was poor and backward. Therefore the women of the village has to fill the water from the well to the far and there is not enough drinking water in the village for this the government conducts surveys in the village through engineering and student of vishwakarma scheme and after the survey, Water harvesting requirementis created is design for it.

Sustainable Design : ATM

Scenario :

The residents of far-flung or rural areas are unable to pay visit to branches located at distant places on account of resource constraints viz., time, cost and opportunity. Thus, it has become imperative for banks to reach out customers through a variety of technology driven delivery channels such as Micro ATMs, Bio-metric ATMs, Mobile ATMs, and Smart Cards etc., which are most cost effective compared to Brick and Mortar model.ATM has brought sea change in Indian Banking space with significant qualitative improvement in delivery of banking services and within short span the presence of ATMs are outnumbered the physical branch network. The higher growth percentage of white-label ATM (WLA) operators is an indication of rural growth but its not limited to that. Banks have also been expanding in rural regions. However, the ATM industry numbers (3% growth) do not reflect that as the expansion was offset by the 10-PSU- bank merger plan, which led to closure of ATMs in urban areas.

Existing Situation in Kharedi:

Here we have designed the ATM for our Kharedi village. The population of Kharedi village is 6463 as per 2011 census. So it is required to have one ATM in the village. The villagers have to go far from the village for cash requirement so that we have decided and finalized the design of ATM.

Sustainability of the design :

ATM as an important tool :

Design Utilized by,
Illiterate/ Semi-literate users ; Under served; Unbanked ; People living in remote area; etc.

Needs :
Basic banking facilities ; Security ; Ease of use ; A suitable and simple product ; etc.

Design brief :
Atm design to assist illiterate, semi-literate with banking; Providing services through familiar devices; Net reduction in transaction processes; Aim to help in financial inclusion policies; etc.

ATM Design :

Length : 2.67m ; Width : 2.67m : Height : 3.35m
Carpet area :4.88m2

Proposed Design in Auto-cad; Revit and Sketchup

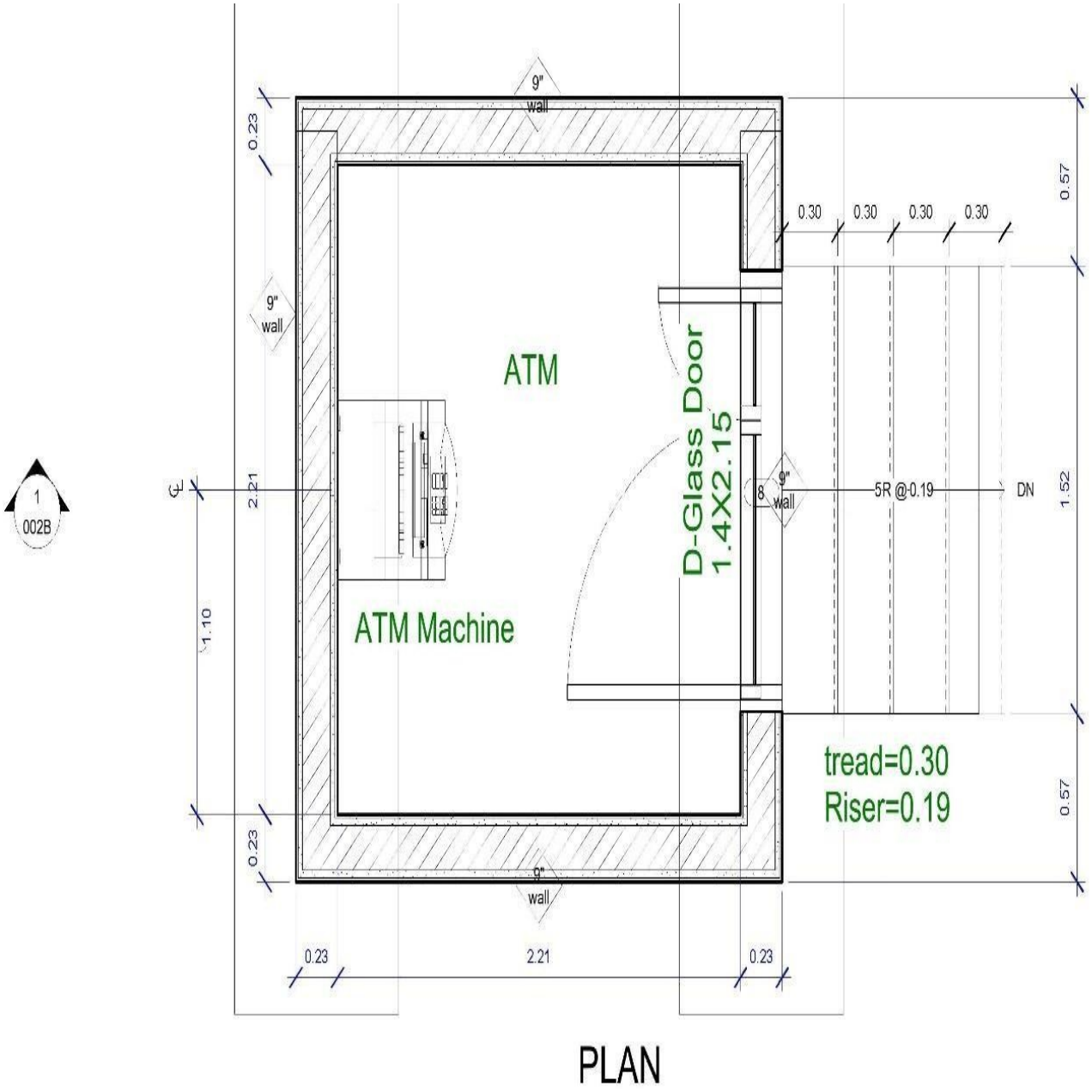
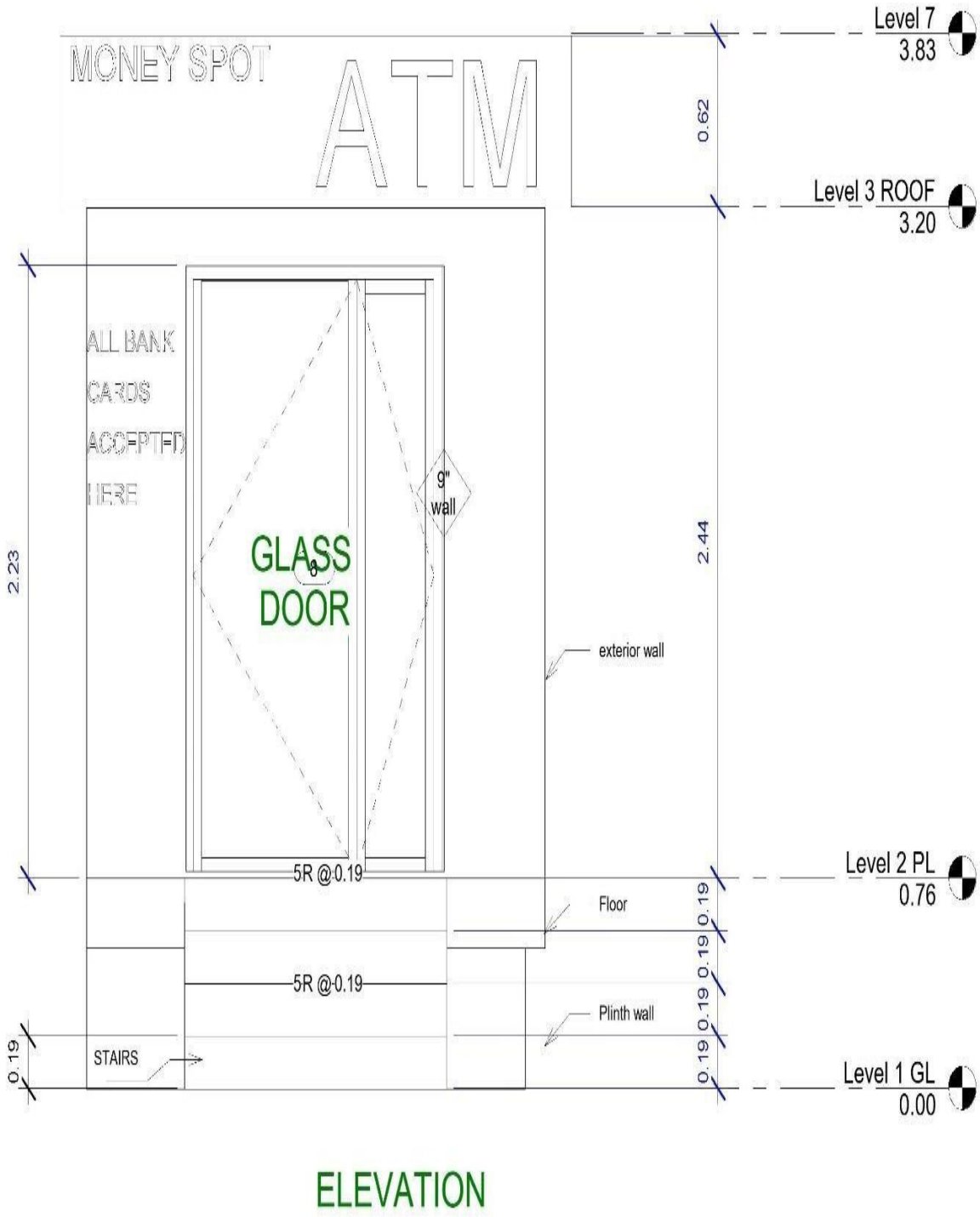


FIG.37 ATM PLAN



ELEVATION

FIG.38 ATM ELEVATION

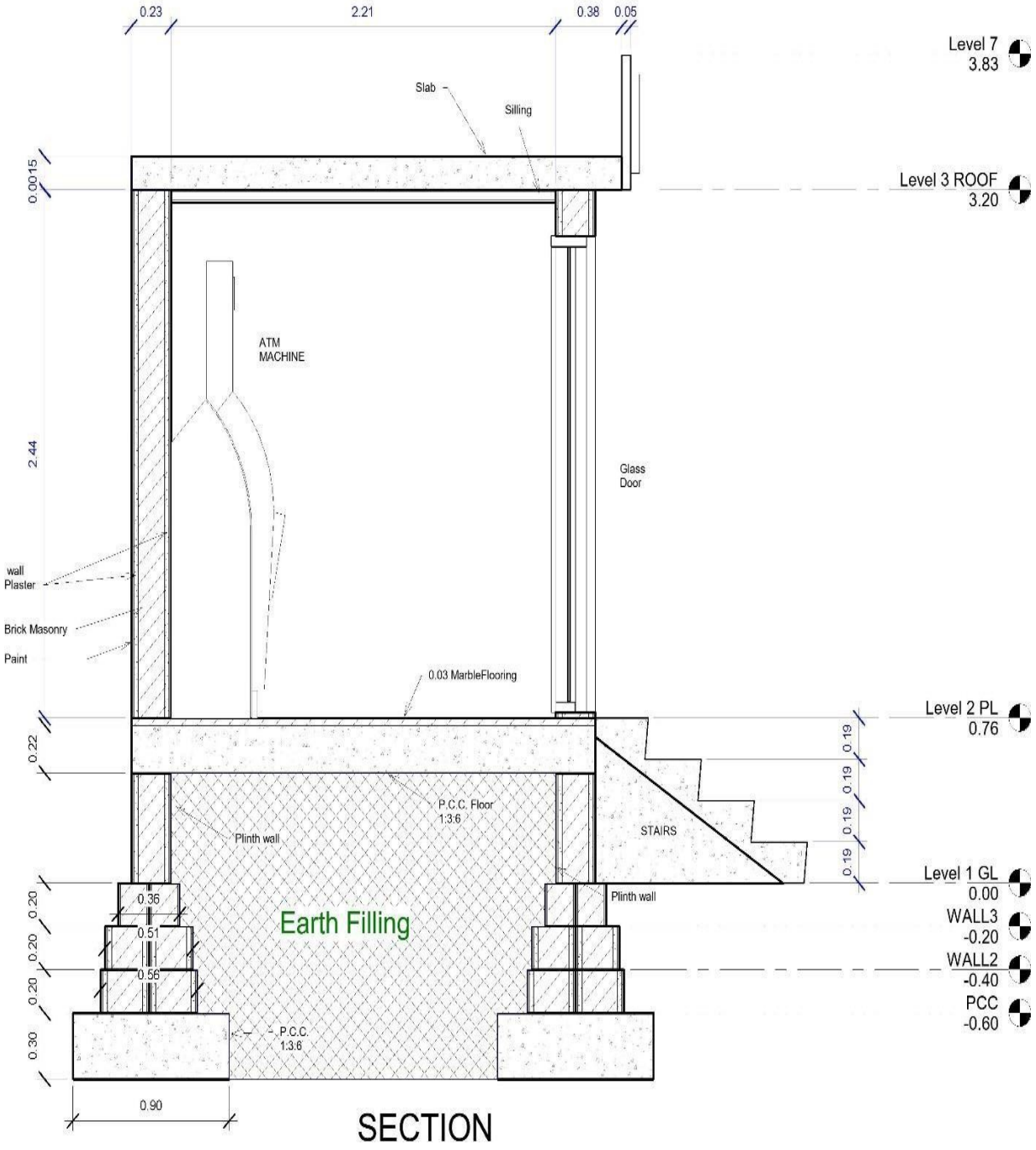


FIG.39 ATM SECTION

ATM : Measurement Sheet (T-8.1.1A- ATM measurement sheet)

SR. NO	Description	Length (m)	Width (m)	Height (m)	Count (Nos.)	Total Quantity (m^3)
1	GLASS DOOR WITH ALUMINUM FRAME	1.397	0.02	2.2098	1	**1**
2	BASIC ROOF: GENERIC	2.667	2.667	0.152	1	**1.15**
3	FLOOR: 10"	2.667	2.667	0.254	1	**1.81**
4	BASIC WALL:9" EXTERIOR	2.4384	0.2286	3		**4.68**
5	BASIC WALL:9" EXTERIOR	1.6002	0.2286	3	1	**3.47**
6	CAST-IN- PLACE STAIR:	0.1778	1.524	0.1778	4	**0.75**
7	PCC IN FOOTING	10.22	0.90	0.4	1	**2.80**
8	BASIC WALL: 0.40	10.22	1.6	0.4	1	**1.64**
9	BASIC WALL: 00.30	10.22	1.2	0.4	1	**1.22**
10	BASIC WALL: GENERIC – 0.50	10.22	2	0.4	1	**2.04**
11	EXCAVATION	10.22	1.2	1.5	1	**18.40**

ATM : Abstract Sheet (T-8.1.1B- ATM abstract sheet)

SR NO.	Description	Quantity (m^3)	Rate	Per	Amount
1	BASIC WALL: 9" EXTERIOR 1	220.48	130	FT^2	**28662**
2	BASIC WALL: 9" EXTERIOR 2	25.84	90	FT^2	**2325.6**
3	GLASS DOOR WITH ALUMINUM FRAME:	-	3000	-	**3000**
4	BASIC ROOF: GENERIC - 12"	1.15	3500	M^3	**4025**
5	FLOOR: 10"	1.81	4100	M^3	**7421**
6	CAST-IN-PLACE STAIR:	-	3000		**3000**
7	EXCAVATION	1.215*4	350	M^3	**1701**
8	PCC	9.32	3500	M^3	**32620**
9	BASIC WALL: 00.30	4.08	90	FT^2	**13140**
10	BASIC WALL: 0.40	5.44	90	FT^2	**13140**
11	BASIC WALL: GENERIC -0.50	6.78	90	FT^2	**13140**
				GRAND TOTAL	**104752**

The rates of their respective works provided in the abstract sheet along with quantities are inclusive of water charges, contractor's profit, contingencies, utilities and labor charges.

Total cost = 104752/-

Physical design : Road Maintenance

The need to build a road arose because of the labor class in the village and the farming that it was necessity for the farmers to have their own road to sand there row material from world place to another if the road system is not right right than the people associated with the sanction have to go long distance and their time and expenses are increase and they do not get their profit so it is difficult for them to run their own house. Therefore inflation increases in the country and inflation becomes the whole country

.
Maintenance of road Length = 1500m
Breath =5.5 m

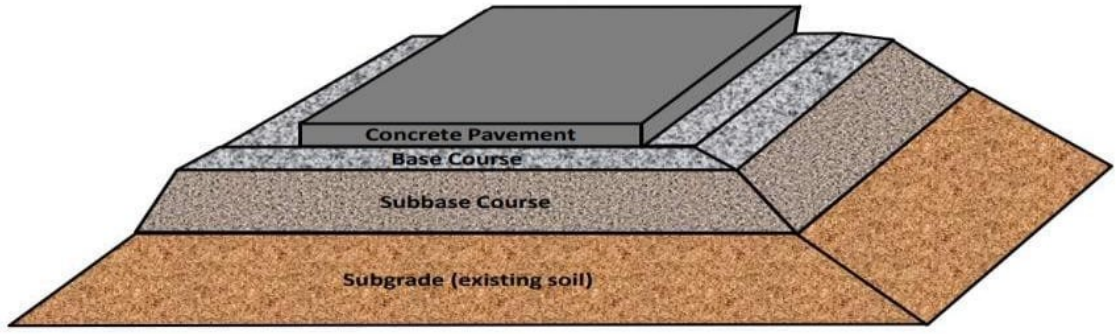


FIG.40 CROSS SECTION OF ROAD

Measurement sheet

Sr no	Description	Nos	L (m)	B (m)	H (m)	Qnt (m3)
1.	Preparing sub grade	1	1200	5.5	0.01	66
2.	Preparing base course	1	1200	5.2	0.135	842.4
3	Preparing wearing course	1	1200	4.9	0.115	676.2

Use 125mm granular size broken stones in sub grade

Use 90 mm granular size aggregate in base course

Abstract sheet

Item description	Qnt	Rate	Per	Amount
Preparing sub grade	66	900	m3	59400
Preparing base course	842.4	750	m3	631800
Preparing wearing course	676.2	1000	m3	676200

Total cost for 1200 m is = 1367400 rs.

10 % profit of contractor = 0.1x1367400 =136740

1.5 % water charge = 20511

Total cost = 1524651 rs

Social design : Medical Store

The need for medical has areisen because the people of the village are backward and poor people go to the cities to cure that illnesses and because of this poor class their care is not correct and so the health of the people of the village is eight risk and the disease is transformed into a major illness show people become victims of the disease and some need for medical.
Thus government conducts surveys in the village through a civil engineering students through the Vishwakarma scheme and has medical and deigned medical needs

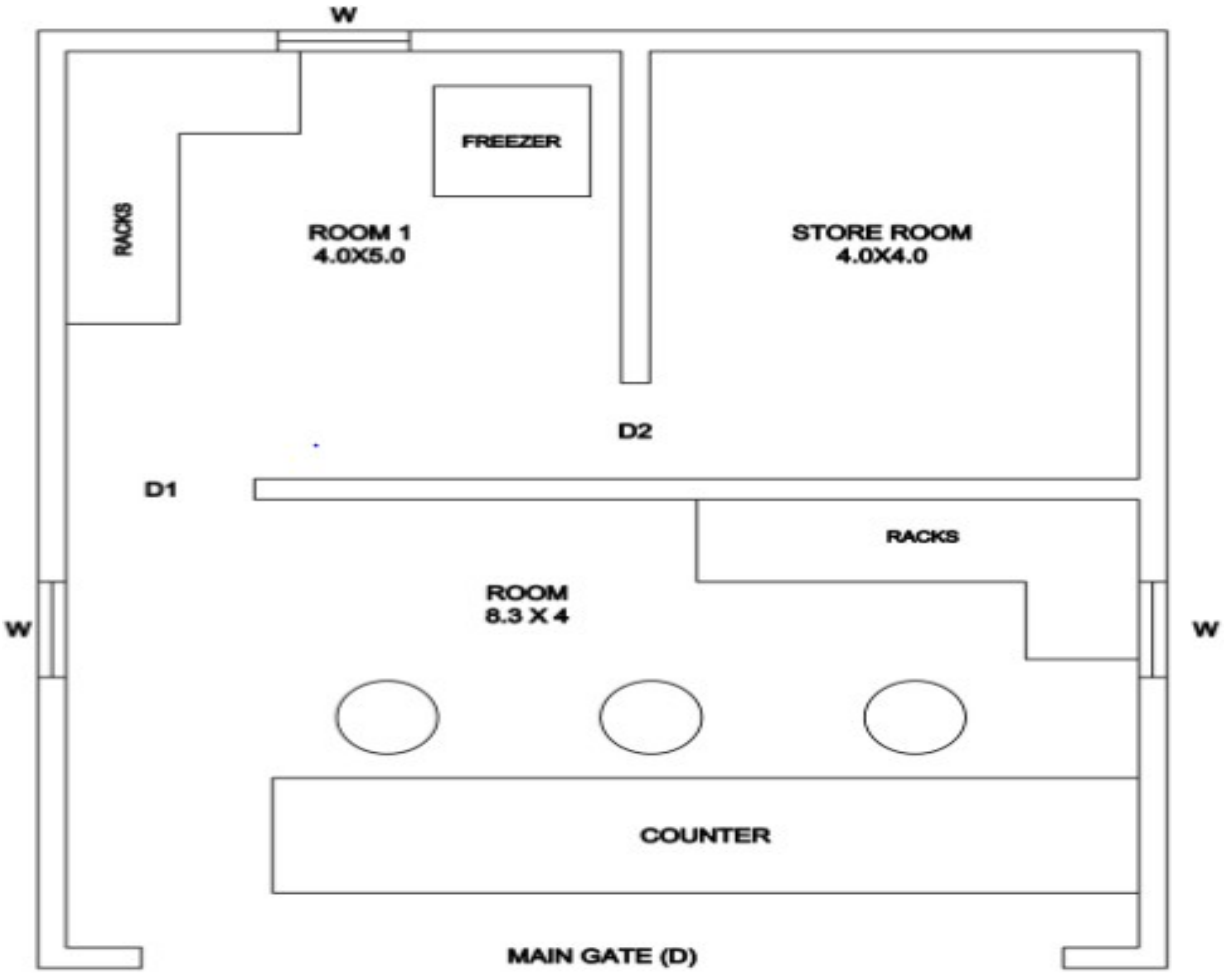


FIG.41 PLAN OF MEDICAL STORE

OPENING SCHEDULE		
TYPE	NO	SIZE
D	1	5.5 X 2.5
D1	2	1.10 X 2.10
D2	3	0.9 X 2.10
W	2	1.8 X 1.4

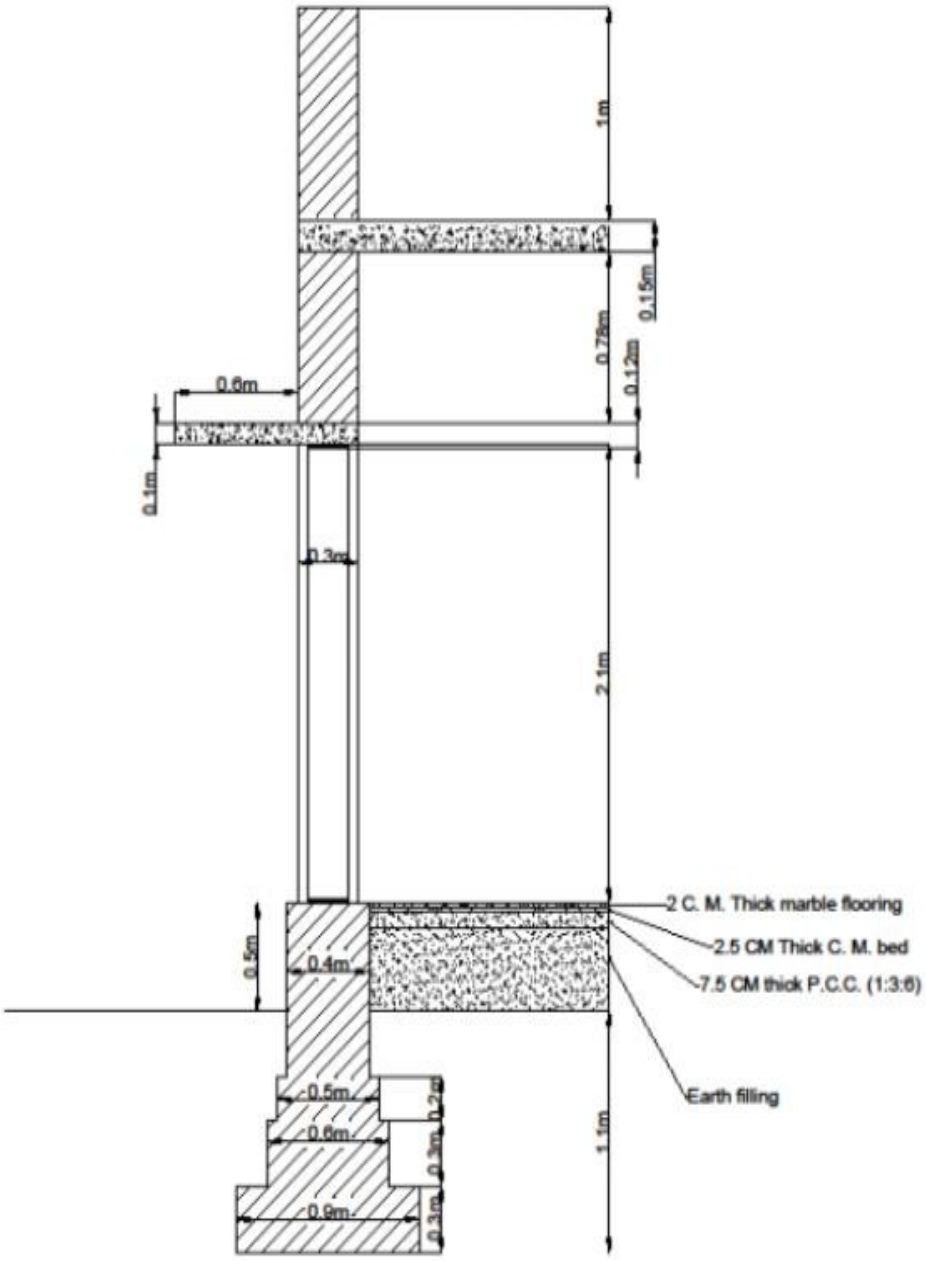


FIG.42 CROSS SECTION OF WALL

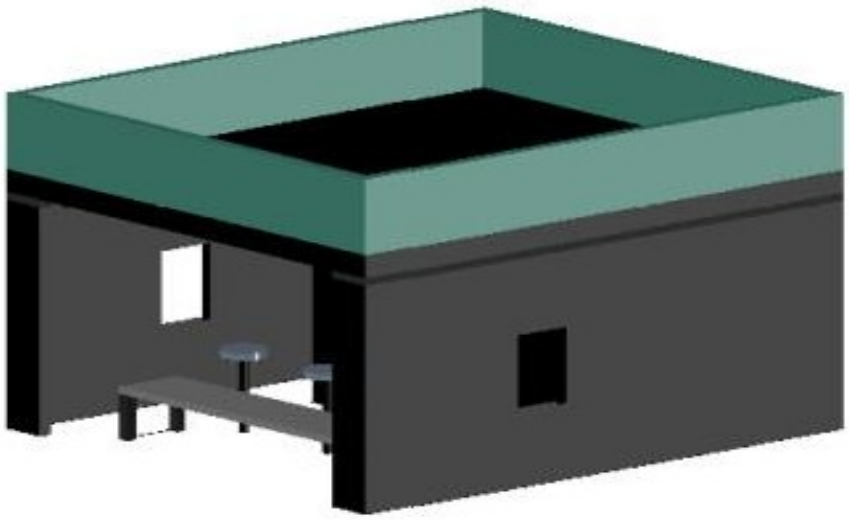


Fig.43 3D view of medical store

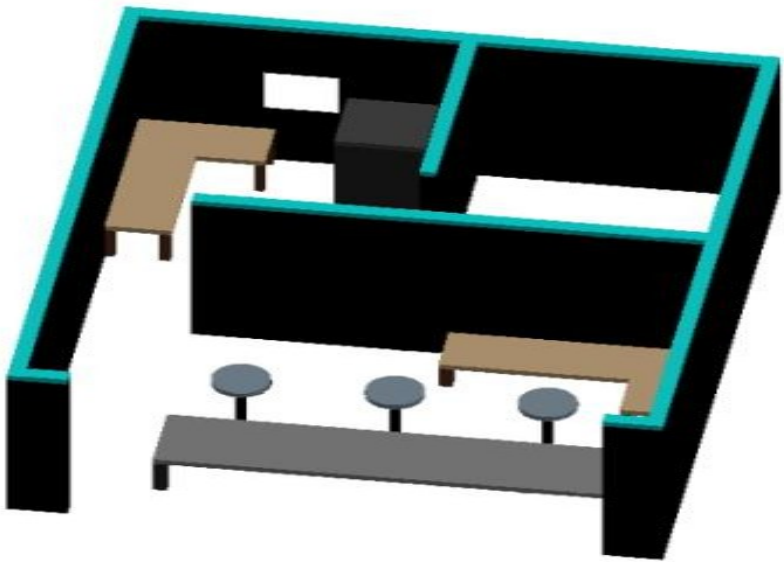


Fig.44 3D view of medical store

VISHWAKARMA PROJECT

Project: Construction of medical store			**Date:**				
Dahod/Kharedi / Medical							
Measurement Sheet							
Sr	**Description of Work**	**No**	**Length**	**Width**	**Depth / Height**	**Quantity**	
#	**TOTAL CENTRE LINE**		**54.7**				
1	**Excavation for Foundation**	1	47.95	0.9	1.1	47.4705	m3
2	**P.C.C.**	1	47.95	0.9	0.3	12.9465	m3
3	**Brick masonary up to plinth**						
i	First step	1	48.4	0.6	0.3	8.712	m3
ii	Second step	1	47.6	0.5	0.2	4.76	m3
iii	Third step	1	47.05	0.4	0.8	15.056	m3
TOTAL			28.528		m3		
4				**BRICK WORK UP TO SUPER STRUCTURE**			
1	48.85		0.3	3	43.965	m3	
A				**Deduction Door/Window**			
i	D1	1	1.1	0.3	2.1	0.693	m3
ii	D2	1	0.9	0.3	2.1	0.567	m3
iii	W	3	1.8	0.3	1.4	2.268	m3
iv	D	1	7.3	0.3	2.5	5.475	m3
TOTAL			9.003		m3		
B				**15 Cm brick deduction for lintel**			
i	D1	1	2.4	0.3	0.15	0.108	m3
ii	D2	1	1.3	0.3	0.15	0.0585	m3
iii	D3	3	2.1	0.3	0.15	0.2835	m3
iv	D	1	7.6	0.3	0.15	0.342	m3
TOTAL			0.792		m3		
5				**Silling Plaster**			
i	ROOM	1	4	8.3	1	33.2	m3
ii	ROOM	1	5	1.2	1	6	m3
iii	STORE ROOM	1	4	1.2	1	4.8	m3
TOTAL			44		m3		
A				**DEDUCTION**			
I	D	0.5	7.3	2.5	9.125	m3	
II	D2	0.5	1.1	2.1	1.155	m3	
III	D3	0.5	0.8	2.1	0.84	m3	
IV	W	1.5	1.8	1.4	3.78	m3	
TOTAL			14.9		m3		

6 2CM THICK MARBLE FLORING							
ROOM	1	4		8.3	33.2		m3
ROOM1	1	5		4	20		m3
STORE ROOM	1	4		4	16		m3
B				**DOOR SILL**			
I	D1	2	1.1	0.3	0.66		m3
II	D2	3	0.9	0.3	0.81		m3
III	D	1	8	0.3	2.4		m3
TOTAL		3.87		m3			
7				**WALL PLASTER**			
i	ROOM	2	8.3	3	49.8		m3
ii	2	4		3	24		m3
iii	ROOM1	2	4	3	24		m3
2	5	3		30		m3	
IV	STORE ROOM	4	4	3	48		m3
TOTAL		175.8		m3			
8				EARTH FILLING IN PLINTH			
i	WC.	1	1.2	1.2	0.38	0.5472	m3
ii	BATH	1	1.2	1.2	0.38	0.5472	m3
iii	DRINKING WATER	1	4	1.2	0.38	1.824	m3
iv	PASSAGE	1	2	7.6	0.38	5.776	m3
v	READING HALL	1	6	6	0.38	13.68	m3
vi	PASSAGE	1	8.3	1.3	0.38	4.1002	m3
TOTAL		26.4746		m3			
8	R.C.C SLAB	1	8.8	8.9	78.32		m3
9	R.C.C. CHAJJA	1	8.8	8.9	0.15	11.748	m3

MEDICAL

ITEM NO.	PARTICULERS OF ITEM	QUNTITY	PER	RATE	AMOUNT
1	EXCAVATION IN FOUNDATION	47.95	m3	90	4315.5
2	PCC IN FOUNDATION (1:3:6)	47.95	m3	2500	119875
3	BRICK WORK UPTO PLINTH	28.598	m3	3200	91513.6
	LEVEL				
4	BRICK WORK UPTO SUPER STRUCTURE	34.16	m3	3200	109312
5	PLASTERING WORK (INNER WALL AND SILLING)	29.1	m3	300	8730
6	WALL PLASTER	175.8	m3	150	26370
7	MARBLE FLOORING	69.2	m3	750	51900
8	EARTH FILLING	26.47	m3	70	1852.9
9	DOORS,WINDOW				6000
10	RCC SLAB AND RCC CHAJJA	12.072	m3	7000	84504
TOTAL					504373

Socio-Cultural design :Supermarket

Scenario :

A supermarket is a self-service shop offering a wide variety of food, beverages and household products,organized into sections. It is larger and has a wider selection than earlier grocery stores, but is smallerand more limited in the range of merchandise than a hypermarket or big-box market.

Existing Situation in Kharedi :

In the Kharedi village there is no any self-service shop and having variety in it. So we have designed a Supermarket as socio-cultural design or structure of the village. Supermarket is a self-service shop offering a wide variety of food, beverages, and household products, organized into sections. It is largerand has a wider selection than earlier grocery stores

Sustainability of the design :

Supermarket as an important tool :

Design Utilized by,

All the people living in the village of even outsiders from nearby villages and relatives of the villagerscan use or utilize a supermarket for their different uses.

Needs :

Ease of use; Availability of more grocery and food products ;etc.

Design brief :

Supermarket - a large self-service grocery store selling groceries and dairy products and household goods food market, grocery, grocery store, market - a marketplace where groceries are sold; "the grocery store included a meat market" hypermarket - a huge supermarket . A self- service retail market selling especially for the foods and household merchandise ; something resembling a supermarket especially in the variety or volume of its goods or services.

Length : 9.14m ; Width : 6.1m

Height: 4.36m Carpet area : 51.29 m^2

Common repair and maintenance of the structure :

For most effective maintenance , it should be organized through a programme of cyclical maintenance.At the most basic level this includes daily routines, and works upwards to periodic programmes of weekly, monthly, semi-annual, annual, quinquennial and so on routines.

Some common repairs and maintenances are as below ; Exterior painting and plastering ; Landscaping and gardening ; Paving repairs ; Carpeting and flooring; Plumbing; Repairing cracking or leaning walls etc.

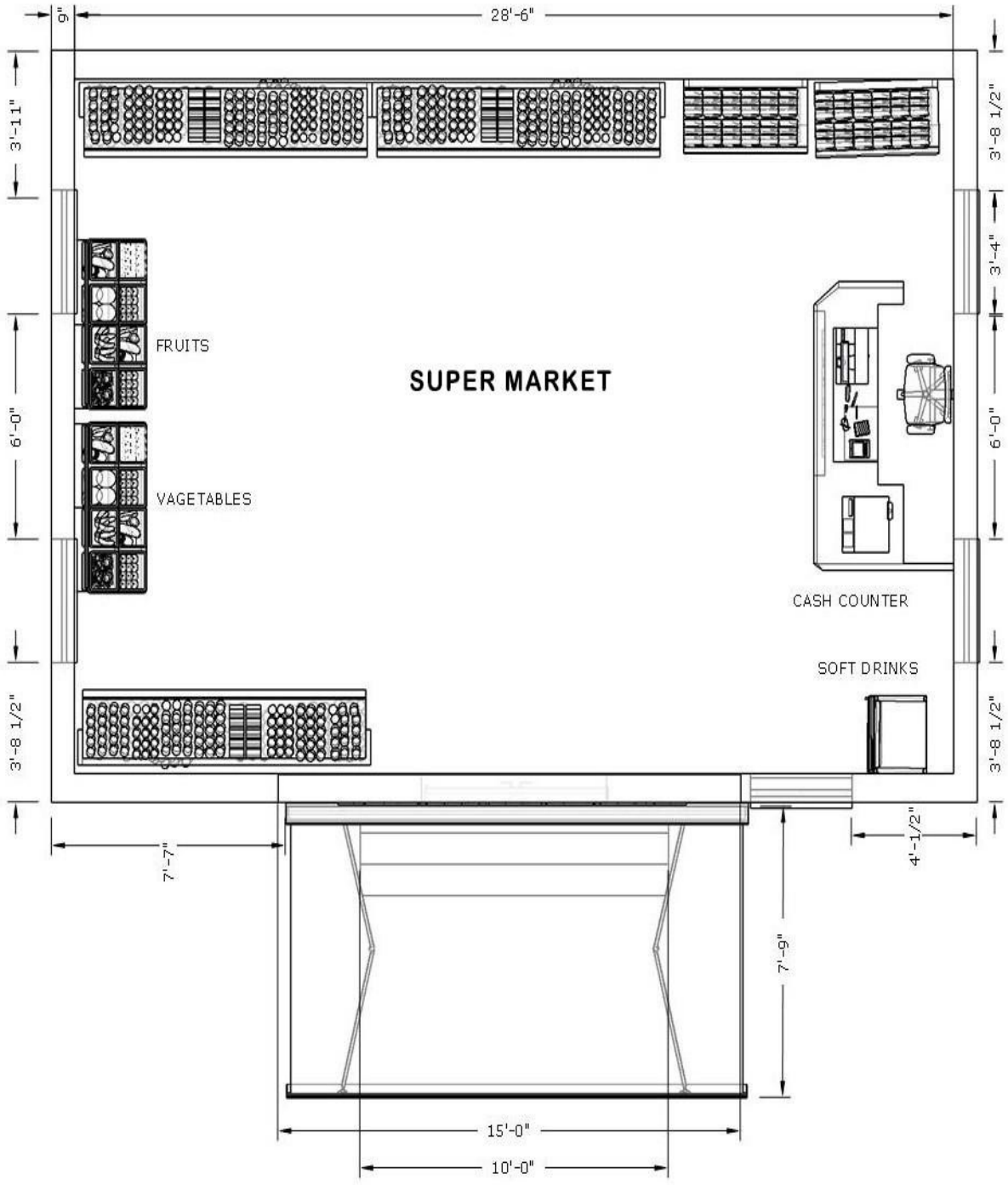
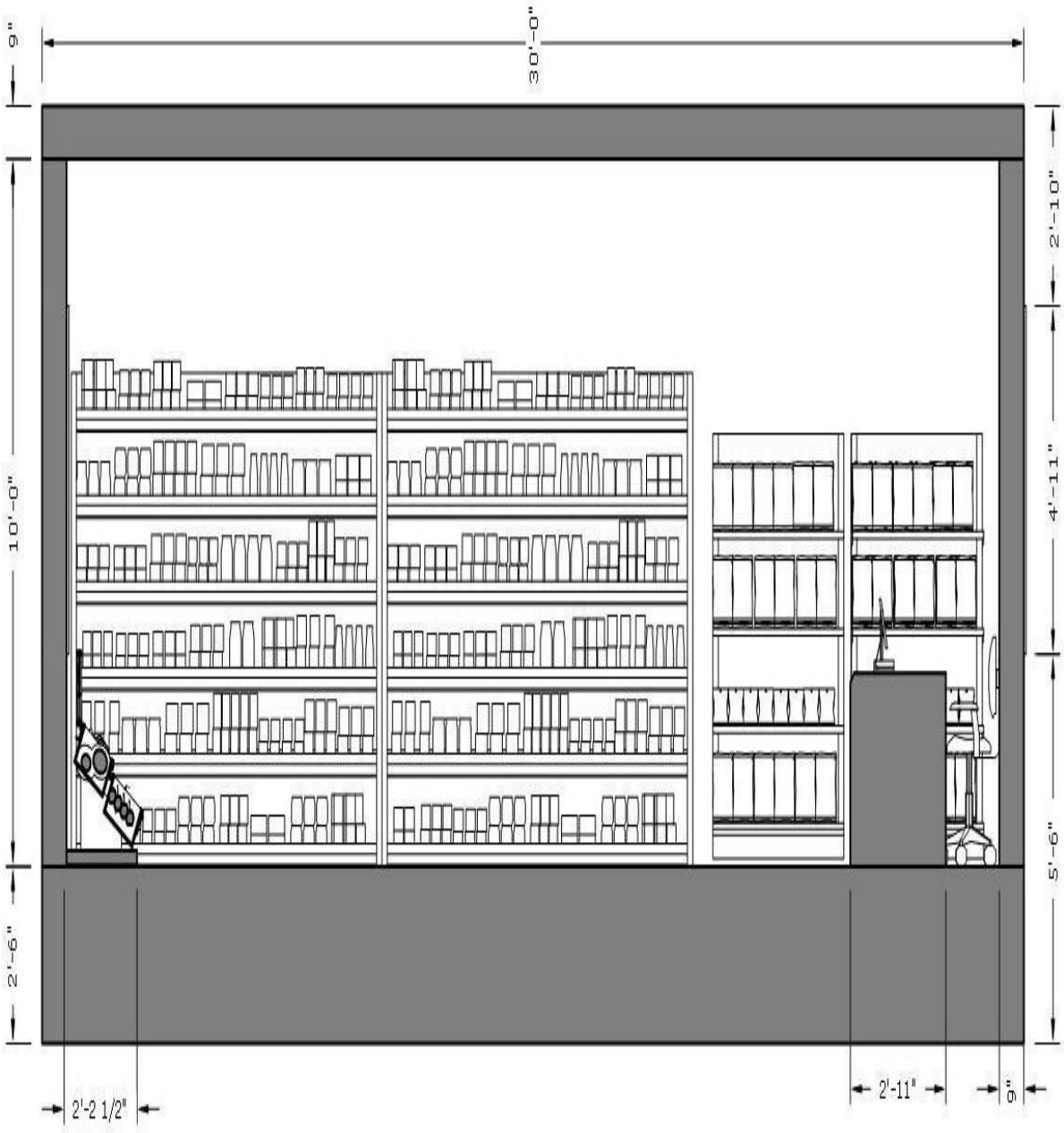


FIG.45 SUPER MARKET PLAN

ELEVATION

FIG.46 SUPER MARKET ELEVATION



SECTION

FIG.47 SUPER MARKET SECTION

Supermarket : Measurement Sheet

SR. NO	Description	Length (m)	Width (m)	Height (m)	Count (Nos.)	Total Quantity (m^3)
1	ROOF	9.144	6	0.15	1	**12.74**
2	WALL 9"	21.336	0.2286	3	1	**18**
3	PLINTH WITH STAIRS	21.336	0.2286	0.762	4	**5.89**
4	FLOOR	9.144	6	0.15	1	**8.5**
5	DOOR	1.8796	-	2.1336	1	**-**
6	WINDOW	1	-	1.524	4	**-**
7	PCC	29.98	1.2	0.4	1	**8.22**
8	BASIC WALL: 00.30	29.98	1.2	0.4	1	**3.6**
9	BASIC WALL: 0.40	29.98	1.6	0.4	1	**4.8**
10	BASIC WALL: GENERIC -0.50	29.98	2	0.4	1	**6**
11	EXCAVATION	33.58	1.2	1.5	4	**60.44**

Supermarket : Abstract Sheet

SR NO.	Description	Quantity (m^3)	rate	per	Amount
1	WALL	18	4590	Ft^2	**82636.32**
2	DOOR		6000	-	**6000**
3	WINDOW		4*2400	-	**9600**
4	ROOF	12.74	3500	m^3	**44590**
5	FLOOR	8.5	3500	m^3	**29750**

6	PLINTH WALL STAIRS	5.89	90	Ft^2	**18720.31**
7	EXCAVATION	1.215*4	350	m^3	**1701**
8	PCC	8.22	3500	m^3	**28770**
9	BASIC WALL: 00.30	3.6	90	Ft^2	**11520**
10	BASIC WALL: 0.40	5.44	90	Ft^2	**11520**
11	BASIC WALL: GENERIC - 0.50	6	90	Ft^2	**11520**
				GRAND TOTAL	**256327**

Smart Village Design : Rain Water harvesting

Design of Rain Water Harvesting System

Water harvesting is the capture, diversion, and storage of rainwater for plant Irrigation and other uses. It is appropriate for large scale landscapes such as parks, schools, commercial sites, parking lots, and apartment complexes, as well as small scale residential landscapes.

Advantages of Rain Water Harvesting:

1) To meet the ever increasing demand for water. Water harvesting to recharge the groundwater enhances the availability of groundwater at specific place and time and thus assures a continuous and reliable access to groundwater.
2) To reduce the runoff which chokes storm drains and to avoid flooding of roads.
3) To reduce groundwater pollution and to improve the quality of groundwater through dilution when recharged to groundwater thereby providing high quality water, soft and low in minerals.
4) Provides self-sufficiency to your water supply and to supplement domestic water requirement during summer and drought conditions.
5) It reduces the rate of power consumption for pumping of groundwater. For every 1m rise in water level, there is a saving of 0.4 KWH of electricity.
6) Reduces soil erosion in urban areas
7) The rooftop rainwater harvesting is less expensive, easy to construct, operate and maintain.

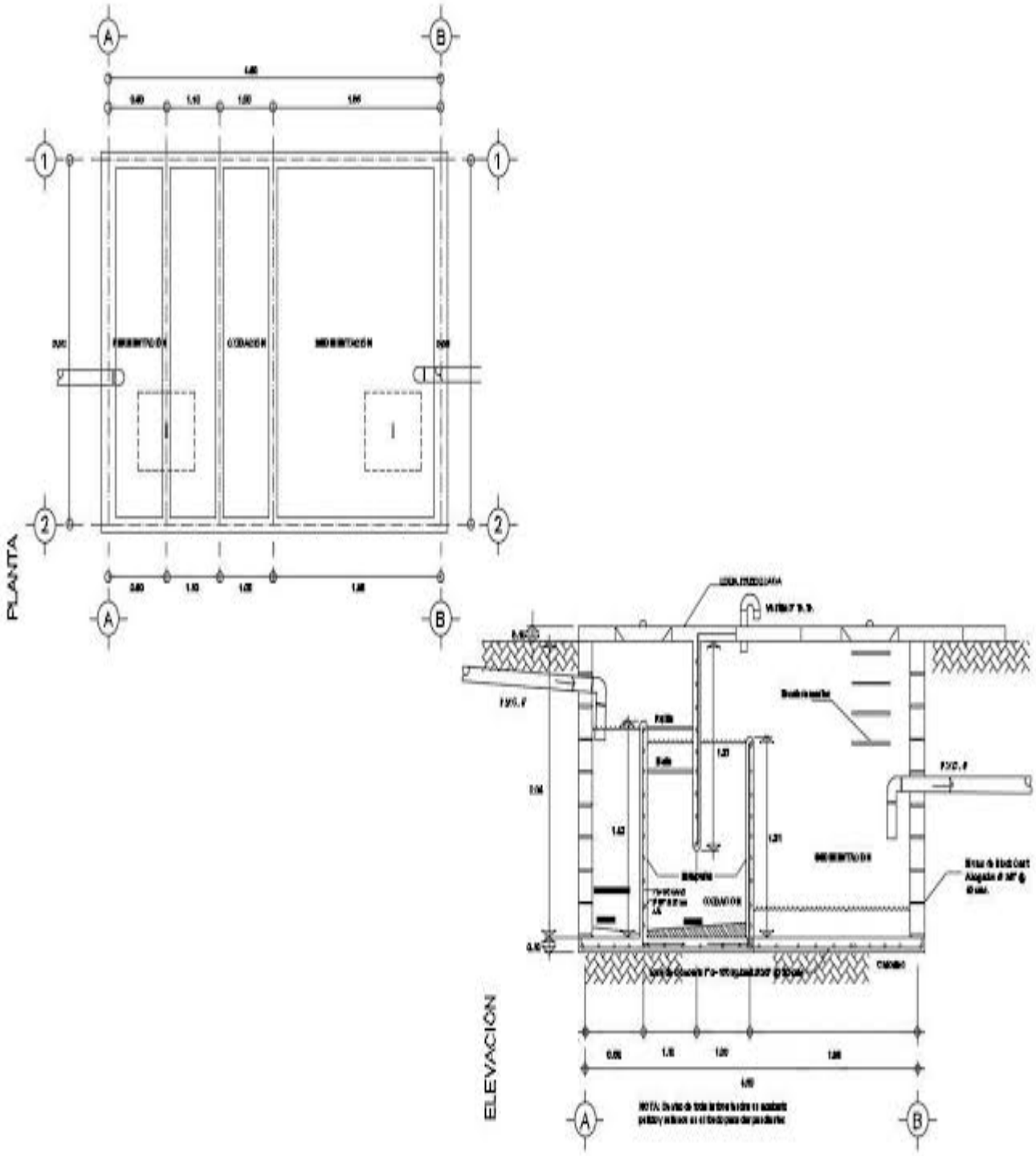


FIG.48 DESIGN OF RAINWATER HARVESTING (PLAN, ELEVATION)

Types Of Tanks
Generally, two types of tank can be used for storing rainwater discharge from the roof.

1) LINED STORAGE TANK
2) UNLINED NATURAL STORAGE TANK

In lined storage tank, earth work excavation is done and underground RCC water storage tank is constructed which is completely covered from the top. The land above the tank can be used for serving as playground or parking slot. In unlined natural storage tank, earth excavation is done and all the water being allowed to fall directly in that pit and store it.

GUTTER DESIGN
A channel which surrounds edge of a sloping roof to collect and transport rainwater to the storage tank is called gutter. Gutters can be semi generally of PVC or galvanized iron sheet type of material.
The efficiency of gutter is highly influenced by its choice of optimal size, width and position relative to the roof edge and its slope. Hence, this parameter is cautiously chosen. So, in order to collect maximum water, it is highly required to build the gutter with large dimensions.

However, it is economical to make large gutter with reasonable dimension because the value of water collected from it is much higher than the cost of constructing the gutter.

Design and Estimation of RAIN WATER HARVESTING
The rooftop area Calculated of Anganvadi building at Kharedi for which rain water harvesting system is to be designed is around 60 m2.

Building used for designing rainwater harvesting

Harvesting potential or Volume of water Received (m^3)

= Area of Catchment (m^2) X Amount of rainfall (m) X Runoff coefficient
Average rainfall of above last five years

= **690 mm**

Now,
Volume of water Received (m^3)

= Area of Catchment X Amount of Rainfall X Runoff Co-efficient

Taking Runoff Co-efficient for the proposed roof-top = 1.0

Hence, Total volume of surface runoff water supposed to be collected
= **60 x 0.69 x 1** = 41.4 m^3/year

Design For Optimum Dimensions Of The Tank:

Size of the tank
= total quantity of water collected in one year + take 20% of that extra for future variations in storage

= 41.4 + (0.2 x 41.4)

= 49.68 m^3

Taking height of tank = 1.5 m

So, Area of base =49.68/1.5 = 33.12 m^2

Let's take square base having each of that side = _B' m
(Or rectangular base may also be considered as per land availability).

Hence, size of each side of the base = (33.12)1/2 = 5.75 m ≈ say 6 m.
So our tank will have dimensions as 1.5 m x 6 m x 6 m (taking square tank) which is not economical.

As water is stored on monthly basis, Size of the tank will be equal to the excess amount of water left over after consumption. Hence, mostly excess amount of water assumed to be collected during the period of maximum rainfall i.e. in months of June, July and August.

Assuming amount of water consumed per month = 20 nos. of people x 0.05 m3/day water demand x 30 days = 30 m^3.

Hence, total amount of water to be stored
= Size of tank = (49.68-30) m^3 = 19.68 m^3

Thus, Area of the base = 19.68/1.5 = 13.12 m^2.

And, size of each side of the base = (13.12)1/2 = 3.62 m ≈ say 4 m.

So, as per suitability base can be taken as square of size 4 m x 4 m (or rectangular as accordingly).

Hence, now tank will be of dimension 1.5 m x 4 m x 4 m which is economical and feasible. Thus this is the optimum dimension of the tank.

Sr. No.	Particulars	Nos.	Length (m)	Breadth (m)	Height/ depth(m)	Quantity
1	Earth work in excavation	1	4.3	4.3	2.0	36.98 m3
2	Plain Cement concrete of 1:3:6 in foundation	1	4.3	4.3	0.2	3.698 m3

3	Ist class brick work in 1:4 cement mortar For walls	4	4.3	0.3	1.8	2.322 m3
4	R.C.C work for slab Cover	1	4.0	4.0	0.20	3.2 m3
5	12 mm plastering inside with 1:2	4	4.0	4.0	-	64.00 m2
	cement mortar For walls					
6	110 mm dia. PVC pipe	1	600	-	-	600 m

Sr. No.	Particulars	Quantity	Rate (as per market rate)	Cost (in Rs)
1	Earthwork in excavation	36.98 m3	180 Rs/m3	6656.40
2	Plain Cement concrete 1:3:6 in foundation with brick ballast	3.698 m3	2800 Rs/m3	10354.40
3	I class brickwork 1:3 cement mortar	2.322 m3	2700 Rs/m3	6269.40
4	R.C.C work for slab cover	3.20 m3	3700 Rs/m3	11840.00
5	12mm plastering with 1:2 cement mortar	64.00 m2	2800 Rs/m2	179200.00
6	110 mm dia. PVC pipe	600 m	210 Rs/m	126000.00
Total				340311.20
7	Add 20 % extra for other minor items like soak pit, pipe fittings etc.			68062.24

8	Add Contingency + work charges establishment (3% + 2 % = 5 %)	17015.56
9	Add 10% Engineering profit	34031.12
Total		459420.12
Say Total		475000.00

8.2 Reason for Students Recommending this Design :

- ATM - to provide flexibility of urgent cash requirements to the villagers
- Medical store- to satisfy the requirements of medicines to the public
- Supermarket - to provide extra feasibility to the public
- Rainwater Harvesting – to use locally avaiable rainwater to meet water requrementss trough out the year without the need of huge capital expenditure

8.3 About designs Suggestions / Benefit of the villagers :

Sustainable Design : ATM

Here we have designed the ATM for our Kharedi village. The population of Kharedi village is 6463 as per 2011 census. So it is required to have one ATM in the village. The villagers have to go far from the village for cash requirement so that we have decided and finalized the design of ATM.

Physical design : Road Maintenance

The need to build a road arose because of the labor class in the village and the farming that it was necessity for the farmers to have their own road to sand there row material from world place to another if the road system is not right than the people associated with the sanction have to go long distance and their time and expenses are increase and they do not get their profit so it is difficult for them to run their own house. Therefore inflation increases in the country and inflation becomes the whole country.

Social Design : medical store

The need for medical has areisen because the people of the village are backward and poor people go to the cities to cure that illnesses and because of this poor class their care is not correct and so the health of the people of the village is eight risk and the disease is transformed into a major illness show people become victims of the disease and some need for medical. Thus government conducts surveys in the village through a civil engineering students through the Vishwakarma scheme and has medical and deigned medical needs

Socio-Cultural Design : Supermarket

Supermarket is a self-serviceshop offering a wide variety of food, beverages, and household products, organized into sections. It is larger and has a wider selection than earlier grocery stores.

Smart Village Design : Rainwater Harvesting

The need to build arose because the village was poor and backward. Therefore the women of the village has to fill the water from the well to the far and there is not enough drinking water in the village for this the government conducts surveys in the village through engineering and student of vishwakarma scheme and after the survey, Water harvesting requirementis created is design for it.

9.Future Development of the Village (for the PART-II Design)

• After completion of visit & data collection the project carried out in the current semester by the group members which includes the design of a sustainable facilities for Samli village, Godhra Taluka , Godhraa, Gujarat.

• Future scope would be study over other different urban amenities that would be sustainable in rural areas of Madhya Gujarat.

• The village still lacks in maintenance of the building and various structures. Taking this into consideration the estimation of its rehabilitation with other necessary amenities will be designed in the next semester.

• In the next semester, we can provide solid waste management, closed drainage, maternity homes, vaternity homes, public garden, village pond, community hall, panchayat building, bank, internet café.

10. Conclusion (Entire Village Project)

The motive of Vishwakarma Yojana phase - VII is to uplift the lifestyle of the rural areas to its certain extent up to the level of an ideal village situated at the nearby location of that particular jurisdiction. It is an effective government scheme to develop the rural areas under economical cost with good workability and efficiency during its usage. The project tends to improve the physical, social as well as socio-cultural aspects of the village by implementing and improvising various infrastructures with regards to lesser or least hindrance to its rural authenticity.

Main Smart Aim: ―Developing village with a rural soul but with all Smart urban amenities that a city may have‖. This will help in developing Smart villages in sustainable manner, reduce migration from villages and prevent the cities from the urban pressure. This should lead to some rethinking about the meaning of efficiency beyond the usual conceptions of economic or technical efficiency. Indeed, employment expansion is at least as important as growth in productivity. In a sense, both represent the utilization of labor as a resource. Why, then, does thinking about efficiency focus on one and neglect the other It is important to reflect on this question. The answer, which calls for change in both economics and politics, could make a real difference.

With Gap Analysis, we conclude that some of different Smart Village facilities are required as basic or primary level which still lack in village. So, according to Gap Analysis of Kharedi village, we observed condition of existing infrastructure facilities in village such as- Primary school, Anganvadi etc. Smart Village can solve their problem itself can become a smart village example to another village too.

According to UDPFI norms, lacking in basic amenities And Smart Amenities can be suggested as

- Solid waste management
- Play ground
- Govt. Dispensary

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12. Annexure attachment

12.1 Survey form of Ideal Village Scanned copy attachment in the report for Part-I

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

Name of Village:	Thamna
Name of Taluka:	Umreth
Name of District:	Anand
Name of Institute:	Goverment engg college Dahod
Nodal Officer Name & Contact Detail:	Prof. D.K. Oza M. No. - 9426788106
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Rekhaben. R. Patel
Date of Survey:	

1. Demographical Detail:

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	4689			
ii)	2011	5147	2599	2545	1214

2. Geographical Detail:

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	1211 Hect
	Forest Area (In hect.)	8 Hect
	Agricultural Land Area (In hect.)	1003 Hect
	Residential Area (In hect.)	150 Hect
	Other Area (In hect.)	51 Hect

	Water bodies	Pond
	Nearest Town with Distance:	5 km

3. **Occupational Details:**

Name of Three Major Occupation groups in Village	1. Farming 2. Labour 3. Dairy Farming

4. **Physical Infrastructure Facilities:**

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated)	Yes	✓		
	• RO Water	Yes	✓		
	• Well (Covered/ Uncovered)	Yes	✓		
	• Hand pumps	Yes	✓		
	• Tube well/ Borehole	Yes	✓		
	• River/ Canal/ Spring/ Lake/ Pond	Yes	✓		
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 50,000 Lit	Yes		
	Underground Sump	Capacity:	-	-	-
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)	Yes	✓		
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	Yes	✓		
	If Open than Pucca / Kutchcha	-	-	-	

	Whether drain water is discharged directly in to Water bodies/ Sewer plants	Yes (Pond)	✓		
Suggestions if any:					
E.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	all Black	✓		
	Main road	Yes	✓		R.C.C
	Internal streets	Yes	✓		
	Nearest NH/SH/MDR/ODR Dist. in kms.	SH (5km) (Umeth)	✓		
Suggest ions if any:					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station—Kms)	No	-	✓	Nearest anklesh 51km
	Bus station (Y/N) Condition: (If No than Nearest Bus Station—Kms)	Yes	✓		Private bus stand
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	✓		All Vehicles
Suggest ions if any:					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs / More Than 6 hrs)	Yes	✓		More than 6hr.
	Power supply for Domestic Use	Yes	✓		

	Power supply for Agricultural Use	Yes	✓		
	Power supply for Commercial Use	Yes	✓		
	Road/ Street Lights	Yes	✓		
	Electrification in Government Buildings/ Schools/ Hospitals				
	Renewable Energy Source Facilities (Y/ N)	No			
	LED Facilities	Yes	✓		
Suggest ions if any:					
H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	Yes	✓		
	Location Condition	Good			
	Community Toilet (With bath/ without bath facilities)	No			At home
	Solid & liquid waste Disposal system available	Yes	✓		Under ground liquid waste.
	Any facility for Waste collection from road	Panchayat (waste vihicle)	✓		
Suggest ions if any:					
I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	Yes	✓		Well, tube well
Suggest ions if any:	Rain water harvesting				
J.	**Housing Condition:**				

	Kutchha/Pucca (Approx. ratio)	26 % Kutchha 74 % Pucca	-	-	-

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
K.	**Health Facilities:**				
	Sub center/ PHC/ CHC /Government Hospital/ Child welfare & Maternity Homes (If Yes than specify No. of Beds) Condition:	Yes	✓		
	Private Clinic/Private Hospital/ Nursing Home	Yes	✓		
	If any of the above Facility is not available in village th an approx. dista nce from village: ………kms.				
Suggesti ons if any: Veterinary hospital facility available.					
L.	**Education Facilities:**				
	Aaganwadi/ Play group	4	Yes	-	Good condition
	Primary School	1	Yes	-	Good condition
	Secondary school	1	Yes	-	Good condition
	Higher sec. School	1	Yes	-	Good condition
	ITI college/ vocational Training Center	-	No	✓	Vocation training center
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	No		✓	8.3 km Science college

	If any of the above Facility is not available in village th an uggest. distance from village: ____kms.				
uggest ions if any: Navjivan Arts and commerce collage Dahod which is 18km away from BAVKA.					
M.	**Socio- Culture Facilities**				
	Community Hall (With or without TV) Location:				
	Condition:				
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	Yes	✓		
	Public Garden Location: Condition:	Yes	✓		
	Village Pond Location: Condition:	Yes	✓		
	Recreation Center Location: Condition:	No		✓	
	Cinema/ Video Hall Location: Condition:	No	-	✓	-
	Assembly Polling Station Location: Condition:	Yes	✓		Zoo

	Birth & Death Registration Office Location: Condition:	Yes	✓	Good	at Panchayat

If any of the above Facility is no t available in village than approx. distance from village : .....kms.

uggest ions if any:

N.	Other Facilities				
	Post-office	Yes	-		
	Telecommunication Network/ STD booth	Yes	-		Both
	General Market	No		✓	
	Shops (Public Distribution System)	Yes			
	Panchayat Building	Yes	✓		
	Pharmacy/Medical Shop	Yes	✓		
	Bank & ATM Facility	Yes	✓		Central bank of India
	Agriculture Co-operative Society	Yes	✓		
	Milk Co-operative Soc.	Yes	✓		
	Small Scale Industries	No		✓	
	Internet Cafes/ Common Service Center/Wi Fi	Yes	✓		
	Other Facility				

Suggestions if any:

6. **Sustainable /Green Infrastructure Facilities:**

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks

O.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources				
P.	Bio-Gas Plant				
	Solar Street Lights	Yes	✓		
	Rain Water Harvesting System	Yes			
		No			
Q.	Any Other				

7. Data Collection From Village

Village Base Map Available: Hard Copy/Soft Copy	

Recent Projects going on for Development of Village	Yes
Any NGO working for village development	Yes

8. Additional Information/ Requirement:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities(School Building, Health Center, Panchayat Building, Public Toilets & any other)	Public Toilets	
2.	Additional Information/ Requirement		

9. Smart Village Proposal Design

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Rain Water harvesting		

Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:
GTU VY Section:
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Email ID: rurban@gtu.edu.in

સરપંચ
ગ્રામ પંચાયત થામણા
તા. ઉમરેઠ, જી. આણંદ

12.2 Survey form of Smart Village Scanned copy attachment in the report forPart-I

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

SMART VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Name of District:	Sabarkantha
Name of Taluka:	Talod
Name of Village:	Punsari
Name of Institute:	Goverment engg. College Dahod
Nodal Officer Name & Contact Detail:	Prof. D.K. OZA Mo.No:- 9426788106
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sumanben. P. Patel
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	6000	3055	2945	1500

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector) Coordinates for Location:	1531 - 65 - 76
2.	Forest Area (In hect.)	-
3.	Agricultural Land Area (In hect.)	1015 - 63 - 62
4.	Residential Area (In hect.)	15 - 51 - 57
5.	Other Area (In hect.)	216 - 60 - 45
6.	Distance to the nearest railway station (in kilometers):	Talod - 30 km
7.	Name of Nearest Town with Distance:	Modasa - 25 km
8.	Distance to the nearest bus station (in kilometers):	Talod
9.	Whether village is connected to all road for the any facility or town or City?	Yes

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Farming 2. Dairy 3. Labour

Major crops grown in the village:	1. Ground Nut 2. Wheat 3.

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
1.	PIPED WATER				
	Piped Into Dwelling				
	Piped To Yard/Plot	- everyday	Yes		
	Public Tap/Standpipe	- 7 Nos			
	Tube Well Or Bore Well				
	DUG WELL				
2.	Protected Well				
	Un Protected Well				
	WATER FROM SPRING				
3.	Protected Spring				
	Unprotected Spring				
	Rainwater				
	Tanker Truck				
	Cart With Small Tank				
4.	SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/				
	Irrigation Channel	canal	Yes		Good Condition
	Bottled Water				
	Hand Pump				
	Other(Specify)Lake/ Pond	Pond	Yes		Proper

Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 11Lit	Yes	-	Good Condition

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	Underground Sump	Capacity: –	–	–	–

Suggestions if any:

C.	The Type of Drainage Facility				
	A. UNDERGROUND DRAINAGE	Yes (closed)	Yes		Good Condition
	1		Yes		
	2				
	B. OPEN WITH OUTLET				
	C. OPEN WITHOUT OUTLET		Yes		Good condition

Suggestions if any:

D.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	3	Yes	–	All Weather
	Main road	2	Yes	–	All Weather
	Internal streets	30	Yes	–	All Weather
	Nearest NH/SH/MDR/ODR Dist. in kms.	7 km	Yes	–	

Suggestions if any:

E.	Transport Facility				
	Railway Station (Y/N) (If No than Nearest Rly Station--Kms)	No (30 km) Talod	–	–	–
	Bus station (Y/N) Condition: (If No than Nearest Bus Station--Kms)	No (30 km) Talod	–	–	–
	Local Transportation (Auto/ Jeep/Chhakda/	Auto Private vehicle	Yes	–	–

	Private Vehicles/ Other)	Private vehicles	Yes	-	-

Suggestions if any:

F.	Electricity Distribution				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt. (More than 6 hrs)	Yes		
	Power supply for Domestic Use	Yes	Yes	-	-
	Power supply for Agricultural Use	Yes	Yes	-	-
	Power supply for Commercial Use	Yes	Yes	-	-
	Road/ Street Lights	Yes	Yes	-	Good Condition
	Electrification in Government Buildings/ Schools/ Hospitals	Yes	Yes	-	-
	Renewable Energy Source Facilities (Y/ N)	No	Yes	-	-
	LED Facilities	Yes	Yes	-	Good Condition

Suggestions if any:

G.	Sanitation Facility				
	Public Latrine Blocks If available than Nos.	2 Nos	Yes	-	Good Condition
	Location Condition	clear	-	-	
	Community Toilet (With bath/ without bath facilities)	2 Nos (with bath)	Yes	-	Very good Condition

	Solid & liquid waste Disposal system available	1 Nos	Yes	-	-
	Any facility for Waste collection from road	-	-	-	-
Suggestions if any:					
H.	Main Source of Irrigation Facility:				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Canal Well -7 Nos	Yes Yes	- -	People Good condition
Suggestions if any:					
I.	Housing Condition:				
	Kutchha/Pucca (Approx. ratio)	< 3 % Kutchha > 97 % Pucca	-	-	-

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	8 Nos	Yes	-	Available
	Sub-Centre	-			
	PHC	1 Nos	Yes	-	Good condition
	BLOCK PHC	-			
	CHC/RH	-			
	District/ Govt. Hospital	-			
	Govt. Dispensary	-			
	Private Clinic	1 Nos	Yes	-	Good condition
	Private Hospital/	-			
	Nursing Home	-			
	AYUSH Health Facility	-			
	sonography /ultrasound facility	-			
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	8	Yes	-	Good condition
	Primary School	5	Yes	-	Good condition
	Secondary school	1	Yes	-	Good condition
	Higher sec. School	1	Yes	-	Good condition
	ITI college/ vocational Training Center	1 - RVK	Yes	-	Good condition

	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	–	–	–	–
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				

Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	Good condition	2 Nos Panchayat	Yes	–
	Public Library (With daily newspaper supply: Y/N)	Yes Yes	Near Panchayat	Yes	–
	Public Garden	–	–	–	–
	Village Pond	Yes	Panchayat	Yes	–
	Recreation Center	–	–	–	–
	Cinem a/ Video Hall	–	–	–	–
	Assembly Polling Station	–	–	–	–
	Birth & Death Registration	Good condition Panchayat	Panchayat	Yes	–

If any of the above Facility is not available in village than approx. distance from village:more than 10 kms.

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	Good	Near Panchayat	Yes	–

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	Telecommunication Network/ STD booth	-	-	-	-
	General Market	Well	-	Yes	-
	Shops (Public Distribution System)	Good condition		Yes	
	Panchayat Building	Good condition		Yes	
	Pharmacy/Medical Shop	Good condition		Yes	
	Bank & ATM Facility	Good Condition		Yes	
	Agriculture Co-operative Society	Good		Yes	
	Milk Co-operative Soc.	Good		Yes	
	Small Scale Industries	Good		Yes	
	Internet Cafes/ Common Service Center/Wi Fi	Wifi		Yes	
	Youth Club	-	-	-	-
	Mahila Mandal	Well		Yes	

	Credit Cooperative Society Agricultural Cooperative Society Milk Cooperative Society Fishermen's Cooperative Society Computer Kiosk/ e-chaupal / Mills / Small Scale Industries	Milk Co-operative Society	-	Yes	-
	Other Facility	-	-	-	-

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)

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VishwakarmaYojana:PhaseVIII TechnoEconomicSurvey

	1. Have these programme implemented the village?	-	-	-	No
	2. Are there any beneficiaries in the village from the following programme?	-	-	-	No
	3. Janani Suraksha Yojana	3) Well		Yes	
	4. Kishori Shakti Yojana	4) Well		Yes	
	5. Balika Samriddhi Yojana	5) Well		Yes	
	6. Mid-day Meal Programme	6) Well		Yes	
	7. Intergrated Child Development Scheme (ICDS)	7) Well		Yes	
	8. Mahila Mandal Protsahan Yojana (MMPY)	8) Well		Yes	
	9. National Food for work Programme (NFFWP)	9) Not			No
	10. National Social Assistance Programme	10) Not			No
	11. Sanitation Programme (SP) 12. Rajiv Gandhi National Drinking Water Mission	11) Well 12) Well		Yes Yes	
	13. Swarnjayanti Gram Swarozgar Yojana	13) Well		Yes	
	14. Minimum Needs Programme (MNP)	14) Well		Yes	
	15. National Rural Employment Programme	15) Well		Yes	
	16. Employee Guarantee Scheme (EGS)	16) Well		Yes	
	17. Prime Minister Rojgar Yojana (PMRY)	17) Well		Yes	
	18. Jawahar Rozgar Yojana (JRY)	18) Well		Yes	
	19. Indira Awas Yaojna (IAY)	19) Well		Yes	

	20. Samagra Awas Yojana (SAY)	२०) नथी		Yes	
	21. Sanjay Gandhi Niradhar Yojana (SGNY)	२१) नथी		Yes	
	22. Jawahar Gram Samridhi Yojana (JGSY)	२२) नथी		Yes	
	23. Other (SPECIFY)	२३) PMAY	Avas Yojana	Yes	

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non- Conventional Energy Sources/ Renewable Energy Sources	Renewable Energy Sources	Adequate		
2.	Bio-Gas Plant	1	Yes	-	Good Condition
	Solar Street Lights Rain Water Harvesting System	100 School	Yes Yes	- -	Good Condition Good Condition
3.	Any Other				

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy	Soft Copy			
2.	Recent Projects going on for Development of Village				
3.	Any NGO working for village development				

4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	No	-		There is No any type of Nature Calamity occure

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	Not required. Y N N N N	Tendering Process
2.	Additional Information/ Requirement	—	
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	— Y	

IX. Smart Village / Heritage Details

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	IS THEIR ANY THING FOR THE VILLAGE ENHANCEMENT POSSIBLE ?	–	

Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:

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સરપંચ
પુંસરી ગ્રામ પંચાયત
તા.તલોદ,જી.સા.કાં.

12.3 Survey form of Allocated Village Scanned copy attachment in the reportfor Part-I

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards **"Rurbanisation for Village Development"**

Name of District:	DAHOD
Name of Taluka:	DAHOD
Name of Village:	Kharedi
Name of Institute:	GOVERNMENT ENGINEERING COLLEGE DAHOD
Nodal Officer Name & Contact Detail:	Prof. D.K. OZA
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadiworker/Village dweller)	Rajendrabhai Chuahan(Sarpanch)
Date of Survey:	-

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	Unable to visit due to covid 19			
2.	2011	6463	3275	3188	1031

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1150.31 hectares
2.	Forest Area (In hect.)	-
3.	Agricultural Land Area (In hect.)	182.109 hect
4.	Residential Area (In hect.)	396.592 hect

1

5.	Other Area (In hect.)	-
6.	Distance to the nearest railway station (in kilometers):	Dahod (4 km)
7.	Name of Nearest Town with Distance:	Dahod (4 KM)
8.	Distance to the nearest bus station (in kilometers):	In Village (0 km)
9.	Whether village is connected to all road for the any facility or town or City?	Yes

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Farming
	2. Labour
	3. Industry worker

Major crops grown in the village:	1. Maize
	2. Gram
	3. Wheat

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	Main Source of Drinking water				

1.	**PIPED WATER** Piped Into Dwelling Piped To Yard/Plot Public Tap/Standpipe Tube Well Or Bore Well	No	No	Yes	
2.	**DUG WELL** Protected Well Un Protected Well	No	No	Yes	
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring Rainwater Tanker Truck Cart With Small Tank	No	No	Yes	
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump	No Yes	No Yes	Yes No	
	Other(Specify)**Lake/ Pond**	Available(Two pond)	Yes	No	
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	75000 ltr.		
	Underground Sump	Capacity:	No		
Sugges tions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1	Not constructed yet.	No	Yes	
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Black topped pucca	Yes	No	
	Main road	Black Topped pucaa	Yes	No	
	Internal streets	RCC	Yes	No	

	Nearest NH/SH/MDR/ODR Dist. in kms.	- MDR :- 0KM - SH :- 3 KM - NH :- 6 KM	-	-	
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No (Dahod railway station which is 4 KM away)	-	-	
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes (0 km)	-	-	
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	- Auto - chhakda - Private vehicles	Yes	No	
Sugges tions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes (Government)	Yes	No	
	Power supply for Domestic Use	More than 6 hrs.	Yes	No	
	Power supply for Agricultural Use	More than 6 hrs.	Yes	No	
	Power supply for Commercial Use	More than 6 hrs.	Yes	No	
	Road/ Street Lights	Not provided.	No	Yes	
	Electrification in Government Buildings/ Schools/ Hospitals	More than 6 hrs.	Yes	No	
	Renewable Energy Source Facilities (Y/ N)	No	No	Yes	
	LED Facilities	No	No	Yes	
Sugges tions if any:					
G.	**Sanitation Facility**				

	Public Latrine Blocks If available than Nos.	Yes	Yes	No	
	Location Condition	Good			
	Community Toilet (With bath/ without bath facilities)	Yes (with bath)	Yes	No	
	Solid & liquid waste Disposal system available	No	No	Yes	
	Any facility for Waste collection from road	No	-	-	
Sugges tions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Pond :- 2 Canal :- 0	-	-	
Sugges tions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Data not available.	-	-	

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr.No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				

	ICDS (Anganwadi) Sub-Centre PHC BLOCK PHC CHC/RH District/ Govt. Hospital Govt. Dispensary Private Clinic Private Hospital/ Nursing Home AYUSH Health Facility sonography /ultrasound facility	8+1 (Mini anganwadi) = 9 PHC :- 1 Clinic :- 1 (private) AYUSH health facility available.	Yes Yes	No No	
	If any of the above Facility is not available in villa ge than appr ox. distance fro m village: .....kms.				
Sugges tions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	9	Yes	No	
	Primary School	2	Yes	No	
	Secondary school	2	Yes	No	
	Higher sec. School	2	Yes	No	
	ITI college/ vocational Training Center	No	-	-	
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	No	-	-	College available at Dahod. (9 KM away)

	If any of the above Facility is not available in village than approx. distance from village: .....kms.
Suggestions if any:	

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)				
	Public Library (With daily newspaper supply: Y/N)				
	Public Garden				
	Village Pond				
	Recreation Center				
	Cinema/ Video Hall				
	Assembly Polling Station				
	Birth & Death Registration Office				

If any of the above Facility is not available in village than approx. distance from village: .....kms.

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office				
	Telecommunication Network/ STD booth				
	General Market				
	Shops (Public Distribution System)				
	Panchayat Building				
	Pharmacy/Medical Shop				
	Bank & ATM Facility				
	Agriculture Co-operative Society				
	Milk Co-operative Soc.				
	Small Scale Industries				
	Internet Cafes/ Common Service Center/Wi Fi				
	Youth Club				
	Mahila Mandal				

	Credit Cooperative Society Agricultural Cooperative Society Milk Cooperative Society Fishermen's Cooperative Society Computer Kiosk/ e-chaupal / Mills / Small Scale Industries	No No No NO No No No No Industries are available.	Yes Yes Yes Yes Yes Yes Yes Yes No		
	Other Facility	No			
Suggesti ons if any:					
N.	**Other Facilities**	**Condition**		**Available (YES)**	**Available (NO)**

	1. Have these programme implemented the village?	Yes			
	2. Are there any beneficiaries in the village from the following programme?	Yes			
	3. Janani Suraksha Yojana	Yes	-		
	4. Kishori Shakti Yojana	Yes	-		
	5. Balika Samriddhi Yojana	Yes	-		
	6. Mid-day Meal Programme	Yes	-		
	7. Intergrated Child Development Scheme (ICDS)	Yes	-		
	8. Mahila Mandal Protsahan Yojana (MMPY)	Yes			
	9. National Food for work Programme (NFFWP)	Yes	-		
	10. National Social Assistance Programme	Yes			
	11. Sanitation Programme (SP)	Yes			
	12.Rajiv Gandhi National Drinking Water Mission				
	13. Swarnjayanti Gram Swarozgar Yojana	Yes	-		
	14. Minimum Needs Programme (MNP)	Yes			
	15. National Rural Employment Programme	Yes	-		
	16. Employee Guarantee Scheme (EGS)	Yes			
	17. Prime Minister Rojgar Yojana (PMRY)	Yes			
	18. Jawahar Rozgar Yojana (JRY)	Yes			

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	19. Indira Awas Yaojna (IAY)	Yes			
	20. Samagra Awas Yojana (SAY)	Yes			
	21. Sanjay Gandhi Niradhar Yojan a (SGNY)	Yes			
	22. Jawahar Gram Samridhi Yojana (JGSY)	Yes			
	23. Other (SPECIFY)	Yes			

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr.No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks

1.	**Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources**	Not adopted	-	-	
2.	**Bio-Gas Plant Solar Street Lights Rain Water Harvesting System**	No	-	-	
3.	**Any Other**	No	-	-	

VII. DATA COLLECTION FROM VILLAGE

Sr.No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy	Soft copy	-	-	Soft copy by Google map.
2.	Recent Projects going on for Development of Village	YES			One Project Is Stared By Sarpanch
3.	Any NGO working for village development	Sadguru foundation & chhtrapti foundation			
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	No	-	-	

VIII.ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	NO	
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	2 times	

IX.Smart Village / Heritage Details

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	IS THEIR ANY THING FOR THE VILLAGE ENHANCEMENT POSSIBLE ?	YES	1-This village is nearest for the city area & this village is one megha gidc 2- one small park 3- Gym center

Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:
GTU VY Section
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in

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તા. જિ. દાહોદ

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12.4 Gap Analysis of the Allocated Village

Facilities	Planning icommission/URDPFI inorms	Village: kharedi		
		Population: 6463		
		Existing	*Required as per norms*	*GAP*
EDUCATION				
Anganvadi	Each village	9	1	0
Primary school	Each village	2	1	0
Secondary village	Per 7500 population	2	1	0
Higher secondary school	Per 15000 population	1	2	0
College	Per 125000 population	0	0	0
Technical training institute	Per 100000 population	0	0	0
Agriculture research centre	Per 100000 population	0	0	0
MEDICAL facilities				
Govt./Panchayat atdispensary	Each village	1	1	0
PHC and CHC	Per 20000 population	1	1	0
Child Welfare and Maternity home	Per 10000 population	0	1	0
Hospital	Per 100000 populatio	0	0	0
TRANSPORTATION				
Internal road approach road	Each village must have good equality nroads.	Internal nroads are nadequate. approach oad bis nadequate.		

Bus/auto stand provision	All villages connected by PT(ST Bus or auto)	1	1	0
DRINKING water				
Water facilities				
Over ahead tank	Total demand	25000 liter	2 ilea c. iter	
Public toilet	Per 20,000 population	1	1	0
Cremation ground	Per 20,000 population	0	0	0
Post office	Per 10,000 Population	1	1	0
Gram panchayat building	Each village	1	1	0
APMC	Per 100000 Population			
Fire station	Per 100000 population	0	0	0
Police station	Per 15000 Population	0	1	0
Community hall	Per 100000 population	1	1	0

TABLE. GAP ANALYSIS OF ALLOCATED VILLAGE

12.5 Summary Details of All the villages Designs in Table form As Part-I andPart-II

Sr. No.	Village Name	Discipline	Part-I	Part-II
1	**Kharedi**	Civil	ATM	Solid waste management
			Road maintenance	Bio gas plant
			Medical store	Public Garden
			Super market	Drainage system
			Rainwater harvesting	Solar street light
2	**Bhatiwada**	Civil	Public toilet	Gram panchayat
			Medical Store	Solid waste management
				Drainage system
				Solar street light
				Community hall
				Road side arboriculture
				Dudh mandali
3	**Moti kharaj**	Civil	Community Hall	Secondary school
			Public toilet	Water harvesting
			Library	Solid waste management

TABLE. SUMMARY OF ALL VILLAGES

12.6 Summary of Good Photographs in Table format (Village visits, Ideal, Smartvillage or any other)

Summary Of Photographs Of Kharedi – Allocated Village :


राजीव गांधी
स्मृति वन


G
I
D
C
DAHOD-II (KHARED)
INDUSTRIAL
ESTATE

12.7 Summary of Photographs of Thamna – Ideal village :

12.8 Summary of Photographs of Punsari – Smart village :

12.9 Village Interaction with Sarpanch Report with the photograph :

As per the guideline of Vishwakarma Yojana VIII, We visited Kharedi villagefor the study purpose.
We met Sarpanch and Talati cum mantra. We met other staff member also, and they gave us good response. Still we tried our best for collection of data from other sources.
We also visited through the village and interacted with villagers directly and asked them about the present situation of village. We had conducted a Techno- economic survey of Kharedi village.
After doing the survey of the village, we prepared gap analysis and designed necessary facilities for Kharedi village.
We prepared some designs. And also we had carried out Estimate of these.

FIG. INTERACT WITH SARPANCH

12.9 Sarpanch Letter giving information about the village development :

Approval Letter for Proposed Designs approval :

Approval Letter For Proposed Design Approval

Vishwakarma Yojana Phase VIII

Kharedi village, Dahod taluka, Dahod Dist.

Village code : 389151

Subject : Approval of design proposal for Kharedi village

I Sarpanch/Talati of Kharedi village undersigned gives approval for following main design proposal given under Vishwakarma Yojana Phase VIII – An approach towards rurbanisation by students of Government Engineering college Dahod named Patel Meet (170180106082) and Patel Smruti (170180106087).

- Approved main design proposals as of part 1:
  1) ATM
  2) Road Maintenance
  3) Medical Store
  4) Supermarket
  5) Rainwater Harvesting

Date : 15/03/2021

Sign :

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Seal of Grampanchayat

Approval Letter For Swachhta & Covid-19 Activity approval

Approval Letter For Swachhta & Covid Awareness Activity Approval

Vishwakarma Yojana Phase VIII

Kharedi village, Dahod taluka, Dahod Dist.

Village code : 389151

Subject : Approval of doing awareness activity for swachhata and covid for Kharedi village

I Sarpanch/Talati of Kharedi village undersigned gives approval of doing swachhta and covid 19 awareness activity under Vishwakarma Yojana Phase VIII – An approach towards rurbanisation by students of Government Engineering college Dahod named Patel Meet (170180106082) and Patel Smruti (170180106087).

Date : 15/03/2021

Sign :

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