DETAIL PROJECT REPORT ON

VISHWAKARMA YOJNA: VIII

AN APPROACH TOWARDS RURBANISATION

PIPALIYARAJ_Village

PREPARED BY

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LUKHDHIRJI ENGINEERING COLLEGE

YEAR:2020-21

GUJARAT TECHNOLOGICALUNIVERSITY

Chandkheda,Ahmedabad– 382424 Gujarat

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Gujarat Technological University,

Chandkheda, Ahmedabad– 382424

Gujarat

CERTIFICATE

This Is To certify that the following students of Degree/Diploma Engineering Successfully Submitted.

DetailProjectReportfor,

VILLAGE:-PIPALIYARAJ

DISTRICT:-MORBI

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:	**25/07/2021**
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College Name:	**LUKHDHIRJI ENGINEERING COLLEGE**

ABSTRACT

Vishwakarma Yojana is one of the ways to deal with diminish urban city Pressure and lower the movement rate by creating town with a 'rustic soul' yet with all urban conveniences that a city may have. The formative work in towns that could embrace according to the need of the town specifically incorporates Physical, Social and Renewable foundation Facilities. It is additionally proposed to outline "Vishwakarma Yojana" to give the advantage of genuine work experience to building understudies of Gujarat Technological University and at the same time apply their specialized learning in the improvement of foundation in rustic advancement.

Pipaliaraj is one of the villages in Morbi District, The village is facing issues such as lack of infrastructure development of internal roads, residential houses, public toilets, pure drinking water. For understanding the actual situation of the village we have collected different data of number of population, school, bank, aanganvadi, post office, public toilet, APSC centre, etc..

By providing design of civil work such as repairing of old building, new road development,, biogas plant, higher secondary school, supermarket and bus stop design. And also provide a design of e-library with facilities of C.C.T.V camera, WIFI system, and shopping mall with residential building

Rural development implies both the economic better of people as well as greater social transformation. The basic objective of all rural development program has been the welfare of the millions. The Ministry of Rural Development places importance now on health, education, drinking water, housing and road so that the quality of life in rural areas improves and the fruit of economic reform are shared by all sections of the society

Keywords:-

- Urbanization
- Rural Development
- Designs
- Community Development
- Facilities

ACKNOWLEDGEMENT

We are highly indented to **Gujarat Technological University**, Ahmedabad for providing ussuch 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 **Prof. (Dr.) K. N. Kher**, **Registrar, Gujarat Technological University-Ahmedabad**, for giving the complete support.

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

We express our sincere thanks to **DDO, TDO, Sarpanch and staff members of Dist. / Taluka Gandhinagar**, Medra 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 Principal **Dr. H.N.Pandya**, faculties of our colleges for their encouragement and support to complete this project work.

An act of gratitude is expressed to our guide **Prof. M.H.Lunagaria, Lukhdhirji Engineering College, Morbi** for their invaluable guidance, constant inspiration and his actively 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. Jayesh Deshkar, Hon'ble Director, Prof.G.A.Patel, GEC, Patan, Prof. Y.B.Bhavsar, VGEC, Chandkheda, Prof.K.L.Timani, VGEC, Chandkheda, Prof. Paresh Nimodiya, GEC, Patan.** For providing us technical knowledge throughout the project work.

We are also thankful to **Dr. Parulkumari Bhati, Deputy Director and Ms. Darshana Chauhan, OSD of Vishwakarma Yojana**, for all support during our work. We, therefore, take this opportunity for this Project work expressing our deep gratitude and sincere thanks to her that without whose help and cooperation, it might not have been possible for us to produce this project work in the present form.

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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(Chapter:-1) PIPALIYARJ VILLAGE – Review

1.1) Rural village concept:

In rural areas, fishing, along with cottage farming is the main means of livelihoodIndustries, pottery etc.The search for a real rural India is still in full swing. Approximately Every economic agency today has a definition of rural India. Rural areas are also known as 'Deshbhar' or 'Village' in India. Its population is very small Density.

Here are a few definitions:

According to The Planning Commission, a city with a maximum population of 15,000, is considered rural in nature.Panchayats take all decisions in these areas. There are five people in the panchayat.

The National Sample Survey Organization (NSSO) defines 'rural' as follows:

- At least 75% of the male population is engaged in agriculture and allied activities.
- Area with a population density of up to 400 square kilometers.
- Villages with clear survey boundaries but not municipal boards.

Rural expenditure accounts for 55% of the total national monthly expenditure as per the strict measures known as monthly per capita expenditure in its rd 63rd round by the National Sample Survey. It is generally said that about 70% of the population of India is rural. Rural India contributes a Agriculture, self-employment, services, construction, etc. account for a large share of India's GDP. The population is currently one-third of total Indian FMCG sales.

1.2) Need for Rural Development in India:

The rural economy is an example of an agricultural economy.Although there is farmingOne of the most important primary activities, the problem lies in the fact that they share in GDP The agricultural sector is on a steady decline. As a result, productivity is not up to the mark, with only getting conditions Bad.

Moreover, adequate infrastructure, financing, Transportation, employment, etc.Henceforth the agricultural output has grown at only 3.2% during 2007- 2011. All these factors have been slowing down the development process. So need Focus on rural development, not just urban development.

It essentially focuses on action for the development of areas outside the mainstream urban economic system. We should think of what type of rural development is needed because modernization of village leads to urbanization and village environment disappears.

1.3) Characteristics of Rural area:-

- Less population density
- Lower standard of living and less amenities.
- Agriculture as prime employment
- Lower literacy rate.
- Lack of good health infrastructure
- Social Interaction
- Homogeneity of Population
- Agriculture is the Main Occupation
- Density of Population
- Size of the Community

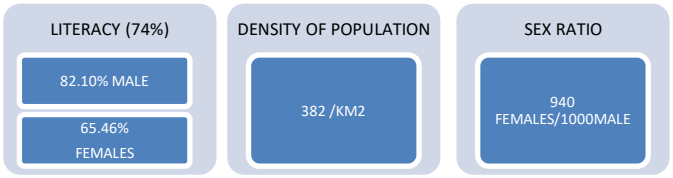
1.4) Characteristics of a village:-

- The village has an atmosphere of simplicity, peace and tranquility. There is no noise and littleSophistication.
- Generally women in villages are less educated and their social status is less than that

  Their counterparts in the towns.
- Village have population between 500 and 10000.
- The villagers took care of their own affairs through the traditional organization of the Panchayat. The central government had neither the attitude nor the means to interfere in the self-government of the villages.

1.5) Details of India as per Census 2011 :-

Male + Female = Total Population



(FIG-1:- POPULATION DETAILS)(FIG-2:- CENSUS DATA)

1.6) Urban village concept:-

The conception of an urban village is based on two circumstances, the effects of which are due The result of the concept of urbanization and urban village formation was brought about by planning and Strategies to redevelop urban areas.

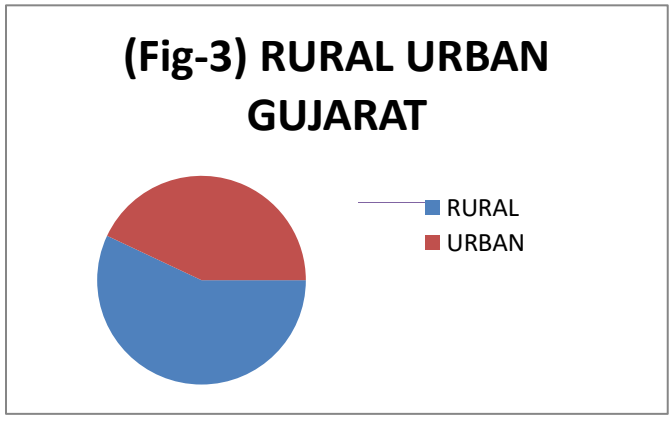
Hence, the urban village formation concept must take into consideration the basic characteristics of the urban village environment, which consist of its geography, background of the village, type of village, the position or status of the village, traditional practices and culture, local organizations, certified status of the land title and the land, distance from the city cent government reserve land were not included in the definition of the urban village concept because this type of settlement does not have certified characteristics of a land title. The operational definition is important as it determines the scope and study sample that can be used in future.

According to census of India 2011 the definition of urban area is :

- Population density of persons00 persons per square kilometer or more…
- 75% of the male working population involved in non-agricultural employment plus

  Activity.
- Location with a population of 5000.

1.7) Gujarat Urban Population 2011 :-



1.8) PIPALIYARAJ POPULATION-MORBI, GUJARAT:-

➢ Pipaliyaraj is a Village in Wankaner Taluka in Morbi District of Gujarat State, India.

It is located 34 KM towards North from District head quarters Rajkot. 17 KM from . 234 KM from State capital Gandhinagar.

- Kalavadi Navi (4 KM) , Valasan (5 KM) , Panch Dwarka (6 KM) , KotdaNayani (6 KM) , Tithava (7 KM) are the nearby Villages to Pipaliyaraj. Pipaliyaraj is surrounded by Tankara Taluka towards west , Rajkot Taluka towards South , Paddhari Taluka towards west , Morvi Taluka towards North. Wankaner , Rajkot , Morbi , Thangadh are the nearby Cities to Pipaliyaraj.

1.9) Pipaliyaraj 2011 Census Details:-

Census Parameter	Census Data
Total Population	4218
Total No of Houses	775
Female Population %	50.8 % (2143)
Total Literacy rate %	67.5 % (2849)
Female Literacy rate	29.4 % (1241)
Scheduled Tribes Population %	0.0 % (0)
Scheduled Caste Population %	3.1 % (130)
Working Population %	40.80%
Child(0 -6) Population by 2011	562
Girl Child(0 -6) Population % by 2011	51.8 % (291)

Table. 1

1.10) Pipaliyaraj Village Details:-

Sarpanch name	Mo. No.
Mahebub Kadivar	**9879762664**

Table. 2

Location and Administration:-

Pipaliyaraj is 16 km distance from Sub District HeadQuarterWankaner and it is 45 km distance from District HeadQuarter Rajkot. Nearest Statutory Town is **Wankaner** in 16 km Distance .Pipaliyaraj Total area is 1981.21 hectares, Non-Agricultural area is 19.99 hectares and Total irrigated area is 1000 hectares.

Health:-

1 Primary Health Sub-Centre available in this village.

Agriculture:-

Cotton, Wheat and Cumin are agriculture commodities grow in this village. 8 hours agricultural power supply in summer and 8 hours agricultural power supply in winter is available in this village. Total irrigated area in this village is 1000 hectares from Boreholes/Tube wells 1000 hectares is the Source of irrigation.

Communication:-

Sub Post Office is available in this Village. LandLine available. Mobile Coverage is available. Internet Centre available in this village. No Private Courier Facility in less than 10 km.

Commerce:-

No ATM in less than 10 km. Commercial Bank available in this village. Cooperative Bank available in this village. Agricultural Credit Society and Mandis/Regular Market are available in this village.

Other Amenities:-

This Village has a Power supply with 24 hour power supply in summer and 24 hour power supply in winter, Anganwadi centre, ASHA, Birth & Death registration office, Daily News Paper and Polling station are the other amenities in the village.

1.11) Various infrastructure guidelines with the norms for villages for the provision of different infrastructure facilities:-

- The importance of infrastructure for economic growth and development in rural area can hardly be overemphasized in a developing economy like India.
- The development of rural infrastructure could promote economic growth, improve the standard of living of the population and reduce the incidence of poverty by generating both farm and non-farm employment and earning opportunities, increasing productivity, providing access to basic goods and services and improving the health and physical condition of people.
- Empirical studies also report a strong relationship between infrastructure, economic growth, rural development and poverty reduction.
- Rica The quantity and quality of infrastructure facilities are substantially lower in rural areas than in urban areas.
- A relatively low density of population, low household incomes and the absence of scale economies are considered to be challenges to the expansion of basic infrastructure facilities in rural areas.

1.12) Rural Infrastructure in India: Scope and Importance:-

- Infrastructure is the backbone of any country. It plays a very important role in supporting nation's economic growth and the same is the case with India. If we talk about rural infrastructure in the country, then it is crucial for agriculture, agro-industries and poverty alleviation in the rural areas.
- Typically, rural infrastructure in the country encompasses rural roads, major dams and canal works for irrigation and drainage, rural housing, rural water supply, rural electrification and rural telecommunication connectivity.

1.13) Importance of rural infrastructure in India:-

- Basically, rural infrastructure has the potential to provide basic amenities to people that can improve their quality of life.
- To give an example, development of rural infrastructure can lead to improved access to market centers for the rural producers, better availability of inputs and raw materials at reduced prices and improved mobility Here is a look at how different sections of rural infrastructure play their role in improving the rural economy as well as life of the people...
- Rural road infrastructure: It provides mobility and connectivity to people living in rural areas. It also provides the much needed boost to agricultural activities by making available water, seeds and other raw materials to the farmers.
- By improving connectivity, rural roads also enhance employment opportunities for the rural people in non-agriculture sector, thereby, increasing livelihood opportunities.

- Rural roads also ensure that the rural areas are served with better public services and all the benefits offered by the state reach the far-flung areas easily. They can even provide access to education and health services.
- Rural electrification infrastructure: It basically caters well to the requirements of agriculture and other activities including irrigation pump sets, small and medium industries, khadi and village industries, cold storage chains, healthcare and education.
- Rural water supply system: It can lead to sustainability of systems and sources and tackle the problem of water quality, thereby, increasing good health of people.
- Rural housing infrastructure: It has the potential to improve living standard of the people.
- Overall and as per various studies, development of rural power, irrigation, water, sanitation and road infrastructure can increase productivity, savings, income and tourism and result in better jobs and health of rural people.

1.14) Scope for development of rural infrastructure in India:

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- Overall and as per various studies, development of rural power, irrigation, water, sanitation and road infrastructure can increase productivity, savings, income and tourism and result in better jobs and health of rural people.

1.16) Scope for development of rural infrastructure in India:-

- As per the road statistics published by central government for the year 2012-13, rural roads span 60.39 km of every 100 km. The sad part is that most of these rural roads in the country are in bad shape i.e., they are of poor quality, potholed and unable to withstand the loads of heavy farm equipment, thereby, affecting the rural population's quality of life and ability of the farmers to transport their produce to the market.
- Further, the rural surfaced road is just 33 per cent of the total rural road network in India and remaining are kutcha roads which are highly vulnerable and inaccessible particularly during the rainy season. Thus, there is increasing need for surfaced rural roads in the country. Scope for development of rural infrastructure in India
- Living conditions of people in rural areas has still not improved much and there are majority who live in kutcha houses which are highly vulnerable to rainfall, wind blow, fire and other environmental

hazards. Hence, good rural housing infrastructure is needed in the country.

- As per the Census 2011, still 45 per cent of the rural households are not connected with electricity and depend on kerosene and other means for lighting. Hence, rural electrification infrastructure is needed to make the lives of rural people better.
- Although there are schools in the rural areas but they lack in terms of the number of classrooms, availability of safe drinking water facilities, toilet facilities etc. Hence, the education infrastructure in rural India also needs a lot more improvement.
- It goes without saying that the health infrastructure is poorly developed in rural India. Even if it is there, there are no good doctors because the rural areas have very low connectivity and doctors or skilled health workers are unable to access these areas. This poses a great threat to the lives of rural population in the country.
- As per the reports from Census 2011, merely 30 per cent of rural areas are covered with tap water supply. In addition, the sanitation facilities in the rural areas are also not adequate. Thus, there is huge scope for developing drinking water infrastructure and sanitation facilities in the rural areas.
- With these points, it is clear that there is huge scope for development of all kinds of infrastructure in rural areas.
- In fact, the gaps in the rural infrastructure need to be addressed properly and as fast as possible so as to achieve redistributive growth and alleviate poverty in the country
- Keeping these things in mind, government has taken various proactive steps to boost rural infrastructure. In the Union Budget

2017-2018, an allocation of Rs 19,000 crore has been made towards the Pradhan Mantri Gram Sadak Yojana (PMGSY) to connect far-flung habitats. The rural housing scheme has received more than Rs 9,000 crore and the allocation for rural electrification scheme has been increased by Rs 4,814 crore in the Union Budget 2017-2018. Under the Swachh Bharat Program, the government has taken up the task of construction of individual, cluster and community toilets. All these initiatives are good but still there is huge scope further in rural infrastructure development.

1.17) Impact of rural infrastructure growth on construction equipment:-

- With the focus shifting on developing rural infrastructure including roads, houses, electrification projects, irrigation facilities and other infrastructure development, the need for construction equipment is also increasing to develop such infrastructure. This has led to growth of many indigenous construction equipment manufacturers in the country. Of all the names, one company that has highly contributed in the rural infrastructure development in the country is Mahindra Construction Equipment (MCE).
- MCE offers the Mahindra EarthMaster backhoe loaders and RoadMaster G75 motor graders which are the most affordable and incomparable indigenous equipment in the country at the present that meet all the rural infrastructure development needs. The two equipment are equipped with latest technologies and intelligent features to boost productivity and are suited to work in any environment and terrain of the country.

- Rural electrification infrastructure: It basically caters well to the requirements of agriculture and other activities including irrigation pumpsets, small and medium industries, khadi and village industries, cold storage chains, healthcare and education.
- Rural water supply system: It can lead to sustainability of systems and sources and tackle the problem of water quality, thereby, increasing good health of people.
- Rural housing infrastructure: It has the potential to improve living standard of the people.

1.18) Other Projects / Schemes of Gujarat / Indian Government:-

- Rural development is a process of improving quality of life and economic status of people living in villages. Education, entrepreneurship, physical infrastructure and social infrastructure also play a role in developing the rural regions.
- The main objective of the rural development is to remove poverty of the people and fill the widening gaps between rich and poor. Various policies and scheme by Government of India are:

- **Prime Minister Rural Development Fellows Scheme.**
- **Sampoorna Grameen Rozgar Yojana (SGRY).**
- **Pradhan Mantri Gram Sadak Yojana.**
- **Swarnjayanti Gram Swarozgar Yojana (SGSY)**
- **SarvSiksha Abhiyan.**

❖ (Chapter:-2) IDEAL VILLAGE

2.1) Ideal Village Concept :-

The idea of an "Adarsh Gram" or Ideal village has been explored earlier as well, most notably through the "**Pradhanmantri Adarsh Gram Yojana**", launched by the Central Government in 2009-10. The scheme was implemented in pilot mode in 1000 villages of Assam, Bihar, Himachal Pradesh, Rajasthan and Tamil Nadu, with an allocation of Rs 10 lakh per village. This limit was later raised to Rs 20 lakh per village. The target villages under the scheme were those with more than 50% of the population belonging to Scheduled Castes (SCs).

2.1.1) Ideal Village-Normal Village :-

- An ideal Indian village will be constructed in such a manner that it will be able to lend itself perfect sanitation. It shall have cottages with sufficient light and ventilation built of material that can be obtained within a radius of five miles of it. The cottages shall have courtyards enabling householders to plant vegetables for domestic use and to house their cattle.
- The village lanes and streets will be free of all kind of avoidable dust. It shall have wells as per the need and demand. It will have houses of worship for all, also a common meeting place.

2.1.2) Objectives:-

- Promote integrated development of rural areas with provision of quality housing, better connectivity, employment opportunities and supporting physical and social infrastructure.

- Reduce migration from rural to urban areas due to lack of basic services and sufficient economic activities in rural areas.
- To creating models of local development which can be replicated in other villages.
- To contribute towards social empowerment by engaging all sections of the community in the task of village development.
- To create and sustain a culture of cooperative living for inclusive and rapid development.

2.1.3) Example-Kuvadva Village:-

Kuvadva village is situated in Teshil Rajkot, District Rajkot and in State of GUJARAT India. Village has population of 8214 as per census data of 2011, in which male population is 4240 and female population is 3974. Total geographical area of Kuvadva village is 2015.48 Hectares. Population density of Kuvadva is 4 persons per Hectares. Total number of house hold in village is 1552.

- Gram Panchayat name of the Kuvadva village is KUVADVA.
- CD Block name is Rajkot and Teshil/Taluk or sub-district is Rajkot.
- Data Reference year is 2009 of Census 2011.
- Sub District HQ Name is RAJKOT and Sub District HQ Distance is 17 Km from the village.
- District Head Quarter name is RAJKOT and it's distance from the village is 17KM.
- Nearest Town of the Kuvadva village is RAJKOT and nearest town distance is 17 km.
- Pincode of Kuvadva village is 360023.
- As per census 2011 village code of village Kuvadva is 512944.

2.2) Ideal Village - Kuvadva :-

- We observed and noted the present condition of Kuvadva village Various infrastructural facilities, economic development, population, electricity, Water. Supply, etc. We also collected the data that was required for the techno-economic survey.

According to Census 2011 information the location code or village code of Kuvadva village is 512944. Kuvadva village is located in Rajkot Tehsil of Rajkot district in Gujarat, India. It is situated 17km away from Rajkot, which is both district & sub-district headquarter of Kuvadva village. As per 2009 stats, Kuvadva village is also a gram panchayat.

The total geographical area of village is 2015.48 hectares. Kuvadva has a total population of 8,214 peoples. There are about 1,552 houses in Kuvadva village. As per 2019 stats, Kuvadva villages comes under Wankaner assembly & Rajkot parliamentary constituency. Rajkot is nearest town to Kuvadva which is approximately 17km away.

2.2.1) Kuvadva Village Data :-

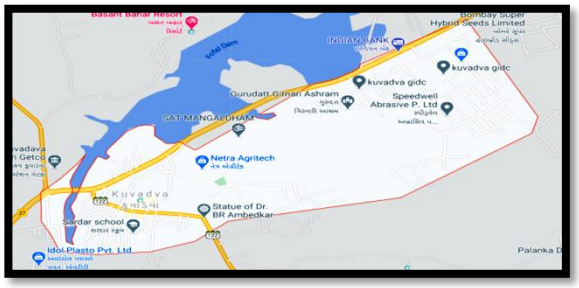
Description	Data
Village Name	Kuvadva
Gram Panchayat Name	KUVADVA
CD Block Name	Rajkot
Teshil Name	Rajkot
Reference Year	2009
Sub District HQ Name	RAJKOT
Sub District HQ Distance	17 Km
District HQ Name	RAJKOT
District HQ Distance	17 Km
Nearest Town	RAJKOT
Nearest Town Distance	17 Km
Pincode	360023

Table. 3

2.2.2) Kuvadva Village Overview :-

Coordinates:22.364° N,70.956° E	
Gram Panchayat :	Kuvadva
Block / Tehsil :	Rajkot
District :	Rajkot
State :	Gujarat
Pincode :	360023
Area :	2015.48 hectares
Population :	8,214
Households :	1,552
Assembly Constituency :	Wankaner
Parliament Constituency :	Rajkot

Table 4



(FIG-4 Satalite View Of Kuvadva) (Fig-5 Kuvadva Map

2.2.3) Kuvadva Village – Population :-

Kuvadva is a large village located in Rajkot Taluka of Rajkot district,Gujarat with total 1552 families residing. The Kuvadva village has population of 8214 of which 4240 are males while 3974 are females as per Population Census 2011.

In Kuvadva village population of children with age 0-6 is 1075 which makes up 13.09 % of total population of village. Average Sex Ratio of

Kuvadva village is 937 which is higher than Gujarat state average of 919. Child Sex Ratio for the Kuvadva as per census is 913, higher than Gujarat average of 890.

Kuvadva village has lower literacy rate compared to Gujarat. In 2011, literacy rate of Kuvadva village was 76.86 % compared to 78.03 % of Gujarat. In Kuvadva Male literacy stands at 84.23 % while

femaleliteracy rate was 69.03 %.Kuvadva village has lower literacy rate compared to Gujarat. In 2011, literacy rate of Kuvadva village was 76.86 % compared to 78.03 % of Gujarat. In Kuvadva Male literacy stands at 84.23 % while female In Kuvadva village population of children with age 0-6 is 1075 which makes up 13.09 % of total population of village. Average Sex Ratio of Kuvadva village is 937 which is higher than Gujarat state average of 919. Child Sex Ratio for the Kuvadva as per census is 913, higher than Gujarat average of 890.

Particulars	Total	Male	Female
Total No. of Houses	**1,552**	-	-
Population	**8,214**	4,240	3,974
Child (0-6)	**1,075**	562	513
Schedule Caste	**544**	271	273
Schedule Tribe	**19**	8	11
Literacy	**76.86%**	84.23%	69.03%
Total Workers	**3,407**	2,610	797
Main Worker	**3,119**	-	-
Marginal Worker	**288**	107	181

Table:-5

2.2.4) Caste Factor :-

➢ Schedule Caste (SC) constitutes 6.62 % while Schedule Tribe (ST) were 0.23 % of total population in Kuvadva village.

2.2.5) Work Profile :-

In Kuvadva village out of total population, 3407 were engaged in work activities. 91.55 % of workers describe their work as Main Work

(Employment or Earning more than 6 Months) while 8.45 % were involved in Marginal activity providing livelihood for less than 6 months. Of 3407 workers engaged in Main Work, 717 were cultivators (owner or co-owner) while 698 were Agricultural labourer

2.2.6) Working Population :-

	Total	Male	Female
Total Workers	3407	2610	797
Main Workers	3119	2503	616
Main Workers Cultivators	717	519	198
Agriculture Labourer	698	471	227
Household Industries	30	25	5
Other Workers	1674	1488	186
Marginal Workers	288	107	181
Non Working Persons	4807	1630	3177

Table 6

2.2.7) Kuvadva Manufactures and Agricultural Commodites Data :-

Description Type	Commodities
Agricultural Commodities (First)	COTTON
Manufacturers Commodities (First)	N/A
Agricultural Commodities (Second)	GROUNDNUT
Agricultural Commodities (Third)	VEGETABLES
Forest Area (in Hectares)	41.8

Table 7

2.2.8) Conectivity Of Kuvadva :-Table 8

Type	Status
Public Bus Service	Available Within Village
Privet Bus Service	Available Within Village
Railway Station	Available Within 10+ KM Distance

❖ (Chapter:-3) Smart Village-(Raj-Samadhiyala)

3.1) Introduction: Concepts,Defination& Practice:-

Concept:-

- **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 programmed 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. The vision of SAGY is a integrated village development plan,encompassing *Personal*, *Human*, *Social*,and *Economic* dimen sions.

Defination:-

- Smart Villages are communities in rural areas that use innovative solutions to improve their resilience, building on local strengths and opportunities. They rely on a participatory approach to develop and implement their strategy to improve their economic, social and/or environmental conditions, in particular by mobilising solutions

offered by digital technologies. Smart Villages benefit from cooperation and alliances with other communities and actors in rural and urban areas.

- The initiation and the implementation of Smart Village strategies may build on existing initiatives and can be funded by a variety of public and private sources

Practice:-

We Selected Raj-Samadhiyala Village as a smart village.

We got information about community in rural areas, participatory approach, Digital Technologies And Smart Village Strategies ETC….

➢ Details About Raj-Samdhiyala

- Samadhiyala is a medium size village located in Rajkot Taluka of Rajkot district, Gujarat with total 247 families residing. The Samadhiyala village has population of 1467 of which 732 are males while 735 are females as per Population Census 2011.
- Samadhiyala village has higher literacy rate compared to Gujarat. In 2011, literacy rate of Samadhiyala village was 87.26 % compared to 78.03 % of Gujarat. In Samadhiyala Male literacy stands at 91.90 % while female literacy rate was 82.86 %.
- In Samadhiyala village population of children with age 0-6 is 172 which makes up 11.72 % of total population of village. Average Sex Ratio of Samadhiyala village is 1004 which is higher than Gujarat state average of 919. Child Sex Ratio for the Samadhiyala as per census is 686, lower than Gujarat average of 890.

- As per constitution of India and PanchyatiRaaj Act, Samadhiyala village is administrated by Sarpanch (Head of Village) who is elected representative of village. Our website, don't have information about schools and hospital in Samadhiyala village.

Particulars	Total	Male	Female
Total No. of Houses	247	-	-
Population	1,467	732	735
Child (0-6)	172	102	70
Schedule Caste	241	113	128
Schedule Tribe	0	0	0
Literacy	87.26 %	91.90 %	82.86 %
Total Workers	650	442	208
Main Worker	499	-	-
Marginal Worker	151	15	136

Table 9

Caste Factor:-

- Schedule Caste (SC) constitutes 16.43 % of total population in Samadhiyala village. The village Samadhiyala currently doesn't have any Schedule Tribe (ST) population.

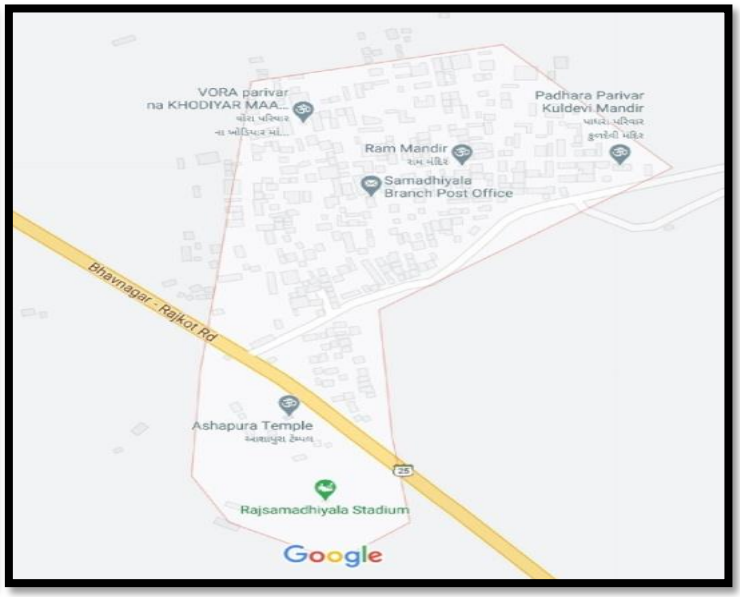
Work Profile:-

- In Samadhiyala village out of total population, 650 were engaged in work activities.
- 76.77 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 23.23 % were involved in Marginal activity providing livelihood for less than 6 months.

MALE FEMALE TOTAL

732 + 735 = 1467

(FIG-6)TOTAL POPULATION



(FIG-7): SATALITE VIEW (FIG-8): RAJ-SAMDHIYALA MAP

3.2) Vision-Goals, Standards and Performance Measurement Indicators

What are the characteristic features of a smart village? How might progression towards a smart village model improve lives in those communities? This brief provides a vision for improving the lives of rural villagers based on the smart villages concept (a rural analogue to smart cities). It also explores two prototypical case studies in Malaysia and Tanzania, where parts of this vision have already been realised.

The central premise is that given the appropriate enabling conditions (including access to finance, appropriate technologies, technical capacities and services, and regulatory/policy frameworks) and an

integrated approach to development, rural communities can harness and develop entrepreneurial capacities to provide modern energy services. Modern energy access can act as a catalyst for development – education, health, food security, productive enterprise, clean water and sanitation, environmental sustainability and participatory democracy. This in turn supports further improvements in modern energy access, ensuring sustainable electricity supplies to meet village needs and the availability of clean and efficient appliances for cooking.

Progressively, such communities may establish the various features of smart villages outlined in this paper. Residents would consequently be able to lead healthy and fulfilling lives, achieve their development potential, earn a viable living, and be connected to the wider world. As a result, villagers would be given a real choice between life in a city or a smart village. They could capture many of the benefits of urban living while retaining valued aspects of rural life, and ensuring balanced development at the national level.

Smart city development vision- Goals - activities :

With an outline of this vision, we will now examine how it might work out so far as typical sectors of development are concerned and invite discussion. The following paragraphs outline generic features – the actual realisation of the smart villages concept will vary according to the country, region and specific context.

- **Education:-**

Access to modern energy in smart villages has the potential to increase the time available for students to study by providing safe and good quality lighting in homes after dark, and by reducing the need to spend

time collecting biomass for cooking. It also lowers indoor air pollution by replacing kerosene lamps and open fires with clean sources of light and heat, thereby reducing respiratory illness which is a prevalent impediment to learning as well as a cause of many premature deaths.

- **Health:-**

Modern energy access can significantly improve health. It enables households to use potable water and to consume a more nutritious diet due to the reduced cost of boiling water and cooking food. And as indicated above, replacing kerosene lamps and traditional biomass cook stoves with modern technologies and cleaner fuel sources substantially reduces indoor air pollution, currently the cause of four million premature deaths every year.

- **Food security:-**

Approximately one in every seven people in the developing world is food insecure: unable to consume, or have access to sufficient food to sustain a healthy and active life. Energy provision together with ICT has the potential to help Smart villages to become more food secure as farmers take advantage of improvements in irrigation systems, weather forecasting, cold-storage infrastructure, and agronomic and market information4 Consequently, smart villages should be in a better position to gain from the benefits of agricultural modernisation, reduce wastage and capture more of the agricultural value chain.

- **Environment:-**

Smart villages can undertake a stewardship role for their local environment, aided by technologies to remotely monitor key environmental indicators, such as forest diagnostics, water quality, soil

conditions and landscape changes. Pressure on deforestation can be reduced through the use of efficient cook stoves to decrease the use of traditional biomass energy sources (e.g. charcoal), which is currently a key driver of unsustainable forest use.

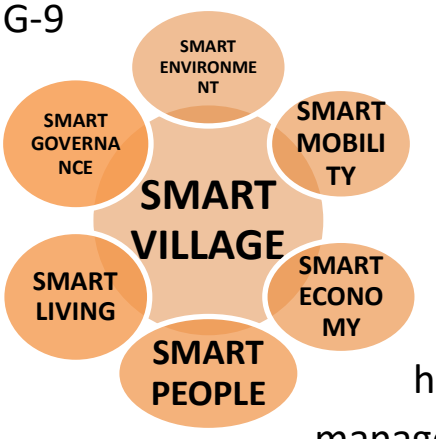
- **Quality of Life:-**

Through the provision of modern energy, smart villages potentially have a transformative impact on villagers by alleviating the drudgery that is pervasive in many lives in rural communities. For example, household appliances can save much time and effort. The availability of radio, TV and the internet enables villagers to enjoy entertainment, and public lighting can be provided at night so that people, particularly women, can enjoy social interaction without fear of danger.

Smart Cities Performance Measurement Indicators:

The indicators for smart cities focus on the monitoring the evolution a city towards an even smart city. The time component “development over the years” is an important feature. The city indicators may be used to show to what extent overall policy goals have been reached or are within reach.

FIG-9



3.3) Technological Options:-

Smart Villages is a relatively new concept. It will ensure good education, better infrastructure, proper sanitation facility, health facilities, waste management,renewable energy, environment protection, clean drinking water, resource useefficiency etc. The

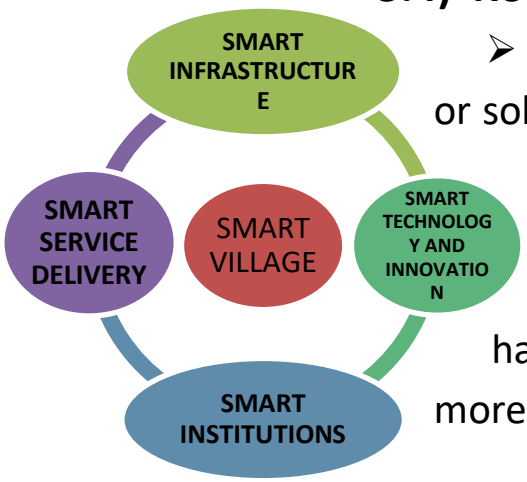
emerging concept of Smart Villages refers to rural areas and communities which build on their existing strengths and assets as well as ondeveloping new opportunities. In Smart Villages traditional and new networksand services are enhanced by means of digital, telecommunication, internettechnologies, innovations and the better use of knowledge, for the benefit ofinhabitants and businesses. Digital technologies and innovations may supportquality of life, higher standard of living, public services for citizens, better useof resources, less impact on the environment, and new opportunities for rural value chains in terms of products and improved processes.

Services Required for the Smart Village:

1) Solar LED Street Lighting and Solar Home Lighting Systems.
2) Development of Health Centres, Roads and school labs and kidsplaygrounds.
3) Efficient public transportation Systems.
4) Use of renewable energy
5) Safe Drinking Water Facility- RO Water Plants.
6) Solid and liquid waste management.
7) Improving sanitation conditions.

(FIG-10)

3.4) Road Map and Safe Guards:-



➢ India is a country of villages. Any product or solution that has to succeed and be popular in the country has to be of direct relevance to village life of this country. As per Census of India 2011, the country has a 69% rural population spread across more than 600,000 villages. Now, that being

the case, no marketer worth his salt can ever dream of ignoring rural India.

- Mahatma Gandhi said, “the future of India lies in its villages”. Despite government’s focus on villages for many decades, villages remain poorly serviced and governed. India has been an agricultural economy yet the sector is still not a well-paying livelihood option.
- Generating new avenues of employment in villages, reviving agriculture and improving services in rural areas are some of the components that need to be included right away in rural development policies. The visual perception of Indian villages has not changed much though certain corrective policy measures and infrastructural reforms have taken place.
- Governments need to transform our villages into smart habitats by generating lucrative economic opportunities and addressing the basic challenges rural areas are facing for decades. Delhi and Mumbai add almost 200 migrants every day.
- A combination of factors like agriculture becoming less remunerative, poor civic services, defunct infrastructure, and unavailability of good career opportunities has accelerated the migration from rural areas to cities.

Government initiatives:-

- Pradhan Mantri Gram Sadak Yojana (PMGSY) has proved to be a transformative scheme. Thousands of villages which were cut-off from the outside world were connected.
- The national rural road construction program has built paved roads to over 100,000 villages since its launch in 2000. A research report

'Market Access and Structural Transformation: Evidence from Rural Roads in India' by Sam Asher and Paul Novosad examines the labor market consequences of high rural transport costs by estimating the causal effects of a USD 37 billion rural road construction program, which has provided over 100,000 Indian villages with paved connections to the wider road network.

- It states, "These effects are driven by villages close to large cities, where a new rural road represents a larger proportional decrease in total transportation costs to external demand for rural labor and production." Similarly the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has brought significant improvement in employment generation in rural India.
- The scheme that is termed the biggest poverty reduction scheme provides jobs to over 50 million households. However, the government needs to find out some innovative ways through which rural workforce can be provided skills and improve their employability in the evolving markets in rural India.

3.5) Issues &Challenges :-

- **Misuse of resources:-** We have been misusing resources because we do not know why it matters and what it does in the long run. It does not even comes to mind as we have been doing all our lives. This includes money.
- **Technological evolution:-** It has taken a dangerous turn and will come to bite us in the ass. The process has already started, things we used to see in movies are becoming bitter truth of the society. We want comfort, ease and we are getting it at the cost of our civilization. Simple examples - Social Media and Mobile Phones.

- **Religion and belief system:-** If only our ancestors were wise and had a long vision, they would not have dared to write holy books. Mostly, we believe what our society believes without thinking or reasoning. It has taken away our freedom and turned us against each other.
- **Our irresponsibility:-** We do not take responsibility for our actions. If only we could think how it affects everything in the future. Why are we increasing our population only to leave the world to its terrible fate? We play a role to shape our future whether we realize it or not.

3.6) Smart Infrastructure - Intelligent Traffic Management:-

Smart Infrastructure:-

1) Social Health Indices
2) Sanitation
3) Electricity
4) Transportation
5) Security system

❖ Social Health Indices:-

The number of businesses per ten lakh population can form a city's level of economic activity and economic performance. It provides a single indication of the business climate in a jurisdiction, and attitudes towards entrepreneurship. The unemployment rate is measured by taking the unutilized labor supply and then tracks business cycles. It is measured in terms of working-age city residents who during the survey period were not considered in paid employment or self-employment and were searching for work divided by the number of total labor force.

❖ Sanitation:-

The sanitation front will see figuring out of sanitary toilet facilities used by the people and community toilet facilities provided at public places. The rate is 10 people per seat. Share of primary, secondary or tertiary treatment of wastewater shall give ranking in matters of handling of waste water. For solid waste management, disposal by bio digestion, landfills, burning or recycling will end the Smart Cities their place in the ranking.

❖ Electricity:-

All the electrical lines will be present underground by not disturbing aesthetics of a place or making any kind of nuisance. The power generated will be available from renewable sources like wind energy farm, hydroelectric plant or natural gases will also be used for not exhausting natural resources.

❖ Transportation:-

An entire intermodal transport available to all at affordable rate with minimum time delay and maximum possible comfort. It has an elaborated recommendation to keep track of transport facilities such as high capacity public transport and light passenger transport The results will be expressed in annual number of public transport trips per capita and ridership of public transport.

❖ Security system:-

CCTV camera present everywhere in every gate. Specially trained policemen will be present System to detect probe of water and electricity, parking or anything necessary. Specially trained policemen will be present System to detect probe of water and electricity, parking or anything necessary.

3.7) Cyber Security :-

Over the past few years, Technology has begun to play an important role in our daily lives. Internet enabled gadgets have changed the way in which we work or do our daily chores. Digitization has an impact on personal lives, education, health, government and national security. Due to increase in complexity of smart city systems and globally connected social, economic, political systems, etc. has increased vulnerability of security of a city.

- Securing smart cities is a not-for-profit global initiative which aims at solving the existing and future cyber security problems of smart cities through collaboration between companies, government, media outlets and individuals across the world.
- The cyber threats have amplified due to infinite supply of data. Smart surveillance technology or analytics to manage the crowd, traffic, cyber security, data privacy, building codes to manage natural/man-made disasters, etc. are some parameters that would make a city safe.
- Different challenges to our security and expectations of privacy have arrived due to innovations in IT.
- Humans are already interconnected via gadgets. Standards are evolved for all these potentially connected systems. This will lead to improve in quality in life.
- Smart Transportation will also provide an access to a web of connected data from GPS location. Integrated systems and cyber security will aid public safety. We examine two important challenges : Security and Privacy.

3.8) Retrofitting- Redevelopment- Greenfield Development District Cooling:-

❖ Retrofitting:-

Retrofitting is one of the strategic components which when will be introduce planning in an existing built-up area, will help us to achieve several objectives for smart city like making the existing area more efficient and liveable along with others.

- In this method, generally an area more than 500 acres will be identified by the city in consultation with citizens.
- After identification and observation of the current situation 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.
- The whole process of retrofitting must be completed in a shorter time frame, as it will lead to help and assistance in other part of city or another city of similar condition.
- SMART-RETROFITS are projects to mitigate major issues affecting urban resilience; are catalytic in nature, effective, requires policy initiatives & some investments for pre-take-off.
- Now days, one of the most commonly method used for the retrofitting for any buildings is Green retrofitting.
- Retrofitting is the process of modifying something after it has been manufactured.
- Retrofitting a building involves changing its systems or structure after its initial construction and occupation.

❖ Redevelopment:-

Redevelopment is any new construction on a site that has pre-existing uses. It represents a process of land development uses to revitalize the physical, economic and social fabric of urban space.

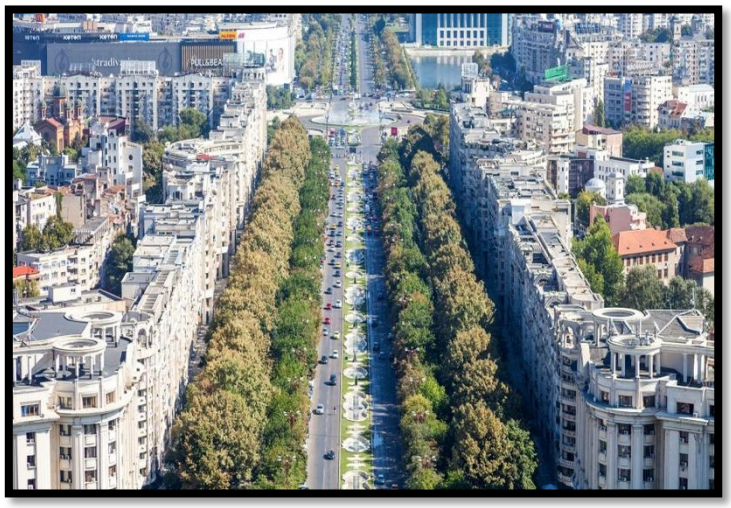
- Urban infill on vacant parcels that have no existing activity but were previously developed, especially on Brownfield land, such as the redevelopment of an industrial site into a mixed-use development.
- Constructing with a denser land usage, such as the redevelopment of a block of townhouses into a large apartment building.
- Adaptive reuse, where older structures are converted for improved current market use, such as an industrial mill into housing lofts.
- Redevelopment projects can be small or large ranging from a single building to entire new neighborhoods or "new town in town" projects.
- Redevelopment also refers to state and federal statutes which give cities and counties the authority to establish redevelopment agencies and give the agencies the authority to attack problems of urban decay. The fundamental tools of a redevelopment agency include the authority to acquire real property, the power of eminent domain, to develop and sell property without bidding and the authority and responsibility of relocating persons who have interests in the property acquired by the agency. The financing/funding of such operations might come from government grants, borrowing from federal or state governments and selling bonds and from Tax Increment Financing.
- Other terms sometimes used to describe redevelopment include urban renewal (urban revitalization). While efforts described as urban revitalization often involve redevelopment, they do not

always involve redevelopment as they do not always involve the demolition of any existing structures but may instead describe the rehabilitation of existing buildings or other neighborhood improvement initiatives.

- A new example of other neighborhood improvement initiatives is the funding mechanism associated with high carbon footprint air quality urban blight. Assembly Bill AB811 is the State of California's answer to funding renewable energy and allows cities to craft their own sustainability action plans. These cutting edge action plans needs the funding structure; which can easily come forward through redevelopment funding.
- While efforts described as urban revitalization often involve redevelopment, they do not always involve redevelopment as they do not always involve the demolition of any existing structures but may instead describe the rehabilitation of existing buildings or other neighborhood improvement initiatives.
- The fundamental tools of a redevelopment agency include the authority to acquire real property, the power of eminent domain, to develop and sell property without bidding and the authority and responsibility of relocating persons who have interests in the property acquired by the agency.

❖ Green field development:-

Greenfield development is a term often used for land that has not been used before for any human activity like agriculture or real estate development. Greenfield Land is generally land where there is no development of anykind.



- These open fields evolve on their own volition and are often sprawling expanses of land near cities and in the countryside. These lands which are not used for any purpose can be classified as Greenfield lands.
- Greenfield land is available in urban areas as well as rural areas. The land between towns and cities all over the world which is unused and characterized by grass, barren lands, and wild growth of vegetation and open fields is Greenfield land.
- This is the land on earth that is untouched by human beings and exists in its natural habitat.

Types of Greenfield Land

- Greenfield Land is open fields which lie between cities and towns or in suburban areas. These are unfenced open fields which often have wild natural vegetation growing unchecked and as per the climate of the region. In dry areas, barren fields which are not used for construction or any agricultural activities are also called as Greenfield lands.
- Restricted closed properties with no development often owned by the government are also Greenfield lands. Governments of most countries own vast areas of land in the country in the rural areas and the semi-urban and urban areas.

- Private property with or without fencing is the land bought by the owner and not used for any purpose or kept for future use is also Greenfield land.

Reasons to use Greenfield Development:-

- These days, the Greenfield development takes a necessary role in constructing lands in unused or green lands. In fact, this is often known as desirable locations for construction projects with some challenges.
- It is used to develop lands that are associated with Greenfield sites and known for compared with sites.
- When compare with Brownfield sites, Greenfield development normally takes part in accessing with used development. This includes distinct solutions and able to develop the projects in Greenfield locations
- It has been taken with the building process and therefore considers sites are a desirable option. There may be space and room to expand the development. It is used for creating development and therefore brings forth attention in constructing with better access with the right development. It is more pleasant and looking green environment taken at the right edge.

3.9) Strategic Options for Fast Development:-

On the basis of the literature and our personal knowledge of fast-growing companies, we conclude that companies grow using three basic strategies: scaling, duplication and granulation. There is no one best strategy. A growth plan may end up tapping more than one.

- To grow steadily and avoid stagnation, a company must learn how to scale up and extend its business, lengthen its expansion phase, and

accumulate and apply new knowledge to new products and markets faster than competitors.

- Managers can't leave growth to chance. They must choose a plan that renders consistent sales growth for years, not just in short bursts. A good growth plan captures the vision for expanding the company. It addresses the product and market combinations the company intends to pursue, the size it hopes to achieve in a particular time frame, and most important, the know-how and organizational structures that will support expansion or diversification.
- Promoting a variety of transport options - Transit Oriented Development (TOD), public transport and last mile para-transport connectivity
- Giving an identity to the city - based on its main economic activity, such as local cuisine, health, education, arts and craft, culture, sports goods, furniture, hosiery, textile, dairy, etc
- Making governance citizen-friendly and cost effective - increasingly rely on online services to bring about accountability and transparency, especially using mobiles to reduce cost of services and providing services without having to go to municipal offices. Forming egroups to listen to people and obtain feedback and use online monitoring of programs and activities with the aid of cyber tour of worksites
- Creating walkable localities –reduce congestion, air pollution and resource depletion, boost local economy, promote interactions and ensure security. The road network is created or refurbished not only for vehicles and public transport, but also for pedestrians and

cyclists, and necessary administrative services are offered within walking or cycling distance

- Housing and inclusiveness - expand housing opportunities for all

3.10) India's Urban Water and Sanitation Challenges and Role of Indigenous:-

- Urban Water Supply in India:-

This section provides an analysis of the current situation in urban water supply in India. It presents this analysis in three parts: household, water distribution and treatment systems, and water sources.

- Household Arrangements and Access:-

The distribution of households according to the primary source of drinking water reported by Census 2011. Nearly 70 per cent households have access to tap water, out of which 62 per cent have access to treated tap water. Thus, nearly 40 per cent of urban households have no access to public supply, and have to depend on other sources of water.2 Moreover, not all households that have access to public supply have access to it within the premise. Only 49 per cent of households have access to piped water supply within their premises.

Table 3.1: Access to Improved Urban Water Supply (MDG and Census of India)

Year	Popn. India '000	% Urban Popn.	Total Improved	Piped	Other Improved	Unimproved
1990	862	26.00%	90.00%	52.00%	38.00%	10.00%
2000	1042	28.00%	93.00%	50.00%	43.00%	4.00%
2008	1181	29.00%	96.00%	48.00%	48.00%	7.00%
2011	1210	31.00%	84.00%	62.00%	2.00%	16.00%

Source: JMP, Census, 2001, Census 2011

Table 10

Table 10 shows the percentage of households by access to water supply over the past two decades. The figure illustrates that there was a gradual increase from 1990 to 2008 in the percentage of households with access to 'improved' drinking water, but then a decline in 2011.3 However, this decline is due to the availability of fine-grained data. Earlier all tap water was taken as 'improved' whereas disaggregated data has become available in 2011 for treated and untreated tap water categories. Similar is the case with water from wells. If untreated tap water and uncovered wells are included in the improved category, then the proportion of households which have access to improved sources would be 98 per cent in 2011.

- Comparing Census 2001 and 2011, one can see that nearly 18 million additional households have obtained access to tap water whereas the overall share across different water sources appears to have changed only marginally (See Annex A2, Fig. A2.4).
- Apparently, access to 'improved' sources of water is similar in slum and non-slum data. But, this might be a result of the under-estimation of slums (Sen, 2010). Moreover, this data hides two critical factors that impact service provisioning in slums: the distance between source of water and house, and shared facilities.
- These two concerns are analysed below. There are differences in access to public supply across districts, class size, and states

Importance of indigenous technology:-

- Plastic Roads
- Thorium-based nuclear reactors
- Defense Technology
- Space Technology

3.11) Initiatives in village development by local self-government :-

Local government in India refers to governmental jurisdictions below the level of the state. India is a federal republic with three spheres of government: central, state and local. The 73rd and 74th constitutional amendments give recognition and protection to local governments and in addition each state has its own local government legislation. Since 1992, local government in India takes place in two very distinct forms. Urban localities, covered in the 74th amendment to the Constitution, have Nagar Palika but derive their powers from the individual state governments, while the powers of rural localities have been formalized under the *panchayati raj* system, under the 73rd amendment to the Constitution.For the history of traditional local goverict Councils of India|zila parishads]] at the district level, 6,672 were panchayat samitis at the block level, and 255,466 were gram panchayats at the village level. Following the 2013 local election, 37.1% of councillors were women, and in 2015/16 local government expenditure was 16.3% of total government expenditure.

- **Rural local governments (or panchayat raj institutions):-**
  - Zilla panchayats
  - Mandal or taluka panchayats
  - Gram panchayats

In 1957, a committee led by Balwant Rai Mehta Committee studied the Community Development Projects and the National Extension Service and assessed the extent to which the movement had succeeded in utilising local initiatives and in creating institutions to ensure continuity in the process of improving economic and social conditions

in rural areas. The Committee held that community development would only be deep and enduring when the community was involved in the planning, decision-making and implementation process. The suggestions were for as follows:

- an early establishment of elected local bodies and devolution to them of necessary resources, power, and authority,
- that the basic unit of democratic decentralisation was at the block/samiti level since the area of jurisdiction of the local body should neither be too large nor too small. The block was large enough for efficiency and economy of administration, and small enough for sustaining a sense of involvement in the citizens,
- such body must not be constrained by too much control by the government or government agencies,
- the body must be constituted for five years by indirect elections from the village panchayats,
- its functions should cover the development of agriculture in all its aspects, the promotion of local industries and others
- services such as drinking water, road building, etc., and
- the higher-level body, Zilla Parishad, would play an advisory role.

3.12) Smart Initiatives by District Municipal Corporation :

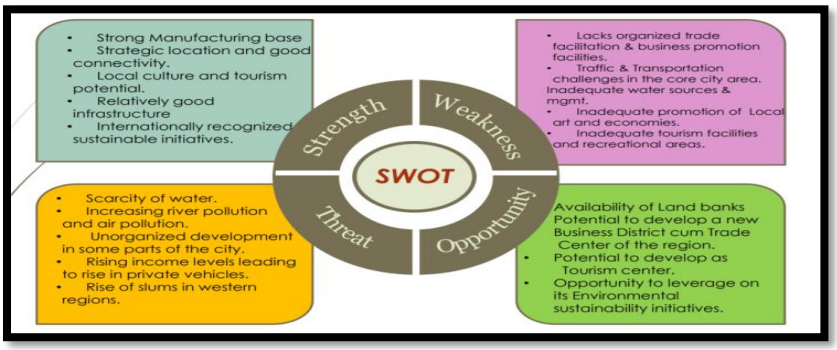
Talking about the smart city initiative by Vadodara district the goal of the initiative is " Smart utilization of Vadodara city's potential for enhancing quality of life for the citizens of providing equal access to (FIG-12) best quality physical

infrastructure , social infrastructure and mobility through leveraging state of the art and technology : thus making Vadodara a futuristic Global city with focus on enhancing economy , protecting the ecology and preserving the identity and culture of the city".

- **AREA BASED DEVELOPMENT:-**
  - **Economy & employment**
  - **Smart & Robust Infrastructure**
  - **Intelligent Traffic & Integrated Transport Management**
  - **Safety & Security for all**
  - **Housing and Social Inclusiveness**

- **The initiatives taken by RAJ-SAMADHIYALA Municipal Corporation are :-**
  - Solar roof Panels
  - Green Vadodara campaign
  - Integrated command and control center.
  - Installation of CCTV Cameras
  - Installation of smart toilet
  - Installation of public wi-fi
  - Parking encroachment drive

3.13) Swot analysis:-



(FIG-13)

Chapter: 4 About PIPALIYARAJ VILLAGE

4.1) Introduction:-

4.1.1) Introduction About Pipaliyaraj Village details :

- Pipaliyaraj is a Village in Wankaner Taluka in Rajkot District of Gujarat State, India. It is located 34 KM towards North from District head quarters Rajkot. 17 KM from .
- 234 KM from State capital GandhinagarPipaliyaraj Pin code is 363621 and postal head office is Wankaner.
- Kalavadi Navi (4 KM) , Valasan (5 KM) , Panch Dwarka (6 KM) , KotdaNayani (6 KM) , Tithava (7 KM) are the nearby Villages to Pipaliyaraj. Pipaliyaraj is surrounded by Tankara Taluka towards west , Rajkot Taluka towards South , Paddhari Taluka towards west , Morvi Taluka towards North.
- Wankaner , Rajkot , Morvi , Thangadh are the near by Cities to Pipaliyaraj.

Pipaliyaraj - Village Overview	
Gram Panchayat	**Pipaliyaraj**
Taluka Name	**Wankaner**
District	**Morbi**
State	**Gujarat**
Pincode	**363621**
Area	**28.4 square kilometer.**
Population	**4218**
Households	**775**
Nearest Town	**Thangadh**
Humidity	**29%**
Temperature	**35.3 °C to 37.5 °C**
Wind	**4.12 mt/sec towards W**
Elevation / Altitude	**80 meters. Above Seal level**
Time zone	**IST (UTC+5:30)**
Language	**Gujarati and Hindi, Urdu, English, Sindhi, Bengali, Tamil, Malayalam And Marathi**

(TABLE-11)

❖ **PipaliyarajPopulation :-**

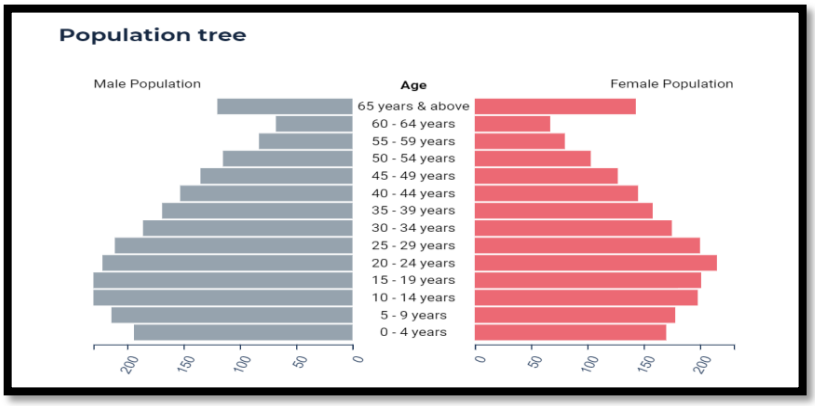
- Pipaliyaraj is a large village located in Wankaner Taluka of Rajkot district, Gujarat with total 775

families residing. The Pipaliyaraj village has population of 4218 of which 2075 are males while 2143 are females as per Population Census 2011.

- In Pipaliyaraj village population of children with age 0-6 is 562 which makes up 13.32 % of total population of village. Average Sex Ratio of Pipaliyaraj village is 1033 which is higher than Gujarat state average of 919. Child Sex Ratio for the Pipaliyaraj as per census is 1074, higher than Gujarat average of 890.
- Pipaliyaraj village has lower literacy rate compared to Gujarat. In 2011, literacy rate of Pipaliyaraj village was 77.93 % compared to 78.03 % of Gujarat. In Pipaliyaraj Male literacy stands at 89.14 % while female literacy rate was 67.01 %.
- As per constitution of India and PanchyatiRaaj Act, Pipaliyaraj village is administrated by Sarpanch (Head of Village) who is elected representative of village. Our website, don't have information about schools and hospital in Pipaliyaraj village.

Particulars	Total	Male	Female
Total No. of Houses	775	-	-
Population	4,218	2,075	2,143
Child (0-6)	562	271	291
Schedule Caste	130	59	71
Schedule Tribe	0	0	0
Literacy	77.93%	89.14%	67.01%
Total Workers	1,720	1,240	480
Main Worker	1,647	-	-
Marginal Worker	73	15	58

Table 12



4.1.2) Justification/ need of the study :

- It is our duty to be future civil engineers, Also works towards minor issues and its improvement.
- Even if a small number of people migrate From villages to cities, the pressure on the city increases, it happened: congestion, pollution, traffic, etc.
- This affects the whole nation. Migration is mainly due to employment opportunities and better facilities Hospitals, educational facilities etc. provided in urban areas.
- To increase the livelihood of the village by Basic requirements like good sanitation facilities, good infrastructural facilities, lined houses or Considering the environmental and needs of the people, water supply etc. is essential.
- The village enjoys 24 hours electricity because of its solar power awareness. All the roads are made of either RCC(cement) or pavers.
- The village has four water tanks with the capacity of 2 lakh litres of water.
- The drinking water is supplied to each and every house after purified. The underground drainage system is also well maintained.

- All the streets have solar lamp post. Even the panchayat house, primary and secondary school and dispensary are modern and have internet connection with online registration facilities.
- The schools focus on overall development of the students and not on just textbook knowledge.
- Students are taught many skills including practical farming, cooking, machine repairing, etc. most of the villages are educated and they follow strict cleanliness in the village.

4.1.3) Study Area (Broadly define) :

Pipaliyaraj is a Village in Wankaner Taluka in Rajkot District of Gujarat State, India. It is located 34 KM towards North from District head quarters Rajkot. 17 KM from . 234 KM from State capital Gandhinagar. Pipaliyaraj Pin code is 363621 and postal head office is Wankaner .Pipaliyaraj Local Language is Gujarati. Pipaliyaraj Village Total population is 4218 and number of houses are 775. Female Population is 50.8%. Village literacy rate is 67.5% and the Female Literacy rate is 29.4%.

Nearby Villages of Pipaliyaraj :-

- Kalavadi Navi (4 KM)
- Valasan(5 KM)
- Panch Dwarka (6 KM)
- KotdaNayani(6 KM)
- Tithava(7 KM)
- Wankaner
- Rajkot
- Morvi

4.1.4) Objectives of the study :

- To build the local capacity and strengthen the institutional development and sustainability of small enterprises and local institutions in the areas include water management, sustainable land use, information and technology, agricultural and rural development, women's development, teaching advocacy skills, engaging in decision-making process and strengthen civil society.
- Promote integrated development of rural areas with provision of quality housing, better connectivity, employment opportunities and supporting physical and social infrastructure.
- Electricity connections like street lighting that is energy efficient and eco-friendly
- To create better lifestyle for village without changing its core soul
- To undertake rural developmental projects like setting up village based banks, providing loans to improve agricultural activity, women's savings and micro-credit schemes, women's health programs, organic farming, and campaigning for land reforms.
- To provide financial aid to children and families in need as well as relief, rehabilitation and development to underprivileged communities in times of natural calamities and common. To provide education to children that leads to get dignified employment
- Economy generation is the key pillars that the concept hinges on which should be introduced to village.
- Refurbishing of village lakes, water tanks and wells, construction of rain water harvesting structures for sustainable development
- To serve as a catalyst for lasting, positive change for low to moderate-income families/groups by providing practical, innovative development assistance, helping improve economic and livelihood conditions, infrastructure and the environment.

- To provide emergency food, clothing, medical supplies, equipment and care to suffering families, children and their rights in times of disasters.

4.1.5) Scope of the Study :

The subject matter or the scope of rural sociology is not narrow, as revealed by the definitions, particularly in countries where the vast majorities of the population live in rural areas. The subject matter of rural sociology has been changing from time to time. In earlier days of its development, i.e., during eighteenth and nineteenth centuries, sociologists and anthropologists studied the society of aboriginals and primitive tribes. In India, administrators-turned sociologists and anthropologists studied primitive people and indigenous institutions of the village, caste and culture. The initial subject matter of rural sociology was the study of life of rural as well as forest dwellers. In fact, rural sociology remained restricted to small villages or clusters of neighborhoods.

- India is agriculture country, about sixty percent of total population lives in village; they migrate to city for job and urban facility. This is useful to find the Actual requirement of village and how to overall development of village is possible in easy and practically way.
- Reduce migration and decrease poverty in to village due to improvement given below content by using and following village development plan:-
    - Micro, Small and Medium Scale Industries
    - Irrigation Development
    - Domestic Water Resource Development

- Power and Energy Utilization
- Educational Programs and Services
- Health Programs and Services

➢ In real sense, the idiom of development referred to the development of villages. The government policy, thus implemented, created the need for the study of village life. By the middle of the 1950s and end of 1960s came a flood of village studies.

4.1.6) Methodology Frame Work for development of your village :

❖ **Project roadmap : Method for development of village**

- **Part-I (Odd Semester) Includes:**
  - Literature Review
  - Visit of Ideal Village of Respective District
  - Data Collection- Techno economic survey
  - Data Presentation
  - Sustainable Design Planning Proposals (Rain water harvesting, Biogas plant, waste to energy models, eco sanitation, Renewable Energy sources Application & Other)
  - Repair & Maintenance of Existing Infrastructure
  - Facilities Suggestions and Recommendation
- **Part-II (Even Semester) Includes:**
  - Gap Analysis (Guidelines, Regulation and Literature will be given for comparison)
  - Design Proposals for Over all development of Village includes
    - Physical Infrastructure Facilities
    - Social Infrastructure Facilities
    - Socio Cultural Infrastructures Facilities

- Recommendation & Suggestions For Village Development
- Conclusion

4.1.7) Available Methodology for development of related to Civil:-

Pipaliaraj is one of the villages in Morbi District, The village is facing issues such as lack of infrastructure development of internal roads, residential houses, public toilets, pure drinking water. For understanding the actual situation of the village we have collected different data of number of population, school, bank, aanganvadi, post office, public toilet, APSC centre, etc....

- Rural development implies both the economic better of people as well as greater social transformation. The basic objective of all rural development program has been the welfare of the millions. The Ministry of Rural Development places importance now on health, education, drinking water, housing and road so that the quality of life in rural areas improves and the fruit of economic reform are shared by all sections of the society

Census Parameter	Census Data
Total Population	4218
Total No of Houses	775
Female Population %	50.8 % (2143)
Total Literacy rate %	67.5 % (2849)
Female Literacy rate	29.4 % (1241)
Scheduled Tribes Population %	0.0 % (0)
Scheduled Caste Population %	3.1 % (130)
Working Population %	40.80%
Child(0 -6) Population by 2011	562
Girl Child(0 -6) Population % by 2011	51.8 % (291)

(TABLE-13)

❖ **Methodology:**

- Design objectives
- Technical approach
- Proposed sustainability features
- Identify customer needs
- Identify local/state/federal engineering and construction

4.2)Pipaliyaraj Village Study Area Profile :

The village is facing issues such as lack of infrastructure development of internal roads, residential houses, public toilets, pure drinking water. For understanding the actual situation of the village we have collected different data of number of population, school, bank, aanganvadi, post office, public toilet, APSC centre, etc..

- In Pipaliyaraj village population of children with age 0-6 is 562 which makes up 13.32 % of total population of village. Average Sex Ratio of Pipaliyaraj village is 1033 which is higher than Gujarat state average of 919. Child Sex Ratio for the Pipaliyaraj as per census is 1074, higher than Gujarat average of 890.
- Pipaliyaraj village has lower literacy rate compared to Gujarat. In 2011, literacy rate of Pipaliyaraj village was 77.93 % compared to 78.03 % of Gujarat. In Pipaliyaraj Male literacy stands at 89.14 % while female literacy rate was 67.01 %.

4.2.1) Study Area Location with brief History land use details :

- Pipaliyaraj is a Village in Wankaner Taluka in Rajkot District of Gujarat State, India. It is located 34 KM towards North from District head quarters Rajkot. 17 KM from . 234 KM from State capital Gandhinagar
- Pipaliyaraj Pin code is 363621 and postal head office is Wankaner.
- Kalavadi Navi (4 KM) , Valasan (5 KM) , Panch Dwarka (6 KM) , KotdaNayani (6 KM) , Tithava (7 KM) are the nearby Villages to Pipaliyaraj. Pipaliyaraj is surrounded by Tankara Taluka towards west , Rajkot Taluka towards South , Paddhari Taluka towards west , Morvi Taluka towards North .

- Wankaner , Rajkot , Morvi , Thangadh are the near by Cities to Pipaliyaraj
- Pipaliyaraj Local Language is Gujarati. Pipaliyaraj Village Total population is 4218 and number of houses are 775. Female Population is 50.8%. Village literacy rate is 67.5% and the Female Literacy rate is 29.4%.
- As per constitution of India and PanchyatiRaaj Act, Pipaliyaraj village is administrated by Sarpanch (Head of Village) who is elected representative of village. Our website, don't have information about schools and hospital in Pipaliyaraj village.

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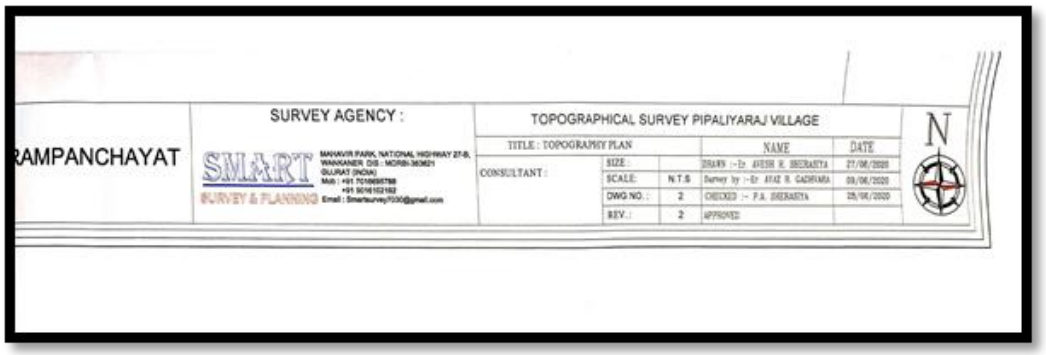
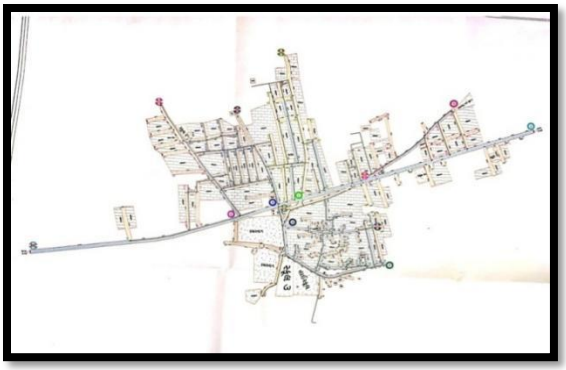
Literacy	77.93%	89.14%	67.01%
Total Workers	1,720	1,240	480
Main Worker	1,647	-	-
Marginal Worker	73	15	58

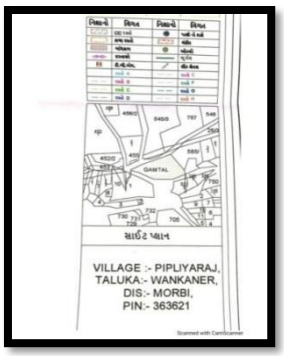
Table:-14

- Schedule Caste (SC) constitutes 3.08 % of total population in Pipaliyaraj village. The village Pipaliyaraj currently doesn't have any Schedule Tribe (ST) population..

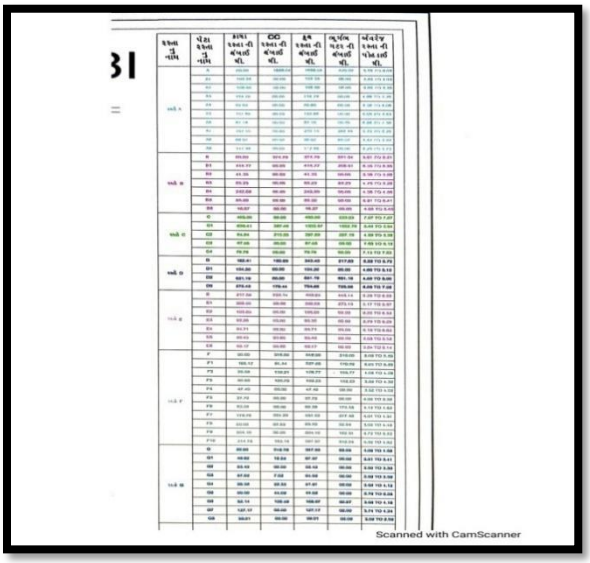
4.2.2) Base Location map, Land Map, Gram Tal Map :

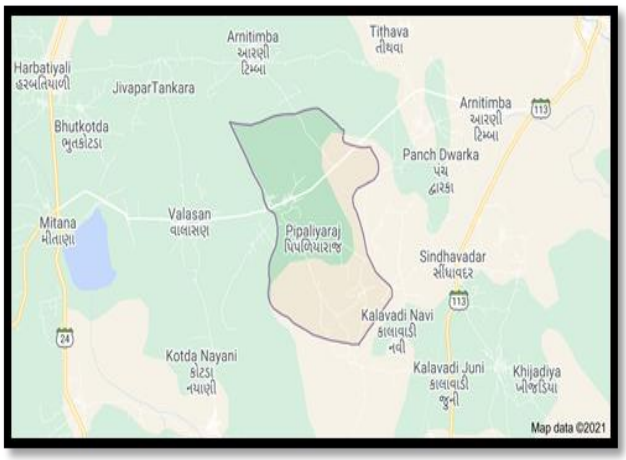


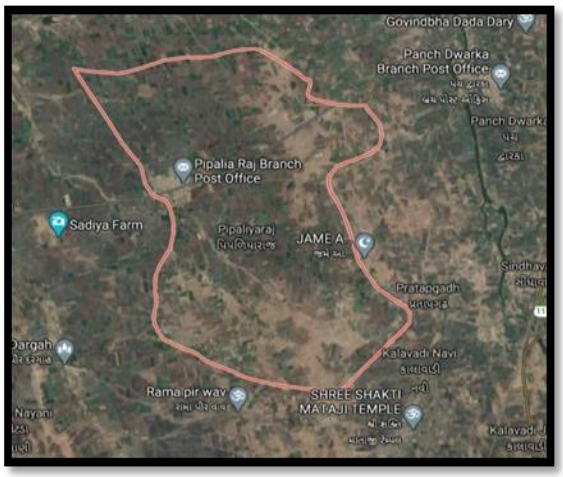




(FIG-15)







(FIG-16) (FIG-17)

4.2.3 Physical & Demographical Growth :

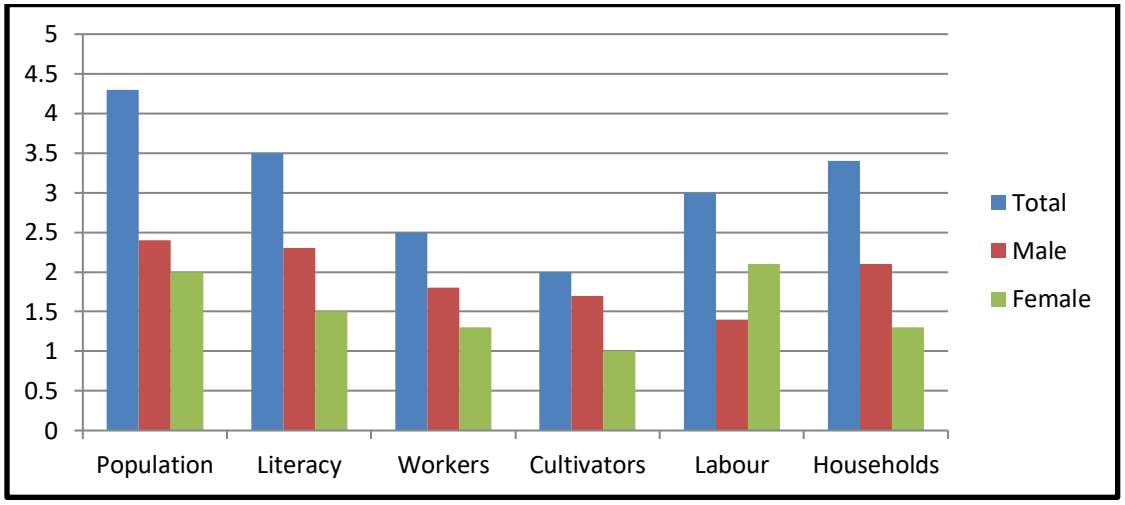


Fig 18

4.2.4) Economic generation profile / Banks :

- The major sources of income are:
  - As Shopkeepers
  - Farming
  - As workers in industries
  - Cotton factory
- Income: The average income of the village dwellers is about ₹9000 to ₹ 28000 per month.
- Post Office: There is one Post Office in Pipaliyaraj village.

4.2.5) Actual Problem faced by Villagers and smart solution :

The village is facing issues such as lack of infrastructure development of internal roads, residential houses, public toilets, pure drinking water. For understanding the actual situation of the village we have collected

different data of number of population, school, bank, aanganvadi, post office, public toilet, APSC centre, etc..

- **During the conversation with the people of PIPALIYARAJ village, we understood their problems and issues:**
  - There is no ATM in the village
  - There is no community hall available in the village
  - There is no Bio-gas Plant available in the village
  - here is no Bus Stand available in the village
  - here is no Librery available in the village
- **Apart from this the villagers have no problem and they are satisfied with the performance of the sarpanch Talati of PIPALIYARAJ village.**

4.2.6) Design planning:-

After going through the concepts of Smart Village and Ideal Village, we decided to implement the following Design in Pipaliyaraj village.

- Biogas Plant
- Higher Secondary School
- Supermarket
- Bus Stop stand
- Shopping Mall
- Gaushala
- Community Hall
- E-Library

4.2.7) Social scenario -Preservation of traditions, Festivals, Cuisine :

❖ **Gujarat Social Scenario:-**

- **CUISINE:-**

The food is usually Served on a metal tray called thali and 4-5 small bowls are placed on it. It is also known as bread, lentils or curry, vegetables and rice. Mostly Gujarati food is vegetarian as the state is dominated by Jains and people Vaishnava. Most of their main diet consists of wheat and millet varieties like sorghum and millet. No meals Gujarati will miss the bread with various vegetable curries and dishes. Gujaratis are known for them Sweet tongue and each meal will come with a sweet dish. Sugar also varies occasionally By round. In his bag are some other common foods that Gujaratis need, dal, Boiled vegetables, homemade pickles, buttermilk and salad. Wagar is a food of Gujarat Spices, which are refined in hot oil and then added to lentils. Gujaratis generally use a lot of salt, sugar. Tomatoes and lemons in their meals.

- **TRADITIONS AND CUSTOMS:-**

Western jewelry is a traditional jewelry The people of Gujarat where the metal used to make this ornament is silver instead of gold. Data on first technical and civilized buildings, While their traditional houses and wooden huts were also there. This in the most traditional way Built houses are beautiful and intricately designed every building of the house but the culture of every country “Platforms” are designed about bird food. This Gujarati women wear a set of keys around their waists and hold a ring as part of their tradition Usually made of silver. These include some other jewelry that is worn by women as part of their

customs Mangalsutra, earrings, necklaces, rings and bracelets. Gujaratis have different deities and many beliefs Goddesses. The cow is considered as mother god or "cow-mother" and Gujaratis are very confident Them. Some of the ceremonies that the people of Gujarat should celebrate are births, Thread ceremony, marriage and death. All these rituals include rituals and worship Brahmins. As part of the customs and traditions of Gujaratis, they celebrate festivals like Navratri and Diwali.

- **CULTURE:-**

The culture of the people does not end with a particular pay generation, but instead of the elders The community sees that future generations also study it which leads automatically Wisdom and appreciation of cultural traditions and lifestyles. Gujaratis are known for their diverse cultural heritage and rich traditions. That one A vibrant mix of Hinduism, Islam, Jainism and Buddhism and a mix of different cultures Arts, beliefs, customs, traditions, institutions, research, language, technology and so on like Gujarat Values. The culture of Gujaratis is not only prevalent in Gujarat, but it is widespread In different parts of the world and now known as international culture. Not much there The people of Gujarat are shocked by the culture and so it makes people very brave and courageous. Energy release to meet the various challenges posed by the world view.

4.3). Data Collection PIPALIYARAJ village (Photograph/Graphs/Charts/Table) :

4.3.1 Describe Methods for data collection :

- The main methods for data collection are :

- Observations - Field trips
- Questionary Survey
- Individual interviews.
- Focus groups

❖ **Observations - Field trips:-**

- Permission to study situation dynamics, frequency calculations of target behavior.
- Videography can be used as a source to provide additional information about a particular group.

❖ **QuestionarySurvey:-**

- The results are usually easy to analyze.
- Forms other than these surveys have been prepared which are distributed to the respondents for their recordings Opinions, data so that can be analyzed.
- By liking numerical values that can be analyzed by numerical methods Type scales

❖ **Individual interviews:-**

- The interview can be conducted in person or by telephone.
- Visits can be made formally or informally.
- Questions should be focused, clarified and open final answers should be encouraged.
- They should be qualitative in nature.

❖ **Focus groups:-**

- A group interview with an individual who has something in common.

- Collects information about combined opinions.
- Answers are often coded into categories and analyzed.

4.3.2 Primary details of survey :

Pipaliyaraj is a Village in Wankaner Taluka in Rajkot District of Gujarat State, India. It is located 34 KM towards North from District head quarters Rajkot. 17 KM from . 234 KM from State capital GandhinagarPipaliyaraj Pin code is 363621 and postal head office is Wankaner .Kalavadi Navi (4 KM) , Valasan (5 KM) , Panch Dwarka (6 KM) , KotdaNayani (6 KM) , Tithava (7 KM) are the nearby Villages to Pipaliyaraj. Pipaliyaraj is surrounded by Tankara Taluka towards west , Rajkot Taluka towards South , Paddhari Taluka towards west , Morvi Taluka towards North. Wankaner , Rajkot , Morvi , Thangadh are the near by Cities to Pipaliyaraj. Pipaliyaraj Local Language is Gujarati. Pipaliyaraj Village Total population is 4218 and number of houses are 775. Female Population is 50.8%. Village literacy rate is 67.5% and the Female Literacy rate is 29.4%

4.3.3) Average size of the House - Geo-Tagging of House :

In Pipaliyaraj : Average size of the house in the village is 6 X 11m

Geo-Tagging:-The process of tagging infrastructure with geographic information such as latitude Longitude, distance, location name, etc. are connected to the GPS that is monitored by the computer Internet network. It can be used to find important places like labs, hospitals, milk centers, etc. Geo-tagging has not been implemented in Pipaliyaraj village.

4.3.4) No of Human being in One House :

According to the 2011 census, the total population of Pipaliyaraj is 4218. The number of people varies Every household has nuclear families as well as joint families, but there is no average human number There are 8 in a house.

4.3.5) Material available locally in the village and Material Out Sourced by the villagers:

Ingredients like milk, other groceries, wheat, paddy, cotton and other agricultural grains They are used locally as they are readily available locally.

4.3.6) Geographical Detail:-

Area	**28.4 square kilometer.**
Population	**4218**
Households	**775**
Nearest Town	**Thangadh**
Humidity	**29%**
Temperature	**35.3 °C to 37.5 °C**
Wind	**4.12 mt/sec towards W**
Elevation / Altitude	**80 meters. Above Seal level**
Longitude	**22.55248379**
Latitude	**70.84341422**
Time zone	**IST (UTC+5:30)**

Table 15

4.3.7) Demographical Detail - Cast Wise Population Details / Which ID proof using by villagers :

Particulars	Total	Male	Female
Population	4,218	2,075	2,143
Child (0-6)	562	271	291
Schedule Caste	130	59	71
Schedule Tribe	0	0	0
Literacy	77.93%	89.14%	67.01%
Total Workers	1,720	1,240	480
Main Worker	1,647	-	-
Marginal Worker	73	15	58

Table 16

4.3.8) Occupational Detail - Occupation wise Details / Majority business :

The main occupations are: farming; Animal husbandry; Service; Labor; Etc. Pipaliyaraj is approx. 1139 The population is engaged in major or marginal work. Of which 772 males Is employed and 367 women are employed.

4.3.9) Agricultural Details / Organic Farming / Fishery :

Most of the population of Pipaliyaraj village is occupied in agriculture. Main crop The village is: wheat, cotton, rice, etc. There is no farmer or villager who uses organic farming.

4.3.10 Physical Infrastructure FacilitiesManufacturing HUB / Ware Houses :

Pipaliaraj is one of the villages in Morbi District, The village is facing issues such as lack of infrastructure development of internal roads, residential houses, public toilets, pure drinking water. For understanding the actual situation of the village we have collected different data of number of population, school, bank, aanganvadi, post office, public toilet, APSC centre, etc..

- **Bus Stops near Pipaliyaraj,Wankaner:-**
  - KotadaNayani Bus Stop
  - S.T. Bus stand

- **Govt Health Centers near Pipaliyaraj:-**
  - Jivapar(Bamanbor) , Subcenter -Jivapar(Bamanbor)
  - Bamanbor ,SubCentre –Bamanbor
  - Navagam(Bamanbor) , Subcenter-Navagam

- **Cinema Theaters in Pipaliyaraj,Wankaner:-**
  - Janjar Talkies

- **Temples in Pipaliyaraj,Wankaner:-**
  - Hanuman Temple
  - SHREE SHAKTI MATAJI TEMPLE
  - Solanki PariwarNaaBahucharMaa No Madh
  - Solanki PariwarBahuchar Mata No Madh

- **Mosques in Pipaliyaraj,Wankaner:-**
  - Makka Masjid
  - Madina Masjid

4.4) Infrastructure Details (With Exiting Village Photograph) :

4.4.1) Drinking Water / Water Management Facilities :(Fig-19)

- The water tank ,RO Water plant and 3 sumps are sufficient for all types of water requirements in the village. As per the present condition of water tank the village officials have decided to construct a new water tank of total 2,00,000 lit capacity
- Contaminated water and poor sanitation are linked to transmission of diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid, and polio. Absent, inadequate, or inappropriately managed water and sanitation services expose individuals to preventable health risks. This is particularly the case in health care facilities where both patients and staff are placed at additional risk of infection and disease when water, sanitation, and hygiene services are lacking. Globally, 15% of patients develop an infection during a hospital stay, with the proportion much greater in low-income countries.
- When water comes from improved and more accessible sources, people spend less time and effort physically collecting it, meaning they can be productive in other ways. This can also result in greater personal safety by reducing the need to make long or risky journeys to collect water. Better water sources also mean less expenditure on health, as people are less likely to fall ill and incur medical costs, and are better able to remain economically productive.
- With children particularly at risk from water-related diseases, access to improved sources of water can result in better health, and therefore better school attendance, with positive longer-term consequences for their lives.

4.4.2) Transportation & Road Network : (Fig-20)

- The road network consists of a system of interconnected paved carriageways which are designed to carry buses, cars and goods vehicles; the road network generally forms the most basic level of transport infrastructure within urban areas, and will link with all other areas, both within and beyond the boundaries of the urban area.
- The road network facilitates the movement of people allowing for social interaction. A high quality road network is essential not only for connecting key urban centres but for improving connectivity of more isolated local communities for whom many public transport options are limited or not available. Roads connect remote communities with the areas where employment options are more concentrated and services and facilities more readily available.
- Sindhawadar Rail Way Station ,Kanakot Rail Way Station are the very nearby railway stations to Pipaliyaraj.

4.4.3) Housing condition :- (Fig-21)

- While housing conditions are known to influence health, little has been done to examine the scale of that influence. Estimating the magnitude of housing-related health impacts is the subject of the WHO report "Environmental burden of disease associated with inadequate housing" WHO (2011a).
- There is a consistent body of evidence on the several ways that inadequate housing adversely affects the health of occupiers. WHO recognizes that housing comprises four interrelated dimensions – the physical structure of the house (or dwelling), the home (psychosocial, economic and cultural construction created by the household), the neighborhood infrastructure (physical conditions of the immediate housing environment) and the community (social environment, the population and the neighborhood services).
- Each of these four dimensions has the potential to have a direct or indirect impact on physical, social and mental health, and two or more of them combined can have an even larger impact.

- Large constructions like schools, panchayat buildings and most of the houses in Pipaliyaraj village There are pucca houses and some kucha houses. The rest of the houses are also made of cement and bricks With metal corrugated roof as shown in the figure. Some of the buildings outside the settlement area, Were observed as mud houses.

4.4.4) Social Infrastructure Facilities , Health , Education , Community Hall , Library :

In Pipaliyaraj village there are 2 anganwadi , 2 primary school , 5-6 temples , 1 Post office , 1 Panchayat building available**.**

(FIG-22 PHC)

(FIG-23 Pipaliyaraj School)

(FIG-24 Pipaliyaraj High School)

(FIG-25 school)

(FIG-26 Post Office)

(FIG-27 Gram Panchayat)

❖ Health Facilities:-

In the village no PHC, CHC, dispensary or any kind of private clinics are available in the village.

1. **Sub Centre :** Most peripheral contact point between Primary Health Care System & Community manned with one HW(F)/ANM & one HW(M)
2. **Primary Health Centre (PHC) :** A Referral Unit for 6 Sub Centres 4-6 bedded manned with a Medical Officer Incharge and 14 subordinate paramedical staff
3. **Community Health Centre (CHC) :** A 30 bedded Hospital/Referral Unit for 4 PHCs with Specialized services

- Sub Centres are assigned tasks relating to interpersonal communication in order to bring about behavioral change and provide services in relation to maternal and child health, family welfare, nutrition, immunization, diarrhoea control and control of communicable diseases programmes.
- Each Sub Centre is required to be manned by at least one auxiliary nurse midwife (ANM) / female health worker and one male health worker. Under National Rural Health Mission (NRHM), there is a provision for one additional second ANM on contract basis. One lady health visitor (LHV) is entrusted with the task of supervision of six Sub Centres. Government of India bears the salary of ANM and LHV while the salary of the Male Health Worker is borne by the State governments.

❖ Education Facilities:-

Pipaliyaraj village has 2 Anganwadi and 2 primary school. Primary School is managed by the government Employee. The school consists of

Grades from 1 to 10. The school is Co-educational and the school have an attached playground section.

- Gujarati is the medium of instructions in this school.
- The school has not a separate room for Head master/Teacher.
- The school has electric connection.
- The school is Government building. It has got 8-10 classrooms for instructional purposes.

❖ Community Hall:-

There is no community hall in Pipliyaraj village, but it is necessary in the village and during the conversation with the villagers they have suggested that there should be only one community hall in the village. As suggested we have proposed a community hall design in Part 1.

❖ Public Library:-

There is no Librery in Pipliyaraj village, but it is necessary in the village and during the conversation with the villagers they have suggested that there should be only one E-Library in the village. As suggested we have proposed a E-Librery design in Part 1.

4.4.5) Existing Condition of Public Buildings & Maintenance of existing Public Infrastructures :-

In the Pipaliyaraj village as per the interaction with the villagers the maintenance is required in the village pond. Water

tank is present but is not in good condition and village officials have said that new water tank will be constructed in place of current water tank with higher capacity. Panchayat building, Anganwadi, Public library and primary school are also in good working condition. So the estimate of proper maintenance is required. Dairy is operated under a good pukka condition building.

- Public Infrastructure assets are a foundation of a country's economic development. Maintaining such assets in good condition is critical. Infrastructure wears out with time and use. Neglected infrastructure will result in degradation of the assets with negative effects on the economy, leading to greater costs of reconstruction over time. The goal of maintenance is to preserve an asset, not to upgrade it. It includes minor repairs (routine maintenance) and improvements (capital maintenance) to eliminate the cause of defects and to avoid excessive repetition of routine maintenance efforts.
- To make reliable estimates of maintenance requirements, governments need to put in place a comprehensive register of their fixed assets, such as buildings, roads and power lines. Unfortunately, infrastructure asset registers are either rarely maintained by countries or do not exist. Maintaining an asset register, backed by a condition report on each asset, is of vital importance, to reduce maintenance costs and increase the life span and quality of the infrastructure. The register provides a country with a record of all previous transactions pertaining to the asset, which include maintenance, modifications, and upgrades as well as performance information.

4.4.6 Technology Mobile/ WIFI / Internet Usage Details :

Villagers in almost all households are using mobile phones and they are also using the internet Convenience for personal use. According to the data collected, there are no private WiFi users in the village.

- For any rural system, cost is the primary consideration in every step of the design. Next to the choice of technology (WiFi), the context in which cost optimization is significant is in network planning. We elaborate on this issue below.
- A long-distance WiFi link requires line-of-sight to get sufficient signal strength for reception; otherwise the attenuation in 2.4 GHz or 5 GHz is too high beyond a few hundred metres. This in turn implies that network deployment involves significant infrastructure in terms of antenna towers. The approximate cost of antenna towers/masts is given in Table 1. In comparison, note that WiFi radio cost can be about $50 or less. Tall towers are one or two orders of magnitude costlier than the radio equipment!

4.4.7 Sports Activity as Gram Panchayat :

There are Many sports activities are being done by gram panchayat. The primary school has some sports equipment and tools & also children and students are using these facilities.

- The idea is to encourage the rural youth to take up sports, identify talents among them and groom them into players,"
- The Minister said that the State government is keen on developing sports in the rural areas so that youngsters hailing from the villages do not feel at a disadvantage when compared to the city youth. "The scheme was initiated in 2013-14 by the former Chief Minister Jayalalithaa and she allocated ₹6.5 crore with which every village was given ₹20,000 for improvement of sports infrastructure and awareness. We have

increased the amount for every village in the hope to take it to the next level,"

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

The Pipaliyaraj village has panchayat building and it is in good condition. The separate Post office building is there in village. Public Library is not available in the village. Dairy building is available in the village. A small playground outside the primary school is present. The village has no public garden, separate play ground or any other recreational facilities. There is one village pond but it is not in good condition and its water is also not drinkable.

4.4.9 Other Facilities (e.g. like foot path development-Smart toilets-Coin operated entry, selfcleansing, waterless, public building) :

There are no facilities like smart toilet-coin operated entry, footpath development, selfcleansing, waterless public building, etc. in the Pipaliyaraj village. There are some houses in which solar system is there like solar panel, solar water heater and solar cooker. And according to current population the village has a smart thing which is RO water plant.

The village has no public garden, separate play ground or any other recreational facilities.

There is one village pond but it is not in good condition and its water is also not drinkable.

Chapter 5:-Technical Options with Case Studies

5.1) Concept (Civil):-

5.1.1) Advance Sustainable construction techniques / Practices and Quantity Surveying:-

- Sustainable construction is the practice of creating a healthy environment that's based on ecological principles. According to Professor Charles J. Kibert, sustainable construction focuses on six principles: "conserve, reuse, recycle/renew, protect nature, create non-toxic and high quality."

- **Methods:-**Sustainable construction isn't just about using the newest materials; it's also about using building methods that enhance renewable and sustainable efforts. Some of these methods include:
- Cutting materials precisely in order to reduce waste
- Controlling waste management, such as separating and recycling waste
- Constructing green buildings
- Adaptive reuse projects that transform old buildings
- Managing construction sites to improve the environment
- Conserving Energy

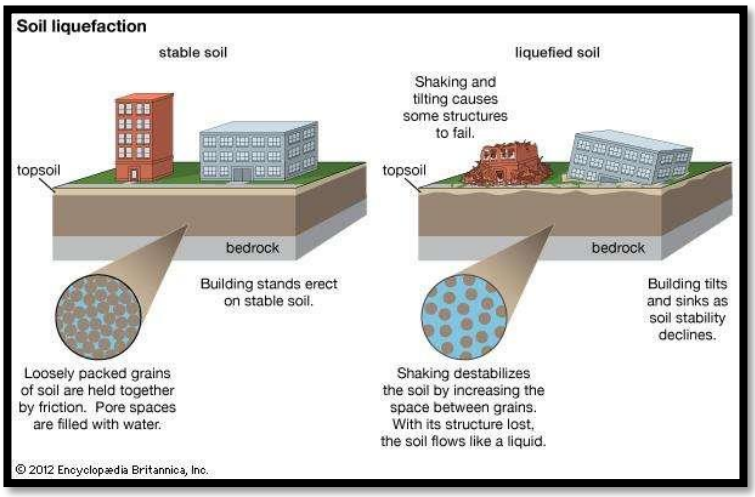
- **Importance of Sustainable Construction:-**
- Whether it's the price tag for the materials, the training that goes behind it, or resistance to adapting to new methods (why fix if it ain't broke as the old saying goes), there is some pushback on green construction.

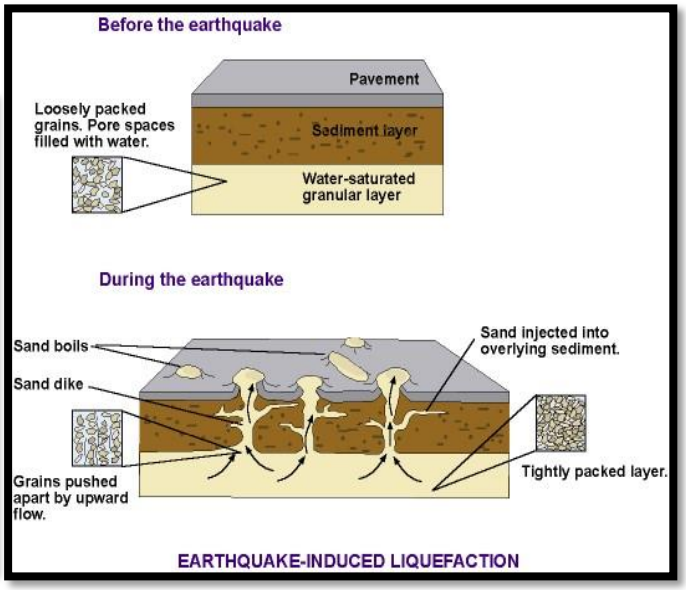
5.1.2) Soil Liquefaction:- A Phenomenon whereby a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress, usually earthquake shaking or other sudden change in stress condition, causing it to behave like a liquid" is called Soil Liquefaction.

There are two types of soil liquefaction.

1) Flow liquefaction

2) Cyclic Mobility





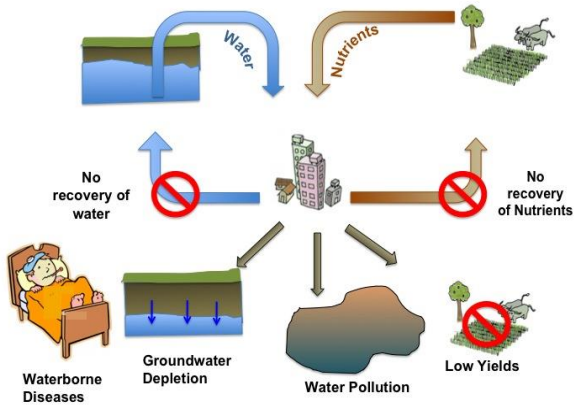
- **Methods to reduce damage due to soil Liquefaction:**
- By avoiding construction on saturated soils
- Liquefaction-proof structural system
- Improving Soil Conditions

- **Importance of Soil Liquefaction:-**
- After Liquefaction, the soil no longer behaves as an inactive grid of particles. The strength and stiffness of the liquefied soil are significantly decreased, often resulting in a variety of structural failures.
- It has no ability to take even its self-weight nor weight of structures above.

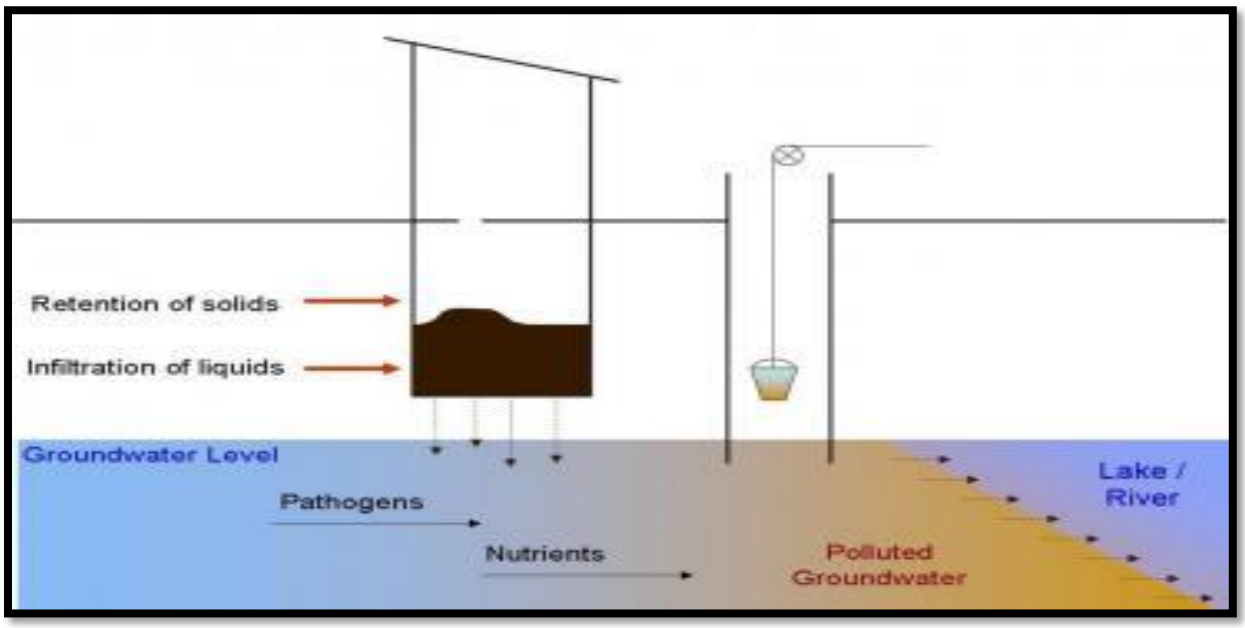
5.1.3) Sustainable Sanitation:- Sustainable sanitation is a sanitation system designed to meet certain criteria and to work well over the long-term. Sustainable sanitation systems consider the entire "sanitation value chain", from the experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment, and reuse or disposal.

Sustainability criteria

- Health
- Environment and natural resources
- Technology and operation
- Finance and economics
- Socio-cultural and institutional aspects



- **Problems with current approaches to sanitation:-**



- **Importance of Sustainable Sanitation:-**
- 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.

5.1.4) Transport Infrastructure / system:- Transport infrastructure is composed of the fixed installations of canals, waterways, airways, railways, roads, and terminals, as well as pipelines such as seaports, refueling depots, trucking terminals, warehouses, bus stations, railway station, and airports.

- Modes of transport include air, land (rail and road), water, cable, pipeline, and space. The field can be divided into infrastructure, vehicles, and operations. Transport enables trade between people, which is essential for the development of civilizations.
- **importance of Transport Infrastructure / system:-**

  Transport infrastructure is one of the most important factors for a country's progress. ... It has been proven by so many instances how transport infrastructure has added speed and efficiency to a country's progress. Good physical connectivity in the urban and rural areas is essential for economic growth.

  It has been proven by so many instances how transport infrastructure has added speed and efficiency to a country's progress.

  "Domestic transportation is a key factor for economic growth," agrees Amitabh Kant, CEO, Delhi Mumbai Industrial Corridor (DMIC), "Transportation issues and infrastructural delays affect a nation's progress and India needs much faster and efficient transportation systems."

  In India, there are equal number of challenges and opportunities. Rail experts believe that the rail transport systems are six times more energy efficient than road and four times more economical.

5.1.5) Vertical Farming:- 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 fewer 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.

- **Types of Vertical Farms:-**

Vertical farms come in different shapes and sizes, from simple two-level or wall-mounted systems to large warehouses several stories tall. But all vertical farms use one of three soil-free systems for providing nutrients to plants.

- Hydroponics
- Aeroponics
- Aquaponics
- Building-based vertical farms
- Shipping-container vertical farms

- **Importance of vertical farming:-**

Probably the biggest benefit of vertical farming is the fact that it helps produce more crops in general. As we already know, this mode of farming enables cultivars to produce crops consistently in a small area. Interestingly, it also boosts the amount of produce.

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

The durability of concrete structures is influenced by various factors, for example, ecological presentation, electrochemical responses, mechanical stacking, affect harm and others. Of all of these, consumption of the fortification is likely the primary driver for the disintegration of steel strengthen cement (RC) structures. Consumption administration is ending up progressively important because of the developing number of maturing foundation resources (e.g. spans, burrows and so on.) and the expanded prerequisite for imprompt upkeep with a specific end goal to keep these structures operational all through their outline life (and usually, past).

The primary RC repair, restoration and recovery approaches by and large utilized can be extensively arranged under

a) ordinary

b) surface medications

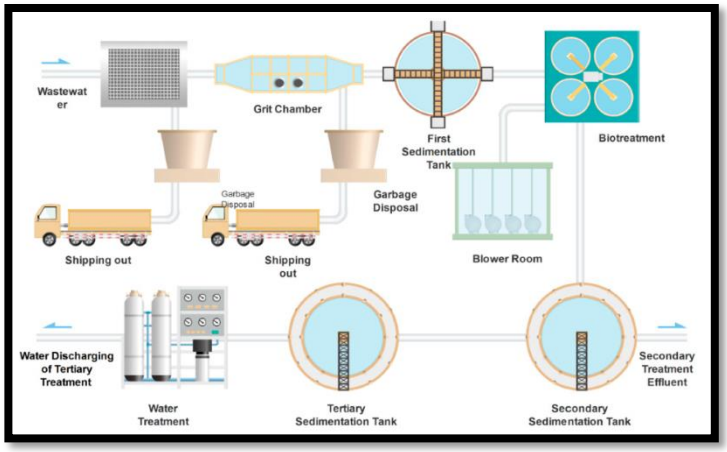
c) electrochemical medicines

d) outline arrangements.

Importance:- Corrosion Mechanism, Prevention & Repair Measures of RCC Structure Though concrete is quite strong mechanically, it is highly susceptible to chemical attack and thus structure gets damaged and even fail unless some preventive measures are adopted to counteract this and thereby increasing the durability of structure.

5.1.7) Sewage treatment plant:- Water from the mains, used by manufacturing, farming, houses (toilets, baths, showers, kitchens, sinks), hospitals, commercial and industrial sites, is reduced in quality as a result of the introduction of contaminating constituents. Organic wastes, suspended solids, bacteria, nitrates, and phosphates are pollutants that must be removed.

- To make wastewater acceptable for reuse or for returning to the environment, the concentration of contaminants must be reduced to a safe level, usually a standard set by the Environment Agency.
- Sewage can be treated close to where it is created (in septic tanks and their associated drainfields or sewage treatment plants), or collected and transported via a network of pipes and pump stations to a municipal treatment plant. The former system is gaining popularity for many new ECO towns, as 60% of the cost of mains sewerage is in the pipework to transport it to a central location and it is not sustainable. It is called 'Decentralisation' of sewage treatment systems.



- **The features of wastewater treatment systems are determined by:**
  - The nature of the municipal and industrial wastes that are conveyed to them by the sewers.
  - The amount of treatment required to keep the quality of the receiving streams and rivers.

❖ **Sewage treatment plant processes fall into two basic types:**

- Anaerobic Sewage Treatment
- Aerobic Sewage Treatment

conditions in rural areas are accomplished and that accessible and original perspectives are initiated through economic development. Environmental considerations are also regarded and incorporated during the development segment of programs of procedures to sustain rural areas. A large proportion of policies were targeted at proper land utilization in rural areas to encourage agro biodiversity and environmental measures in agriculture (Rural Development, n.d.).

Attaining of services and infrastructure is normally accessible all over the country on a national scale, for example, provisions of drinking water supply, sewage treatment, mail, telecommunications, transportation, roads, infrastructure, machines, tools, equipment, food products and so forth. The eminences of these services, however, are different from one region to another. One area that requires improvement is sewage treatment where, for economic reasons, the numbers of distributed systems are increasing. The identification for national access to broadband services in the field of Information Technology and telecommunications is giving rise to new challenges. In addition, employment opportunities are not always adequately available in rural areas; various measures are required to be initiated to improve the situation in rural areas

5.2) Case Study-Solar Irrigation Pump:-

5.2.1) Introduction

With a changing climate, agriculture-based economies are seeking innovations that protect farmers and their livelihoods. Groundwater is the main source of irrigation across India. Pumping of groundwater is usually either done with electrified pumps using subsidised electricity, often leading to over-exploitation of groundwater, or through expensive and polluting diesel-powered pumps. These diesel pumps reduce farmers' profit margins and increase agriculture's carbon footprint.

In the village of Dhundi, in Gujarat, solar pumps for irrigation were introduced from 2015 to 2016, with assistance from the International Water Management Institute (IWMI) and the Climate Change, Agriculture and Food Security (CCAFS) programme of the Consultative Group for International Agricultural Research (CGIAR) and Tata Trusts. The solar energy was used to generate electricity to pump water for irrigation, and to sell to the grid.

Through selling the excess electricity, farmers owning the pumps have earned 'climate-smart' income, and have been incentivised to use groundwater and energy more sustainably. Farmers using the water for irrigation have also benefited, as they are able to buy water at a low price of 250 Indian rupees (INR) ($3.3 as at 12 May, 2020) per bigha (0,4 acres), as opposed to the INR 500 ($6.6) charged for the same area by diesel pump owners.1 The pilot also reduces greenhouse gas emissions by replacing diesel with solar pumps, contributing to climate change mitigation efforts

(FIG-28 Dhundi, Gujrat. Solar irrigation Pump)

5.2.2) Approach:-

To discourage the overuse of groundwater, the state government gave farmers that owned pumps incentives to use solar energy to pump only the required amount of water for irrigation and thereafter generate electricity to sell back to the grid. In 2015, six farmers came together to

form a farmer-led cooperative, Solar Pump Irrigators' Cooperatives Enterprise (SPICE), to capitalise on the opportunity.

The farmers contributed INR 5,000 ($66) per kilowatt peak (kWp - the peak power of a solar PV system or panel) for the pumps, totalling INR 8.4 lakhs ($11,000). The remaining INR 60.8 lakhs ($80,000) was sourced from a research grant from IWMI and CGIAR.

The pumps formed a microgrid that was connected to a transmission line by the Madhya Gujarat Vij Company Limited (MGVCL), a local power utility. SPICE farmers gave up their electricity subsidy and accepted a 25-year power purchase agreement with MGVCL to sell electricity generated at INR 4.63 ($0.06) per kilowatt hour (kWh). In addition, IWMI offered INR 2.50 ($0.03) per kWh as a bonus to the farmers, taking the effective tariff to INR 7.13 ($0.09) per kWh. With a 25-year power purchase agreement, the solar cooperative in Dhundi faces no price risk.

Within six months of the microgrid operating successfully, three more farmers joined the cooperative.

5.2.3) Results:-

In the 12 months between June 2017 and May 2018, the nine SPICE farmers generated 103,161 kWh of electricity, of which only 26 percent was used for pumping groundwater for irrigation. The remaining electricity was sold to MGVCL. The farmers earned INR 5.26 lakhs ($6,935) through the sale of electricity alone. Moreover, it is estimated MGVCL can save close to INR 8 lakh ($10,547) per annum on the subsidy costs of providing electricity for the 25-year period of the power purchase agreement, while generating renewable electricity. This makes it a win-win for both the power utility as well as farmers.

5.2.4) Success factors:-

The project is supported by both water sellers and buyers in the irrigation market, and is showing promise as a climate change mitigation strategy in agriculture:

- **Water sellers** – The incomes of the SPICE farmers increased by 45 percent from the 2015-2016 to the 2017– 2018 period, with nearly half of their farm income coming from energy and irrigation sales.
- **Water buyers** – Without the solar-pumps, 120 water buyers would have had to spend INR 5.4 lakh ($7,119) more for the same amount of water, had they purchased water from diesel pump owners.
- **Climate change mitigation** – The solar pumps were estimated to have saved close to 40,000 kilograms of carbon dioxide emissions by 2018.

The project would not have been a success without the cooperation of MGVCL agreeing to experiment with the new model and buy back electricity for 25 years. Farmers also took decisions independently without the interference of the organisations involved, ensuring the sustainable growth of the SPICE Cooperative. The cooperative has also made the sale of electricity more efficient. Each farmer does not sign a power purchase agreement with the power utility; rather, the cooperative can sell electricity back to the grid on behalf of all farmer members. The Dhundi example shows how encouraging community ownership and providing financial support in the form of grants and subsidies can promote clean energy, provide farmers with an additional ‘climate-proofed’ income source and encourage a sustainable and buyer-friendly irrigation market.

Chapter 6:-Swachh Bharat Abhiyan (Clean India)

"A clean India would be the best tribute India could pay to Mahatma Gandhi on his 150 birth anniversary in 2019," said Shri Narendra Modi as he launched the Swachh Bharat Mission at Rajpath in New Delhi. On 2nd October 2014, Swachh Bharat Mission was launched throughout length and breadth of the country as a national movement.

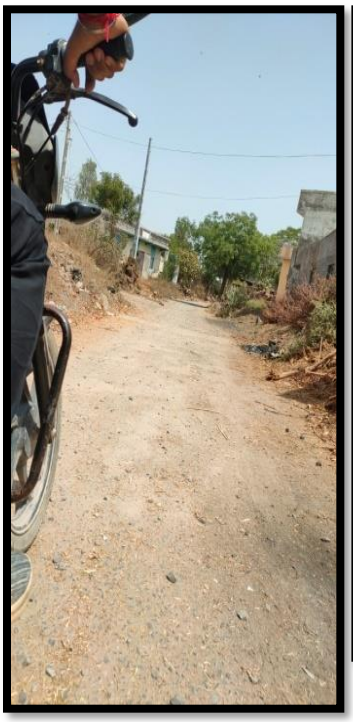
- The Prime Minister has helped spread the message of Swachh Bharat by urging people through his words & action. He carried out a cleanliness drive in Varanasi as well. He wielded a spade near River Ganga at AssiGhat in Varanasi under the Clean India Mission. He was joined by a large group of local people who cooperated in the Swachhta Abhiyan. Understanding the significance of sanitation, Prime Minister, Shri Narendra Modi has simultaneously addressed the health problems that Indians families have to deal with due to lack of proper toilets in their homes.
- While leading the mass movement for cleanliness, the Prime Minister exhorted people to fulfil Mahatma Gandhi's dream of a clean and hygienic India. Shri Narendra Modi himself initiated the cleanliness drive at Mandir Marg Police Station. Picking up the broom to clean the dirt, making Swachh Bharat Abhiyan a mass movement across the nation, the Prime Minister said people should neither litter, nor let others litter. He gave the mantra of 'Na gandagikarenge, Na karnedenge.' Shri Narendra Modi also invited nine people to join the cleanliness drive and requested each of them to draw nine more into the initiative.
- People from different sections of the society have come forward and joined this mass movement of cleanliness. From government officials to jawans, bollywood actors to the sportspersons,

industrialists to spiritual leaders, all have lined up for the noble

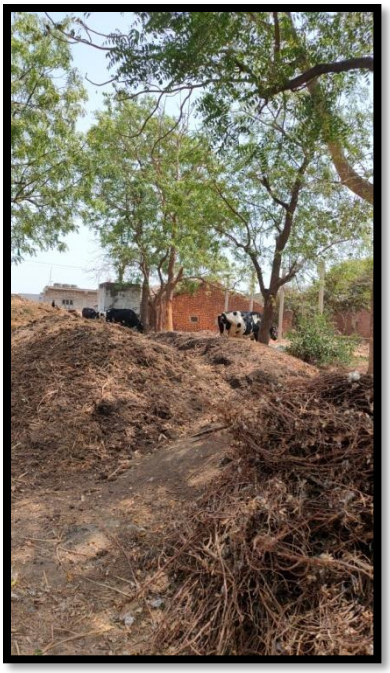
work. Millions of people across the country have been day after day joining the cleanliness initiatives of the government departments, NGOs and local community centres to make India clean. Organising frequent cleanliness campaigns to spreading awareness about hygiene through plays and music is also being widely carried out across the nation.

6.1)Swachhta needed in Pipaliyaraj village -Existing Situation with photograph :

We have conducted a survey on the current condition of the village regarding sanitation. There are people Maintaining the cleanliness of the village but also some streets are not clean because there are



animals And their waste, mud, etc., the village lake needs proper maintenance. Apart from this there There are clean streets, main thoroughfares and access roads.



6.2) Guidelines - Implementation Pipaliyaraj village with Photograph :

According to Talati, Sarpanch and villagers, people are regularly cleaning the area near them Collect that garbage and dispose of it outside the village and burn it. There is waste collection on a daily basis In the village of Pipaliyaraj.

6.3 Activities Done by Students for Pipaliyaraj village with Photograph :

First we took permission from the Talati and Sarpanch of the village to conduct a hygiene awareness camp And then we did a hygiene awareness activity in the village and we did a task Interact with the villagers and make them aware of the importance of hygiene in our lives and tell them To keep the village and infrastructural facilities clean and safe.

- We have instructed them not to dump garbage in the village streets and dispose of it at the right place. So we have also proposed a design of Solid Waste Management as a Part 2 design in Pipaliyaraj Village. We have also cleaned the village streets.

FIG:-30

Chapter-7:-Village condition due to Covid-19

The nation-wide lockdown imposed in India from March 25 to May 31, 2020 following the breakout of the Covid-19 pandemic affected rural India in diverse ways. This was only to be expected given the great variation in production systems and socio-economic conditions in villages across agro-ecological zones.

- The villages chosen in the Survey were already part of the FAS database, having been extensively surveyed in the past. This gave us the opportunity to compare the "before" and "after" lockdown situation in each village. The two villages from Kerala, chosen outside of **PARI** study villages, were surveyed in 2018-19. We could therefore check with the prior studies to obtain a pre-lockdown scenario of economic activities in these villages.
- The villages chosen under the rapid assessment survey – hereafter referred to as the survey – represent diverse agro-ecological regions of the country and characterise different agricultural production systems, agrarian relations and social composition. We have broadly grouped the villages into irrigated and rainfed or dry. Such a distinction is useful as there are many similarities to be found in the nature of production, particularly agriculture, in the irrigated and dry villages.
- 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 healthcare. 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.

- The stigmatisation of those infected or suspected to have COVID-19 is likely to result in unreported cases. And, indeed, some reports suggest that this is taking place. This means the situation can only get worse for COVID-19 victims and is undermining efforts to mitigate the pandemic.

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

- During the conversation with Talati, he told us that there was a quarantine place and a home quarantine facility. Implemented during lockdown. Sarpanch and villagers, according to Talati; In the village of PipaliyarajThe sanitization process was carried out during the lockdown period when the first case of Covid 19 occurred Village.

Chapter-8:-Sustainable Design Planning Proposal (Prototype Design) - Part- I(Scenario / Existing Situation / Proposed Design in Auto cad / Recapitulation Sheet / Measurement Sheet / Abstract Sheet / Sustainability of Proposal / Any other software):

8.1) Design Proposals:-

➢ **Social Design : Community Hall**

- community halls are public locations where members of a community tend to gather for group activities, social support, public information, and other purposes. They may sometimes be open for the whole community or for a specialized group within the greater community. Community centres can be religious in nature, such as Christian, Islamic, or Jewish community centres, or can be secular, such as youth clubs.
- Around the world (and sometimes within single countries) there appear to be four common ways in which the operation of the kind of community centre are owned and organised. In the following description, "Government" may refer to the ordinary secular government or to a dominant religious organisation such as the Roman Catholic Church; and it may refer to the central, national, or international branch of a government/church or to the local subdivision of it. Community centres look different depending what area of the city they are in.

➢ **Smart Village Design : E-Library:-**

- It's an electronic or online library where one can have access to books,journals,novels,articles,or any other information over net.

- Either general reader or a research scholar may have access to a number of e-libraries sitting at home itself.

➢ **Sustainable Design : BANK & ATM:-**

- An automated teller machine (**ATM**) is an electronic banking outlet that allows customers to complete basic transactions without the aid of a branch representative or teller. Anyone with a credit card or debit card can access cash at most ATMs.
- A bank is a financial institution which is involved in borrowing and lending money. Banks take customer deposits in **return** for paying customers an annual **interest** payment. The bank then uses the majority of these deposits to lend to other customers for a variety of loans.
- The difference between the two interest rates is effectively the profit margin for banks. Banks play an important role in the economy for offering a service for people wishing to save. Banks also play an important role in offering finance to businesses who wish to invest and expand.
- These loans and business investment are important for enabling economic growth.

➢ **RECREATION DESIGN: BIO-GAS PLANT:-**

- A **biogas** plant is where **biogas** is produced by fermenting biomass. The substrate used for the production of this methane-containing gas usually consists of energy crops such as corn, or waste materials such as manure or food waste.

- The fermentation residue left over from the substrates at the end of the process can be used as fertilizer.

- The biogas is produced by the microbacterial decomposition of the substrate in an oxygen-free environment, i.e. under anaerobic conditions. To do this, the substrate is pumped into the fermenters. The substrate is stored here under anaerobic conditions and is periodically shifted by agitators to avoid the formation of surface scum and sinking layers. This also allows the biogas to rise more easily. Unlike in the decomposition of biomass under aerobic conditions (for example, composting), under anaerobic conditions the microbacterial organisms can only use a small part of the energy contained.
- he anaerobically non-usable energy is contained in the “waste product” of biogas in the form of biomethane.
- Before being fed into the gas grid, this crude biogas from the biogas plant still has to be processed in a processing plant to attain natural gas quality, which means that substances such as carbon dioxide, hydrogen, oxygen and sulfur are filtered out. To do this, it is desulfurized by an iron-containing filter material, or its sulfur content is released by the addition of oxygen.
- In a final step the gas is dehumidified and can then be used to generate electricity and heat, which is why many biogas plants have combined heat and power units (CHP).

➢ **PUBLIC SERVICE DESIGN:- BUS STAND**

- A **bus stand**, also called a **bus** bay, or **bus** stance, is a designated parking location where a **bus** or coach waits out of service between scheduled public transport services. '**Bus stand**' is also often an alternative name for specific **bus** stops inside a **bus** station.
- A bus stand are seen at different busy spots. Like school or college gates, markets, medical centres and the crossing point of two or more roads. A bus stand is usually employed to allow a bus to lay over at a bus terminus, without giving the appearance of being in

service, or blocking the stop from use by other buses that are in service. Bus stands also allow short-term parking for driver changes or driver breaks.

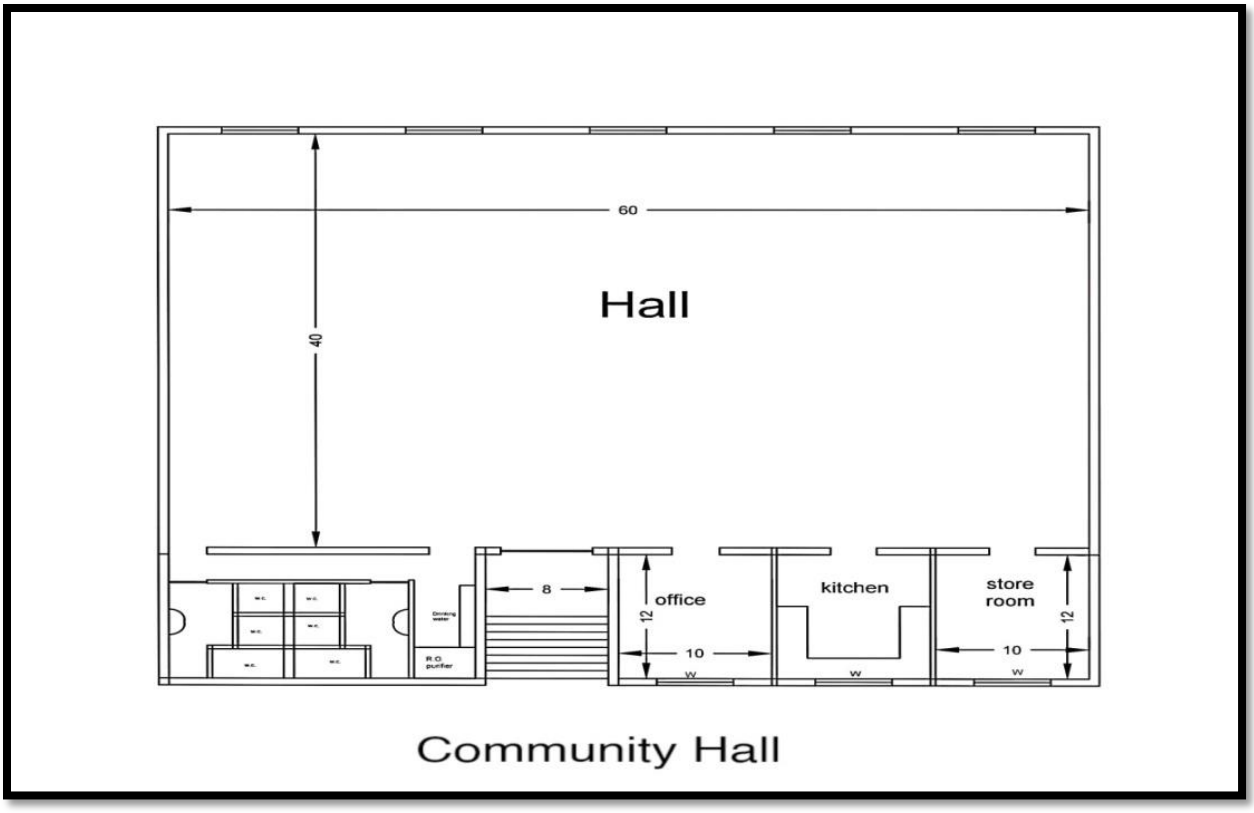
- Due to their public transport use, bus stands will often be specifically covered by local legislation. Parking of non-public service vehicles (PSVs) in bus stands may be prohibited. For pollution and fuel saving concerns, drivers may be required to switch their engines off if in a bus stand, as opposed to when stopped in a bus stop.
- In public bus and coach stations, buses will often be marshalled into specific parking slots, which act as stands where buses queue for an available slot at a departure point, such as in Victoria Coach Station in London. At the appropriate time, the bus can be moved the short distance to the stop, to begin boarding.

8.1.1) COMMUNITY HALL

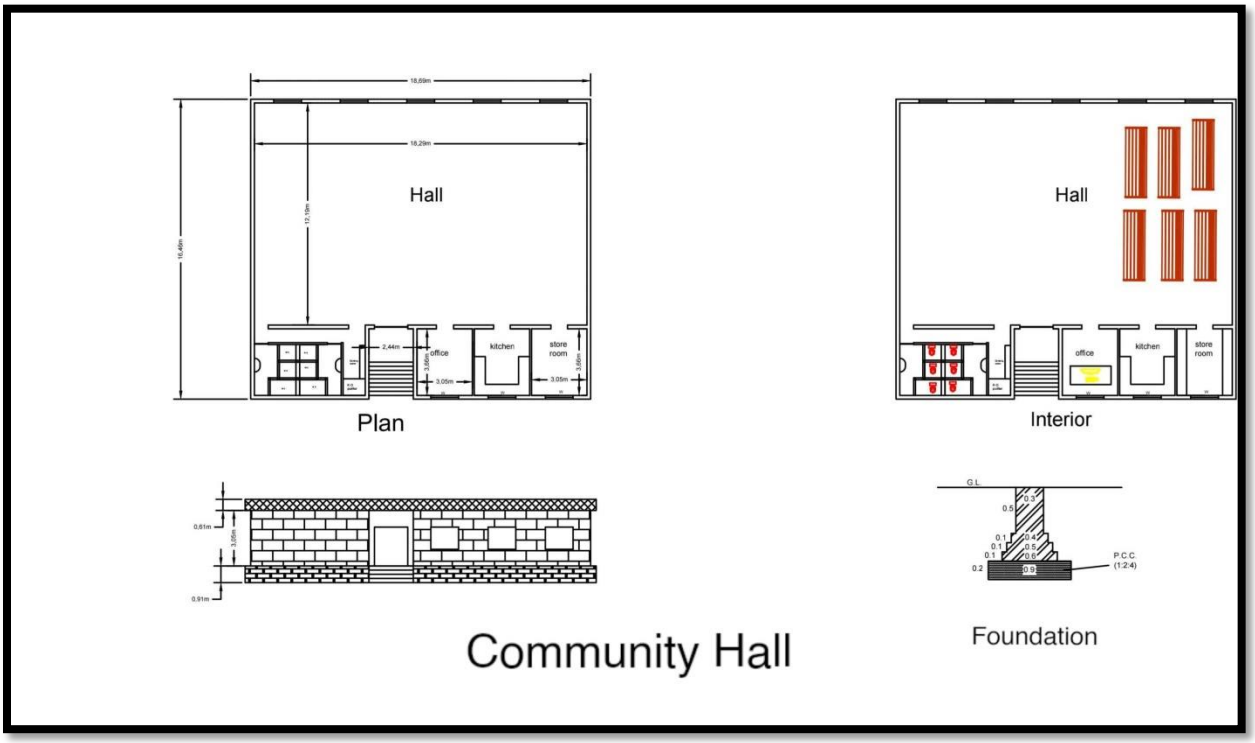
Community centres or **community** halls are public locations where members of a **community** tend to gather for group activities, social support, public information, and other purposes. They may sometimes be open for the whole **community** or for a specialized group within the greater **community**.

❖ **OBJECTIVES OF COMMUNITY HALL:-**

- Promotes Exercise is one of the most obvious benefits of a community center
- Boosts the Local Economy
- Keeps Adolescents Safe
- Provides a Meeting Space
- Boosts Property Values


60
Hall
40
8
office
kitchen
store room
12
10
12
10
R.O purifier
Community Hall

(Fig 31)


Hall
Plan
Hall
Interior
office
kitchen
store room
G.L.
P.C.C. (1:2:4)
Foundation
Community Hall

ESTIMATE OF COMMUNITY HALL

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount/ m3	TOTAL AMOUNT IN INR
1	Earthwork in Excavation in Foundation:	ORDINARY SOIL								
		POST	16	1.20	1.20	1.00	23.04	m3		
		STEP	1	4.88	1.2	0.15	0.88	m3		
	Depth From GL = 2 m					TOTAL	23.92		64.67	1547
2	Brick flat soling									
		Post	16	1.2	1.2		23.04	m2		
		P. Beam	1	52.70	0.25		13.18	m2		
		Step	1	4.88	1.00		4.88	m2		
		Floor	1	8.48	12.35		104.67	m2		
						TOTAL	145.76		286.37	41742
3	Plaint cement concrete works with course aggregate									
		Post	16	1.00	1.00	0.10	1.60	m3		
	size:- 13 mm to 32 mm in foundation bed	P. Beam	1	52.70	0.25	0.05	0.66	m3		
		Step	1	4.88	1.00	0.08	0.37	m3		
	In prop 1:3:6					TOTAL	2.62		3733.63	9800
4	form work of ordinary timber									
	Foundation footing base of column, tie and lintel using 25 mm thick	Footing	16	4.00	1.00	0.15	9.60	m3		
		Beam of column	14	4.00	0.53	0.25	7.35	m3		
			16	2.00	0.60	0.25	4.80	m3		
						TOTAL	21.75		140.84	3063
5	Side of Tie beam, plinth beam, grade beam	Plinth Beam	1	2.00	56.70	0.30	34.02	m2		
						TOTAL	34.02		191.27	6507
	thickness=25mm									
6	Brick work in cement mortar									
		Wall	1	52.70	0.60	0.23	7.11	m3		
		step	1	4.88	1.00	0.36	1.76	m3		
						TOTAL	8.87		4632.29	41094
7	Column, pillar post struts									
		post	12	2.00	3.35	0.20	16.08	m3		
			4	4.00	2.45	0.20	7.84	m3		
			2	2.00	1.50	0.15	0.90	m3		
						TOTAL	24.82		213.13	5290
8	Lintel, P.Plate, Brresumer									
		Lintel	1	43.90	2.00	0.15	13.17	m3		
		P.Plate	1	43.40	2.00	0.15	13.02	m3		
		Brresumer	1	12.80	3.00	0.20	7.68	m3		
			2	1.85	3.00	0.20	2.22	m3		
						TOTAL	36.09		163.01	5883

9	In sub-structure									
		Lintel	1	43.90	2.00	0.15	13.17	m3		
		P.Plate	1	43.40	2.00	0.15	13.02	m3		
		Brresumer	1	12.80	3.00	0.20	7.68	m3		
			2	1.85	3.00	0.20	2.22	m3		
						TOTAL	36.09		163.01	5883
10	Providing fitting fixing full paneled door window	1st class local wood								
		Door	2	2.10	1.20		5.04	m2		
		Window	10	1.30	0.45		5.85	m2		
	THICKNESS= 35MM									
						TOTAL	10.89		1725.92	18795
11	Providing fitting and fixing fully glazed clearstory window and fan light									
	THICKNESS= 35MM	Ventilator	2	1.20	0.45		1.08	m2		
			10	1.50	0.45		6.75	m2		
						TOTAL	7.83		1234.35	9665
12	cement concrete ratio 1:3:6			12.35	8.48		104.67	m2		
	THICKNESS= 15 MM									
						TOTAL	104.67		554.46	58033
13	Providing, fitting hoisting and fixing of roof trusses									
	60.30 mm OD – 3.65 mm thick	Rafter	2	5.00	4.50		45.00	Rm		
		T. Member	3	2.00	1.50		9.00	Rm		
		Tie	3	7.32			0.00	Rm		
		V. Rafter	5	2.40			0.00	Rm		
			5	1.83			0.00	Rm		
		Purline	2	5.00	14.00		140.00	Rm		
			1	3.00	14.00		42.00	Rm		
		Members	3	2.00	1.50		9.00	Rm		
			3	2.00	1.00		6.00	Rm		
			3	2.00	0.40		2.40	Rm		
		Varanda	5	1.00	1.00		5.00			
						TOTAL	258.40		2125	549100

8.1.2) E-LIBRARY

An electronic **library** has, not only text data but also sound, graphics, and motion video, in the form of digital data. ... The Electronic **Library** System provides the latest functions as well as allowing books to be displayed on screen as if they were printed books. The system makes advances in retrieving books and papers.

❖ OBJECTIVES OF E-LIBRARY:-

- Revival of reading and learning culture in general public, especially youth, families and senior citizens.
- Inculcate e-reading and e-learning culture amongst general public, students, teachers and our society at large.

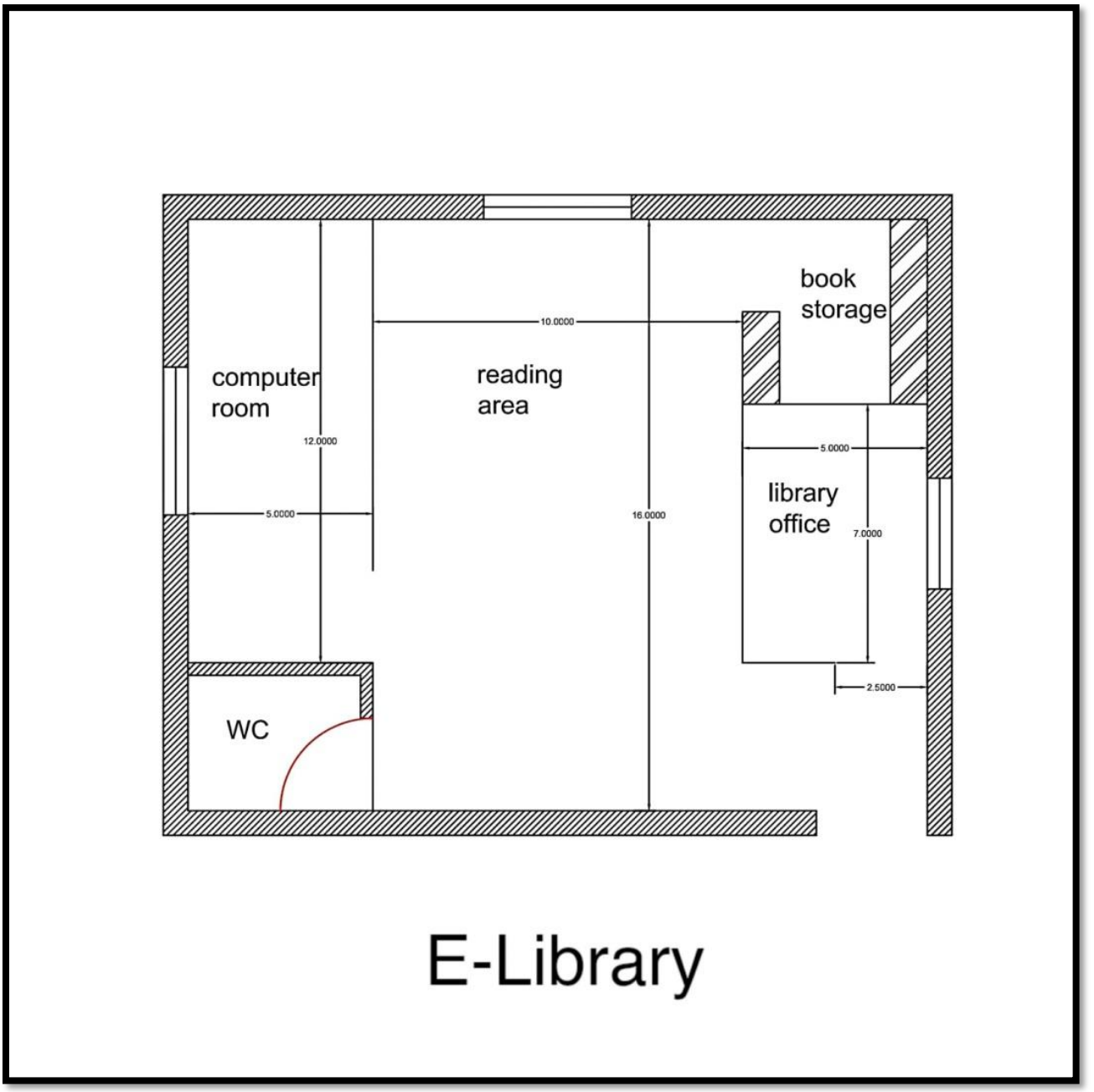
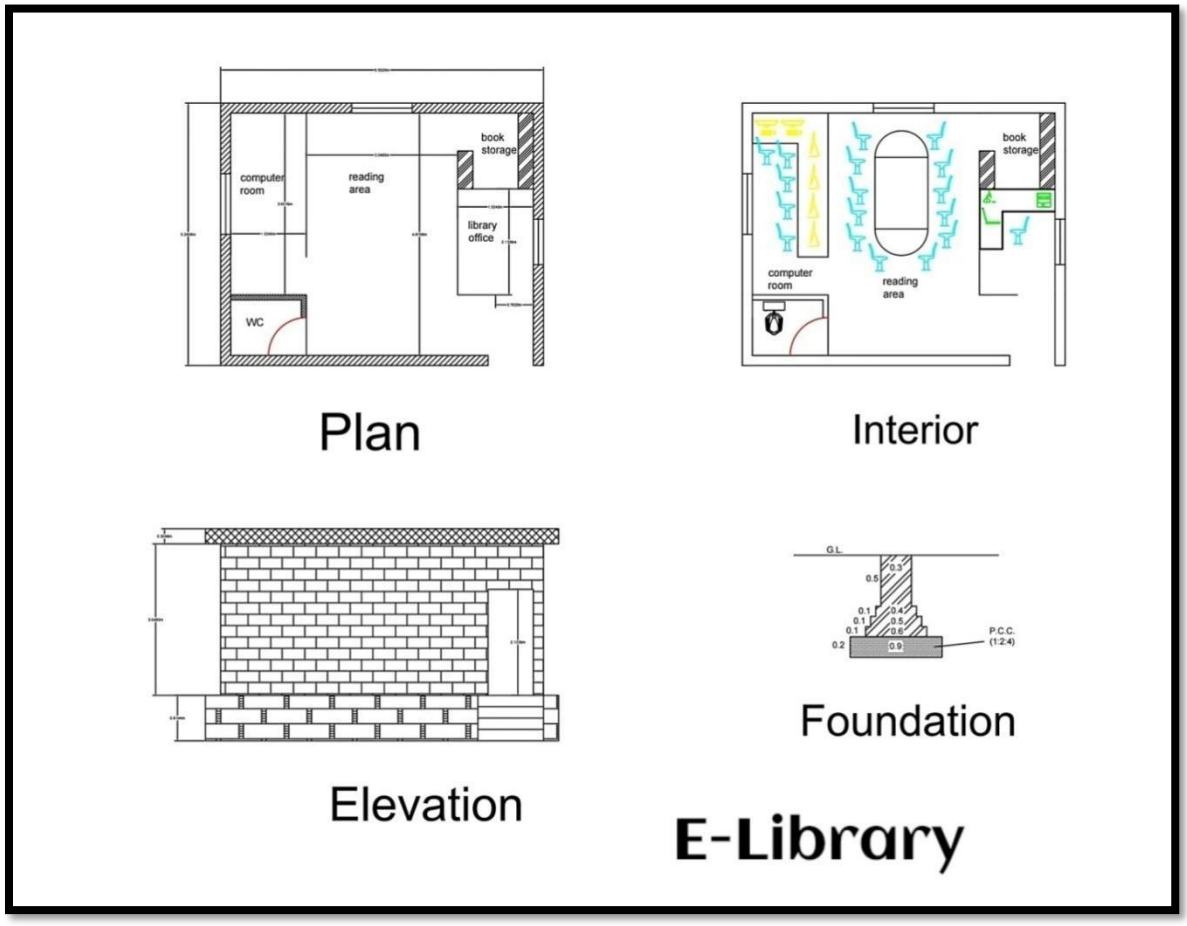


Fig 32



GENERAL NOTES	
1) All Dimensions Are In meter	
2) Drawing Should be read not to scale	
3) Design Is prepared only for Educational purpose	
4) Correctness of all data must be check before Use	
5) Designer is not Responsible for any kind of wrong data	
Design name:-	E-LIBRARY
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	V. H. KHOKHANI
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
Chandrakhed -Ahemdabad	
LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

Table 18

Estimate Of E-Library

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount/ m3 or m2	TOTAL AMOUNT IN INR
1	Earthwork in Excavation in Foundation:									
			1	22.77	0.90	1.00	20.49	m3		
	Net center Line =22.7696 m3					TOTAL	20.49		125	2562
2	B.B.C.C. in Foundation									
			1	22.77	0.9	0.2	4.10	m3		
						TOTAL	4.10		800	3279
3	Brick Work Up to Ground Level									
		1st Step	1	22.77	0.60	0.10	1.37	m3		
		2nd Step	1	22.77	0.50	0.10	1.14	m3		
		3rd Step	1	22.77	0.40	0.10				
		4th step Up to G.L.	1	22.77	0.30	0.50	3.42	m3		
						TOTAL	5.92		700	4144
4	DPC (5cm)									
			1	22.77	0.30		6.83	m2		
	Deduction	Door	1	1.00	0.30		0.30	m2		
						TOTAL	6.53		160	1045
5	Brick Work in Super Structure									
		Net Center Line=22.77m	1	22.77	0.30	3.08	21.07	m3		
	Deduction	Door	1	1.00	0.30	2.13	0.64	m3		
		Windows	3	1.00	0.30	1.00	0.90	m3		
						TOTAL	19.53		700	13669
6	RCC slab									
			1	5.28	6.50		34.33	m2		
						TOTAL	34.33		1600	54929
7	Internal Plaster (12 mm)									
		Walls	2	5.08		3.05	30.99	m2		
			2	6.30		3.05	38.40	m2		
		Ceilin	1	5.08	6.30		32.00	m2		
	Deduction	Door	0.5	1.00		2.13	1.07	m2		
		Windows	1.5	1.00		1.00	1.50	m2		
						TOTAL	98.83		230	22731
8	Out SidePlasster (20mm)									
		walls	2	5.28		4.26	44.96	m2		
			2	6.50		4.26	55.35	m2		
	Deduction	Door	0.5	1.00		2.14	1.07	m2		
		Window	1.5	1.00		1.00	1.50	m2		
						TOTAL	97.75		260	25415

9	Flooring									
			1	5.08	6.30		32.00	m2		
						TOTAL	32.00		180	5761
10	Painting									
		Incide Wall	2	5.08		3.05	30.99	m2		
			2	6.03		3.05	36.78	m2		
		Ceilin	1	5.08	6.30		32.00	m2		
		Out side wall	2	5.28		4.26	44.96	m2		
			2	6.50		4.26	55.35	m2		
	Deduction	Door	1	1.00		2.14	2.14	m2		
		Windows	3	1.00	1.00	1.00	3.00	m2		
						TOTAL	194.96		220	42891

	Abstract Sheet	Indian (Rs.)
1	Earthwork in Excavation in Foundation:	2562
2	B.B.C.C. in Foundation	3279
3	Brick Work Up to Ground Level	4144
4	DPC (5cm)	1045
5	Brick Work in Super Structure	13669
6	RCC slab	54929
7	Internal Plaster (12 mm)	22731
8	Out SidePlasster (20mm)	25415
9	Flooring	5761
10	Painting	42891
	Total Cost	**176425**
	Extra charges 2.5%	4410.61335
	Water Charges 5%	8821.2267
	Contractor's profit 10%	17642.4534
	Final Estimated Cost	**207299**

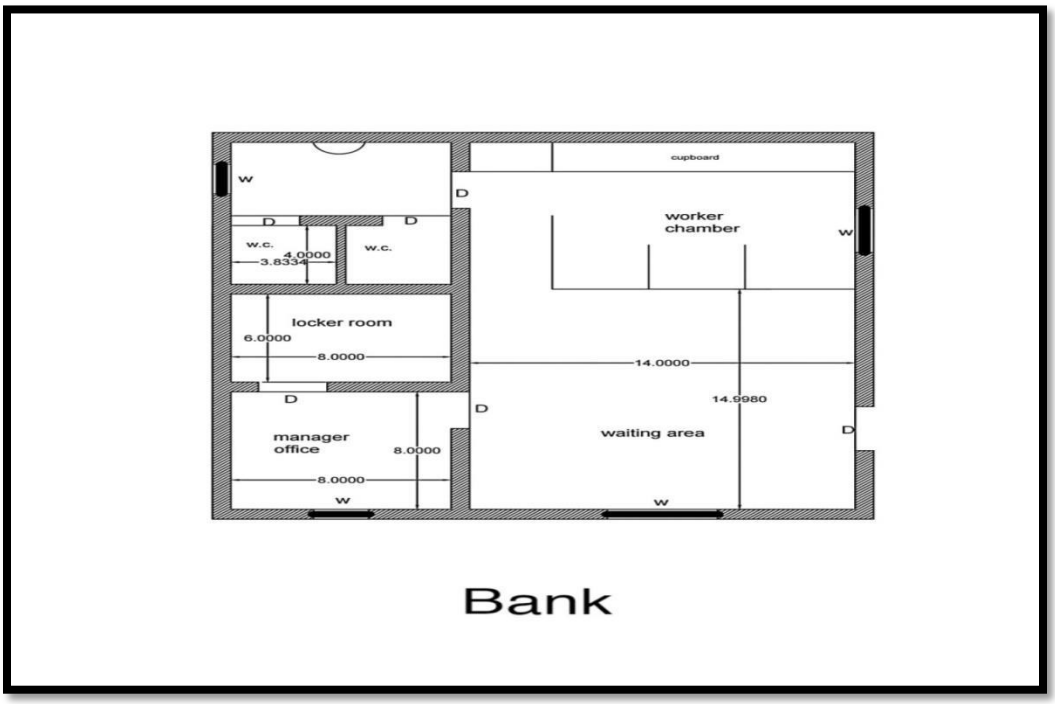
8.1.3) BANK

A bank is a financial institution which is involved in borrowing and lending money. Banks take customer deposits in **return** for paying customers an annual **interest** payment. The bank then uses the majority of these deposits to lend to other customers for a variety of loans.

❖ OBJECTIVES OF BANK:-

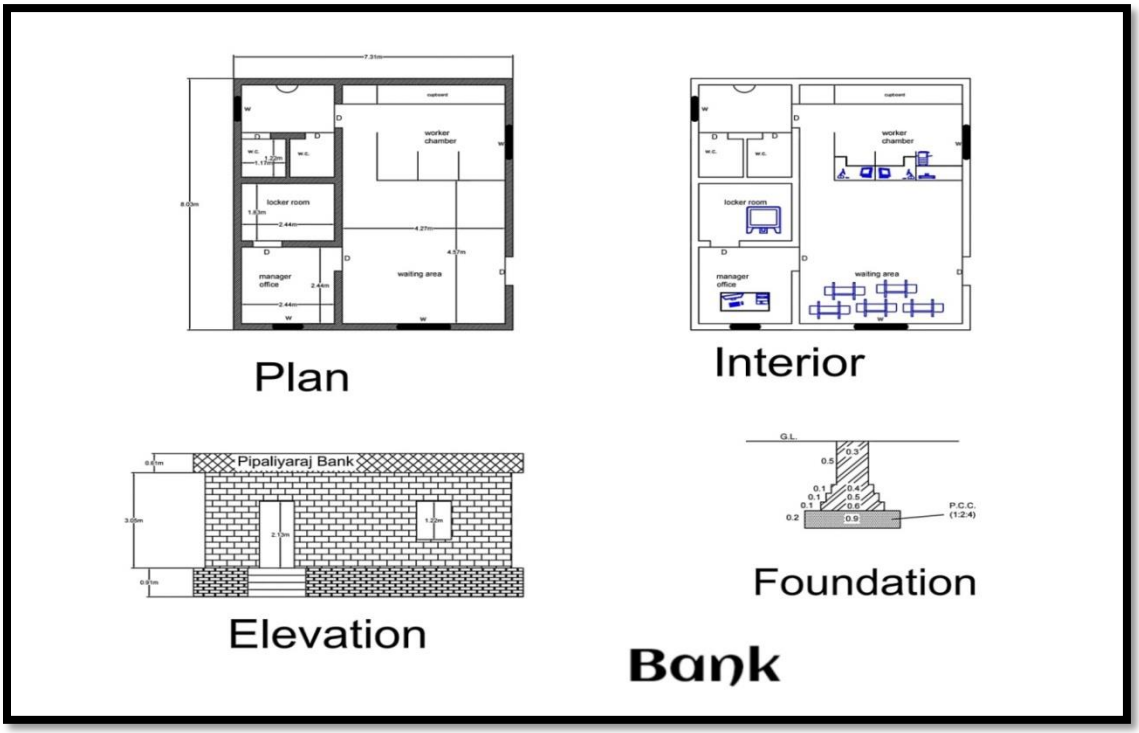
- Offer customers interest on deposits, helping to protect against money losing value against inflation. Lending money to firms, customers and homebuyers.
- Banks also play an important role in offering finance to businesses who wish to invest and expand.

- Banks play an important role in the economy for offering a service for people wishing to save.



Bank

Fig 33



Plan

Interior

Elevation

Foundation

Bank

GENERAL NOTES	
1) All Dimensions Are In meter	
2) Drawing Should be read not to scale	
3) Design Is prepared only for Educational purpose	
4) Correctness of all data must be check before Use	
5) Designer is not Responsible for any kind of wrong data	
Design name:-	BANK
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	V. H. KHOKHANI
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
Chandrakhed -Ahemdabad	
LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

8.1.4) ATM

An **ATM**, which stands for automated teller machine, is a specialized computer that makes it convenient to manage a bank account holder's funds. It allows a person to check account balances, withdraw or deposit money, print a statement of account activities or transactions, and even purchase stamps.

❖ **OBJECTIVE'S OF ATM:-**

- Withdrawals are the most common transaction among ATM cardholders. This allows them to withdraw cash from their accounts. For a withdrawal, account holders just have to key in the amount they wish to take out.

- Transfers and payments are also available depending on the bank. This allows account holders to move money from one account to another, without withdrawing cash.
- Account holders using an ATM not affiliated with their bank will most likely have to pay a fee. ATMs always disclose these fees on their screens, and they give users an option to cancel the transaction if they do not want to pay the fee.

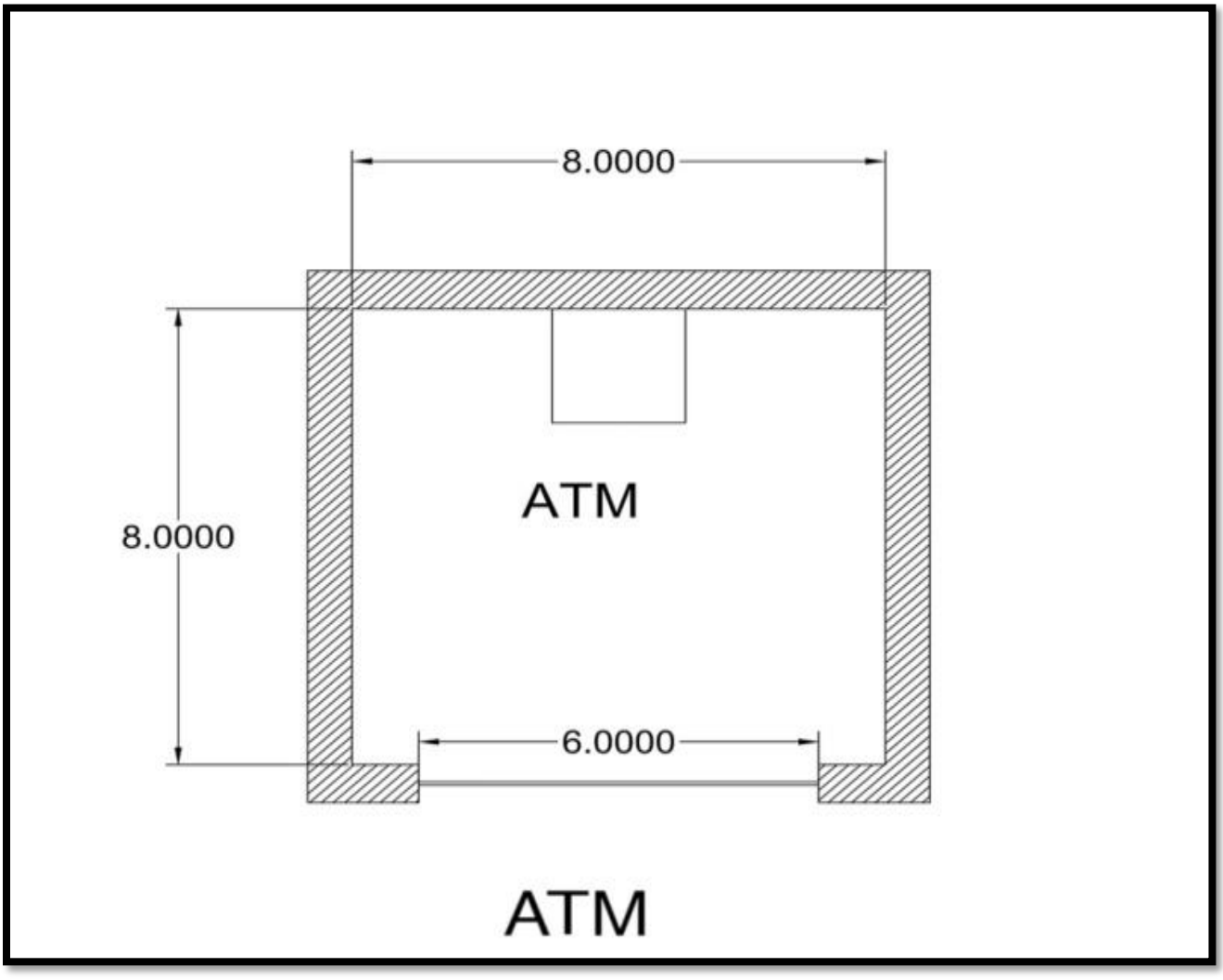
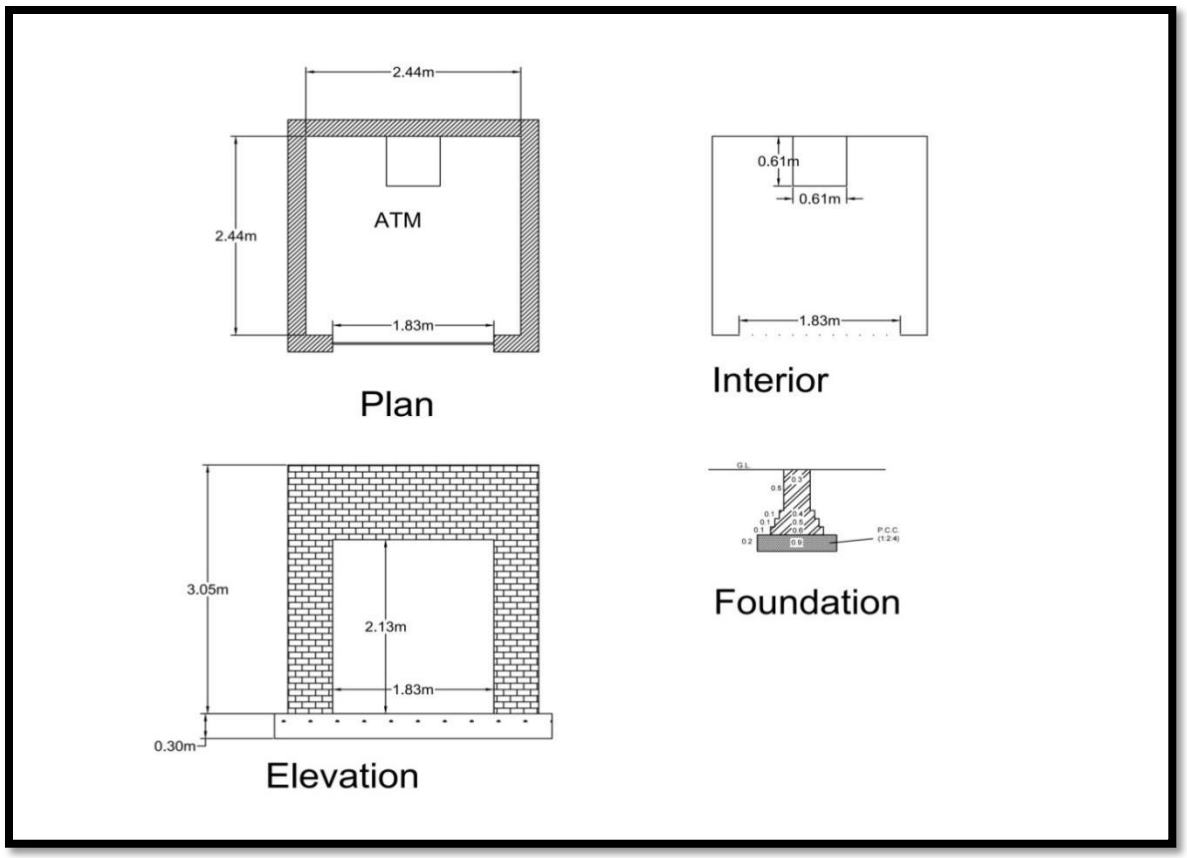


Fig 34



GENERAL NOTES	
1) All Dimensions Are In meter	
2) Drawing Should be read not to scale	
3) Design Is prepared only for Educational purpose	
4) Correctness of all data must be check before Use	
5) Designer is not Responsible for any kind of wrong data	
Design name:-	ATM
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	V. H. KHOKHANI
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
Chandrakhed -Ahemdabad	
LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

Table 19

ESTIMATE OF ATM

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount/ m3	TOTAL AMOUNT IN INR
1	**Excavation In Foundation Net Centerline =10.56m**									
			1	10.56	0.90	1.00	**9.50**	**m3**		
	Depth From GL = 2 m					**TOTAL**	**9.50**		**547**	**5199**
2	**B.B.C.C. in Foundation Net Centerlie=10.56m**									
			1	10.56	0.90	0.20	**1.90**	**m3**		
						TOTAL	**1.90**		**312**	**593**
3	**Brick Work up to ground level**									
		1st Step	1	10.56	0.6	0.1	**0.63**	**m3**		
		2nd step	1	10.56	0.5	0.1	**0.53**	**m3**		
		3rd Step	1	10.56	0.4	0.1	**0.42**	**m3**		
		4th step up to G.L.	1	10.56	0.3	0.5	**1.58**	**m3**		
						TOTAL	**3.17**		**7200**	**22810**
4	**Earthfilling below G.L.**	9.5-3.164=6.34 m3								
5										
	Brick work from G.L To Plinth level		1	10.56	0.3	0.4	**1.27**	**m3**		
	Earthfilling from G.L. to plinth		1	2.34	2.34	0.18	**0.99**	**m3**		
	Gravel filling above earth fillimg		1	2.34	2.34	0.15	**0.82**	**m3**		
	Sand filling		1	2.34	2.34	0.12	**0.66**	**m3**		
						TOTAL	**3.73**		**5340**	**19925**
6	D.P.C. (5 cm)									
	Deduction (Door)	D.P.C. (5 cm)	1	10.56	0.3	1.00	**3.17**	**m3**		
		Deduction (Door)	1	1.83	0.3	1.00	**0.55**	**m3**		
						TOTAL	**3.72**		**3576**	**13292**
7	Brick work in Super structre									
		Brick work in Super structre	1	10.56	0.3	2.75	**8.71**	**m3**		
		Deduction (Door)	1	10.56	0.3	2.13	**6.75**	**m3**		
		For lintel (Door)	1	1	0.3	0.15	**0.05**	**m3**		
						TOTAL	**15.50**		**6434**	**99758**
8	12mm thick inside plaster (1:5)									
		Walls	4	2.44	1.74	2.75	**46.70**	**m3**		
		ceilin	1	2.44	2.44	2.13	**12.68**	**m3**		
		deduction (Door)	0.5	1.83	2.46	0.15	**0.34**	**m3**		
						TOTAL	**59.72**		**1020**	**60915**
9	20 mm thick outside plaster (1:4)									
		Walls	4	2.84	1	2.75	**31.24**	**m3**		
		deduction (Door)	0.5	1.83	1	2.13	**1.95**	**m3**		
						TOTAL	**33.19**		**517**	**17159**

10	Flooring									
		Flooring	1	2.44	2.44	2.75	16.37	m3		
		Painting	1	1	1	2.13	2.13	m3		
		Inside (walls)	4	2.44	1	1	9.76	m3		
		ceilin	1	2.44	2.44	1	5.95	m3		
		outside (walls)	4	2.84	1	1	11.36	m3		
		deduction (Door)	1	1.83	1	1	1.83	m3		
						TOTAL	47.41		2016	95570
11	Door Frame Glass									
		Door Frame Glass	1	1.83	0.23	2.75	1.16	m3		
						TOTAL	1.16		3150	3646

8.1.5) BIO-GAS PLANT

A **biogas** plant is where **biogas** is produced by fermenting biomass. The substrate used for the production of this methane-containing gas usually consists of energy crops such as corn, or waste materials such as manure or food waste.

❖ OBJECTIVES OF BIO-GAS PLANT:-

- To increase the renewable energy **production** from **biogas** with small-scale concepts for energy self-sufficiency.
- The biogas is produced by the microbacterial decomposition of the substrate in an oxygen-free environment, i.e. under anaerobic conditions.
- To do this, the substrate is pumped into the fermenters. The substrate is stored here under anaerobic conditions and is periodically shifted by agitators to avoid the formation of surface scum and sinking layers.

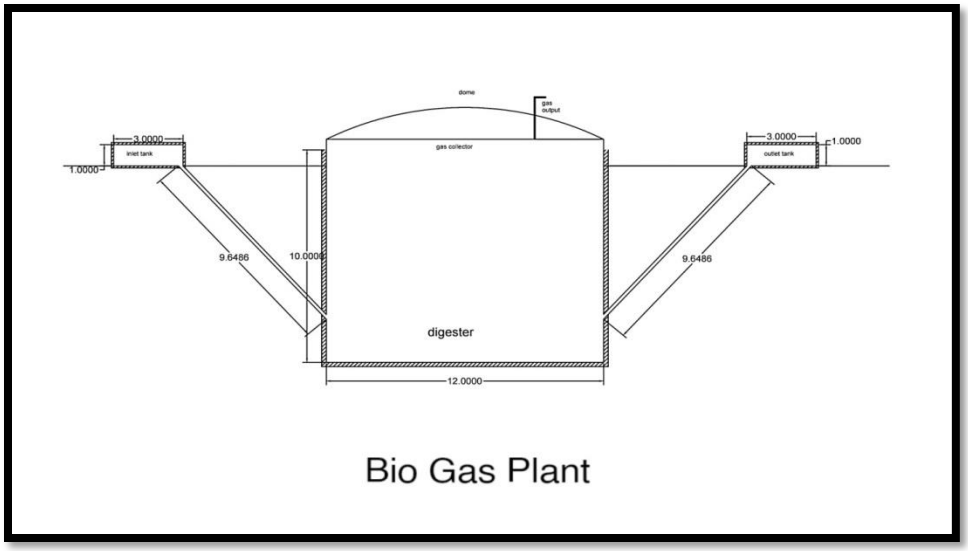


Fig 35

- A *biogas plant* is the name often given to an anaerobic digester that treats farm wastes or energy crops. It can be produced using anaerobic digesters (air-tight tanks with different configurations).
- These plants can be fed with energy crops such as maize silage or biodegradable wastes including sewage sludge and food waste. During the process, the micro-organisms transform biomass waste into biogas (mainly methane and carbon dioxide) and digestate.
- Higher quantities of biogas can be produced when the wastewater is co-digested with other residuals from the dairy industry, sugar industry, or brewery industry. For example, while mixing 90% of wastewater from beer factory with 10% cow whey, the production of biogas was increased by 2.5 times compared to the biogas produced by wastewater from the brewery only.
- Before being fed into the gas grid, this crude biogas from the biogas plant still has to be processed in a processing plant to

attain natural gas quality, which means that substances such as carbon dioxide, hydrogen, oxygen and sulfur are filtered out. To do this, it is desulfurized by an iron-containing filter material, or its sulfur content is released by the addition of oxygen.

- In a final step the gas is dehumidified and can then be used to generate electricity and heat, which is why many biogas plants have combined heat and power units (CHP). The purified biogas can also be fed into the gas grid and transported to points of consumption. A meter measures how much "green gas" was fed in. In this way, besides being piped to industrial customers, biogas can also be made available to bio-CNG dispensers at service stations for natural gas vehicles.
- One key differentiator of biogas plants is their mode of operation. Depending on the substrate, the fermentation process is wet or dry. For substrates such as manure with a high liquid content, wet fermentation is always used.
- Dry or solid-state fermentation is used for stackable organic biomass such as municipal biowaste.
- A distinction can also be made between agricultural and industrial biogas plants. The input material is the decisive factor. Industrial biogas plants mainly use residual and waste materials in accordance with the German "Biowaste Ordinance (Bioabfallverordnung)." The operation of these plants is subject to more stringent requirements than that of "NAWARO" biogas plants, which mainly ferment energy plants.

Table 20

ESTIMATE OF BIO-GAS PLANT

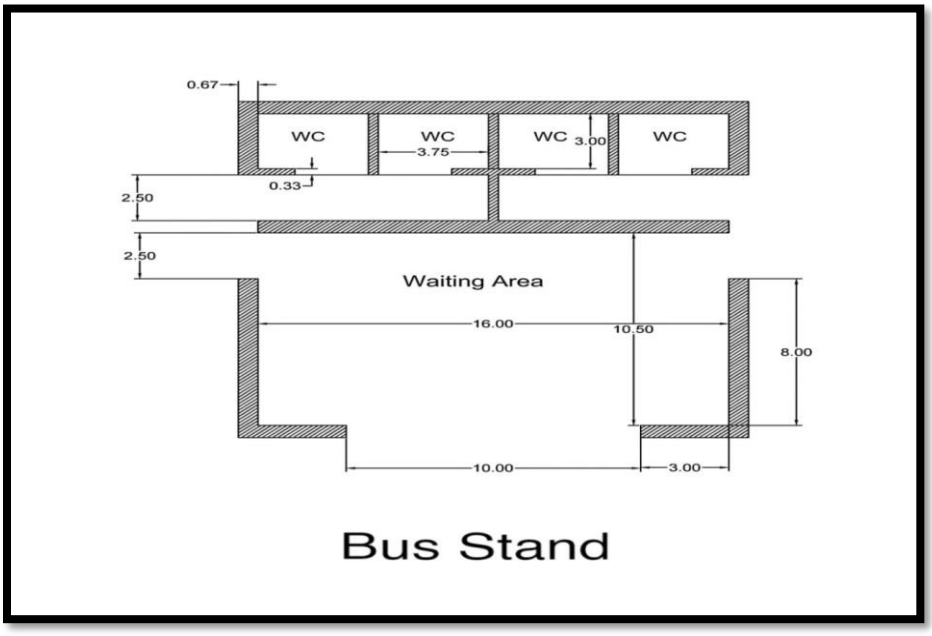
Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount/m3	TOTAL AMOUNT IN INR
1	Design Of Digester	ORDINARY SOIL								
		Total per day dung	14	1.00	1.00	1.00	14.00	m3		
		Wateramount	1	4.88	1.2	0.15	1.75	m3		
	retention period (RT)					TOTAL	15.75		46.4	731
2	Digester volume (Vd)									
		SD	0.5	2	1	1	15.75	m3		
		RT	0.5	2.00	1.00	1.00	70.00	m3		
						TOTAL	1102.50		6.4	7056
3	DESIGN OF GASHOLDER	Daily gas production G								
		Gd	1	1.00	1.00	3.70	3.70	m3		
	digester temperature= 26-28˚C	Feedvolume	1	1.00	1.00	52.50	52.50	m3		
	RT=70 days	RT	1	1.00	1.00	138.05	138.05	m3		
	Specific gas production Gd =37 Lit. / Kg. /day					TOTAL	194.25		40.13	7795
4	Gas holder volume									
	gas holder capacity =60	Daily gas production	0.5	2.00	1.00	90.26	90.26	m3		
		Capacity of holder	0.5	2.00	1.00	0.60	0.60	m3		
			0.5	2.00	1.00	25.69	25.69	m3		
						TOTAL	116.55		90.31	10526
5	DESIGN OF INLET AND OUTLET									
		total volume of slurry	1	3.00	3.00	1.00	9.00	m3		
						TOTAL	9.00		300	2700
	Total volume of slurry mix per unit=15.75 m3 / day									
6	Brick work in cement mortar									
		Wall	1	52.70	0.60	0.23	7.11	m3		
		step	1	4.88	1.00	0.36	1.76	m3		
						TOTAL	8.87		1300	11533
7	In sub-structure									
		Lintel	1	43.90	2.00	0.15	13.17	m3		
		P.Plate	1	43.40	2.00	0.15	13.02	m3		
		Brresumer	1	12.80	3.00	0.20	7.68	m3		
			2	1.85	3.00	0.20	2.22	m3		
						TOTAL	36.09		153.55	5542
						TOTAL			45882	

8.1.6) BUS STAND

A **bus stand**, also called a **bus** bay, or **bus** stance, is a designated parking location where a **bus** or coach waits out of service between scheduled public transport services. '**Bus stand**' is also often an alternative name for specific **bus** stops inside a **bus** station.

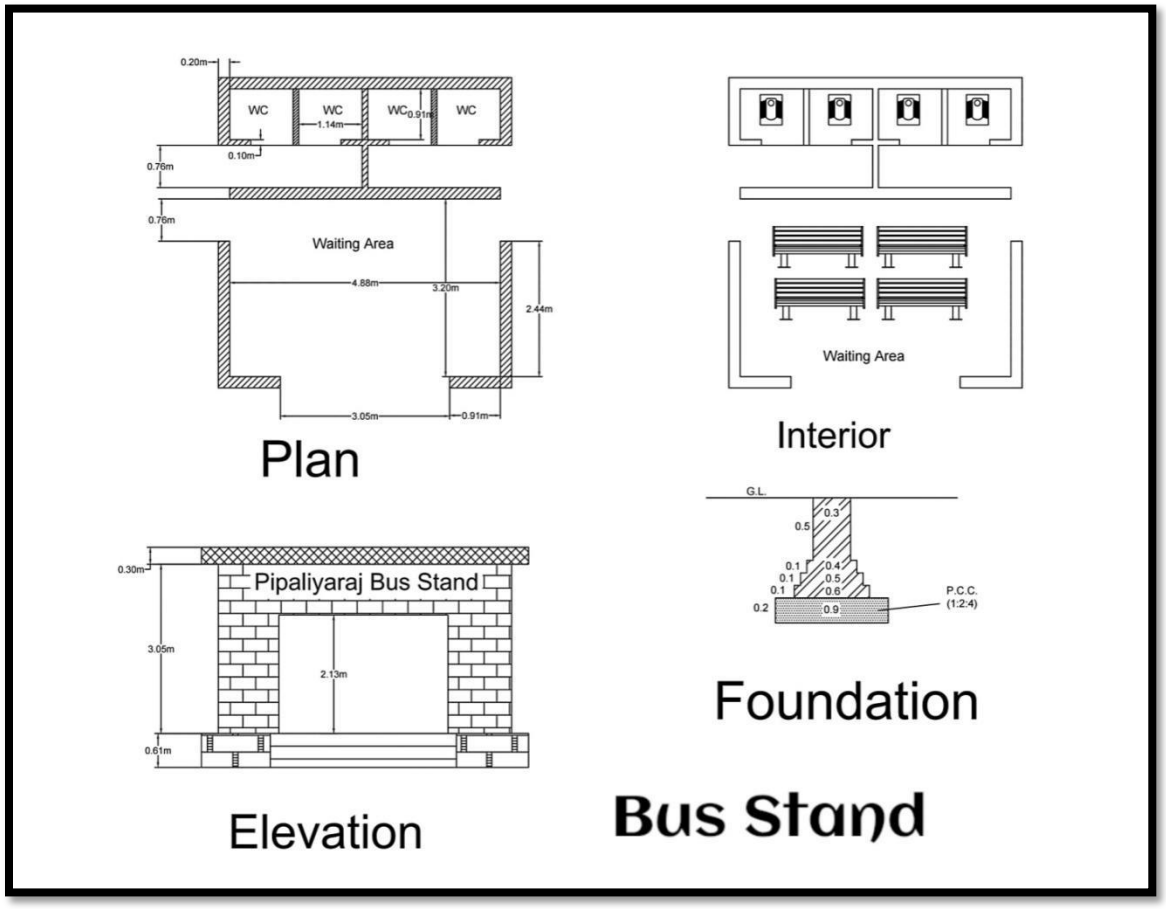
❖ **OBJECTIVES OF BUS STAND:-**

- Bus stop infrastructure ranges from a simple pole and sign, to a rudimentary shelter, to sophisticated structures. The usual minimum is a pole mounted flag with suitable name/symbol. Bus stop shelters may have a full or partial roof, supported by a two, three or four sided construction. Modern stops are mere steel and glass/perspex constructions, although in other places, such as rural Britain, stops may be wooden brick or concrete built.
- A bus stand are seen at different busy spots. Like school or college gates, markets, medical centres and the crossing point of two or more roads. A bus stand is usually employed to allow a bus to lay over at a bus terminus, without giving the appearance of being in service, or blocking the stop from use by other buses that are in service. Bus stands also allow short-term parking for driver changes or driver breaks.



Bus Stand

Fig 36



GENERAL NOTES	
1) All Dimensions Are In meter	
2) Drawing Should be read not to scale	
3) Design Is prepared only for Educational purpose	
4) Correctness of all data must be check before Use	
5) Designer is not Responsible for any kind of wrong data	
Design name:-	BUS STAND
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	V. H. KHOKHANI
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
Chandrakhed -Ahemdabad	
LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

Table 21

Estimate Of Bus Stand

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount/m 3 or m2	TOTAL AMOUNT IN INR
1	Earthwork in Excavation in Foundation:									
			1	29.70	0.90	1.00	26.73	m3		
	Net center Line =35.1 m no. of T joints= 12					TOTAL	26.73		125	3341
2	B.B.C.C. in Foundation									
			1	29.7	0.9	0.2	5.35	m3		
						TOTAL	5.35		800	4277
3	Brick Work Up to Ground Level									
		1st Step	1	31.50	0.60	0.10	1.89	m3		
		2nd Step	1	32.10	0.50	0.10	1.61	m3		
		3rd Step	1	32.70	0.40	0.10	1.31	m3		
		4th step Up to G.L.	1	33.33	0.30	0.50	5.00	m3		
						TOTAL	9.80		700	6862
4	DPC (5cm)									
			1	35.10	0.20		7.02	m2		
	Deduction	Door 1	1	3.05	0.20		0.61	m2		
		Door 2	4	0.76	0.20		0.61	m2		
		Door 3	4	0.70	0.20		0.56	m2		
						TOTAL	5.24		160	839
5	Brick Work in Super Structure									
			1	33.90	0.20	3.08	20.91	m3		
	Deduction	Door 1	1	3.05	0.20	2.13	1.30	m3		
		Door 2	4	0.76	0.20	2.13	1.30	m3		
		Door 3	4	0.70	0.20	2.13	1.19	m3		
						TOTAL	17.12		700	11981
6	RCC slab									
			1	5.27	5.57		29.35	m2		
						TOTAL	29.35		1600	46966
7	Internal Plaster (12 mm)									
		Wall	1	37.76		3.05	115.17	m2		
		Ceilin	1	5.27	5.57		29.35	m2		
	Deduction	Door 1	0.5	3.05		2.13	3.25	m2		
		Door 2	2	0.76		2.13	3.24	m2		
		Door 3	2	0.70		2.13	2.98	m2		
						TOTAL	135.05		230	31062
8	Out SidePlasster (20mm)									
		walls	2	5.27		3.96	41.74	m2		
			2	5.57		3.96	44.11	m2		
	Deduction	Door 1	0.5	3.05		2.13	3.25	m2		
		Door 2	2	0.76		2.13	3.24	m2		
						TOTAL	79.37		260	20635

9	Flooring									
			1	5.27	5.57		29.35	m2		
						TOTAL	29.35		180	5284
10	Painting									
		Incide Wall	1	37.76		3.05	115.17	m2		
		Ceilin	1	5.27	5.57		29.35	m2		
		Out side wall	2	5.27		3.96	41.74	m2		
			2	5.57		3.96	44.11	m2		
	Deduction	Door 1	1	3.05		2.13	6.50	m2		
		Door 2	4	0.76		2.13	6.48	m2		
		Door 3	4	0.70		2.13	5.96	m2		
						TOTAL	211.44		220	46517

	Abstract Sheet	Indian (Rs.)
1	Earthwork in Excavation in Foundation:	3341
2	B.B.C.C. in Foundation	4277
3	Brick Work Up to Ground Level	6862
4	DPC (5cm)	839
5	Brick Work in Super Structure	11981
6	RCC slab	46966
7	Internal Plaster (12 mm)	31062
8	Out SidePlasster (20mm)	20635
9	Flooring	5284
10	Painting	46517
	Total Cost	**177764**
	Extra charges 2.5%	4444.101649
	Water Charges 5%	8888.203297
	Contractor's profit 10%	17776.40659
	Final Estimated Cost	**208873**

(8.2). Reason for Students Recommending this Design :-

Community hall:-

- Provides a Meeting Space
- Boosts Property Values
- Community Center Development with SFA
- Boosts the Local Economy.
- Promotes Exercise. Exercise is one of the most obvious benefits of a community center
- To organize events easily for the villagers

E-library:-

- Easily accessible.
- Round the clock availability A major advantage of digital libraries is that people can gain access 24/7 to the information.
- No physical boundary
- Preservation and conservation.
- Information retrieval.
- Multiple access.

Bank:-

- money will be protected from theft and fires
- easy way to save money

ATM:-

- Access to hard Cash Anywhere at Anytime
- **ATM** machines Serve an Important Function in times of Crisis
- **ATM** machines can be targeted by criminals, robbers and hackers.

Bio-gas Plant:-

- Clean & Renewable Energy Source
- Reduces Soil & Water Pollution
- Prevents Health Problems & Biodiversity Loss.
- Generates Organic Fertilizer
- Healthy Cooking Alternative For Developing Areas.

Bus Stand:-

- Reduced traffic congestion
- Public transportation is safer
- Increased fuel efficiency
- Public transportation reduces air pollution

Chapter-9:- Proposing designs for Future Development of the Village for the PART-II Design:-

We have visited the model village Raj-Samdhiyala and that visit helped us to know about its type of infrastructure required for the village.

With the help of techno-economic survey and gap analysis and by studying/surveying our model village Raj-Samadhiyala, we were able to define needs in a broader sense. Development for the people of Pipliyaraj village. We have since visited Kuvadwa and Smart Village. In that visit we have better understanding of smart technologies and concepts as our smart development allotted village is Pipliyaraj.

Proposed Designs:-

- Higher Secondary School
- Supermarket
- Gaushala
- Shopping Mall With Residential Building
- Septic tank
- E-Library

Benefits of Proposed Design:-

- Students who want to work for the preservation of the rural spirit of the country can do a lot of work For our own good and atmosphere. Planting the given design proposals, we can say that all Missing facilities are provided which will stop the migration of rural people to urban areas.
- This Can reduce the burden on urban areas as well as reduce pollution in both areas Slowly Slowly.
- These facilities designed under this project will be helpful for better development of the village Physically as well as socially, which improves the overall lifestyle of the people along with the country Saving a little bit of nature.

Chapter-10:- Conclusion of the Entire Village Activities of the Project:-

We have visited the ideal village Raj-Samdhiyala and that visit helped us to know about its type Infrastructural facility required by the village. With the help of technical-economic surveys and gap analysis and By studying / surveying our ideal village Raj-Samdhiyala, we were able to broadly define the needs. Development for the people of Pipaliyaraj village. We have since visited Kuvadva and Smart Village In that visit we have a better understanding of smart technologies and concepts as our smart development Allocated village Pipaliyaraj.

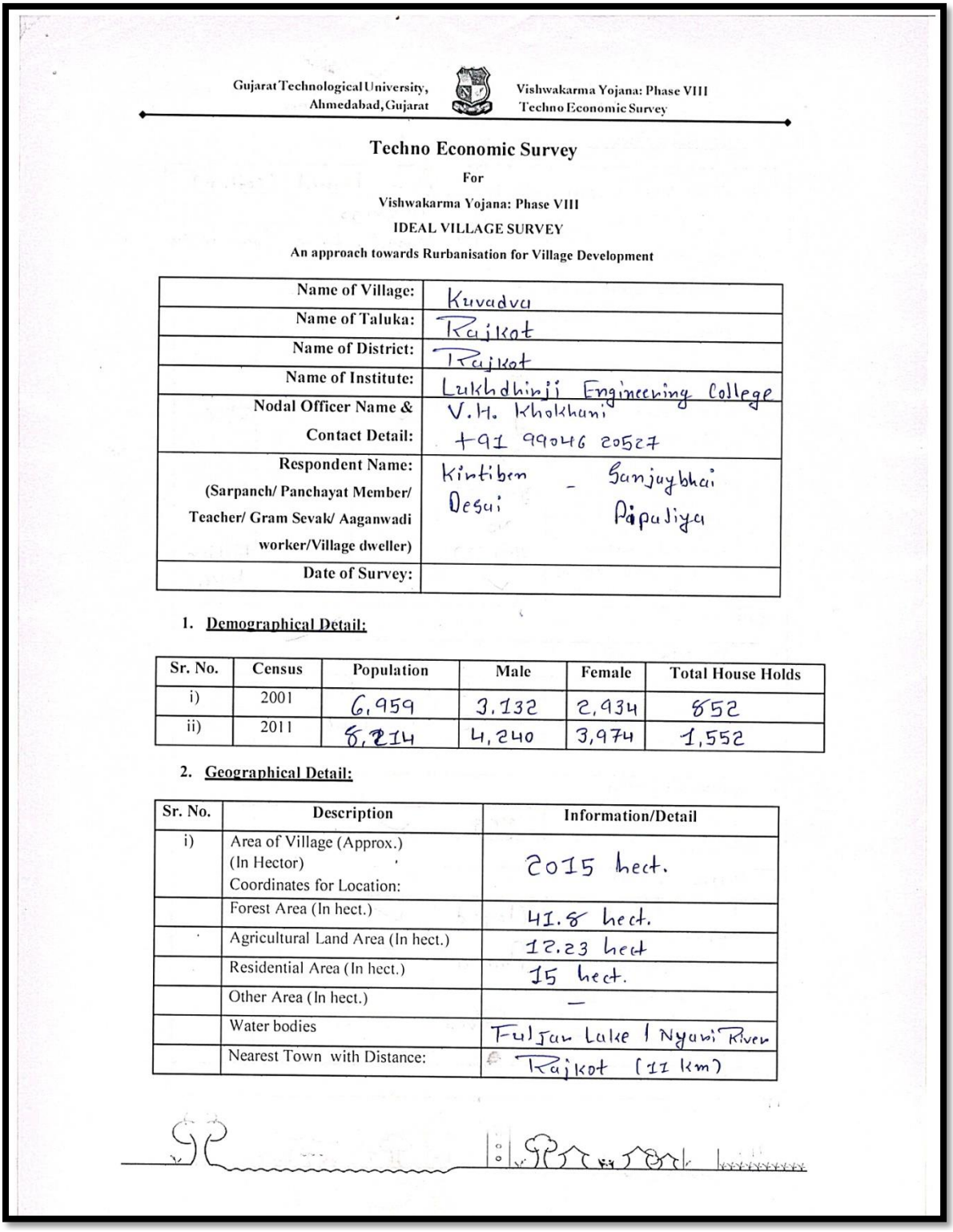
- The facilities designed under this Vishwakarma Project Phase VIII will be better helpful Development of the village physically as well as socially, which improves the overall lifestyle People with the nation by preserving nature little by little. This will help in the development of smart Sustainable villages, reduce migration from villages and prevent cities Urban pressure.
- Basic necessities like community hall, any recreation area, in Pipaliyaraj village, ATM,Bio-gas Plant etc. were not present. Planting a given design proposal, can make all the missing features Will be provided which will prevent the migration of rural people towards the urban area which will in turn Reduces pressure on cities.
- Further consideration should be given to the meaning of efficiency General concepts of economic or technical efficiency. Indeed, employment expansion is minimal As important as productivity growth. In a sense, both represent the use of labor as one Tool. Then, thinking about efficiency focuses on one and ignores the other Important to affect this question. The answer, which calls for change in both economics and Politics can make a real difference.
- This Can reduce the burden on urban areas as well as reduce pollution in both areas Slowly Slowly.

Chapter-11:- References refereed for this project:-

- http://www.onefivenine.com/india/villages/Rajkot/Wankaner/Pipaliyaraj#:~:text=Pipaliyaraj%202011%20Census%20Details,Female%20Literacy%20rate%20is%2029.4%25.
- https://villageinfo.in/gujarat/rajkot/wankaner/pipaliyaraj.html
- https://pincode.net.in/GUJARAT/RAJKOT/P/PIPALIYA_RAJ
- https://www.villagemaps.in/gujarat/pipaliyaraj-wankaner-rajkot-512810/
- https://www.accuweather.com/en/in/pipaliyaraj/3318219/weather-forecast/3318219
- http://www.pincodeindia.net/state/gujarat/district/rajkot/postoffice/pipaliya-raj.html
- https://www.census2011.co.in/data/village/512944-kuvadva-gujarat.html#:~:text=Kuvadva%20is%20a%20large%20village,as%20per%20Population%20Census%202011.&text=In%20Kuvadva%20Male%20literacy%20stands,female%20literacy%20rate%20was%2069.03%20%25.
- https://etrace.in/census/village/kuvadva-rajkot-district-rajkot-gujarat-512944
- https://villageinfo.in/gujarat/rajkot/rajkot/kuvadva.html
- https://www.census2011.co.in/data/village/512981-samadhiyala-gujarat.html
- https://www.census2011.co.in/data/village/513368-samadhiyala-gujarat.html

Chapter-12:- Annexure attachment

12.1) Survey form of Ideal Village Scanned copy attachment in the report for Part-1



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

Name of Village:	Kuvadva
Name of Taluka:	Rajkot
Name of District:	Rajkot
Name of Institute:	Lukhdhinji Engineering College
Nodal Officer Name & Contact Detail:	V.H. Khokhani +91 99046 20527
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Kintiben Desai - Sanjaybhai Pipaliya
Date of Survey:	

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	6,959	3,132	2,934	852
ii)	2011	8,214	4,240	3,974	1,552

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	2015 hect.
	Forest Area (In hect.)	41.8 hect.
	Agricultural Land Area (In hect.)	12.23 hect
	Residential Area (In hect.)	15 hect.
	Other Area (In hect.)	—
	Water bodies	Fuljan Lake / Nyari River
	Nearest Town with Distance:	Rajkot (11 km)

3. Occupational Details:

Name of Three Major Occupation groups in Village	1. Agricultural (cotton) 2. Business 3. Manufacture commodities

4. Physical Infrastructure Facilities:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated) • RO Water • Well (Covered/ Uncovered) • Hand pumps • Tube well/ Borehole • River/ Canal/ Spring/ Lake/ Pond	yes ✓ No yes (2) No yes (2) ✓	✓ ✓ ✓ 		RMC. Fuljar Lake
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 2	Lakh Litre		
	Underground Sump	Capacity: 2	Lakh Litre		
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)	yes	✓		
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	Closed	✓		
	If Open than Pucca / Kutchcha	Pucca	✓		
	Whether drain water is discharged directly in to Water bodies/ Sewer plants	In River			
Suggestions if any:					

E.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	✓	✓		
	Main road	✓	✓		
	Internal streets	✓	✓		
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH-27			
Suggestions if any:					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	—			
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes (1.5 km)	✓		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	yes	✓		
Suggestions if any:					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt 24 Hrs.	✓		
	Power supply for Domestic Use	✓	✓		
	Power supply for Agricultural Use	✓ (8 hours)	✓		8 hours
	Power supply for Commercial Use	✓	✓		
	Road/ Street Lights	Yes			

	Electrification in Government Buildings/ Schools/ Hospitals	✓	✓		
	Renewable Energy Source Facilities (Y/ N)	No			
	LED Facilities	yes	✓		
Suggestions if any:					
H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	✓			
	Location Condition		✓		
	Community Toilet (With bath/ without bath facilities)	With bath	✓		
	Solid & liquid waste Disposal system available	yes	✓		
	Any facility for Waste collection from road	yes	✓		
Suggestions if any:					
I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	Stream, Wells Tube wells			
Suggestions if any:					
J.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	1:4	✓		Pucca

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks

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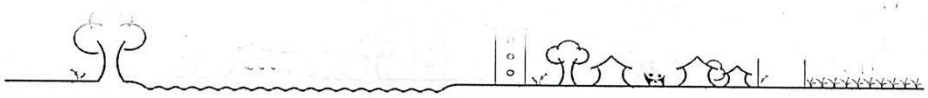
K.	**Health Facilities:**				
	Sub center/ PHC/ CHC /Government Hospital/ Child welfare & Maternity Homes (If Yes than specify No. of Beds) Condition:	PHC	✓		
	Private Clinic/Private Hospital/ Nursing Home	Yes		(15)	
	If any of the above Facility is not available in village than approx. distance from village: ...10...kms.				
Suggestions if any:					
L.	**Education Facilities:**				
	Aaganwadi/ Play group	5	✓		
	Primary School	3	✓		
	Secondary school	3	✓		
	Higher sec. School	3	✓		
	ITI college/ vocational Training Center	1	✓		
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	No			
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					
M.	**Socio- Culture Facilities**				
	Community Hall (With or without TV) Location:	No			Private Hall Available



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	Condition:	Good			
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	No			
	Public Garden Location: Condition:	yes (1)			
	Village Pond Location: Condition:	yes	✓		
	Recreation Center Location: Condition:	No	✓		
	Cinema/ Video Hall Location: Condition:	No ✓			
	Assembly Polling Station Location: Condition:	yes	✓		
	Birth & Death Registration Office Location: Condition:	yes	✓		

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

Suggestions if any:

N.	Other Facilities				
	Post-office	yes	✓		
	Telecommunication Network/ STD booth	No	✓		

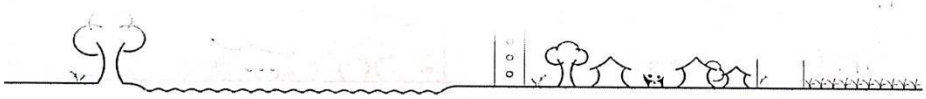
	General Market	yes	✓		
	Shops (Public Distribution System)	yes	✓		
	Panchayat Building	yes	✓		
	Pharmacy/Medical Shop	yes	✓		
	Bank & ATM Facility	yes	✓		
	Agriculture Co-operative Society	No	–		
	Milk Co-operative Soc.	No	–		
	Small Scale Industries	yes	✓		
	Internet Cafes/ Common Service Center/Wi Fi	No			
	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	Inverter Power Supply	✓		
P.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	yes No yes	✓ ✓		
Q.	Any Other				

7. **Data Collection From Village**

Village Base Map Available: ~~Hard Copy~~/Soft Copy	Soft Copy



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1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	No All Public Infrastructure facilities are good.	
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	10 times 5 times yes	-

IX. Smart Village / Heritage Details

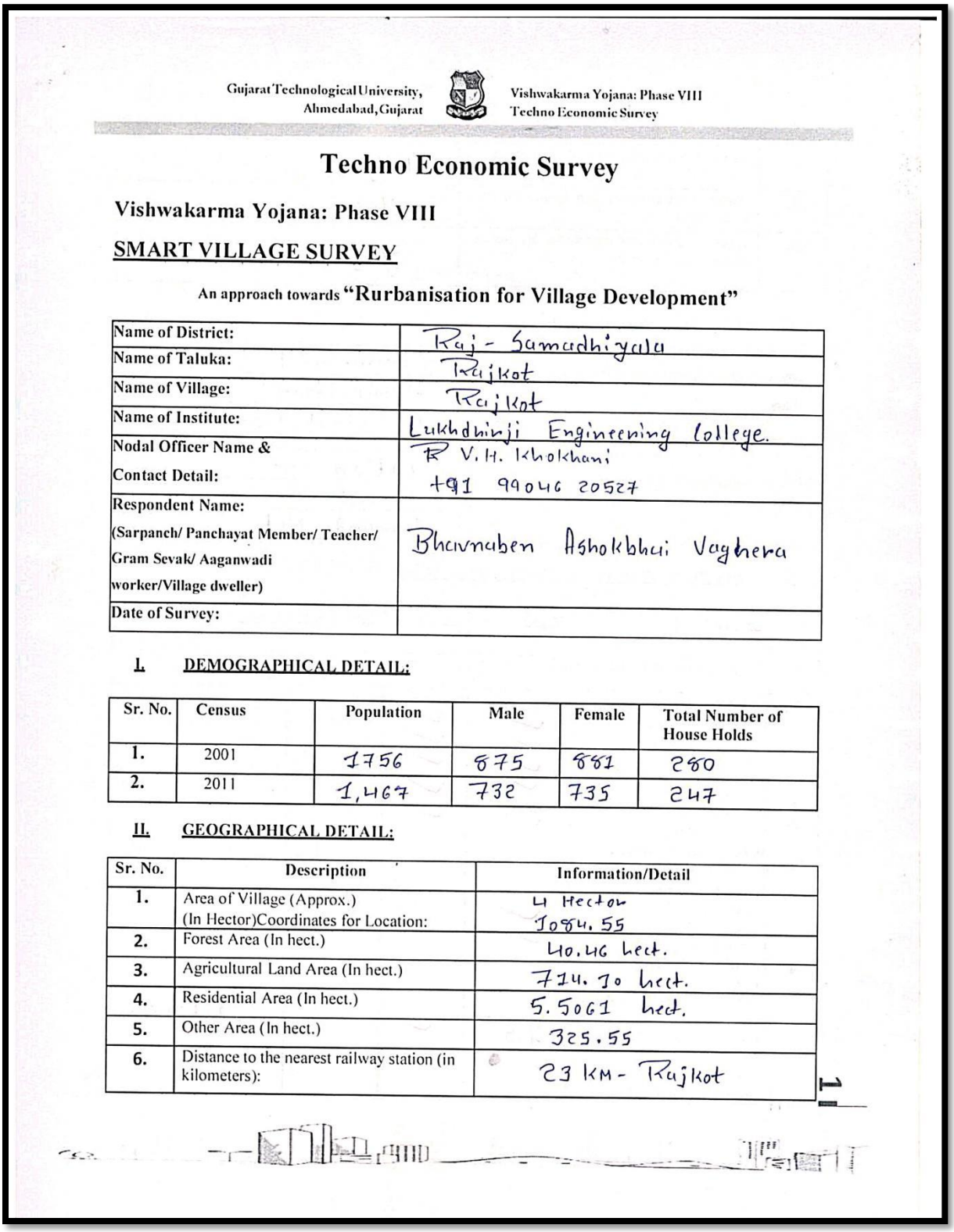
Sr. No.	Descriptions	Information/ Detail	Remarks
1.	IS THEIR ANY THING FOR THE VILLAGE ENHANCEMENT POSSIBLE ?	Secondary School.	—

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

Sanjaybhai P. Pipaliya
સરપંચ
કુવાડવા-ગ્રામ પંચાયત

12.2) Survey form of Smart Village Scanned copy attachment in the report for Part-I



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

SMART VILLAGE SURVEY

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

Name of District:	Raj - Samadhiyala
Name of Taluka:	Rajkot
Name of Village:	Rajkot
Name of Institute:	Lukhdhinji Engineering College.
Nodal Officer Name & Contact Detail:	R V.H. Kholkhani +91 99046 20527
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Bhavnaben Ashokbhai Vaghera
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	1756	875	881	280
2.	2011	1,467	732	735	247

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	4 Hector 1084.55
2.	Forest Area (In hect.)	40.46 hect.
3.	Agricultural Land Area (In hect.)	714.10 hect.
4.	Residential Area (In hect.)	5.5061 hect.
5.	Other Area (In hect.)	325.55
6.	Distance to the nearest railway station (in kilometers):	23 KM - Rajkot

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7.	Name of Nearest Town with Distance:	Rajkot
8.	Distance to the nearest bus station (in kilometers):	Yes
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.	Commercial
	2.	Agriculture
	3.	Industrial work.

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

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	✓	✓		
2.	**DUG WELL**				
	Protected Well	yes	✓		
	Un Protected Well				
3.	**WATER FROM SPRING**				
	Protected Spring				
	Unprotected Spring				
	Rainwater	✓			
	Tanker Truck	✓			
	Cart With Small Tank				
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/**				10 Lake's
	Irrigation Channel	yes	✓		
	Bottled Water				
	Hand Pump				
	Other(Specify)**Lake/ Pond**				

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Suggestions if any:						
B.	**Water Tank Facility**					
	Overhead Tank	Capacity:	—			
	Underground Sump	Capacity:	1,00,000/-			
Suggestions if any:						
C.	**The Type of Drainage Facility**					
	A. UNDERGROUND DRAINAGE 1 Cloud 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	✓ yes	✓		only 5% open drainage system	
Suggestions if any:						
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**					
	Village approach road	All Wether Road				
	Main road	C.C. Road				
	Internal streets	C.C. Road				
	Nearest NH/SH/MDR/ODR Dist. in kms.	S.H. Rajkot, Bhavnagar			Highway	
Suggestions if any:						
E.	**Transport Facility**					
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No Rajkot.				
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes.	✓			
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	✓			
Suggestions if any:						
F.	**Electricity Distribution**					
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt. (24 hrs)	✓			

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	Power supply for Domestic Use	✓			
	Power supply for Agricultural Use	yes			
	Power supply for Commercial Use	✓			
	Road/ Street Lights	✓			
	Electrification in Government Buildings/ Schools/ Hospitals	✓			
	Renewable Energy Source Facilities (Y/ N)	✓			
	LED Facilities	✓			
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	✓ 5			
	Location Condition	3	✓		
	Community Toilet (With bath/ without bath facilities)	With bath			
	Solid & liquid waste Disposal system available	yes	✓		
	Any facility for Waste collection from road	yes	✓		
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Bonewell River Tube well. Canal.			
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	2 : 98			

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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	Available			
	Govt. Dispensary				
	Private Clinic	Available			
	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: ...23..kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	(1)	✓		
	Primary School	(1)	✓		
	Secondary school	(1)	✓		Bhurad School.
	Higher sec. School	-			
	ITI college/ vocational Training Center	-			
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	-			R.K. University Tramba
	If any of the above Facility is not available in village than approx. distance from village: ...10...kms.				

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Suggestions if any:

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

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

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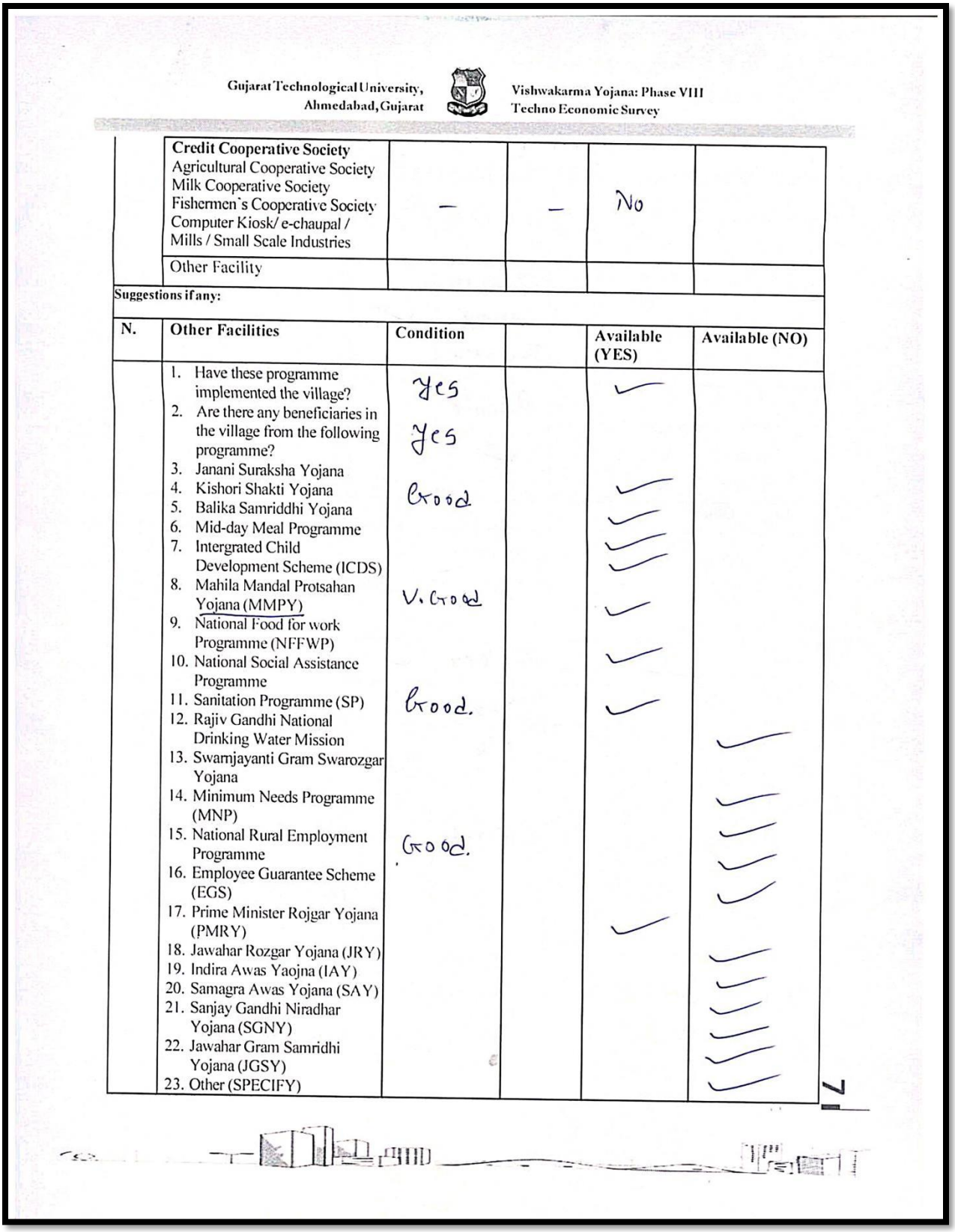

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	Credit Cooperative Society Agricultural Cooperative Society Milk Cooperative Society Fishermen's Cooperative Society Computer Kiosk/ e-chaupal / Mills / Small Scale Industries	–	–	No	
	Other Facility				

Suggestions 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				
	4. Kishori Shakti Yojana	Good		✓	
	5. Balika Samriddhi Yojana			✓	
	6. Mid-day Meal Programme			✓	
	7. Intergrated Child Development Scheme (ICDS)			✓	
	8. Mahila Mandal Protsahan Yojana (MMPY)	V. Good		✓	
	9. National Food for work Programme (NFFWP)			✓	
	10. National Social Assistance Programme			✓	
	11. Sanitation Programme (SP)	Good.		✓	
	12. Rajiv Gandhi National Drinking Water Mission				✓
	13. Swarnjayanti Gram Swarozgar Yojana				✓
	14. Minimum Needs Programme (MNP)				✓
	15. National Rural Employment Programme	Good.			✓
	16. Employee Guarantee Scheme (EGS)				✓
	17. Prime Minister Rojgar Yojana (PMRY)			✓	
	18. Jawahar Rozgar Yojana (JRY)				✓
	19. Indira Awas Yaojna (IAY)				✓
	20. Samagra Awas Yojana (SAY)				✓
	21. Sanjay Gandhi Niradhar Yojana (SGNY)				✓
	22. Jawahar Gram Samridhi Yojana (JGSY)				✓
	23. Other (SPECIFY)				✓

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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 Inverter	✓		
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	Private ✓			
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	No			
3.	Any NGO working for village development	No			
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	Earthquake			

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks

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1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	No All Public Infrastructure facilities are good.	
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	10 times 5 times yes	-

IX. Smart Village / Heritage Details

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

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

H.N. Makwana
સરપંચ
સામધીયાળા-ગ્રામ પંચાયત

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12.3) Survey form of Allocated Village Scanned copy attachment in the report for Part-I

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Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

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

Name of District:	Rajkot
Name of Taluka:	Wankaner
Name of Village:	Pipaliyaraj
Name of Institute:	Lukhdhirji Engineering College.
Nodal Officer Name & Contact Detail:	V. H. Khokhani +91 99046 20527
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sarpanch:- Kadivar Rahimaben Mahebubbhai Contact No:- 98797 62664
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	4,218	2,100	2143	775

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	234km from State Capital Gandhinagar 34 Km towards North.
2.	Forest Area (In hect.)	50.3 hect
3.	Agricultural Land Area (In hect.)	15 hect
4.	Residential Area (In hect.)	19 hect.
5.	Other Area (In hect.)	—
6.	Distance to the nearest railway station (in kilometers):	—

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7.	Name of Nearest Town with Distance:	Kalavadi (11km), Valasan (5 km) Panch dwarka (6 km), Tithuva (7 km)
8.	Distance to the nearest bus station (in kilometers):	Kumbhar Para Bus Stand.
9.	Whether village is connected to all road for the any facility or town or City?	yes, but Reconstruction needed.

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Manufacture commodities
	2. Agricultural (Cotton)
	3. Business

Major crops grown in the village:	1. Ground Nut
	2. Cotton
	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	Public Tap..	✓		Management needed.
	Piped To Yard/Plot				
	Public Tap/Standpipe				
	Tube Well Or Bore Well	Borewell			
2.	**DUG WELL**				
	Protected Well				
	Un Protected Well	Un protected		✓	
3.	**WATER FROM SPRING**				
	Protected Spring				
	Unprotected Spring				
	Rainwater	Rainwater	✓		
	Tanker Truck	Tanker Truck			
	Cart With Small Tank				
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/**				
	Irrigation Channel				Construction of channel needed.
	Bottled Water				
	Hand Pump	Hand Pump		✓	

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	Other(Specify)**Lake/ Pond**	—	—	—	—
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	1 Jar	Jitve.	
	Underground Sump	Capacity:	—	—	—
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1 Parallel System	✓	✓	-	—
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Kutchha		✓	
	Main road	Pucca	✓		
	Internal streets	Kutchha		✓	
	Nearest NH/SH/MDR/ODR Dist. in kms.	SH 113	✓		NH-27 also
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No Morbi-42.4		✓	
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Good Kumbhar Pipli - 14.2 km		✓	
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Auto chakda	✓		
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt. 17 hrs	✓		No action Needed

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	Power supply for Domestic Use	Average	✓		Voltage damages Repairing
	Power supply for Agricultural Use	High	✓		
	Power supply for Commercial Use	Low	✓		
	Road/ Street Lights	Good		✓	
	Electrification in Government Buildings/ Schools/ Hospitals	Good		✓	
	Renewable Energy Source Facilities (Y/ N)	No		✓	Inverter System Needed.
	LED Facilities	Yes	✓		
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	5	✓		Renovation and Cleaning
	Location Condition	Into village - Good Condition.			needed.
	Community Toilet (With bath/ without bath facilities)	without bath	✓		
	Solid & liquid waste Disposal system available	Yes	✓		
	Any facility for Waste collection from road	Truck		✓	every day Collect garbage
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Borewell Canal.	✓		
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Kutchha (30%)		Pucca (70%)	

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	Available	✓		
	Sub-Centre	—		✓	
	PHC	Available	✓		
	BLOCK PHC	—		—	Construction needed of Hospital.
	CHC/RH	—		✓	
	District/ Govt. Hospital	—		✓	
	Govt. Dispensary	—		✓	
	Private Clinic	Available	✓		
	Private Hospital/	—		✓	
	Nursing Home	Available.	✓		
	AYUSH Health Facility	—		✓	
	sonography /ultrasound facility	Available.	✓		
	If any of the above Facility is not available in village than approx. distance from village: ..15...kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Available	✓		
	Primary School	Available	✓		
	Secondary school	.			
	Higher sec. School	Not Available.	.	✓	Construction needed.
	ITI college/ vocational Training Center	—	—	—	
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	Shri Itn Rn	and Doshi		15 km away.

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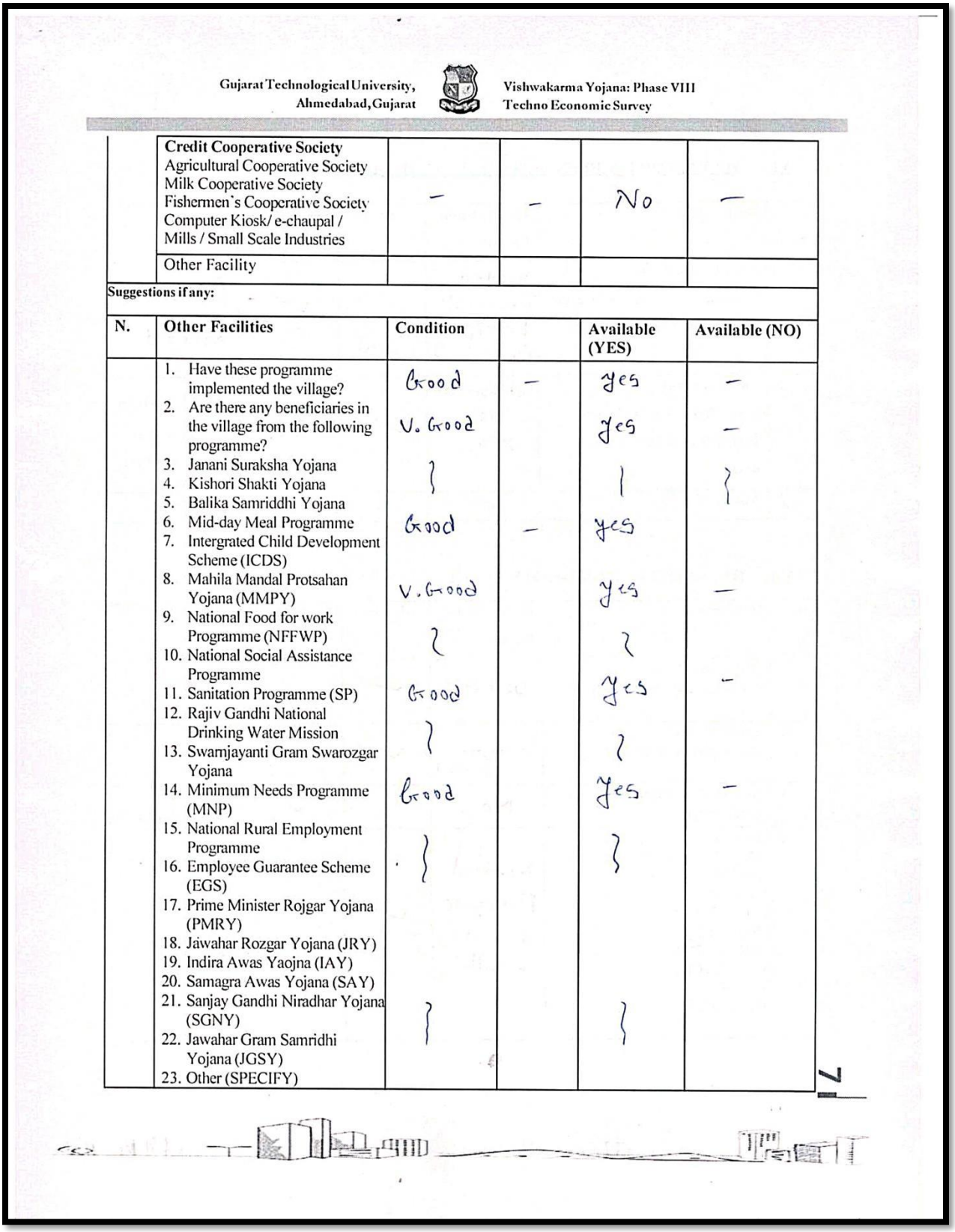
	If any of the above Facility is not available in village than approx. distance from village: ..20...kms.
Suggestions if any:	

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	Not Available	-	-	No
	Public Library (With daily newspaper supply: Y/N)	Good	Into Village	yes but construction needed.	
	Public Garden	Good	-	yes	-
	Village Pond	-	-	-	-
	Recreation Center	Not Available	-	-	No
	Cinema/ Video Hall	Tunjan Talkies		yes	0 -
	Assembly Polling Station	-	-	-	No
	Birth & Death Registration Office	Good	-	yes	-

If any of the above Facility is not available in village than approx. distance from village: ..15...kms.

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	Good	Village	yes	-
	Telecommunication Network/ STD booth	No	-	-	No
	General Market	Sabji Mandi	AK Shop	yes	-
	Shops (Public Distribution System)	Kailash General store.		yes	-
	Panchayat Building	Good	TOL	yes	1 1/2 km away
	Pharmacy/Medical Shop	Good	-	yes	-
	Bank & ATM Facility	Good	-	yes	-
	Agriculture Co-operative Society	-	-	-	No
	Milk Co-operative Soc.	V. Good	-	yes	-
	Small Scale Industries	Good	-	yes	-
	Internet Cafes/ Common Service Center/Wi Fi	-	-	-	No
	Youth Club	Good	-	yes	-
	Mahila Mandal	V. Good	-	yes	-



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	Credit Cooperative Society Agricultural Cooperative Society Milk Cooperative Society Fishermen's Cooperative Society Computer Kiosk/ e-chaupal / Mills / Small Scale Industries	–	–	No	–
	Other Facility				

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village?	Good	–	yes	–
	2. Are there any beneficiaries in the village from the following programme?	V. Good		yes	–
	3. Janani Suraksha Yojana	〃		〃	〃
	4. Kishori Shakti Yojana				
	5. Balika Samriddhi Yojana				
	6. Mid-day Meal Programme	Good	–	yes	
	7. Intergrated Child Development Scheme (ICDS)				
	8. Mahila Mandal Protsahan Yojana (MMPY)	V. Good		yes	–
	9. National Food for work Programme (NFFWP)	〃		〃	
	10. National Social Assistance Programme				
	11. Sanitation Programme (SP)	Good		yes	–
	12. Rajiv Gandhi National Drinking Water Mission	〃		〃	
	13. Swarnjayanti Gram Swarozgar Yojana				
	14. Minimum Needs Programme (MNP)	Good		yes	–
	15. National Rural Employment Programme	〃		〃	
	16. Employee Guarantee Scheme (EGS)				
	17. Prime Minister Rojgar Yojana (PMRY)				
	18. Jawahar Rozgar Yojana (JRY)				
	19. Indira Awas Yaojna (IAY)				
	20. Samagra Awas Yojana (SAY)				
	21. Sanjay Gandhi Niradhar Yojana (SGNY)	〃		〃	
	22. Jawahar Gram Samridhi Yojana (JGSY)				
	23. Other (SPECIFY)				

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	Needed Renewable Energy Converter, Inverter		✓	Action needed.
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	Not Available No yes	✓		Construction of Bio-gas Plant needed.
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	V Yojna Project	✓		
3.	Any NGO working for village development	No	-	✓	Action needed
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	Normal Earthquake in last month	✓		—

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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 ✓	All Public Infrastructure's Repairing & Maintenance needed.	Reconstruction Needed
2.	Additional Information/ Requirement	–	–
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	11 6 yes	

IX. Smart Village / Heritage Details

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

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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પીપળીયારાજ ગ્રામ પંચાયત

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12.4) Gap Analysis of the Allocated Village:-

VILLAGE GAP Analysis					
Village Facilities	**Planning Commission/UDPFI Norms**	**Village Name:**	PIPALIYARAJ		
		Population:			4218
		Existing	**Required as per Norms**	**Smart Vilage / Cities / Heritage Future Projection Design**	**Gap**
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	1	2	0	-1
Primary School	Each Per 2500 population	1	2	0	-1
Secondary School	Per 7,500 population	0	1	0	-1
Higher Secondary School	Per 15,000 Population	0	1	0	-1
College	Per 125,000 Population	0	0	0	0
Tech. Training Institute	Per 100000 Population	0	0	0	0
Agriculture Research Centre	Per 100000 Population	0	0	0	0
Skill Development Center	Per 100000 Population	0	0	0	0
Health Facility					
Govt/Panchyat Dispensary or Sub PHC or Health Centre	Each Village	1	0	0	0
Primary Health & Child Health Center	Per 20,000 population	0	1	0	-1
Child Welfare and Maternity Home	Per 10,000 population	0	0	0	0
Multispeciality Hospital	Per 100000 Population	0	0	0	0
Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum pockets & kutcha house)	1	2	1	-1
Physical Infrastructure Facilities					
Transportation		**Inadequate**			
Pucca Village Approach Road	Each village	ADEQUATE		0	0
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	INADEQUATE		0	0
Drinking Water (Minimum 70 lpcd)		**Adequate**			
Over Head Tank	1/3 of Total Demand	900000 LTR		0	0

U/G Sump	2/3 of Total Demand	200000 LTR		0	0
Drainage Network - Open		**Adequate**		0	0
Drainage Network - Cover		**adequate**		0	0
Waste Management System		**Inadequate**	Solid waste management required	0	0
Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	0	1	0	-1
community hall and Public Library	Per 15000 Population	0	1	0	-1
Cremation Ground	Per 20,000 population	0	1	0	-1
Post Office	Per 10,000 population	1	1	0	0
Gram Panchayat Building	Each individual/group panchayat	1	1	0	0
APMC	Per 100000 Population	0	0	0	0
Fire Station	Per 100000 Population	0	0	0	0
Public Garden	Per village	1	1	0	0
Police post	Per 40,000Population	0	1	0	-1
Shopping Mall	Small shops are available				
Electrical Design					
Electricity Network		**Adequate**			
Any Smart Village Facility					
Technology					
		ESR cap	0	0	0
		Sump cap	0	0	0
		Lat	0	0	0

Table 22

- Rural Development Ministry is conducting a gap analysis of villages in the country.
- Till now it has done a gap analysis of more than 3.5 lakh villages, in more than 1.6 lakh panchayats under the Mission Antyodaya convergence scheme.
- A team of officials surveyed and scored village level facilities and amenities using parameters related to infrastructure, economic development and

livelihood, irrigation facilities, health, nutrition and sanitation, women's empowerment, and financial inclusion.

12.5) Summary Details of All the Villages Designs in Table form as Part-I and Part-II:-

Sr No.	Village no.	Discipline	Part-1	Part-2
1	Pipaliyaraj	civil	• Community hall • Bank • Atm • Bio-gas Plant • E-library • Bus stand	• Cyber Cafe • Supermarket • Gaushala • Shopping mall • Post Office • Septic Tank
2	BHADIYAD	Civil	• PICKUP STAND • ATM • BANK • CREMATORIA	• PUBLIC LATRINE • WASTE MANAGEMENT • SUMP • AAROGYA KENDRA • LIBRARY
		ELECTRICAL	• SOLAR STREET LIGHT • ATM FACILITIES	• CCTV CAMERA • BIOGAS PLANT • SOLAR PHOTOVOLATIC PUMPING SYSTEM
3	AMRELI	Civil	• ATM • POST OFFICE • BANK • BIOGAS PLAN • LIBRARY • COMMUNIT Y HALL	• PHC • BUS STOP • CYBER CAFE • SUPER MARKET • MILK DAIRY • PUBLIC TOILET

Table 23

12.6) Summary of Good Photographs in Table Format:-

(FIG-37)

12.7) Village Interaction with sarpanch Report :-

VILLAGE INTERACTION WITH TALATI/SARPANCH LETTER

Vishwakarma Yojana Phase VIII

Pipaliyaraj Village

Village Code:- 363621

Sub:-Village Interaction Form With Sarpanch/Talati Of Pipaliyaraj Village

I Sarpanch/Talati Of Pipaliyaraj Village Undersigned Gives Approval Of Doing Village interection Acivity Under Vishwakarma Yojana VIII-An Approch Towards Rurbanization By Students Of Lukhdhirji Engineering College Named Pankhaniya Ravi N. (170310106078) & Meghanathi Nikulgiri N. (170310106071)

Date:-

Sign:- સરપંચ,
પીપળીયારાજ ગ્રામ પંચાયત

12.8) Sarpanch Letter giving information about the village development:-

APPROVAL LETTER FOR PROPOSED DESIGN APPROVAL

Vishwakarma Yojana Phase VIII

Pipaliyaraj Village

Village Code:- 363621

Sub:- Approval Of Design Proposal For Pipaliyaraj Village

I Sarpanch/Talati Of Pipaliyaraj Village Undersigned Gives Approval For Following Main Design Proposal Given Under Vishwakarma Yojana VIII-An Approch Towards Rurbanization By Students Of Lukhdhirji Engineering College Named Pankhaniya Ravi N. (170310106078) & Meghanathi Nikulgiri N. (170310106071)

Approved Main Design Proposals as Of PART-1:

1) **COMMUNITY HALL**
2) **E-LIBRARY**
3) **BANK**
4) **ATM**
5) **BIO-GAS PLANT**
6) **BUS STAND**

DATE:-

SIGN:- સરપંચ, પીપળીયારાજ ગ્રામ પંચાયત

12.9) LETTER FOR SWACHHTA & COVID AWARENESS ACTIVITY APPROVAL:-

APPROVAL LETTER FOR SWACHHTA & COVID AWARENESS ACTIVITY APPROVAL

Vishwakarma Yojana Phase VIII

Pipaliyaraj Village

Village Code:- 363621

Sub:- Approval Of Doing Awareness Activity For Swachhta And Covid For Pipaliyaraj Village

I Sarpanch/Talati Of Pipaliyaraj Village Undersigned Gives Approval Of Doing Swachhata&Covid Awarness Acivity Under Vishwakarma Yojana VIII-An Approch Towards Rurbanization By Students Of Lukhdhirji Engineering College Named Pankhaniya Ravi N. (170310106078) & Meghanathi Nikulgiri N. (170310106071)

Date:-

Sign:- સરપંચ, પીપળીયારાજ ગ્રામ પંચાયત

VY-PHASE-VIII-PART-II

**Chapter:-13 From the Chapter- 9 future designs of the aspects (Feasibility, Construction,
Operation and maintenance of various design options in Rural Areas along with cost with AutoCAD designs / planning with any software**

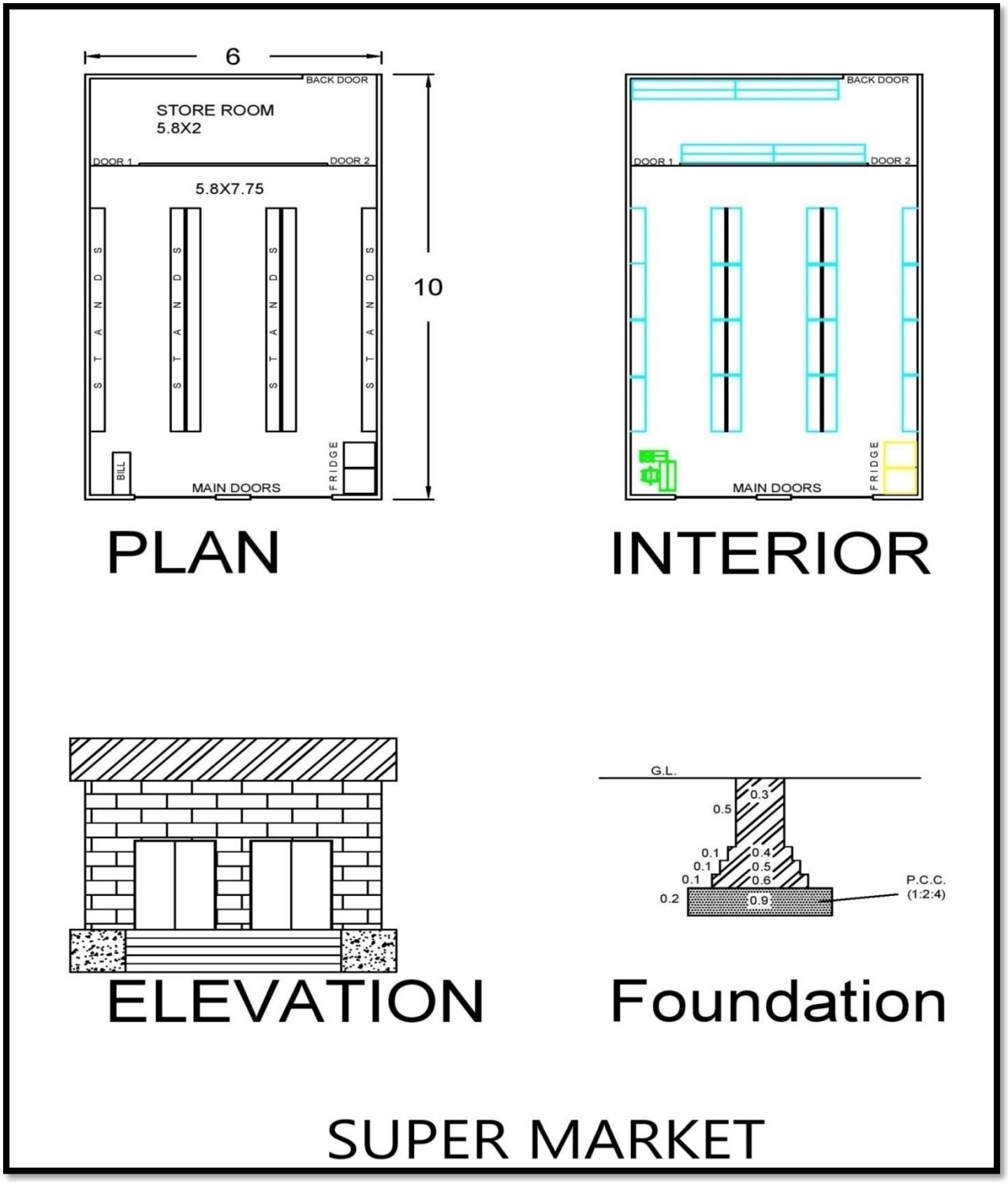
13.1 Design Proposals:-

13.1.1 Super Market

Supermarket, large retail store operated on a self-service basis, selling groceries, fresh produce, meat, bakery and dairy products, and sometimes an assortment of nonfood goods. Supermarkets gained acceptance in the United States during the 1930s.

❖ **OBJECTIVES OF SUPER MARKET:-**

- To provide cheap products.
- Control shrink, expenses, and payroll.
- Ensure sales floor is adequately stocked, signed, and merchandised to brand presentation.
- Continually evaluate and react to performance issues while proactively hiring, developing and retaining the store's team in a timely manner.
- The major objective of most grocery store companies is to sell products and earn the highest profits possible.
- However, grocery store owners face major competition from other retailers like restaurants and mass merchandisers.


6
BACK DOOR
STORE ROOM
5.8X2
DOOR 1
DOOR 2
5.8X7.75
STANDS
STANDS
STANDS
STANDS
10
BILL
MAIN DOORS
FRIDGE
PLAN
BACK DOOR
DOOR 1
DOOR 2
MAIN DOORS
FRIDGE
INTERIOR
ELEVATION
G.L.
0.3
0.5
0.1
0.4
0.1
0.5
0.1
0.6
0.2
0.9
P.C.C.
(1:2:4)
Foundation
SUPER MARKET

(FIG-38)

GENERAL NOTES	
1) All Dimensions Are In meter	
2) Drawing Should be read not to scale	
3) Design Is prepared only for Educational purpose	
4) Correctness of all data must be check before Use	
5) Designer is not Responsible for any kind of wrong data	
Design name:-	Super Market
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	M.H. LUNAGARIYA
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
Chandrakhed -Ahemdabad	
LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

ESTIMATE OF SUPER MARKET

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount /m3 or m2	TOTAL AMOUNT IN INR
1	Earthwork in Excavation in Foundation:									
			1	25.60	0.80	1.00	20.48	m3		
	Net center Line =35.1 m no. of T joints= 12					TOTAL	20.48		100	2048
2	B.B.C.C. in Foundation									
			1	25.6	0.8	0.3	6.14	m3		
						TOTAL	6.14		900	5530
3	Brick Work Up to Ground Level									
		1st Step	1	32.00	0.70	0.10	2.24	m3		
		2nd Step	1	33.00	0.60	0.10	1.98	m3		
		3rd Step	1	33.00	0.50	0.10	1.65	m3		
		4th step Up to G.L.	1	34.00	0.40	0.50	6.80	m3		
						TOTAL	12.67		850	10770

4	DPC (5cm)									
			1	36.00	0.30		10.80	m2		
	Deduction	Door 1	1	5.00	0.30		1.50	m2		
		Door 2	4	0.80	0.30		0.96	m2		
		Door 3	4	0.80	0.30		0.96	m2		
						TOTAL	7.38		250	1845
5	Brick Work in Super Structure									
			1	35.00	0.30	4.00	42.00	m3		
	Deduction	Door 1	1	4.00	0.30	3.25	3.90	m3		
		Door 2	4	0.80	0.30	3.25	3.12	m3		
		Door 3	4	0.80	0.30	3.25	3.12	m3		
						TOTAL	31.86		750	23895
6	RCC slab									
			1	6.00	6.00		36.00	m2		
						TOTAL	36.00		1650	59400
7	Internal Plaster (12 mm)									
		Wall	1	35.00		4.50	157.50	m2		
		Ceilin	1	6.00	6.00		36.00	m2		
	Deduction	Door 1	0.5	4.00		3.25	6.50	m2		
		Door 2	2	0.80		3.25	5.20	m2		
		Door 3	2	0.80		3.25	5.20	m2		
						TOTAL	176.60		300	52980
8	Out SidePlasster (20mm)									
		walls	2	6.00		5.00	60.00	m2		
			2	6.00		5.00	60.00	m2		
	Deduction	Door 1	0.5	4.00		3.25	6.50	m2		
		Door 2	2	0.80		3.25	5.20	m2		
						TOTAL	108.30		250	27075
9	Flooring									
			1	6.00	6.00		36.00	m2		
						TOTAL	36.00		250	9000
10	Painting									
		Incide Wall	1	40.00		4.00	160.00	m2		
		Ceilin	1	6.00	6.00		36.00	m2		
		Out side wall	2	6.00		5.00	60.00	m2		
			2	6.00		5.00	60.00	m2		
	Deduction	Door 1	1	4.00		3.25	13.00	m2		
		Door 2	4	0.80		3.25	10.40	m2		
		Door 3	4	0.80		3.25	10.40	m2		
						TOTAL	282.20		350	98770
							TOTAL		5650	291312.1

13.1.2 Post Office:-

A post office is a public facility that provides mail services, such as accepting letters and parcels, providing post office boxes, and selling postage stamps, packaging, and stationery. Post offices may offer additional services, which vary by country.

❖ OBJECTIVES OF POST OFFICE:-

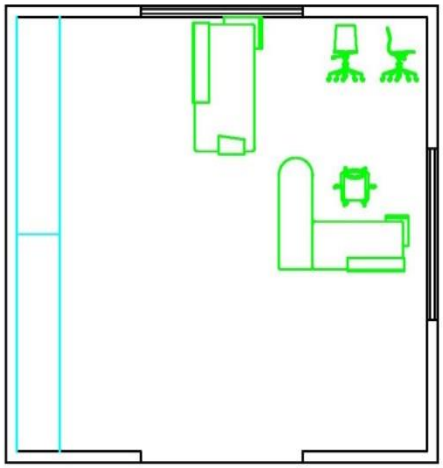
- To sustain its position as the largest postal network in the world touching the lives of every citizen in the country.
- To provide mail parcel, money transfer, banking, insurance and retail services with speed and reliability.
- To provide services to the customers on value-for-money basis.
- To ensure that the employees are proud to be its main strength and serve its customers with a human touch.

To continue to deliver social security services and to enable last mile connectivity as a Government of India platform.

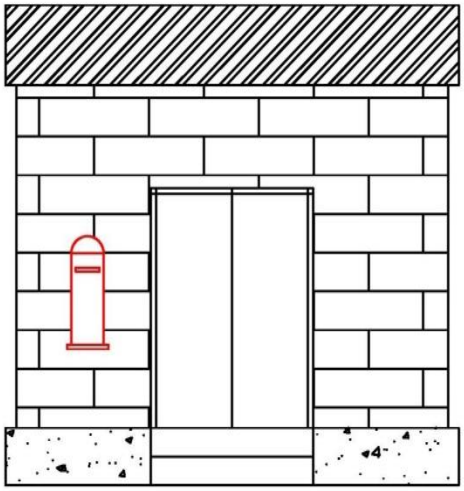
GENERAL NOTES	
1) All Dimensions Are In meter	
2) Drawing Should be read not to scale	
3) Design Is prepared only for Educational purpose	
4) Correctness of all data must be check before Use	
5) Designer is not Responsible for any kind of wrong data	
Design name:-	POST OFFICE
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	M.H. LUNAGARIYA
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
Chandrakhed -Ahemdabad	
LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

(FIG-39)

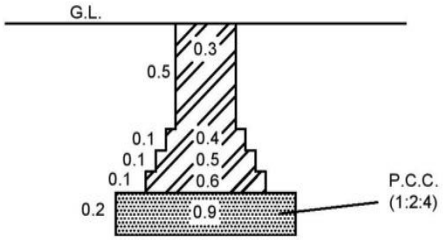
PLAN



INTERIOR



ELEVATION



Foundation

POST OFFICE

ESTIMATE OF POST OFFICE

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount /m3 or m2	TOTAL AMOUNT IN INR
1	Earthwork in Excavation in Foundation:									
			1	25.00	0.70	1.00	17.50	m3		
	Net center Line =35.1 m no. of T joints= 12					TOTAL	17.50		90	1575
2	B.B.C.C. in Foundation									
			1	25	0.7	0.2	3.50	m3		
						TOTAL	3.50		500	1750
3	Brick Work Up to Ground Level									
		1st Step	1	29.00	0.50	0.10	1.45	m3		
		2nd Step	1	29.00	0.40	0.10	1.16	m3		
		3rd Step	1	30.00	0.30	0.10	0.90	m3		
		4th step Up to G.L.	1	31.00	0.20	0.50	3.10	m3		
						TOTAL	6.61		300	1983
4	DPC (5cm)									
			1	30.00	0.20		6.00	m2		
	Deduction	Door 1	1	4.05	0.20		0.81	m2		
		Door 2	4	0.86	0.20		0.69	m2		
		Door 3	4	0.80	0.20		0.64	m2		
						TOTAL	3.86		100	386
5	Brick Work in Super Structure									
			1	35.00	0.20	2.50	17.50	m3		
	Deduction	Door 1	1	4.01	0.20	2.00	1.60	m3		
		Door 2	4	0.86	0.20	2.00	1.38	m3		
		Door 3	4	0.80	0.20	2.00	1.28	m3		
						TOTAL	13.24		500	6621
6	RCC slab									
			1	5.00	5.00		25.00	m2		
						TOTAL	25.00		1200	30000
7	Internal Plaster (12 mm)									
		Wall	1	35.00		2.50	87.50	m2		
		Ceilin	1	5.00	6.00		30.00	m2		
	Deduction	Door 1	0.5	3.00		2.25	3.38	m2		
		Door 2	2	0.86		2.25	3.87	m2		
		Door 3	2	0.80		2.25	3.60	m2		
						TOTAL	106.66		150	15998

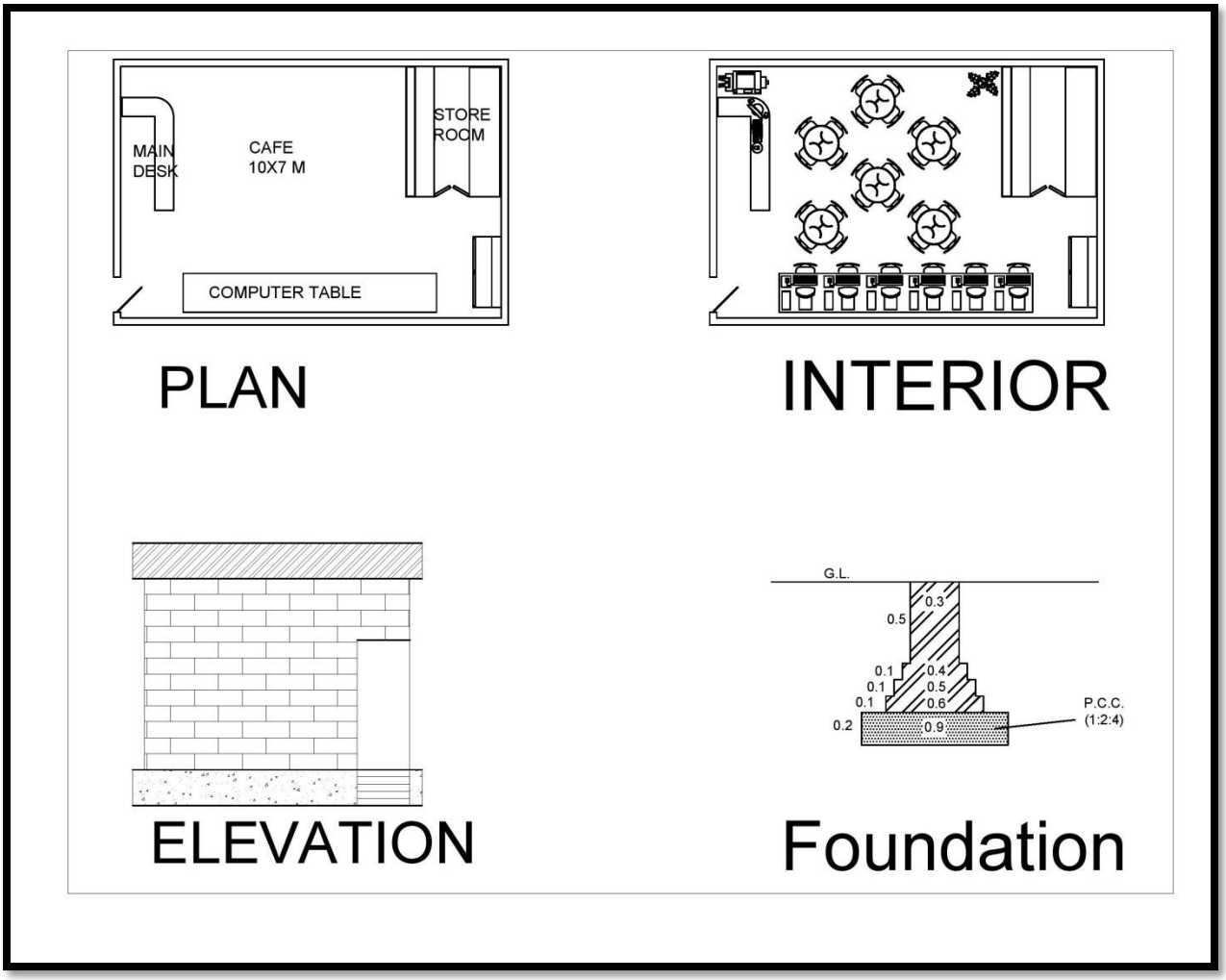
8	Out SidePlasster (20mm)									
		walls	2	4.00		4.00	32.00	m2		
			2	5.57		4.00	44.56	m2		
	Deduction	Door 1	0.5	3.00		2.00	3.00	m2		
		Door 2	2	0.86		2.00	3.44	m2		
						TOTAL	70.12		150	10518
9	Flooring									
			1	3.00	2.00		6.00	m2		
						TOTAL	6.00		130	780
10	Painting									
		Incide Wall	1	34.00		2.50	85.00	m2		
		Ceilin	1	5.00	6.00		30.00	m2		
		Out side wall	2	5.00		4.00	40.00	m2		
			2	5.00		4.00	40.00	m2		
	Deduction	Door 1	1	3.00		2.50	7.50	m2		
		Door 2	4	0.86		2.50	8.60	m2		
		Door 3	4	0.80		2.50	8.00	m2		
						TOTAL	170.90		200	34180
							TOTAL		3320	103791.45

13.1.3 Cyber Café:-

Cybercafe is a place to use computers to access the Internet, play games, create documents, chat with friends using voice and video, and other computer-related tasks. At most Internet cafes the computer and Internet access is provided for an hourly or daily fee.

❖ **OBJECTIVES OF Cyber Cafe:-**

- The main objective of the Cyber Cafe Management System is to manage the details of ID Proof, Charges, Customers, Downloads, Usage. It manages all the information about ID Proof, Computers, Usage, ID Proof. The project is totally built at administrative end and thus only the administrator is guaranteed the access.



GENERAL NOTES	
1) All Dimensions Are In meter	
2) Drawing Should be read not to scale	
3) Design Is prepared only for Educational purpose	
4) Correctness of all data must be check before Use	
5) Designer is not Responsible for any kind of wrong data	
Design name:-	Cyber Café
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	M.H. LUNAGARIYA
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
Chandrakhed -Ahemdabad	
LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

(Fig-40)

ESTIMATE OF CYBER CAFÉ

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount /m3 or m2	TOTAL AMOUNT IN INR
1	Earthwork in Excavation in Foundation:									
			1	32.00	0.90	1.00	28.80	m3		
	Net center Line =35.1 m no. of T joints= 12					TOTAL	28.80		200	5760
2	B.B.C.C. in Foundation									
			1	31	0.9	0.2	5.58	m3		
						TOTAL	5.58		850	4743
3	Brick Work Up to Ground Level									
		1st Step	1	32.50	0.70	0.10	2.28	m3		
		2nd Step	1	33.10	0.60	0.10	1.99	m3		
		3rd Step	1	33.70	0.50	0.10	1.69	m3		
		4th step Up to G.L.	1	34.33	0.40	0.50	6.87	m3		
						TOTAL	12.81		750	9609
4	DPC (5cm)									
			1	35.10	0.20		7.02	m2		
	Deduction	Door 1	1	3.05	0.20		0.61	m2		
		Door 2	4	0.76	0.20		0.61	m2		
		Door 3	4	0.70	0.20		0.56	m2		
						TOTAL	5.24		200	1048
5	Brick Work in Super Structure									
			1	33.90	0.20	3.08	20.91	m3		
	Deduction	Door 1	1	3.05	0.20	2.13	1.30	m3		
		Door 2	4	0.76	0.20	2.13	1.30	m3		
		Door 3	4	0.70	0.20	2.13	1.19	m3		
						TOTAL	17.12		750	12837
6	RCC slab									
			1	4.00	4.00		16.00	m2		
						TOTAL	16.00		1800	28800
7	Internal Plaster (12 mm)									
		Wall	1	35.00		4.00	140.00	m2		
		Ceilin	1	4.00	5.00		20.00	m2		
	Deduction	Door 1	0.5	2.00		2.50	2.50	m2		
		Door 2	2	0.76		2.50	3.80	m2		
		Door 3	2	0.70		2.50	3.50	m2		
						TOTAL	150.20		300	45060

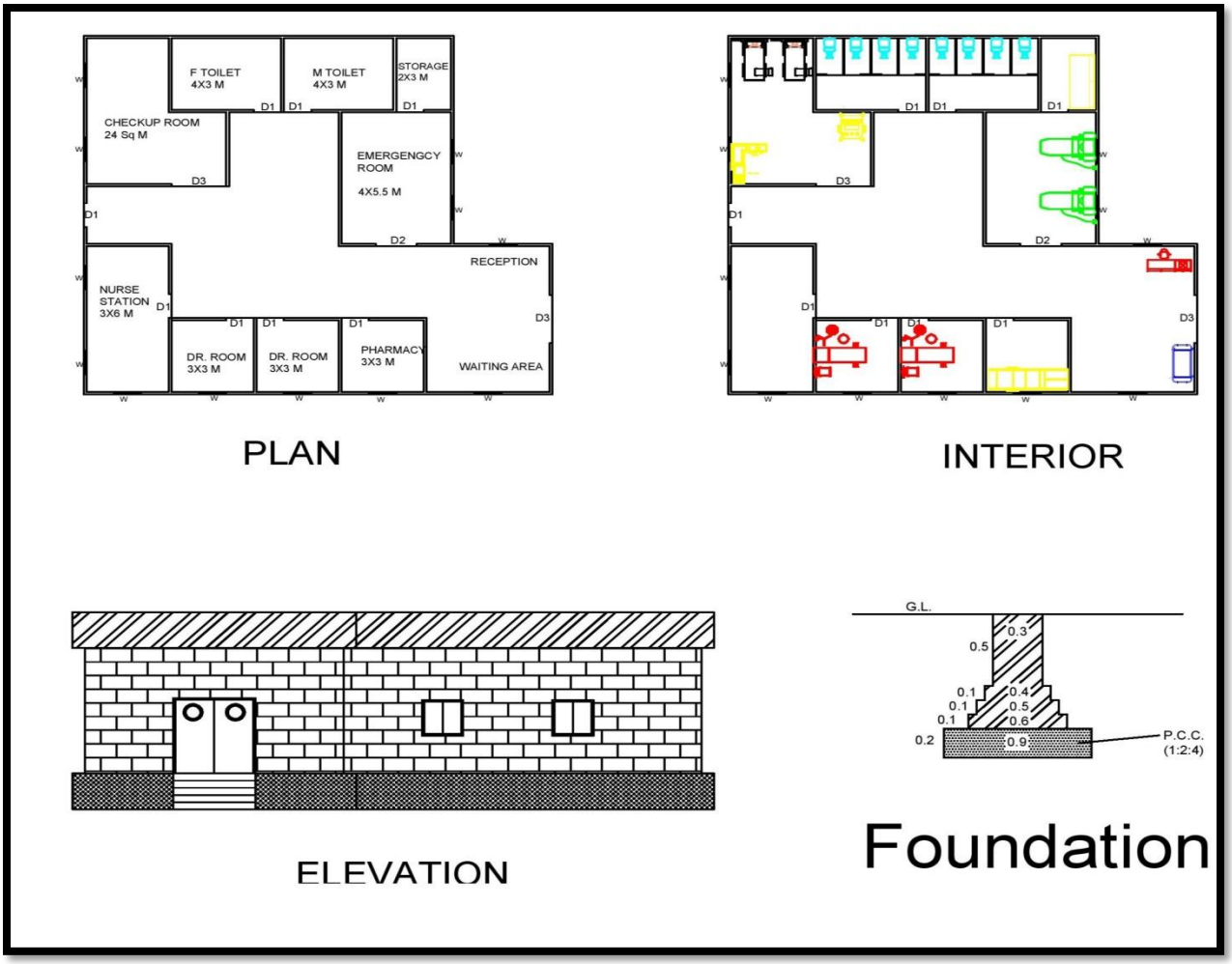
8	Out SidePlasster (20mm)									
		walls	2	2.00		4.00	16.00	m2		
			2	3.00		4.00	24.00	m2		
	Deduction	Door 1	0.5	2.50		2.50	3.13	m2		
		Door 2	2	2.50		2.50	12.50	m2		
						TOTAL	24.38		350	8531
9	Flooring									
			1	3.00	5.57		16.71	m2		
						TOTAL	16.71		250	4178
10	Painting									
		Incide Wall	1	34.00		4.00	136.00	m2		
		Ceilin	1	5.00	3.00		15.00	m2		
		Out side wall	2	4.00		3.00	24.00	m2		
			2	4.00		3.00	24.00	m2		
	Deduction	Door 1	1	3.00		2.50	7.50	m2		
		Door 2	4	0.86		2.50	8.60	m2		
		Door 3	4	0.80		2.50	8.00	m2		
						TOTAL	174.90		300	52470
							TOTAL		5750	173036.1344

13.1.4 PHC:-

- Provision of medical care.
- Maternal-child health including family planning.
- Safe water supply and basic sanitation.
- Prevention and control of locally endemic diseases.
- Collection and reporting of vital statistics.
- Education about health

❖ OBJECTIVES OF PHC:-

The main objective of primary health care will be to provide better health care services to the rural areas and urban slums. The population will be encouraged both individually and collectively to participate in the development of health.



GENERAL NOTES	
1) All Dimensions Are In meter	
2) Drawing Should be read not to scale	
3) Design Is prepared only for Educational purpose	
4) Correctness of all data must be check before Use	
5) Designer is not Responsible for any kind of wrong data	
Design name:-	PHC
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	M.H. LUNAGARIYA
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
Chandrakhed -Ahemdabad	
LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

(Fig-41)

ESTIMATE OF PHC

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount /m3 or m2	TOTAL AMOUNT IN INR
1	Earthwork in Excavation in Foundation:									
			1	35.10	0.90	1.00	31.59	m3		
	Net center Line =35.1 m no. of T joints= 12					TOTAL	31.59		350	11057
2	B.B.C.C. in Foundation									
			1	35.1	0.9	0.2	6.32	m3		
						TOTAL	6.32		1200	7582
3	Brick Work Up to Ground Level									
		1st Step	1	32.00	0.60	0.10	1.92	m3		
		2nd Step	1	33.00	0.50	0.10	1.65	m3		
		3rd Step	1	33.00	0.40	0.10	1.32	m3		
		4th step Up to G.L.	1	34.00	0.30	0.50	5.10	m3		
						TOTAL	9.99		750	7493
4	DPC (5cm)									
			1	36.00	0.20		7.20	m2		
	Deduction	Door 1	1	4.00	0.20		0.80	m2		
		Door 2	4	0.86	0.20		0.69	m2		
		Door 3	4	0.80	0.20		0.64	m2		
						TOTAL	5.07		450	2282
5	Brick Work in Super Structure									
			1	32.00	0.20	4.00	25.60	m3		
	Deduction	Door 1	1	3.00	0.20	2.25	1.35	m3		
		Door 2	4	0.76	0.20	2.25	1.37	m3		
		Door 3	4	0.70	0.20	2.25	1.26	m3		
						TOTAL	21.62		850	18379
6	RCC slab									
			1	5.00	5.00		25.00	m2		
						TOTAL	25.00		2000	50000
7	Internal Plaster (12 mm)									
		Wall	1	35.00		3.00	105.00	m2		
		Ceilin	1	5.00	4.00		20.00	m2		
	Deduction	Door 1	0.5	3.00		2.50	3.75	m2		
		Door 2	2	0.76		2.50	3.80	m2		
		Door 3	2	0.70		2.50	3.50	m2		
						TOTAL	113.95		450	51278

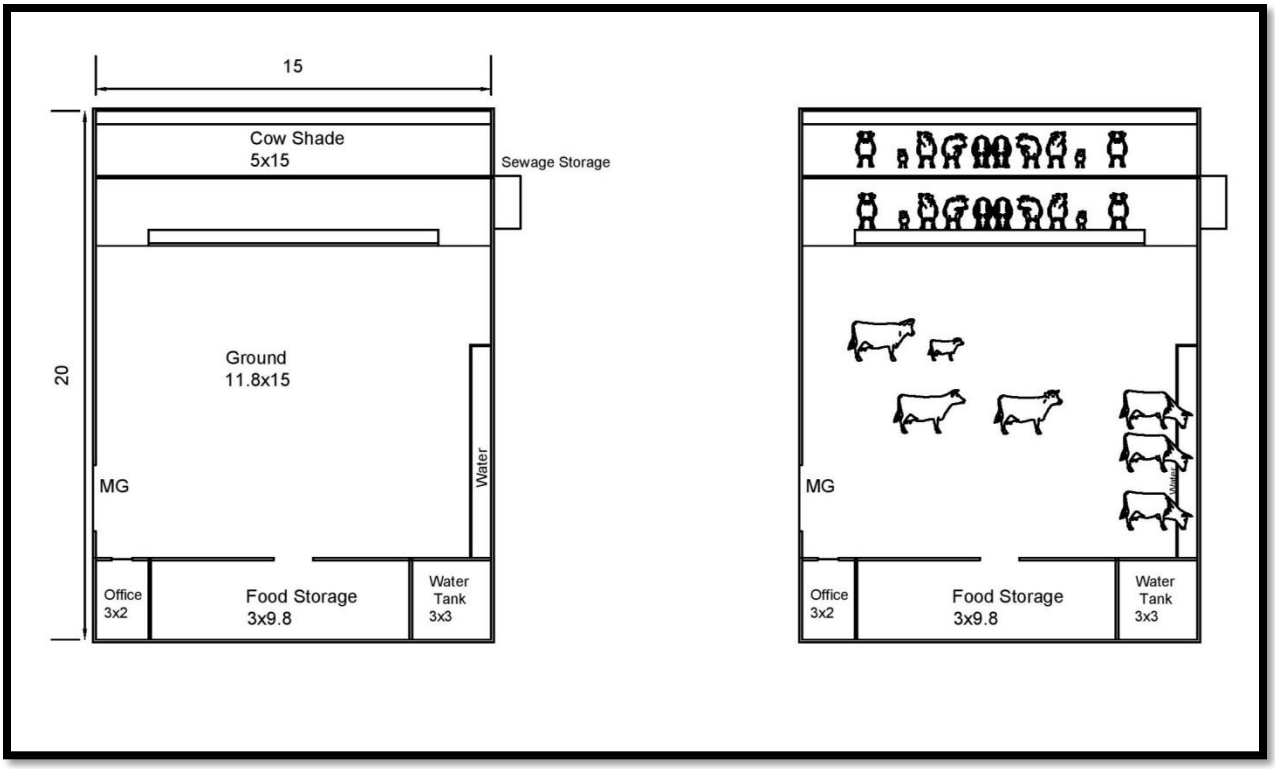
8	Out SidePlasster (20mm)									
		walls	2	4.00		4.00	32.00	m2		
			2	4.00		4.00	32.00	m2		
	Deduction	Door 1	0.5	3.00		2.25	3.38	m2		
		Door 2	2	0.80		2.25	3.60	m2		
						TOTAL	57.03		500	28513
9	Flooring									
			1	5.00	5.00		25.00	m2		
						TOTAL	25.00		300	7500
10	Painting									
		Incide Wall	1	35.00		3.00	105.00	m2		
		Ceilin	1	5.00	5.00		25.00	m2		
		Out side wall	2	6.00		4.00	48.00	m2		
			2	6.00		4.00	48.00	m2		
	Deduction	Door 1	1	3.00		2.50	7.50	m2		
		Door 2	4	0.86		2.50	8.60	m2		
		Door 3	4	0.80		2.50	8.00	m2		
						TOTAL	201.90		500	100950
							TOTAL		7350	285031.7

13.1.5 Gaushala:-

Gaushalas are protective shelters for cows in India. Goshalas focus on treating cows well, because of their religious significance in Hinduism and consequent cultural sensitivity towards their welfare.

❖ OBJECTIVES OF GAUSHALA:-

- To providing for their food, shelter and care.
- To sensitizing people towards needs of animals and necessity to protect by spreading awareness and presenting facts.
- To propagate and promote love for the cow and its virtues.
- To make cow-protection a people's movement.
- To work for the protection and conservation of cow.



GENERAL NOTES	
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3) Design Is prepared only for Educational purpose	
4) Correctness of all data must be check before Use	
5) Designer is not Responsible for any kind of wrong data	
Design name:-	GAUSHALA
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	M.H. LUNAGARIYA
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
Chandrakhed -Ahemdabad	
LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

(Fig-42)

ESTIMATE OF GAUSHALA

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount /m3 or m2	TOTAL AMOUNT IN INR
1	Earthwork in Excavation in Foundation:									
			1	31.00	0.90	1.00	27.90	m3		
	Net center Line =35.1 m no. of T joints= 12					TOTAL	27.90		100	2790
2	B.B.C.C. in Foundation									
			1	32	0.9	0.2	5.76	m3		
						TOTAL	5.76		500	2880
3	Brick Work Up to Ground Level									
		1st Step	1	31.00	0.60	0.10	1.86	m3		
		2nd Step	1	32.00	0.50	0.10	1.60	m3		
		3rd Step	1	32.00	0.40	0.10	1.28	m3		
		4th step Up to G.L.	1	34.00	0.30	0.50	5.10	m3		
						TOTAL	9.84		300	2952
4	DPC (5cm)									
			1	36.00	0.20		7.20	m2		
	Deduction	Door 1	1	4.00	0.20		0.80	m2		
		Door 2	4	0.90	0.20		0.72	m2		
		Door 3	4	0.80	0.20		0.64	m2		
						TOTAL	5.04		100	504
5	Brick Work in Super Structure									
			1	35.00	0.20	4.00	28.00	m3		
	Deduction	Door 1	1	4.00	0.20	3.50	2.80	m3		
		Door 2	4	0.80	0.20	3.50	2.24	m3		
		Door 3	4	0.90	0.20	3.50	2.52	m3		
						TOTAL	20.44		500	10220
6	RCC slab									
			1	5.00	6.00		30.00	m2		
						TOTAL	30.00		1000	30000
7	Internal Plaster (12 mm)									
		Wall	1	38.00		4.00	152.00	m2		
		Ceilin	1	5.00	6.00		30.00	m2		
	Deduction	Door 1	0.5	3.00		3.50	5.25	m2		
		Door 2	2	0.90		3.50	6.30	m2		
		Door 3	2	0.80		3.50	5.60	m2		
						TOTAL	164.85		150	24728

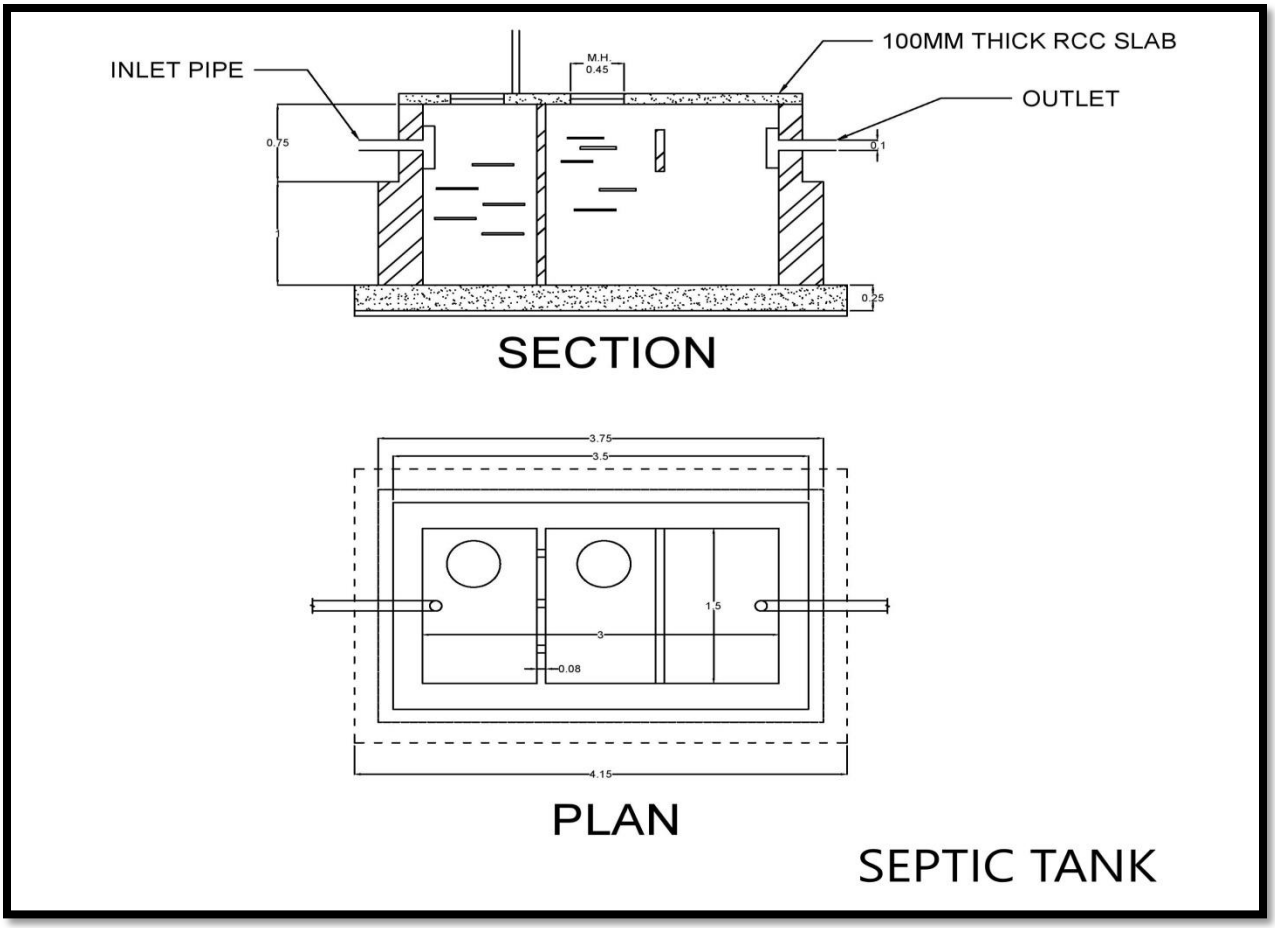
8	Out SidePlasster (20mm)									
		walls	2	5.27		3.96	41.74	m2		
			2	5.57		3.96	44.11	m2		
	Deduction	Door 1	0.5	3.05		2.13	3.25	m2		
		Door 2	2	0.76		2.13	3.24	m2		
						TOTAL	79.37		100	7937
9	Flooring									
			1	5.27	5.57		29.35	m2		
						TOTAL	29.35		100	2935
10	Painting									
		Incide Wall	1	38.00		4.00	152.00	m2		
		Ceilin	1	6.00	6.00		36.00	m2		
		Out side wall	2	6.00		4.00	48.00	m2		
			2	6.00		4.00	48.00	m2		
	Deduction	Door 1	1	6.00		3.00	18.00	m2		
		Door 2	4	0.90		3.00	10.80	m2		
		Door 3	4	0.80		3.00	9.60	m2		
						TOTAL	245.60		100	24560
							TOTAL		2950	109505.585

13.1.6 Septic Tank:-

Septic tanks are often used in rural areas, campgrounds, and picnic areas in place of sewer systems to treat human waste and separate solids and liquids in wastewater. The liquid portion of the waste is disposed of through a drain field where natural filtering takes place in the soil.

❖ OBJECTIVES OF SEPTIC TANK:-

Its job is to The septic tank is a buried, water-tight container usually made of concrete, brick masonry, fiberglass or polyethylene. hold the wastewater long enough to allow solids to settle down to the bottom (forming sludge), while the oil and grease floats to the top (as scum).



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Design name:-	SEPTIC TANK
Design By:-	Pankhaniya Ravi N
	Meghanathi NikulGiri N
Check & Approved By:-	M.H. LUNAGARIYA
TO:-	
VISWAKARMA YOJANA PHASE VIII	
Gujarat Technological University	
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LUKHDHIRJI ENGINEERING COLLEGE	
MORBI-2 PINCODE:-363642	
PH:- 02822-240743	
WEB:- www.lecm.cteguj.in	

(Fig-43)

Sr. No.	Item Description		No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity		Amount /m3 or m2	TOTAL AMOUNT IN INR
1	Earthwork in Excavation in Foundation:									
			1	25.00	0.90	1.00	22.50	m3		
	Net center Line =35.1 m no. of T joints= 12					TOTAL	22.50		80	1800
2	B.B.C.C. in Foundation									
			1	25	0.9	0.2	4.50	m3		
						TOTAL	4.50		400	1800
3	Brick Work Up to Ground Level									
		1st Step	1	30.00	0.70	0.10	2.10	m3		
		2nd Step	1	31.00	0.60	0.10	1.86	m3		
		3rd Step	1	32.00	0.50	0.10	1.60	m3		
		4th step Up to G.L.	1	33.00	0.40	0.50	6.60	m3		
						TOTAL	12.16		300	3648
4	DPC (5cm)									
			1	32.00	0.20		6.40	m2		
	Deduction	Door 1	1	4.00	0.20		0.80	m2		
		Door 2	4	0.90	0.20		0.72	m2		
		Door 3	4	0.80	0.20		0.64	m2		
						TOTAL	4.24		100	424
5	Brick Work in Super Structure									
			1	34.00	0.20	4.00	27.20	m3		
	Deduction	Door 1	1	4.00	0.20	3.00	2.40	m3		
		Door 2	4	0.90	0.20	3.00	2.16	m3		
		Door 3	4	0.80	0.20	3.00	1.92	m3		
						TOTAL	20.72		500	10360
6	RCC slab									
			1	6.00	6.00		36.00	m2		
						TOTAL	36.00		1150	41400
7	Internal Plaster (12 mm)									
		Wall	1	35.00		4.00	140.00	m2		
		Ceilin	1	6.00	6.00		36.00	m2		
	Deduction	Door 1	0.5	4.00		3.00	6.00	m2		
		Door 2	2	0.90		3.00	5.40	m2		
		Door 3	2	0.80		3.00	4.80	m2		
						TOTAL	159.80		150	23970

8	Out SidePlasster (20mm)									
		walls	2	4.00		4.00	32.00	m2		
			2	4.00		4.00	32.00	m2		
	Deduction	Door 1	0.5	6.00		3.00	9.00	m2		
		Door 2	2	0.90		3.00	5.40	m2		
						TOTAL	49.60		150	7440
9	Flooring									
			1	3.00	3.00		9.00	m2		
						TOTAL	9.00		160	1440
10	Painting									
		Incide Wall	1	35.00		4.00	140.00	m2		
		Ceilin	1	5.00	6.00		30.00	m2		
		Out side wall	2	5.00		4.00	40.00	m2		
			2	5.00		4.00	40.00	m2		
	Deduction	Door 1	1	4.00		2.50	10.00	m2		
		Door 2	4	0.90		2.50	9.00	m2		
		Door 3	4	0.90		2.50	9.00	m2		
						TOTAL	222.00		70	15540
							TOTAL		3060	107822

13.2 Reason for Students Recommending this Design:-

1. Clear and realistic building protection goals and objectives should be defined prior to deploying protection systems.
2. Building protection systems should be designed and implemented on a case-by-case basis for each structure to be protected.
3. Life-cycle costs should be planned for prior to deploying building protection systems.
4. Because goals and objectives for protection drive the choice of building protection system for each installation, metrics for a building protection system should be based on these same well-understood, clear goals and objectives.

13.3 About designs Suggestions / Benefit of the villagers:-

1. Public health and sanitation.
2. Literacy.
3. Female empowerment.
4. Enforcement of law and order.
5. Land reforms.
6. Infrastructure development like irrigation, electricity, etc.
7. Availability of credit.
8. Eradication of poverty

Chapter:14:-Technical Options with Case Studies:-

14.1 Civil Engineering:-

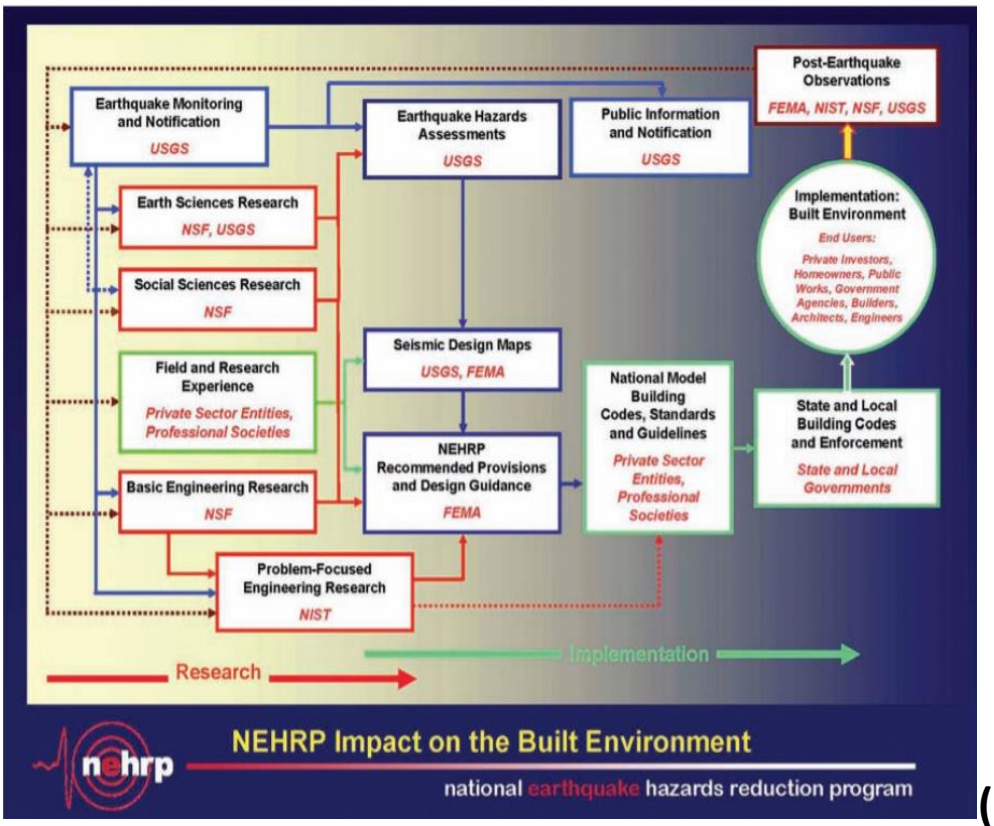
14.1.1 Advanced Earthquake Resistant:-

The science of structural and **Earthquake Engineering** helps enhance the seismic flexibility of civil structures and critical infrastructure through advanced engineering and management tools. While natural forces are extremely useful to mankind, natural disasters can wreak a havoc with hurricanes, earthquakes, tsunamis posing threat to life and infrastructure worth billions of dollars.

- **Techniques For Earthquake Resistant Design of Structures**

There are many known and practiced measures to protect against seismic threats. Let's take a look at some of the **earthquake resistant techniques** used by the engineers world over to minimize the damage to structures due to earthquakes:

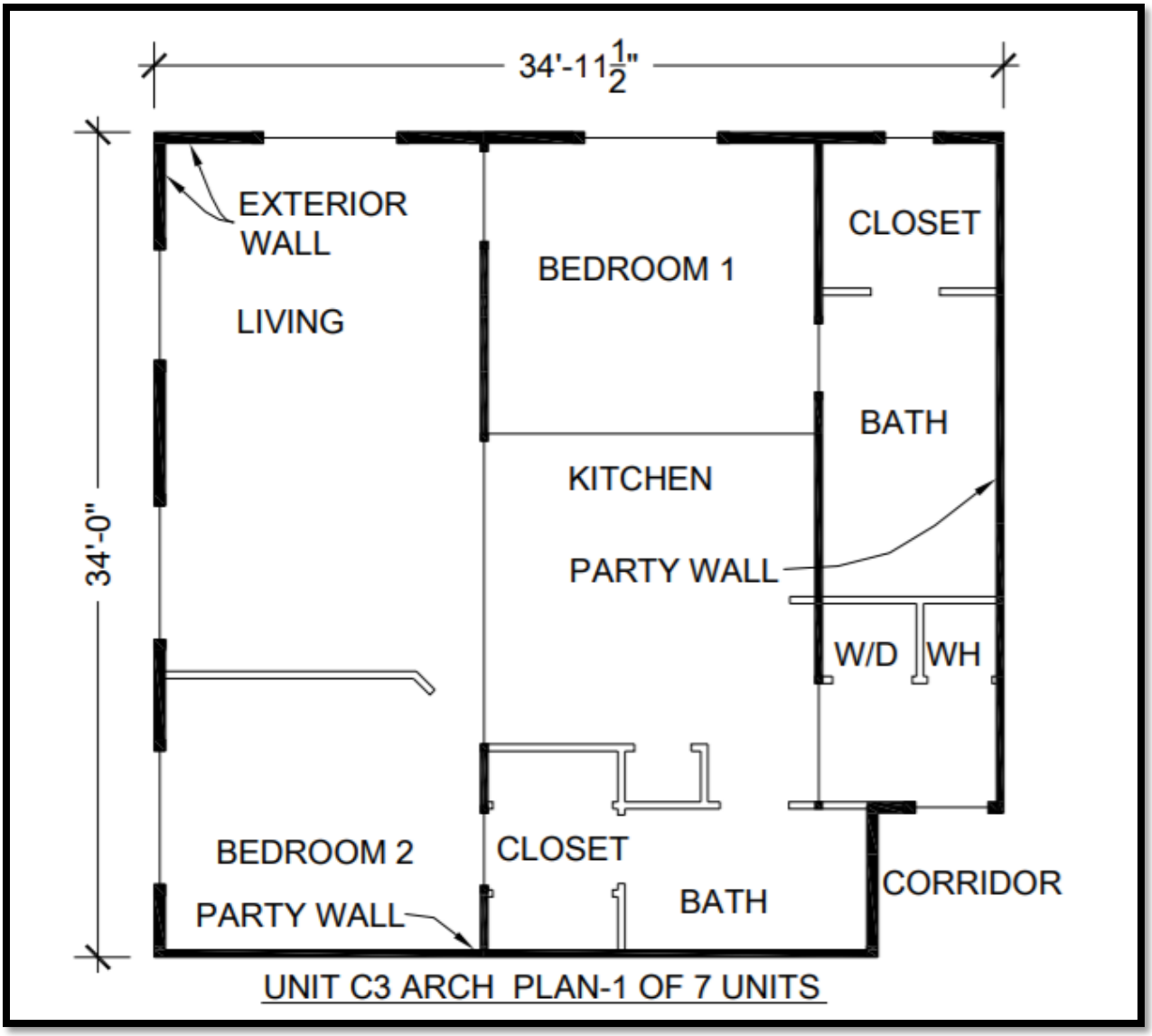
- Floating Foundation
- Shock Absorption
- Rocking Core-Wall
- Pendulum Power
- Symmetry, Diaphragms And Cross-Bracing



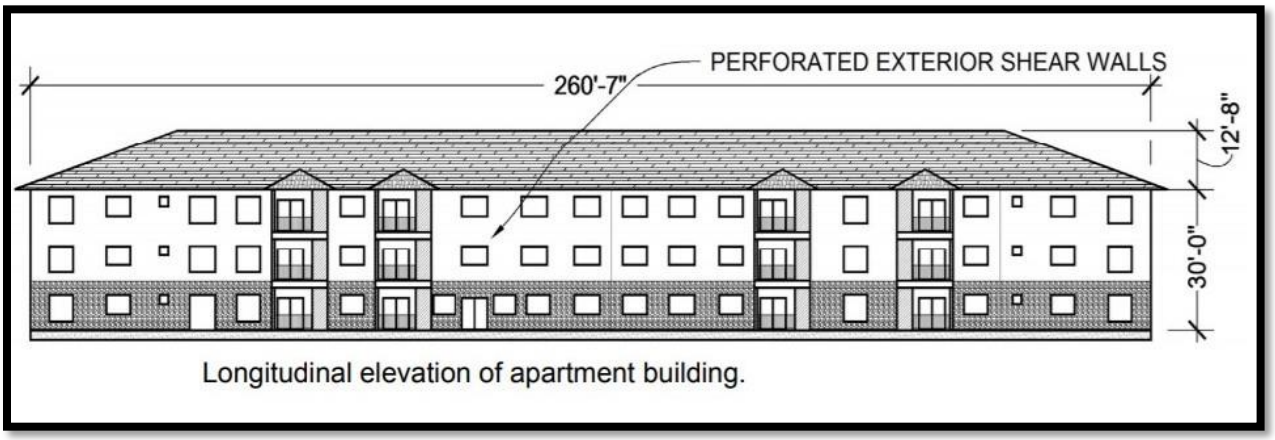
(Fig-44)

Design Of Advanced Earthquake Resistant Building :-

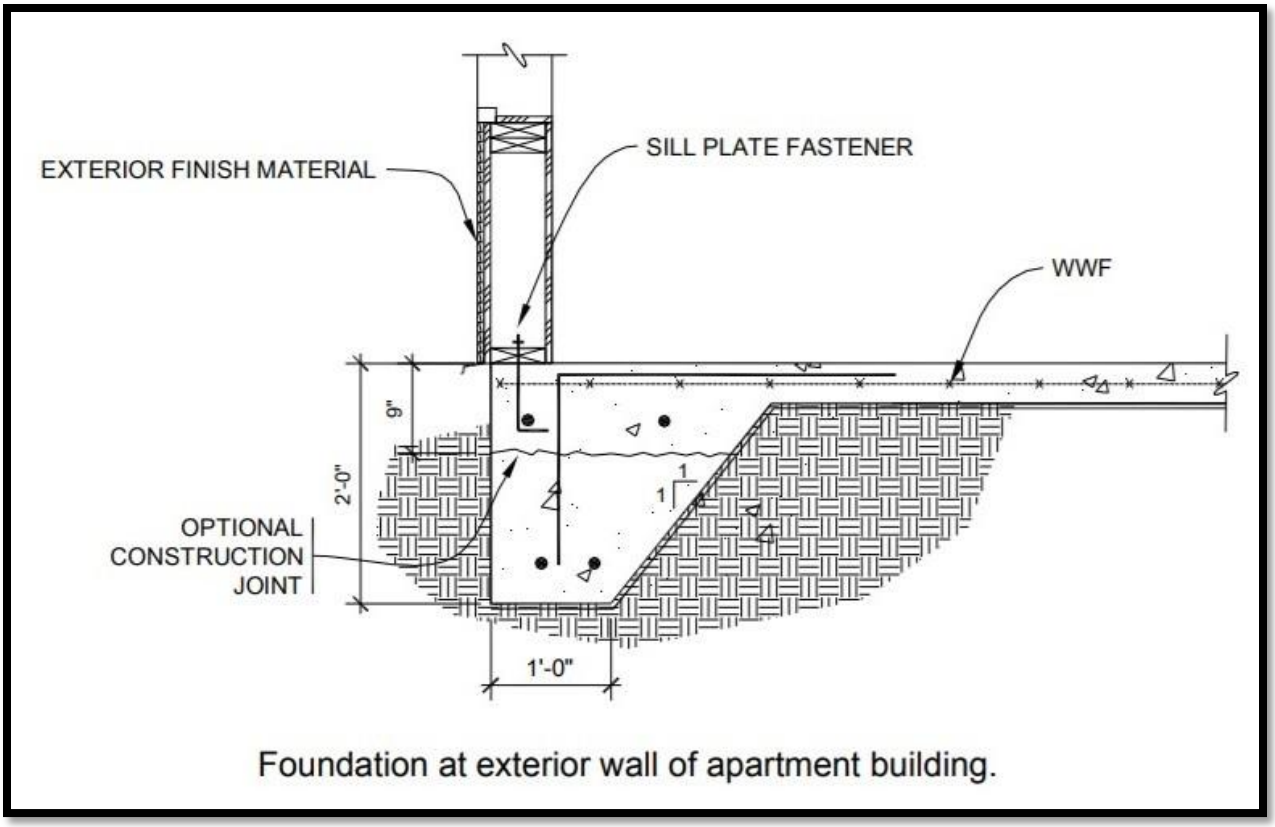
There are many known and practiced measures to protect against seismic threats. Let's take a look at some of the **earthquake resistant techniques** used by the engineers world over to minimize the damage to structures due to earthquakes:



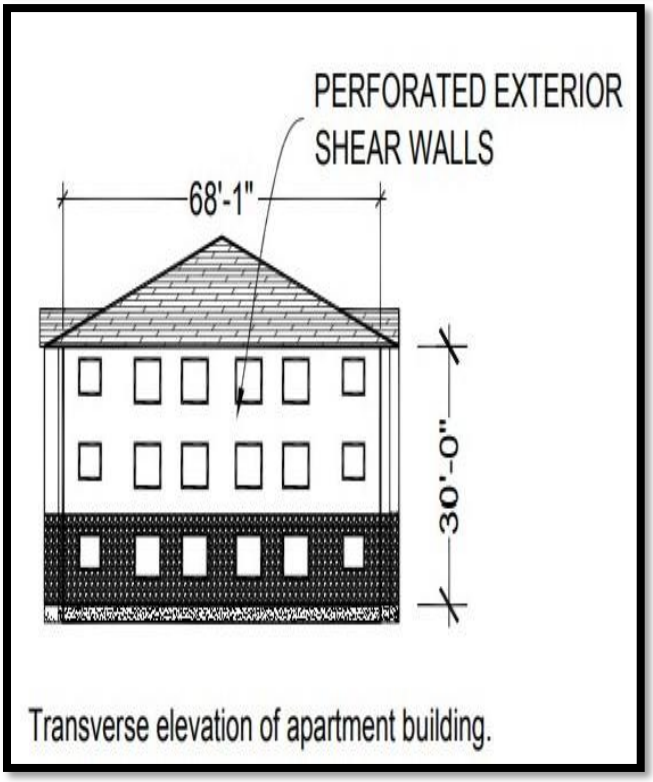
UNIT C3 ARCH PLAN-1 OF 7 UNITS



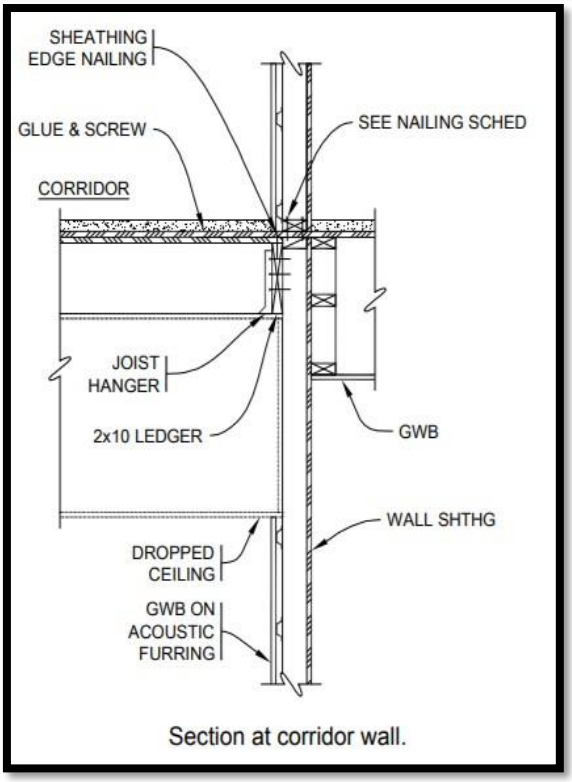
Longitudinal elevation of apartment building.



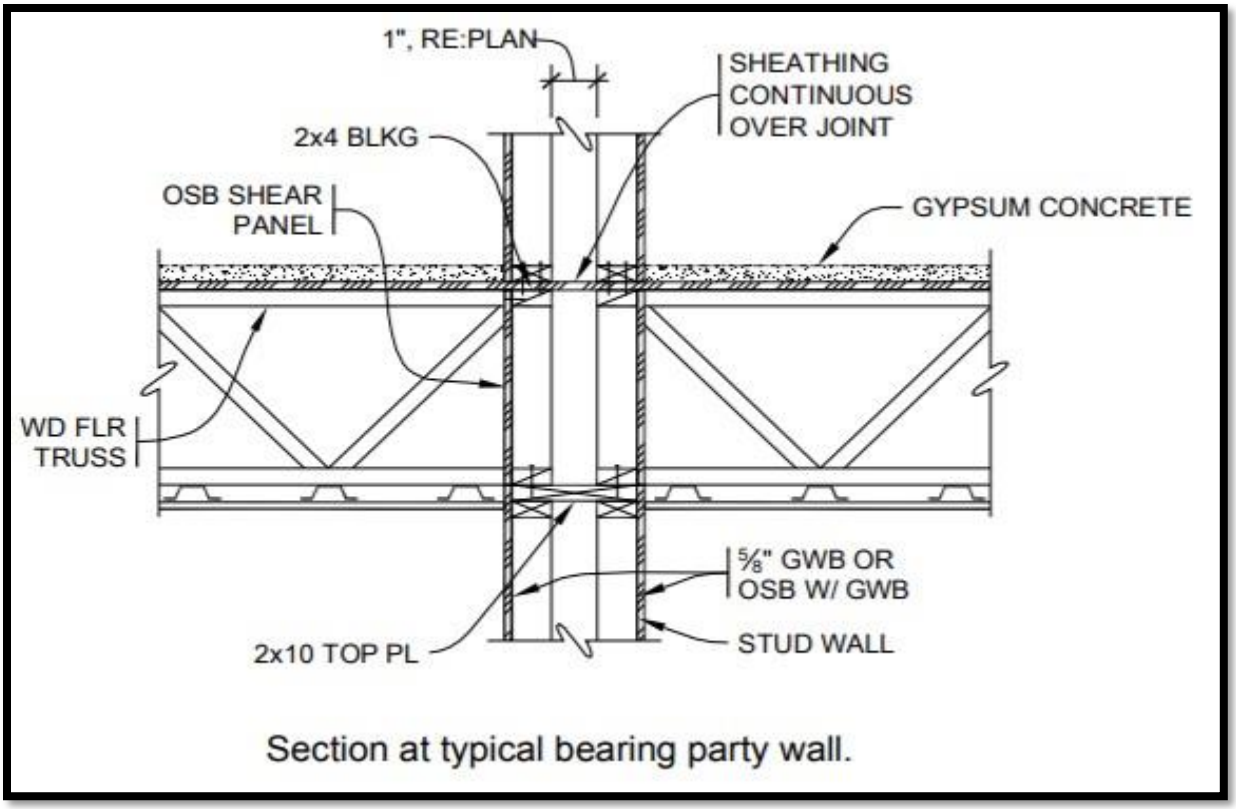
Foundation at exterior wall of apartment building.

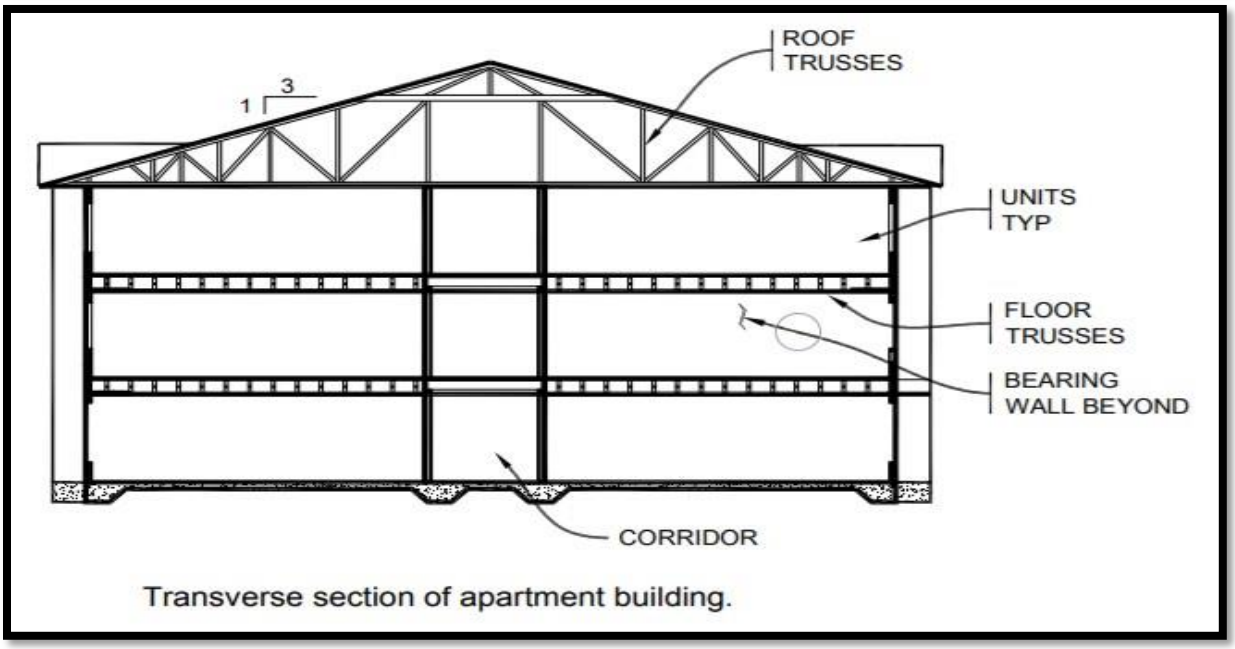


Transverse elevation of apartment building.

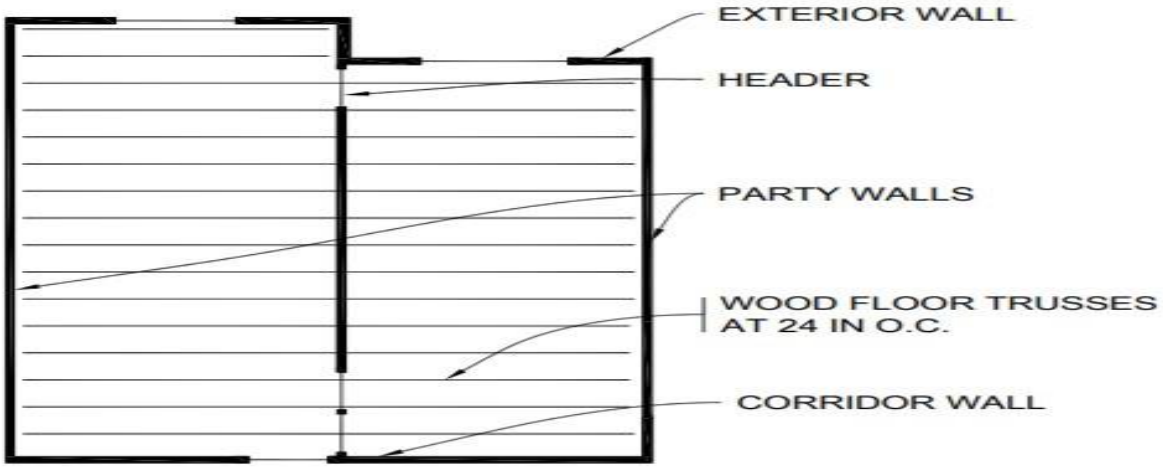


Section at corridor wall.

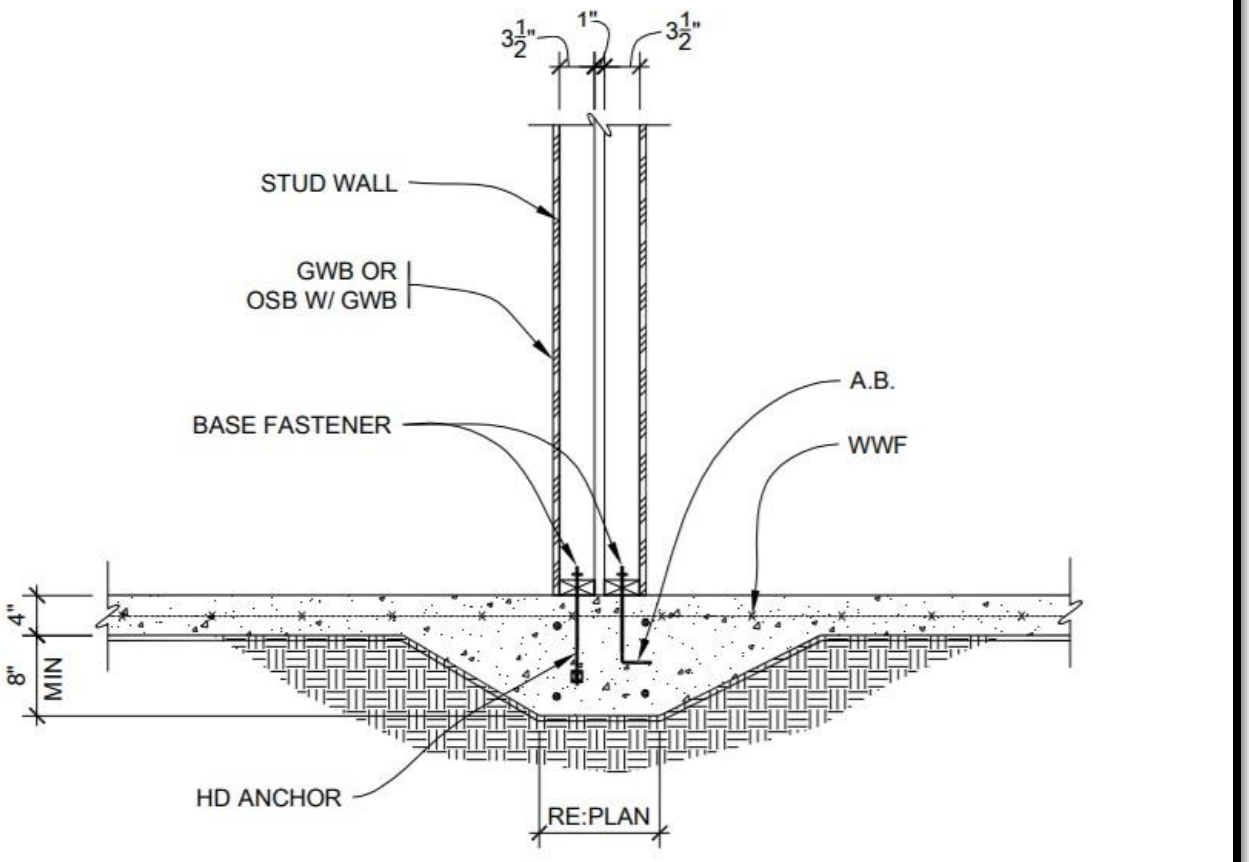

1", RE:PLAN
SHEATHING
CONTINUOUS
OVER JOINT
2x4 BLKG
OSB SHEAR
PANEL
GYPSUM CONCRETE
WD FLR
TRUSS
⅝" GWB OR
OSB W/ GWB
STUD WALL
2x10 TOP PL
Section at typical bearing party wall.


ROOF
TRUSSES
1
3
UNITS
TYP
FLOOR
TRUSSES
BEARING
WALL BEYOND
CORRIDOR
Transverse section of apartment building.

(Fig-45)



Typical apartment unit floor framing plan.



Foundation at interior wall of apartment building (A.B. is anchor bolt, and HD anchor is a holdown attached to the end post of a wall).

Building Construction Materials					
S.No.	Material		Qty	Rate	Amount
1	Cement in Bags		800	350	2,80,000.00
2	Steel in Kg		5000	55	2,75,000.00
3	Sand in Cu.ft.		2400	60	1,44,000.00
4	Gravel in Cu. ft.		2700	60	1,62,000.00
5	Bricks in Nos.		14640	5.5	80,520.00
6	Tiles in Sq. ft.		1400	70	98,000.00
7	Color in Liters		240	212	50,880.00
				Total Cost	₹ 10,90,400.00

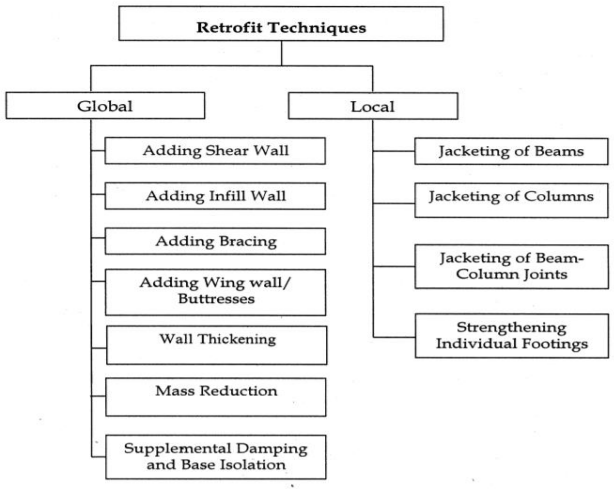
Building Construction Cost			
S. No.	(Material)	%	Amount
1	Cement	12.00	1,44,000.00
2	Steel	10.00	1,20,000.00
3	Sand	12.00	1,44,000.00
4	Gravel	8.10	97,200.00
5	Bricks Color Tiles Finishing	11.47	1,37,640.00
6	Sanitary Plumbing Doors Windows Fittings Electrical	8.00	96,000.00
	Labour Cost	61.57	7,38,840.00
	Engineers/architect	28.43	3,41,160.00
	Total Construction Cost	10.00	1,20,000.00
	Total Construction Cost		₹ 12,00,000.00

14.1.2 Seismic Retrofitting of Buildings:-

Seismic retrofitting is the modification of existing structures to make them more resistant to seismic activity, ground motion, or soil failure due to earthquakes. ... These codes must be regularly updated; the 1994 Northridge earthquake brought to light the brittleness of welded steel frames.

❖ **Retrofitting Strategies for RC Buildings:-**

➢ The need for retrofitting or strengthening of earthquake damaged or earthquake vulnerable buildings in India have been tremendously increased during recent years after the devastating Bhuj earthquake with an alarming awakening for sufficient preparedness in anticipation to face future earthquakes. Many professional engineers are accustomed to the designing of new building but they may find themselves not fully equipped to face the challenges posed at the time of strengthening the existing buildings with a view to improving their seismic performance. This section presents the most common devices for retrofitting of reinforced concrete buildings with technical details, constructional details and limitations.



❖ **Source of Weakness in RC Frame Building:-**

(a) Discontinuous load path/ interrupted load path/irregular load path

(b) Lack of deformation compatibility of structural members

(c) Quality of workmanship and poor quality of material

14.1.3 Advance Practices in Construction field in Modern Material, Techniques and Equipment's:-

Every construction project is different, every site is a singular prototype, construction works are located in different places, and involve the constant movement of personnel and machinery. In addition, the weather and other factors can prevent the application of previous experience effectively.

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.

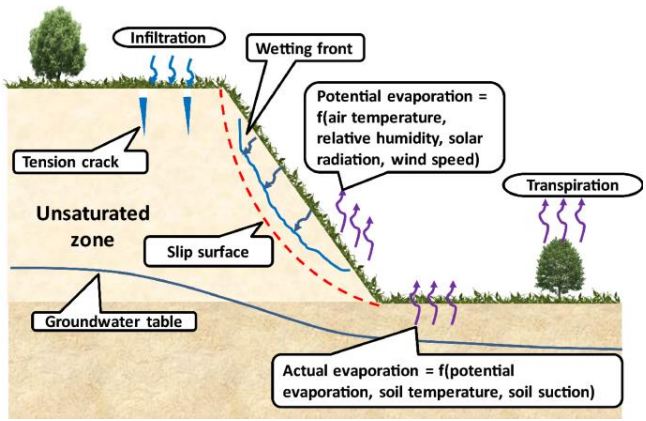
Incorporating advanced construction technology into practice can increase levels of quality, efficiency, safety, sustainability and value for money.

Modern methods of curing are adopted. Advanced adhesives and chemicals are used.

- Chain and pulley block.
- Grouting pumps.
- Sprayers for painting work.
- Tile cutters.
- Portable hand drilling machines.
- Horizontal trolleys, wheelbarrows.
- Pumps.
- Vibrators for compaction of concrete, surface vibrators.

14.1.4 Engineering Aspects Of Soil mechanics - Environmental Impact Assessment:-

An Environmental Impact Assessment is a formal method of judging the impact that any new developmental project would have on the environment and its constituents. This can include changes that the project would create in the physical aspects of existing geography, chemical changes to the atmosphere including air and water, biological changes that affect plant, animal and human life, cultural impact.

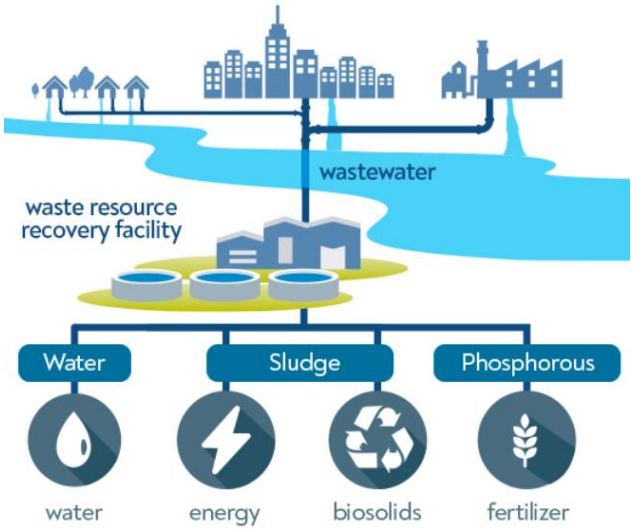


- Such an assessment allows problems to be foreseen, so that the design and planning of the projects is modified to reduce any negative effects. It is now fashionable to build green buildings which have a positive effect on the environment.

❖ Objectives of Environmental Impact Assessment:-

- The project has then to be modified to suit the local environment and all predictions and likely options presented to decision makers for final decisions.
- You can gain a better understanding of EIA by understanding how any typical project can affect the environment of a particular area. Take for example the building of a new road in a city.
- The alignment of the road may require that certain lands have to be leveled or new embankments created.
- Cutting of the land and the new embankments would affect the geography of the area and probably upset its drainage pattern.

14.1.5 Water Supply-Sewerage system-Waste Water-Sustainable development techniques:-



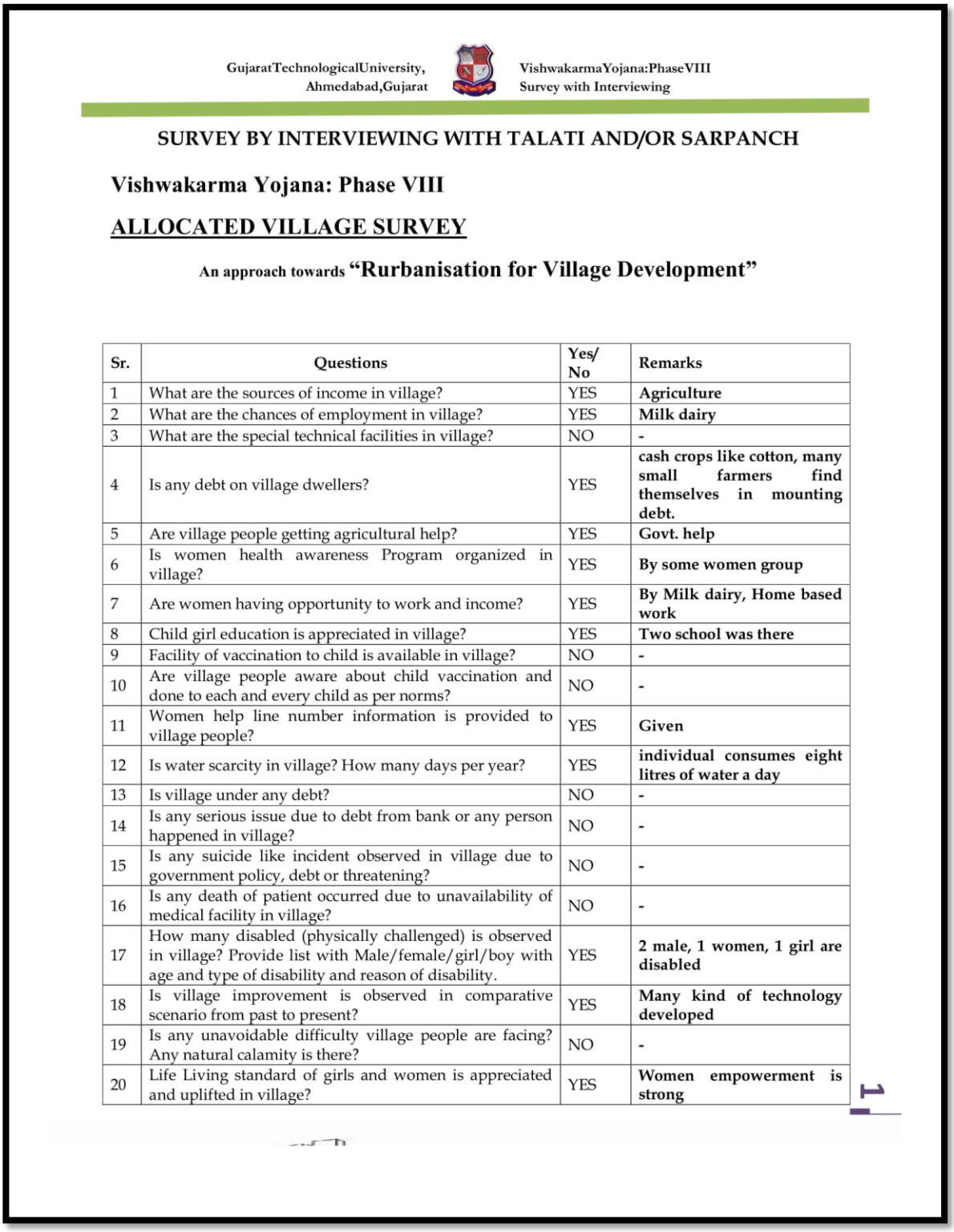
Water resources are under pressure from continuing population growth and urbanisation, rapid industralisation, and expanding and intensifying food production, particularly in developing countries and in urban areas. Urban populations may nearly double from current 3.4 billion to 6.4 billion by 2050. Numbers of people living in slums will rise even faster, with most of the rapid expansion in urbanization taking place not in megacities (21 of the world's 33 megacities are on the coast), but in small and medium sized cities with populations of less than 500 000.

- When a water-supply well is drilled, it is usually with the hope that the well will reliably provide water for a long time (that is, its use will be sustainable for future generations). This book presents the principles associated with development of groundwater at the macro scale.
- These ideas date back to a classic paper by C.V. Theis in 1940 on the source of water derived from wells, in which he noted that all pumpage is balanced by a loss of water somewhere, with the loss during early times coming largely from aquifer storage and at later times increasingly from capture, which includes increases in recharge and decreases in discharge (such as base flow to streams and evapotranspiration).

Chapter 15:-Smart and/or Sustainable features of Chapter 8 & 13 designs, Impact on society.(For Allocated village development, villagers happiness, comfortable and for enhancement of the village) (With the Smart village development Concept As Per Your Idea And Village Visit, modern technology with innovation).with doing small changes, Period, Amount Expenditure and Benefit –

Sr. No	Design	Period	Amount Expenditure	Benefits
1	Community Hall	Within 2.5 Year	7,56,402	1) Use for villagers social gathering and many other functions. 2) Unites a community 3) Support for community projects
2	E-Library	Within 2 Year	5,07,299	1) Increase education facilities. 2)Learn about modern new technology 3) Libraries make communities healthier
3	Bank	Within 2 Year	13,67,000	1) Increase security of money. 2)Loan facilities for the villagers. 3) It's an easy way to save money
4	Atm	Within 2.5 Year	2,78,000	1) Easy to access money. 2)Increase security of money. 3)ATM machines are Cheaper to Maintain
5	Bio-Gas Plant	Within 2 Year	2,22,000	1) Produce homemade fertilizers for garden and agriculture Eco-friendly 2) Produces a Circular Economy 3) Utilization of Waste
6	Bus Stand	Within 3 Year	3,08,000	1) In this village not Bus-stand so it is very helpful for transportation of people. 2)Increased fuel efficiency
7	Super Market	Within 2.5 Year	3,91,000	1) People need not to travel in city for small basic needs 2) Availability of all the Goods of Daily Need
8	Post Office	Within 2 year	1,03,000	1) Easy to access for post and money.
9	Cyber Cafe	Within 3 to 5 years	1,73,000	1) Use of new technologies. 2)Online education system. 3) Work from home.
10	PHC	Within 3 year	2,85,000	1) People will get immediate health care attention
11	Gaushala	Within 2 Year	1,09,500	1) Gaushalas are protective shelters for cows in India.
12	Septic Tank	Within 2.5 years	1,07,800	1) Treat human waste and separate solids and liquids in wastewater. 2) eliminate waste by using the natural filtering process of the soil

Chapter 16:- Survey By Interviewing With Talati And/Or Sarpanch:-



GujaratTechnologicalUniversity, Ahmedabad,Gujarat

VishwakarmaYojana:PhaseVIII Survey with Interviewing

SURVEY BY INTERVIEWING WITH TALATI AND/OR SARPANCH

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Sr.	Questions	Yes/ No	Remarks
1	What are the sources of income in village?	YES	Agriculture
2	What are the chances of employment in village?	YES	Milk dairy
3	What are the special technical facilities in village?	NO	-
4	Is any debt on village dwellers?	YES	cash crops like cotton, many small farmers find themselves in mounting debt.
5	Are village people getting agricultural help?	YES	Govt. help
6	Is women health awareness Program organized in village?	YES	By some women group
7	Are women having opportunity to work and income?	YES	By Milk dairy, Home based work
8	Child girl education is appreciated in village?	YES	Two school was there
9	Facility of vaccination to child is available in village?	NO	-
10	Are village people aware about child vaccination and done to each and every child as per norms?	NO	-
11	Women help line number information is provided to village people?	YES	Given
12	Is water scarcity in village? How many days per year?	YES	individual consumes eight litres of water a day
13	Is village under any debt?	NO	-
14	Is any serious issue due to debt from bank or any person happened in village?	NO	-
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	NO	-
16	Is any death of patient occurred due to unavailability of medical facility in village?	NO	-
17	How many disabled (physically challenged) is observed in village? Provide list with Male/female/girl/boy with age and type of disability and reason of disability.	YES	2 male, 1 women, 1 girl are disabled
18	Is village improvement is observed in comparative scenario from past to present?	YES	Many kind of technology developed
19	Is any unavoidable difficulty village people are facing? Any natural calamity is there?	NO	-
20	Life Living standard of girls and women is appreciated and uplifted in village?	YES	Women empowerment is strong

Chapter17:- Irrigation / Agriculture Activites And Agro Industry, Altenate Technics And Solution:-

❖ **Irrigation / Agriculture Activites:-** Irrigation helps to grow agricultural crops, maintain landscapes, and revegetate disturbed soils in dry areas and during periods of less than average rainfall. Irrigation also has other uses in crop production, including frost protection, suppressing weed growth in grain fields and preventing soil consolidation.

Agriculture Activites:-

- The economic activities included in agriculture proper are
  - (i) growing of field crops, fruits, nuts, seeds and vegetables,
  - (ii) management of tea, coffee and rubber plantations
  - (iii) Agricultural and horticultural services on a fee or on contract basis such as harvesting, baling and thrashing, preparation of tobacco

❖ **Agro Industry :-** Agro-industries are the enterprises, activi- ties. and institutions that deliver material inputs to the farming sector and transform, distribute and otherwise add value to agricultural and food products targeting an identified market demand. Benefits of agro-industries include pro- viding.

- An agro-industry is an enterprise that processes bio-mass, i.e. agricultural raw materials, which include ground and tree crops as well as livestock and fisheries, to create edible or usable forms, improve storage and shelf life, create easily transportable forms, enhance nutritive value, and extract chemicals for other uses.

❖ Techniques:-

The methods of irrigation can be divided into four main types. These include –

1. Surface irrigation
2. Sprinkler
3. Drip
4. Subsurface

It is one of the most common methods of irrigation. Here water is applied to the soil with the help of gravity.

❖ Solution:-

- Sodium Chloride 0.9% Irrigation Solution exerts a mechanical cleansing action for sterile irrigation of body cavities, tissues or wounds, indwelling urethral catheters and surgical drainage tubes. It also acts as diluent or vehicle for other pharmaceutical preparations.
- Hold the syringe so the catheter tip is 2.5 to 5 cm (1 to 2 inches) above the wound and perpendicular to the skin surface.
- Push down forcefully on the plunger while prying open the edges of the wound with your fingers, and squirt the solution into the wound.

Chapter 18:- Social Activities – Any Activates Planned By Students:-

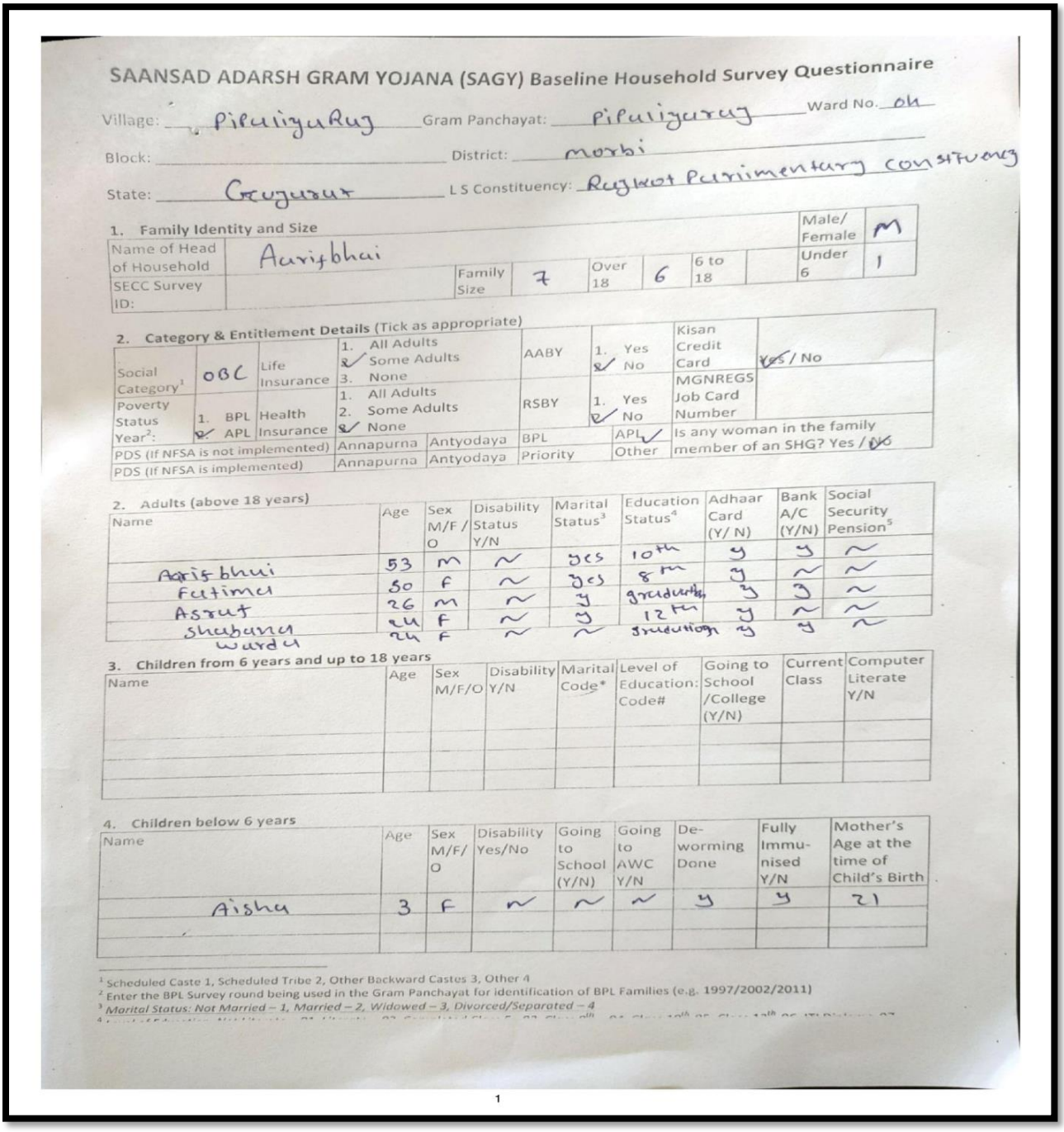
- Attend a community gathering to see what the village needs. Do they need a clean water source, tillable land for crops, etc. and then suggest to your age group that we should get together and discuss how to help solve these problems.
- Awareness and active public participation is the key for any change in the society. To create awareness, the first women Panchayat was organized and issues related to women like sanitation, use of toilets, use of pads and education for girls were discussed.
- It was the first step to motivate and encourage the women for active participation in the social change.
- Subsequently, a massive awareness campaign was undertaken in the village. It was an effort to prepare people for active participation in rural development.

❖ **Activities for Students in School:-**

- Conducting a quiz in class on the topics covered in the previous classes helps them to understand the basic concepts of subjects.
- Giving Importance of Yoga & Meditation for students , is a worldwide proven method for improving brain power & concentration level of students.
- Activities for students to overcome the fear of speaking in front of the audience, mingling with other students, working in groups, etc. are called group activities.

Chapter 19:- PIPALIYARAJ SAGY Questionnaire Survey form with the Sarpanch Signature:-

Sansad Adarsh Gram Yojana (SAGY) is a village development project launched by Government of India in October 2014, under which each Member of Parliament will take the responsibility of developing physical and institutional infrastructure in three villages by 2019.



SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: PipaliyaRaj Gram Panchayat: Pipaliyaraj Ward No. 04

Block: District: morbi

State: Gujarat L S Constituency: Rajkot Parliamentary constituency

1. Family Identity and Size

Name of Head of Household	Aarifbhai									Male/ Female	M
SECC Survey ID:		Family Size	7	Over 18	6	6 to 18		Under 6	1		

2. Category & Entitlement Details (Tick as appropriate)

Social Category[1]	OBC	Life Insurance	1. All Adults 2. Some Adults 3. None	AABY	1. Yes 2. No	Kisan Credit Card	Yes / No	
Poverty Status Year[2]:	1. BPL 2. APL	Health Insurance	1. All Adults 2. Some Adults 3. None	RSBY	1. Yes 2. No	MGNREGS Job Card Number		
PDS (If NFSA is not implemented)	Annapurna	Antyodaya	BPL	APL	Other	Is any woman in the family member of an SHG? Yes / No		
PDS (If NFSA is implemented)	Annapurna	Antyodaya	Priority					

2. Adults (above 18 years)

Name	Age	Sex M/F/O	Disability Status Y/N	Marital Status[3]	Education Status[4]	Adhaar Card (Y/N)	Bank A/C (Y/N)	Social Security Pension[5]
Aarifbhai	53	M	~	Yes	10th	y	y	~
Fatima	50	F	~	Yes	8th	y	~	~
Asrut	26	M	~	y	graduate	y	y	~
Shabana	24	F	~	y	12th	y	~	~
Warda	24	F	~	~	graduation	y	y	~

3. Children from 6 years and up to 18 years

Name	Age	Sex M/F/O	Disability Y/N	Marital Code*	Level of Education: Code#	Going to School /College (Y/N)	Current Class	Computer Literate Y/N

4. Children below 6 years

Name	Age	Sex M/F/O	Disability Yes/No	Going to School (Y/N)	Going to AWC Y/N	De-worming Done	Fully Immu-nised Y/N	Mother's Age at the time of Child's Birth
Aisha	3	F	~	~	~	y	y	21

[1] Scheduled Caste 1, Scheduled Tribe 2, Other Backward Castes 3, Other 4
[2] Enter the BPL Survey round being used in the Gram Panchayat for identification of BPL Families (e.g. 1997/2002/2011)
[3] Marital Status: Not Married – 1, Married – 2, Widowed – 3, Divorced/Separated – 4

1

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

5. Hand washing

	Always		Sometimes		Never
After use of Toilet	Soap ✓	Other	Soap ✓	Other	
Before Eating	Soap ✓	Other	Soap	Other	

6. Use of Mosquito Net

Children: Yes / No Adults: Yes / No

7. Do members take Regular Physical Exercise

	Yoga	Games	Other Exercises
Adults	Yes / No	Yes / No	Yes / No
Children	Yes / No	Yes / No	Yes / No

8. Consumption of Tobacco

	Smoking	Chewing
Adults	JCS	JCS
Children	NO	NO

9. House & Homestead Data

Own House: Yes / No	No. of Rooms: 3
Type: Kutcha / Semi Pucca / Pucca	
Toilet: Private / Community / Open Defecation	
Drainage linked to House: Covered / Open / None	
Waste Collection System	Door Step / Common Point / No Collection System
Homestead Land: Yes / No	Kitchen Garden : Yes / No
Compost Pit: Individual/ Group/ None	Biogas Plant: Individual/ Group/ None

10. Source of Water (Distance from source in KMs)

Source of Water		Distance
Piped Water at Home	Yes / No	0 km
Community Water Tap	Yes / No	
Hand Pump (Public / Private)	Yes / No	
Open Well(Public / Private)	Yes / No	
Other (mention):		

11. Source of Lighting and Power

Electricity Connection to Household: Yes / No
Lighting: Electricity/Kerosene/Solar Power
Mention if Any Other: _____
Cooking: LPG/Biogas/Kerosene/Wood/Electricity
Mention if Any Other: _____
If cooking in Chullah: Normal/ Smokeless

12. Landholding (Acres)

1. Total	2	2. Cultivable Area	1.8
3. Irrigated	1.8	4. Uncultivable	0.2

13. Principal Occupations in the Household

Livelihood	Tick if applicable
Farming on own Land	✓
Sharecropping /Farming Leased Land	
Animal Husbandry	
Pisciculture	
Fishing	
Skilled Wage Worker	
Unskilled Wage Worker	
Salaried Employment in Government	
Salaried Employment - Private Sector	✓
Weaving	
Other Artisan(mention)	
Other Trade & Business (mention)	

14. Migration Status

Does any member of the household migrate for Work: Yes / No. If Yes Entire Year / Seasonal

Does anyone below 18 years migrate for work: Y/N

15. Agriculture Inputs

Do you use Chemical Fertilisers	Yes/No JCS
Do you use Chemical Insecticides	Yes/No
Do you use Chemical Weedicide	Yes/No
Do you have Soil Health Card	Yes/No NO
Irrigation: None/ Canal/ Tank/ Borewell/Other	
Drip or Sprinkler Irrigation: Drip /Sprinkler / None	

16. Agricultural Produce in a normal year (Top 3)

Name	Unit	Quantity
Cotton		1000 kg

17. Livestock Numbers

Cows: 0	Bullocks: 0	Calves: 0
Female Buffalo: 0	Male Buffalo: 0	Buffalo Calves: 0
Goats/ Sheep: 0	Poultry/ Ducks: 0	Pigs: 0
Any other: Type _____		No. _____
Shelter for Livestock: Pucca / Kutcha / None		
Average Daily Production of Milk(Litres): _____		

18. What games do Children Play

Indoor and Outdoor

19. Do children play musical instrument (mention)

NO

Schedule Filled By:

2

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

I. Basic Information

a. Gram Panchayat: PipaliyaRaj

b. Block: _____

c. District: Morbi

d. State: Gujarat

e. Lok Sabha Constituency: Rajkot Parlimetary constituency

f. Number of Wards in the Gram Panchayat: 04

g. Number of Villages in the Gram Panchayat: 1

h. Names of Villages:

i) PipaliyaRaj

Demographic Information

Number of Households 775 Total Population 4218 Male 2075 Female 2143

SC HHs 130 ST HHs 0 OBC HHs _____ Other HHs _____

I. Access to Infrastructure / Facilities / Services

	Infrastructure Facilities / Services	Located within the GP Yes (Y)/No (N)	If located elsewhere (N), distance from the GP office
a.	ANM/ Health Sub Centre	N	within 30km
b.	Nearest Primary Health Centre (PHC)	Y	
c.	Nearest Community Health Centre (CHC)	N	within 30 km
d.	Nearest Post Office	Y	
e.	Nearest Bank Branch (Any)	Y	
f.	Nearest Bank with CBS Facility	Y	
g.	Nearest ATM	N	within 10km
h.	Nearest Primary School	Y	
i.	Nearest Middle School	Y	
j.	Nearest Secondary School	Y	
k.	Nearest Higher Secondary School / +2 College	N	within 3 km
l.	Nearest Graduate College	N	within 30km
m	Nearest ITI / Polytechnic Centre	N	within 30 km
n	Kisan Seva Kendra	Y	

3

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

	Infrastructure Facilities / Services	Located within the GP Yes (Y)/No (N)	If located elsewhere (N), distance from the GP office
o	Agriculture Credit Cooperative Society	N	
p	Nearest Agro Service Centre	Y	
p	MSP based Government Procurement Centre	N	
q	Milk Cooperative /Collection Centre	Y	
r	Veterinary Care Centre	N	
s	Ayurveda Centre	Y	
t	E – Seva Kendra	N	
u	Bus Stop	N	within 10km
v	Railway Station	N	within 10km
w	Library	N	.
x	Common Service Centre	N	

IV. Sports Facilities in the Gram Panchayat

a. Number of Play Grounds in the GP: Total 5 Public 5 Private –

b. Mini Stadium : No Yes(Y) /No (N) *(Playground with equipment and sitting arrangement)*

V. Education, ICDS

a. Number of Angan Wadi Centres: 2

b. Number of villages without Angan Wadi Centres 0

Names of such villages: _____

c. Schools (Number)

Primary Private: – Primary Govt.: 1

Middle Private: – Middle Govt.: 1

Secondary Private: – Secondary Govt.: 1

Higher Secondary Private: – Higher Secondary Govt: 0

VI. Public Distribution System

	Item	Private Contractor	Women's SHG	Gram Panchayat	Cooperative	Other (Mention)	Location in GP (mention Location)	If outside GP, Location & distance from GP HQrs)
a.	Cereal (Rice/ Wheat/ Millets)	–	–	1	–	–	near main road	
b.	Kerosene	–	–	1	–	–	11	
c.	Other (mention)	–	–	–	–	–	–	–

4

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

VII. Coverage of Villages under different Facilities & Services

	Parameter	Villages Status[1]	Names of Villages Covered	Names of Villages not Covered
a.	Piped Water Supply Coverage to Villages	Covered ✓ / Not Covered	Pipaliyaraj	—
b.	Hand Pump Coverage in Villages:	Covered ✓ / Not Covered	—	—
c.	Coverage under Covered Drains:	Covered ✓ / Not Covered	Pipaliyaraj	—
d.	Coverage under Open Drains:	Covered / Not Covered	—	—
e.	Villages with Household Electricity Connection (Numbers)	Connected / Not Connected	775	

VIII. Land and Irrigation

	Private Land	Area in Acres		Common Land	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land		d.	Pasture / Grazing Land		g.	Check Dam	—
b.	Irrigated Land		e.	Forests/ Plantations	—	h.	Wells/Bore Wells	✓16
c.	Un-irrigated Land		f.	Other Common Land		i	Tanks /Ponds	✓5

[1] Mention the number of Villages Covered and Not Covered

5

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

IX. Parameters relating to Households & Institutions

		Number
a)	Number of eligible Households for pension (old age, widow, disability)	23
b)	Number of Households receiving pension (old age, widow, disability)	10
c)	Number of eligible Households who are not receiving pension	13
d)	Number of Households eligible for Ration Card	573
e)	Number of eligible HHs having ration cards	35
f)	Number of households covered under RSBY (Rashtriya Swasthya Bima Yojana)	-
g)	Number of HHs covered under AABY (Aam Aadmi Bima Yojana)	-
h)	Number of active Job Card holders under MGNREGA	
i)	Number of Job Card holders who completed 100 days of work during 2013-14	
j)	Number of shops selling alcohol	0
k)	Number of BPL families	79
l)	Number of landless households	126
m)	Number of IAY beneficiaries	
n)	Number of FRA[2] beneficiaries	
o)	Number of Community Sanitary Complexes	5
p)	Number of Households headed by single women	13
q)	Number of Households headed by physically handicapped persons	7
r)	Total number of Persons with Disability in the village	29
s)	Number of SHGs	
t)	Number of active SHGs	
u)	Number of SHG Federations	
v)	Number of Youth Clubs	-
w)	Number of Bharat Nirman Volunteers	-

Name and Signature of Surveyor and Respondent'

meghnathi Nikulgiri Pankhaniya Ravi Surveyor	Aarif bhai PRI Respondent (Preferably Gram Panchayat Chairperson)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	15-5-2021 Date of Survey

6

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

This questionnaire should be filled for each of the villages in the selected Gram Panchayat[1]

I. Basic Information

a. Village: Pipaliyaraj

b. Ward Number: 04

c. Gram Panchayat: Pipaliyaraj

d. Block: _____

e. District: Morbi

f. State: Gujrat

g. Lok Sabha Constituency: Rajkot Parliamentary

h. Number of Habitations / Hamlets in the Gram Panchayat: _____

i. Names of Habitations / Hamlets:

Demographic Information

Number of Households 775 Total Population 4218 Male 2075 Female 2143

SC HHs 130 ST HHs — OBC HHs _____ Other HHs _____

II. Access to Infrastructure/Amenities etc.

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
a.	Nearest Primary School	Y	
b.	Nearest Middle School	Y	
c.	Nearest Secondary School	Y	
d.	Kisan Seva Kendra	Y	
e.	Milk Cooperative /Collection Centre	Y	
g.	Health Sub Centre	Y	
h.	Bank	Y	
i.	ATM	N	within 10 km
j.	Bus Stop	N	11
k.	Railway Station	N	11

[1] While filling this the surveyor must collect the information from the Ward Member/s and relevant government officials

7

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
l	Library	~	within 30 km
m	Common Service Centre	~	11
n	Veterinary Care Centre	~	11

ii. Road Connectivity

a. Habitations connected by All-weather Roads yes *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations where not available: _____

iii. Drinking Water Facilities

a. Piped Water Supply Coverage to Habitations: yes *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: _____

b. Hand Pump Coverage in Habitations: _____ *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: _____

iv. Coverage of Habitations under Waste Management System

a. Coverage under Covered Drains: All *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: _____

b. Coverage under Open Drains: All *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: _____

c. Coverage under Doorstep Waste Collection: *(1-All 2-None 3-Some)* All

If 3 mention the name of the habitations not covered: _____

v. Coverage of Habitations under Electrification

a. Coverage under Household Connections: *(1-All 2-None 3-Some)* All

If 3 mention the name of the habitations not covered: _____

b. Coverage under Street Lighting: All *(1-All 2-None 3-Some)* All

If 3 mention the name of the habitations not covered: _____

vi. Sports Facilities in the Village

a. Number of Play Grounds in the Village (minimum size 200 square meters): 3

b. Mini Stadium : ~ Yes(Y) /No (N)

vii. Education, ICDS

a. Number of Anganwadi Centres: 2

c. Schools (Number)

Primary Private: ~ Primary Govt.: 1

Middle Private: ~ Middle Govt.: 1

Secondary Private: ~ Secondary Govt.: 1

Higher Secondary Private: ~ Higher Secondary Govt: 0

8

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

viii. Land Category		Area in Acres		Land Category	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land		d.	Pasture / Grazing Land		g.	Check Dam	–
b.	Irrigated Land		e.	Forests/ Plnatations	–	h.	Wells/Bore Wells	16
c.	Un-irrigated Land		f.	Other Common Land		I	Tanks /Ponds	5

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	–
2	Number of active Job Card holders who have completed 100 days of work	–
3	Number of shops selling alcohol	0
4	Number of BPL families	79
5	Number of landless households	126
6	Number of IAY beneficiaries	
7	Number of FRA beneficiaries	
8	Number of common sanitation complexes	5
9	Number of SHGs	
10	Number of active SHGs	
11	Existence of SHG Federation in the Village (Yes / No)	NO
12	Number of Youth Clubs	–
13	Number of Bharat Nirman Volunteers	–

Name and Signature of Surveyor and Respondent'

Surveyor	PRI Respondent (Preferably a ward member from a ward that is fully or partially covered under the Village)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey
Meghanathi Nikulgiri Pankhaniya Ravi	Aarif bhai		15-5-2021

9

Chapter 20:- TDO-DDO-Collector email sending Soft copy attachment in the report:- (Fig-46)

10/8/21, 12:41 PM Gmail - Pipaliyaraj village : Vishwakrama Yojana Phase VIII

Gmail

Ravi Pankhaniya <ravi.pankhaniya212@gmail.com>

Pipaliyaraj village : Vishwakrama Yojana Phase VIII
1 message

Ravi Pankhaniya <ravi.pankhaniya212@gmail.com> Fri, Oct 8, 2021 at 12:41 PM
To: tdo-pipaliyaraj@gujarat.gov.in

Respected Sir

We are the students of Lukhdhirji Engineering College Morbi affiliated with Gujarat technological University. We are working on Vishwakarma Yojana Phase 8 and for that we choose Pipaliyaraj Village located 40 km away from Morbi district, so for that we need to survey the village and provide designs and amenities to the village to make it ideal or smart for living a better life.

As a part of VY guidelines, we are asked to inform the Talati of the Pipaliyaraj Village about our project.

Pipaliyaraj village profile of issues for development and our design work for the same is attached below...

Table : List of Design with Completion Period and Amount Expenditure

Sr. No	Design	Period	Amount Expenditure	Benefits
1	Community Hall	Within 2.5 Year	7,56,402	1) Use for villagers social gathering and many other functions. 2) Unites a community 3) Support for community projects
2	E-Library	Within 2 Year	5,07,299	1) Increase education facilities. 2)Learn about modern new technology 3) Libraries make communities healthier
3	Bank	Within 2 Year	13,67,000	1) Increase security of money. 2)Loan facilities for the villagers. 3) It's an easy way to save money
4	Atm	Within 2.5 Year	2,78,000	1) Easy to access money. 2)Increase security of money. 3)ATM machines are Cheaper to Maintain
5	Bio-Gas Plant	Within 2 Year	2,22,000	1) Produce homemade fertilizers for garden and agriculture Eco-friendly 2) Produces a Circular Economy 3) Utilization of Waste
6	Bus Stand	Within 3 Year	3,08,000	1) In this village not Bus-stand so it is very helpful for transportation of people. 2)Increased fuel efficiency
7	Super Market	Within 2.5 Year	3,91,000	1) People need not to travel in city for small basic needs 2) Availability of all the Goods of Daily Need
8	Post Office	Within 2 year	1,03,000	1) Easy to access for post and

https://mail.google.com/mail/u/0?ik=157d6d9bfe&view=pt&search=all&permthid=thread-a%3Ar-1880357778676448460&simpl=msg-a%3Ar-1872... 1/2

				money.
9	Cyber Cafe	Within 3 to 5 years	1,73,000	1) Use of new technologies. 2)Online education system. 3) Work from home.
10	PHC	Within 3 year	2,85,000	1) People will get immediate health care attention
11	Gaushala	Within 2 Year	1,09,500	1) Gaushalas are protective shelters for cows in India.
12	Septic Tank	Within 2.5 years	1,07,800	1) Treat human waste and separate solids and liquids in wastewater. 2) eliminate waste by using the natural filtering process of the soil

V-Yojana Pipaliyaraj Part-1&2 (2).pdf
17068K

Chapter 21:- Comprehensive report for the entire village:-

- Vishwakarma scheme focuses on technical consequences of project problems Which the villagers see through the eyes of an engineer. obstacles that are the village mainstream is solved by engineering students.
- It is an initiative program to take villages towards Rurbanisation, which is organized by the Gujarat government handed over the key developers of GTU that are student.
- Students assigned as engineers and faculty members as a guide/nodal Officers meet and survey all stakeholders of villages existing features. After that, the engineers revisit the existing facilities and Accordingly they give new designs for the needs.
- The basic need of the Rural Maturity Program is to improve poverty and unemployment through the creation of basic social and economic infrastructure, Arrangement for providing training and employment to rural unemployed youth To discourage seasonal and permanent migration of marginal farmers/workers to urban areas Area.
- Although different government sectors are involved in different infrastructure functions, a holistic approach and modern treatments can be provided by new engineers Under Vishwakarma scheme villages are examined by students with this approach.
- In villages no renewable energy sources was used till now and the people are not that much aware from electric energy conservation and advantages of renewable sources. Need to aware people from both and also aware from the other government's schemes and subsidy related to it so, villagers are start using renewable energy sources and save electricity.
- Based on gap analysis done in previous semester we developed and designed the bio gas plant, Bank, Atm, E-Library, community hall. So we can say if all the missing amenities are provided than it may stop

the migration of rural people towards the urban area. This can cause reduce the load on urban areas. And this amenities designed by us is helpful for better development of village as physically as well as socially, which improves the overall lifestyle of people.

- This project has proved to be very informative and interesting for us. Later By doing this project we have understood that the development of villages is As important as the urban area is for the overall development of the country. the village needs Some basic amenities we have tried to make the village a better place The best by applying our technical knowledge to this project by proposing designs For some basic facilities which are required.
- By this project we have learned Many things and it was great experience of village culture and environment.

- We are proposing a design base based on our survey, knowledge and gap analysis Village for its development Following are all the designs we propose for a village are:-
    1) **Community Hall**
    2) **E-Library**
    3) **Bank**
    4) **Atm**
    5) **Bio-gas Plant**
    6) **Bus stand**
    7) **Super Market**
    8) **Post Office**
    9) **Cyber Café**
    10) **Phc**
    11) **Gaushala**
    12) **Septic Tank**