DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII

AN APPROACH TOWARDS RURBANISATION

MOTI PARABADI Village

RAJKOT District

PREPARED BY

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OMENGINNERINGCOLLAGE

H.M. BHIMJIANI
NODAL OFFICERSNAME

YEAR: 2019-20

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmadabad– 382424 Gujarat

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Year: 2019-20

Gujarat Technological University,
Chandkheda, Ahmadabad– 382424 Gujarat

CERTIFICATE

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

Detail Project Report for
VILLAGE MOTI PARABADI
DISTRICTRAJKOT
Under

Vishwakarma Yojana: Phase-VIII

In partial fulfillment of the project of freed by

GUJARATTECHNOLOGICALUNIVERSITY, CHANDKHEDA

During the academic year2019-20.

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

NAME	BRANCH NAME	ENROLLMENT NO
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College Stamp:	

ABSTRACT

This project launched of the government of Gujarat "VISHWAKARMA Yojana: An Approach towards Urbanization" for development of the village which implement by "Gujarat Technological University Vishwakarma Yojana would vide "Design to Delivery" solution for development of villages in 'City' areas. In this Project, we describe the ecosystem for a village and then map out an integrated design procedure for building an Ideal Village.

Moti Parabadi is a village in Dhoraji Taluka, Rajkot District of Gujarat, India. This Moti Parabadi village is 10 km of the Dhoraji Taluka. This village are available also gram panchayat. This village is native language of the most use of the Gujarati. This village is population is 2413 total population of the village it is the male of the 1163 and female is 1151 is village. The village is area of the 1065.65 hector of the Moti Parabadi village.

Vishwakarma Yojana is one of the approaches to reduce urban city Pressure and lower the migration rate by developing village with a 'rural soul' but with all urban amenities that a city may have. The developmental work in villages that could undertake as per the need of the village in particular includes Physical, Social and Renewable infrastructure Facilities.

Key Words:

Rural Development,

Reduce Migration,

Infrastructure Facilities,

Environment,

Agricultural Development.

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

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ABBREVIATIONS

SHORT NAME / SYMBOL	FULL NAME
B	Bank
A	Anganwadi
AF	Anganwadi facilities
GP	Gram panchayat
ATP	Any Time Payment
PO	Post office
PDS	Public Distribution
NHM	National Health Mission
PDS	Public Distribution system
PMJDY	Pradhan Mantri Jan – Dhan Yojana
VDP	Village development plan
SBA	Swachh Bharat Abhiyaan
MKSD	Mahila Kisan Sashaktikaran yojana
MKRE	Ministry of New and Renewable Energy
MHM	Menstrual Hygiene Management
MDWS	Ministry of Drinking Water and Sanitation
NRLM	National Rural Livelihood Mission
NABARD	National Bank for Agriculture and Rural Development
NDDB	National Daily Development Board
NFSA	National Food Security Act
NHM	National Health Mission
NIRD&PR	National Institute of Rural Development and Panchayat Raj

Chapter 1:

Ideal village visit from District of Gujarat State (Civil Concept)

1.1 Background & Study Area Location:

According to census 2011 information the location code of Vadal village is 514463. Vadal village is located in Junagadh district in Gujarat, India. It is located 12Km away from Junagadh, which is both district & sub- district headquarter of Vadal village. Vadal village is gram panchayat.

Fig. 1.1: Map of Vadal Village

Table 1.1 Populations in Vadal

Detail	Total
Population	7165
Male Population	5277
Female Population	3439
Child(0-6)	623
Girl Child(0-6)	272
Scheduled Caste	901
Scheduled Tribes	1

❖ **Study of Location:**

Table 1.2 Study of Location

Gram panchayat	Vadal
Taluka	Junagadh
District	Junagadh
State	Gujarat
Latitude & Longitude	21.6113º N & 70.4970º E
Area	2104.32 Hector
Population	7165
Household	1557

1.2 Concept: Ideal village, Normal village:

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

House:

The houses of an ideal village are very neat clean. The owners of these houses look to the house sanitation and house-drainage. The houses have sufficient windows to let in air and light.

Agriculture:

People of an ideal village are good farmers. They grow food crops and seasonal crops etc. now they improved method of farming for production of crops.

Educational facilities:

There are primary schools and high school in an ideal village. Primary education is free and compulsory.

Medical facilities:

In an ideal village, there are clinical facilities for villagers and animals. Hence, there are lots of dispensaries.

Other facilities:

We can find Railway station, post-office, library, playground, garden, skill development centre etc there.

People:

People of an ideal village are very neat and clean. They have a sense of discipline and collaboration. They have a spirit of service and let go.

1.2.1 Objectives of ideal village:

- To provide insufficient basic physical infrastructure facilities like Water Supply, Transportation, Sewerage and Solid Waste Management etc.
- To provide insufficient Social infrastructure facilities like health and education facilities and to ensure proper delivery of facilities to village dwellers.
- To promote integrated development of rural areas with provision of quality housing, better connectivity, employment opportunities and supporting physical and social infrastructure.
- To Identification sanitation facilities that are needed to be improve like sewerage and drainage line, dumping facilities, Electricity connections.
- Refurbishing of village lakes, water tanks and wells, construction of rain water harvesting structures for sustainable Development.

1.2.2 Case study of ideal Village of India/Gujarat:

A large majority of the Indians live the village area Hence should have idea of an Ideal village.

• Drinking Water:

This is village is water supply to the good drinking water.

Fig. 1.2 Drinking Water Tank

• Clinical facilities:

In ideal village to development the hospital and clinic facility to increase the health protection against the dangers disease in the environment through spread.

Some clinics are provided in the village to reduce the time to travel the people in near towns and increase the reliability to people.

Fig. 1.3 Clinical facilities

• Sanitation and drainage:

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

Fig. 1.4 drainage in village

• Education Facilities:

Vadal was education and cultural hub for neighbour villages. There village take pride to have one of the best education systems, school, and teaching staffs in the district. There are primary schools, high school in ideal village. Primary education is free.

Fig. 1.5 Education Facility

• Agriculture Facilities:

In ideal village latest technology use in agriculture product, irrigation and cultivation of a crop in increase a wealth of farmer and the living standard is high. To use a advance methods it increase an irrigation and crop production in yearly.

• **Other facilities:**

We can find post-office, Bank, Bus stand, Bank, Public Toilet, Medical, Railway Station There.

Fig. 1.6 Railway Station

Fig. 1.7 Other Facilities

1.2.3 The Ideal of Model/Smart Village

- Smart village refers to a concept developed in rural area that provides solution to problem occurred and improves the quality of life. The main problems faced by rural areas are cover poverty, low level of education, and limited access to technology. Smart village concept emerged due to some different characteristics between rural and urban areas.

1.2.4 Ancient history civil/electrical concept about Indian village/foreign countries perspective and its development.

- **Physical Requirements:**

  - ✓ Since zero slump concrete is use in production of paver blocks, the quality of blocks produced will depend upon various parameters like the capacity of compaction and vibration of machine, grade of cement used, water content quality of aggregates used their gradation and mix design adopted, additives used, handling equipment employed, curing method adopted level of supervision, workmanship and quality control achieved etc.

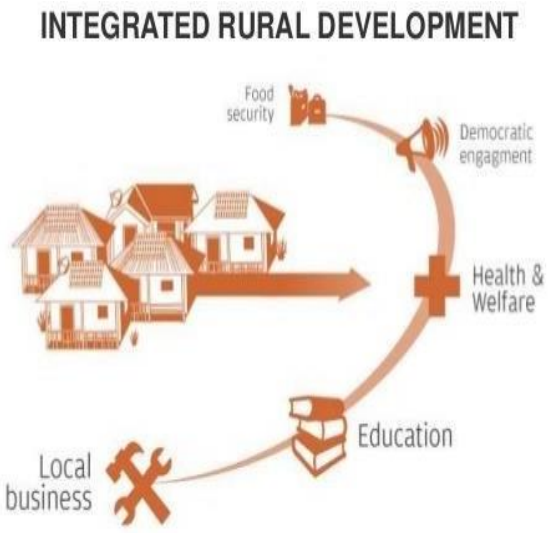


Fig. 1.8 Physical Requirement

  - ✓ There primary school building is very good condition. There one primary school available in village.

  - ✓ There Anganwadi building. There 3 Anganwadi in village.

  - ✓ There one primary health centre available in village.

  - ✓ Panchayats were functional institutions of grassroots governance in almost every village. They endured the rise and fall of empires in the past, to the current highly structure system.

1.3 Detail study:

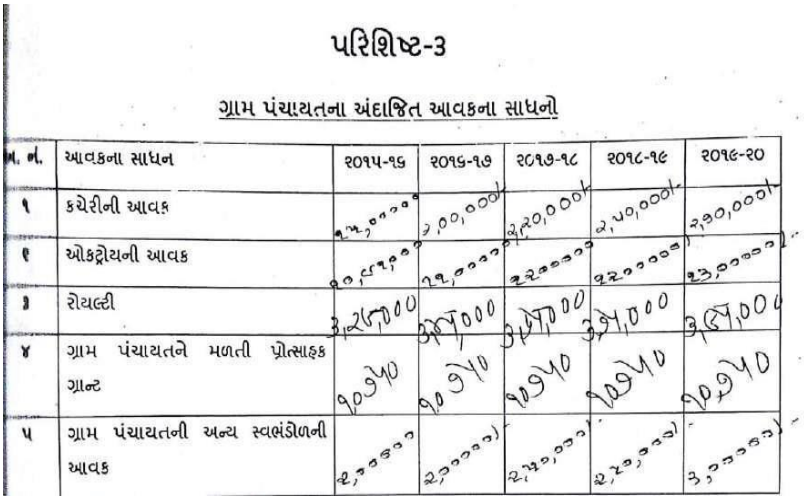
1.3.1 Socio economic:

The village is free from Children Marries, Child Labour, Uneven Fighting's and any Ferias are not allowed in afternoon time Zone and also free from Robbery Men's.

The total population of the village is fill 100% taxes. So, the Government provides speedy Development.

1.3.2 Demographical Detail

Fig. 1.9 Gram Panchayat



પરિશિષ્ટ-૩

ગ્રામ પંચાયતના અંદાજિત આવકના સાધનો

ક્ર. નં.	આવકના સાધન	૨૦૧૫-૧૬	૨૦૧૬-૧૭	૨૦૧૭-૧૮	૨૦૧૮-૧૯	૨૦૧૯-૨૦
૧	કચેરીની આવક					
૨	ઓકટ્રોયની આવક					
૩	રોયલ્ટી					
૪	ગ્રામ પંચાયતને મળતી પ્રોત્સાહક ગ્રાન્ટ					
૫	ગ્રામ પંચાયતની અન્ય સ્વભંડોળની આવક					

1.3.3 Infrastructures details:

This village has very good infrastructure facility.

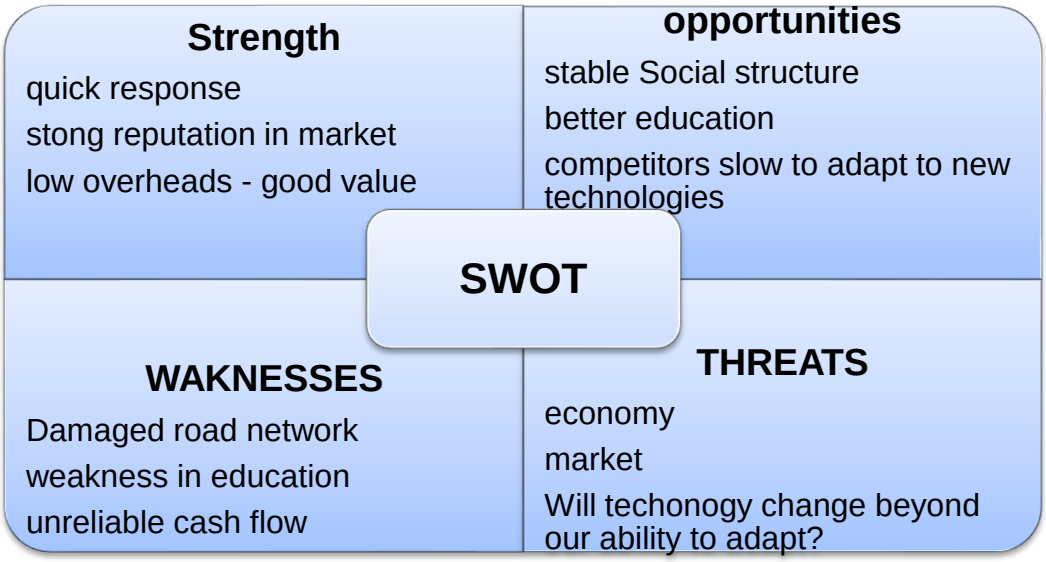
This Vadal village are available ATM, Bank, Post office, Health centre etc. are to the Village.

Fig. 1.10 Anganwadi

Fig. 1.11 Post Office

1.4 SWOT Analysis of ideal village:

SWOT mean strength, weakness, opportunities, and threats analysis has been carried out as the base study for the project on preparing long term training and capacity building strategy for disaster rick reduction in India under the national cyclone risk mitigation project.



1.5 Future prospects of village:

- Increase of the wealth of people.
- Increase of the less energy system for irrigation technique.
- To improve the rain water harvesting.
- Solar street light
- Better agriculture prosperity.
- Establishment of the R.O. plant for providing a pure drinking water.
- Road network is improved of the village.
- To provide in village the filter plant.

1.6 Benefits of the visits of ideal village / Smart village:

1.6.1 Benefits of the visits

- Increase the life style of peoples and safety against health and damages.
- To know the strength and weakness of village.
- We saw all type of basic and primary amenities available.
- We see some different type of little requirements of village.

1.7 Electrical Concept of Ideal village / Smart village:

No electrical student

Chapter 2:
Literature Review (Civil & Electrical Concept)

2.1 Introduction: Urban & Rural village concept:

Urban Area:

Urban area is national economic Growth (NEG) of India is increase by the development of urban area business or non-agriculture activities.

Invention of new advance technology and new development facilities to meets its standard livelihood. The transportation and communication are also well developed. The urban area is surrounding a developed area or developed city in the reference of good facility to human being. Invention of new techniques and development of facility increase standard of living.

Fig. 2.1 Urban Area

Rural Area:

In general, a rural area is a geographic area that is located outside towns and cities. Where the most of the total population is engaged with agriculture activities. Rural areas are also known as the 'countryside' or a 'village' in India. It has a very low population density. According to the Planning Commission, a town with a maximum population of 15,000 is considered rural in nature. In these areas the panchayat makes all the decisions. There are five people in the panchayat. The National Sample Survey Organization (NSSO) defines ‘rural’ as follows:

- An area with a population density of up to 400 per square kilometre.
- A minimum of 75% of male working population involved in agriculture.

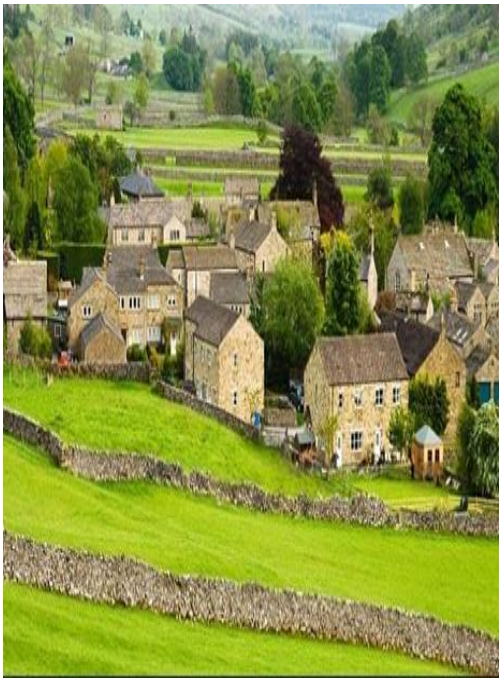


Fig. 2.2 Rural area

2.2 Importance of the rural development:

- Rural development is a dynamic process, which is mainly concerned with the rural areas.
- This includes- Agriculture growth, putting up of economic and social infrastructure, fair wages as also housing and house sites for the landless, village planning, public health, education and functional literacy, communication etc.

Fig. 2.3 Importance of rural development

- Rural development is important not only for the majority of the population residing in a rural area but the growth of rural activities is necessary to stimulate the speed of overall economic expansion of the nation.

2.3 Ancient Village / Different Definition of: Rural area / Village:

- The quest to discover the real rural India still continues in great earnest. Almost every economic agency today has a definition of rural India.

- Urban areas are very developed, meaning there is a density of human structures such as houses, commercial buildings, roads, bridges, and railways. “Urban area" can refer to towns, cities, and suburbs. An urban area includes the city itself, as well as the surrounding areas.

2.4 Scenario: Rural / Urban India &Gujarat as per Centre 2011 and latest Population:

- Total population 60,439,692
- Total population of male: - 31,491,260
- Total population of female: 28,948,432
- Total population growth in decade is 19.28%
- Out of total population of Gujarat, 42.60% people lives in urban region and rest in rural.

2.5 Scenario: Rural / Urban village of Gujarat as per Census 2011 and latest:

Table 2.1 Population of Gujarat

Description	2011	2001
Approximate population	6.04 Cores	5.07 Crore
Actual population	60,439,692	50,671,017
Male	31,491,260	26,385,577
Female	28,948,432	24,285,440
Population Growth	19.28%	22.48%
Percentage of total population	4.99%	4.93%
Sex ratio	919	920
Density per square km	308	258
Density per square meter	798	669
Area per square km	196.244	196.024
Area per square meter	75,770	75,685
Total child population (0-6 age)	7,777,262	7,532,404
Male population (0-6 age)	4,115,384	4,000,148
Female population (0-60 age)	3,661,878	3,532,256
Literacy	78.03%	69.14%
Male Literacy	85.75%	79.66%
Female Literacy	69.68%	57.80%
Total Literate	41,093,358	29,827,750
Male Literate	23,474,873	17,833,273
Female Literate	17,618,485	11,994,477

Table 2.2 Gujarat Rural & Urban Population

Description	Rural	Urban
Population (%)	57.40%	42.60%
Total Population	34,694,609	25,745,083
Male Population	17,799,159	13,692,101
Female Population	16,895,450	12,052,982
Population Growth	9.31%	36.00%
Sex Ratio	949	880
Child Population (0-6)	4,824,903	2,952,359
Child Percentage (0-6)	13.91%	11.47%
Literates	21,420,842	19,672,516
Average Literacy	71.71%	86.31%
Male Literacy	81.61%	90.98%
Female Literacy	57.78%	70.26%

2.6 Rural Issues & Concern:

- ✓ Water problems
- ✓ Sewage system
- ✓ Lower education
- ✓ Poor Health services
- ✓ Migration to urban areas
- ✓ Lower living standards
- ✓ No transportation facility
- ✓ Less awareness

2.7 Various infrastructure & guidelines/Norms for Villages for the provisions of different infrastructure facilities:

- ✓ Rods in village
- ✓ Transportation
- ✓ Bus station in each village
- ✓ Natural resource conservation service directive
- ✓ Department directive

2.8 Other Projects / Schemes of Gujarat / Indian Government:

❖ **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS):**

- ➢ National Rural Employment Guarantee Act 2005, was launched on the 2nd Feb.2006. Now the new name of this scheme is "Mahatma Gandhi National Rural Employment Guarantee Act" (or, MGNREGA).
- ➢ This scheme is an Indian labour law and social security measure that aims to provide 'right to work' to the people falling Below Poverty Line.
- ➢ It guarantees 100 days employment in a year to the village people.
- ➢ Fifty percent workers should be women.
- ➢ Its 90% funding is borne by the central government and 10% by the state government.

❖ **National Rural Health Mission (NRHM):**

- ➢ The National Rural Health Mission (NRHM), now under National Health Mission is initiated on 12 April, 2005.
- ➢ Main aim of this plan is to provide accessible, affordable and accountable quality health services even to the poorest households in the remotest rural regions.
- ➢ Accredited social health activists (ASHA) scheme is also operational under this scheme.
- ➢ It is run by the ministry of health and family welfare.

Chapter 3:
Smart (Cities / Village) Concept Idea and its Visit (Civil & Electrical Concept)

3.1 Introduction: Concepts and Definitions:

A smart city is an urban area of the different types of use of the city. This data collection of the city is water supply network, power plant, transportation system, water management, law enforcement, information system, school, libraries, hospital, and other community services.

❖ Concepts

Making a city "smart" is evolving as a strategy to ease the problems generated by the urban population growth and speedy urbanization. Yet little hypothetical research has sparingly discussed the phenomenon.

This smart city concept of the improving the building and infrastructure quality and improving the infrastructure management (digital technology). this smart city digital like this communication, social network, mobile, internet of things etc is the smart city.

This is smart to improve the quality of life and economic competitiveness resource efficient and environmentally friendly. Like is potable water, clean air, security, efficient building, reliable power grid, mobility solution.

❖ Definitions (civil)

The meaning of smart village is all the necessaries' facilities is developed in the village and no need to moves in city for any kind of requirement.

3.2 Vision-Goals, Standards and Performance Measurement Indicators:

❖ Smart city Vision & Goals:

The vision of "Smart Cities" is the **urban centre of the future**, made safe, secure environmentally green, and efficient because all structures--whether for power, water, transportation, etc. are designed, constructed, and maintained making use of advanced, integrated materials, sensors, electronics, and networks which are interfaced with computerized systems comprised of databases, tracking, and decision-making algorithms.

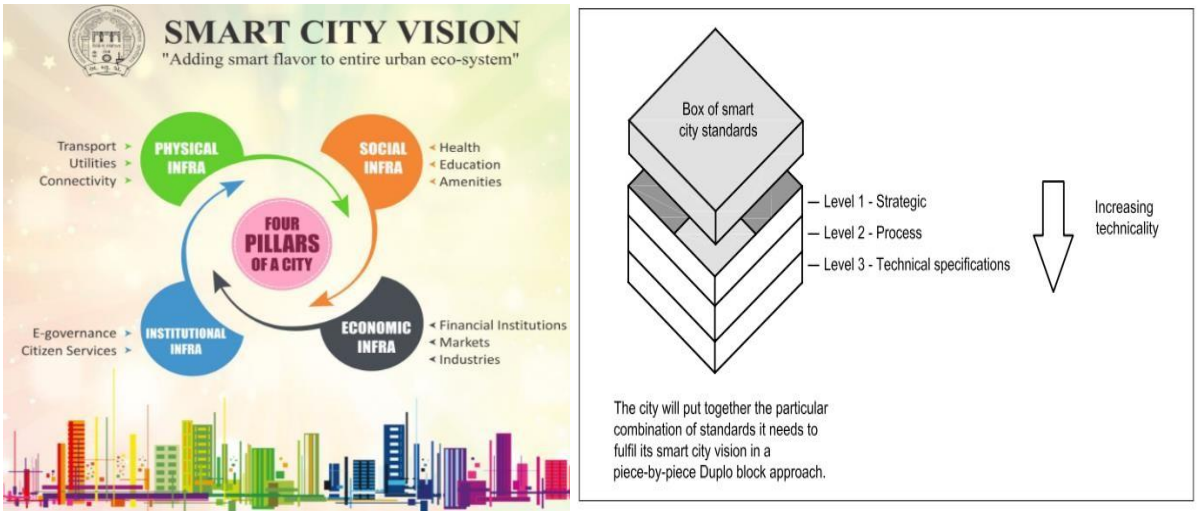


Fig. 3.1 Smart city Vision

❖ Smart city Standards:

➢ **Strategic**:

These are smart city standards that aim to provide guidance to city leadership and other bodies on the "process of developing a clear and effective overall smart city strategy". They include guidance in identifying priorities, how to develop a roadmap for implementation and how to effectively monitor and evaluate progress along the roadmap.

➢ **Process**:

Standards in this category are focused on procuring and managing smart city projects – in particular those that cross both organizations and sectors. These essentially offer best practices and associated guidelines.

➢ **Technical**:

This level covers the myriad technical specifications that are needed to actually implement Smart City products and services so that they meet the overall objectives.

❖ Smart City Performance Measurement Indicators:

Indicators for smart cities, gives cities a set of indicators for measuring their performance across a number of areas, allowing them to draw comparative lessons from other cities around the world and find innovative solutions to the challenges they face.

Key performance indicators represent a particular value or characteristic that is measured to assess whether an organization's goals are being achieved. The main benefit of a KPI is that it collects all the data from various individuals and combines it on a main data base. But does not address the constraints involved to achieve the goals is a setback for leaders to take decision.

3.3 Technological options:

1. Smart Energy:

Both residential and commercial building in smart cities is more efficient, using less energy, and the energy used is analysed and data collected. Smart girds are part of a development of a smart city, and smart streetlight are an easy entry point for many cities, since LED lights save money and pay for themselves within a few years.

2. Smart Transportation:

A smart city supports multi-model transportation, smart traffic lights and parking. By making parking smarter people spend less time looking for parking spots and circling city blocks. Smart traffic lights have a camera that monitors traffic flow so that it’s reflected in the traffic signals.

3. Smart Infrastructure:

Having a smart infrastructure means that a city can move forward with other technologies and use the data collected to make meaningful change in future city plans.

4. Smart mobility:

Mobility refers to both technology and the data which travels across the technology. The ability to seamlessly move in out of many different municipal and private systems is essential if we are to realize the promise of smart cities. Building the smart city will never be a project that is “finished”. Technology needs to be interoperable and perform to expectations regardless of who made it or when it was made.

5. Smart healthcare:

Intelligent Healthcare, technology, use of e-health and m-health system, intelligent and connected medical devices.

6. Civil Related Technology

These civil engineering technicians assist engineers by surveying, drafting and performing other related activities for building road, highways, waterways, and public structures. Civil engineering technician careers can be gained through the completion of a degree or training program in the field or through on the job experience.

7. Electrical Related Technology

Not electrical student

3.4 Road Map and Safe Guards for Smart Cities:

The smart City mission has two components; area-based development for smaller areas within the city and pan-city development where one idea is implemented all throughout. According to officials from the Ministry of Urban Development (MUD), among other things, area-based plane allow for the parches of buses and other means to augment public transportation.

3.5 India's Smart Cities: Issues & Challenges:

Other challenges for India include merging technology with law enforcement. There is no point in installing high tech traffic signals if its implementation cannot be enforced. India will also have to find ways of encouraging private investment for infrastructure required for a smart city.

3.6 Smart Infrastructure:

Smart city technology is literally built into the fabric of the city. For example, lighting systems can adapt to their surroundings using connected sensors, increasing or decreasing illumination according to time of day, in response to human or vehicle traffic, or in response to events or other city activities.

Connected roads can provide information on traffic patterns and road hazards through cameras or road sensors. Data can be used to inform public transportation routes, make traffic enforcement more efficient, and help emergency vehicles get to their destination faster.

3.7 Cyber Security:

Now day all payment is going to digital and smart user use net banking sell phone and computer. This facility is good for busy people but it has a disadvantage. Some people disuse his knowledge and going work for scam and frond. So this problem is the Cyber security. It protect and ewer to scam and frond. This save our data and protect our moony. Elements of cyber security include: Application security, Information security, Network security.

3.8 Strategic Options for Fast Development:

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

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

❖ Urban water and Sanitation Challenges:

- Urban sanitation in India faces many challenges. Nearly 60 million people in urban areas lack access to improved sanitation arrangements, and more than two-thirds of wastewater is let out untreated into the environment, polluting land and water bodies. To respond to these environmental and public health challenges, urban India will need to address the full cycle of sanitation, i.e. universal access to toilets, with safe collection, conveyance and treatment of human excreta. This paper outlines these concerns, and highlights the need for focusing on access to water and the full cycle of sanitation for the urban poor, as fundamental to addressing the sanitation challenge. Priorities for policy and financing for urban sanitation in India are discussed, and the paper concludes with an examination of key policy initiatives in the last decade, assessing the extent to which these priorities are gaining attention.

❖ Role of Indigenous Technologies:

- The indigenous technology is use in smart city at any place. The technology is use in that place like a governance, Public Service, Safety and security, Environment and power consumption, Education, Health, etc.

3.10 Initiatives in village development by local self-government:

The Smart Cities Mission is an innovative and new initiative by the Government of India to drive economic growth and improve the quality of life of people by enabling local development and harnessing technology as a means to create smart outcomes for citizens.

3.11 Smart Initiatives by District Municipal Corporation:

Smart city Mission was launched by Prime Minister Shri Narendra Modi on 25 June, 2015. Surat city was selected among 100 cities to be developed as smart city in India due to various achievements, initiatives and all-inclusive approach. Accordingly, Surat city had submitted “Smart City Proposal”.

Fig. 3.2 This solid Municipal management

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

- The ENGO Challenge aspires to create an ecosystem of NGOs, which use Information Communication Technology (ICT) and digital media tools for good governance practices for the benefit of societies and communities at large. The challenge seeks to recognise, salute and honour best NGO practices using ICT in any part of the world. The objectives of the ENGO Challenge are:

- To create an ecosystem of NGOs who uses ICTs and digital media for good governance practice for community serving purpose.

- To create and build a network of NGOs into innovative ICT practices for learning, experience sharing and promoting good practices.

- To advocate the wider need for good ICT practice among NGOs as the third sector working partner hand in hand with the public and the private sectors

- To encourage bottom up NGO led local content development and population, information and community work experiences on ICT platforms through the web especially for wider access and partnership.

- Over the years, ENGO Challenge has created a database of 647 ICT for Development interventions by NGOs from eight countries in Asia and Africa. In its three editions so far, the ENGO Challenge has honoured and felicitated 27 winners.

3.13 How to implement other Countries smart villages projects in Indian village context:

- The emerging concept of Smart Villages refers to rural areas and communities which build on their existing strengths and assets as well as on developing new opportunities. In Smart Villages traditional and new networks and services are enhanced by means of digital, telecommunication, internet technologies, innovations and the better use of knowledge, for the benefit of inhabitants and businesses. Digital technologies and innovations may support quality of life, higher standard of living, public services for citizens, better use of resources, less impact on the environment, and new opportunities for rural value chains in terms of products and improved processes. LED street lights and solar panels.

3.14 Electrical concept (Design Ideal and Prototype model):

- No Electrical Student

Chapter 4:

About Moti Parabadi Village

4.1 Introduction:

4.1.1 Introduction about Moti Parabadi village

Moti Parabadi village is located in Rajkot district in Gujarat, India. It is situated 12Km away from Junagadh. Moti Parabadi has population of 2413 as per census of India 2011.

4.1.2 Justification / Need of study

The government takes responsibility for uplifting rural and poorer regions. There is lot of public spending to improve the infrastructure water and sanitations in this area. But not much improvement achieved in most of the villages Vishwakarma Yojana helps in better and fast development of rural areas. By proving urban facilities in Rural decrease this rate of migration & also increase standard of living of people of rural area.

The basic need of this study is to provide facilities in the village for the Rurban development. implement the different physical, social and socio-culture infrastructural facilities in the villages and to lessen the urban migration of people of the village.

4.1.3 Study Area:

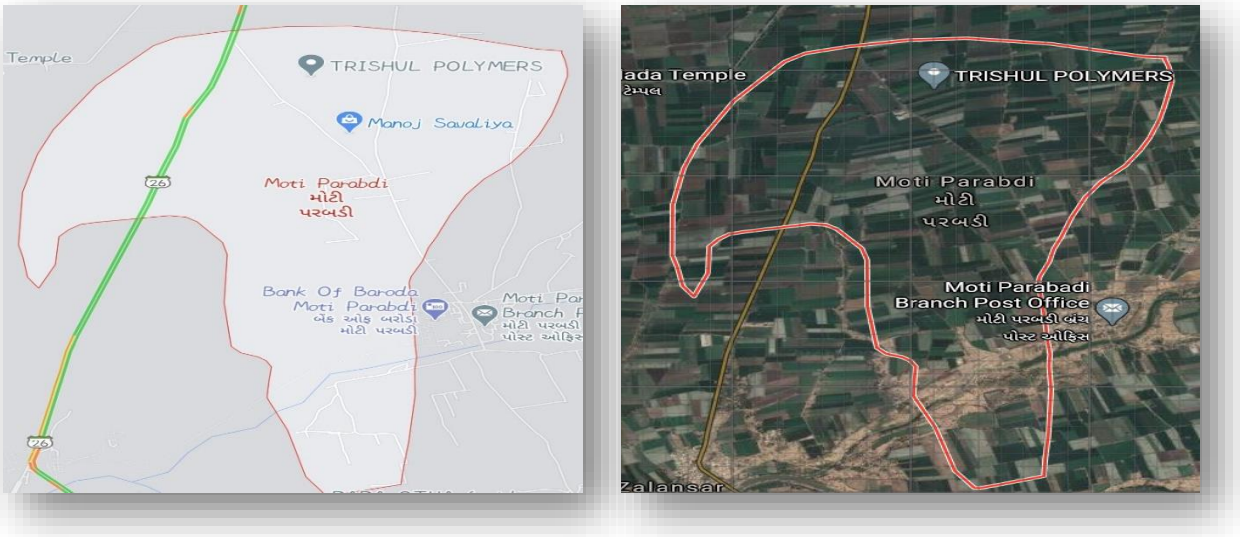


Fig. 4.1 Map of Moti Parabadi Village

Table 4.1 Study area detail

Village	Moti Parabadi
Taluka	Dhoraji
District	Rajkot
State	Gujarat
Location	95Km form Rajkot
Telephone code	02824
Nearest town	Junagadh(12km)

4.1.4 Objectives of the study:

- To provide basic facilities in the village.
- To reduce migration.
- Repair & maintenance of existing public building like Gram panchayat, public Library, School Buildings, health Centre, and public Toilet Block & Other.
- To provide the necessary design of the public building which are not available in the village.
- To promote integrated development of Moti Parabadi village with provision of required facilities, better connectivity, employment opportunities, etc.
- To develop the village such that it can be called a Smart village.
- To crease of the improvement of the communication skills of the people.

4.1.5 Scope of the Study:

Provide basic amenities in the rural area which are not existing with rural soul remain intact and to increase the livelihood of people.

4.1.6 Methodology Frame Work For development of your village:

- Methodology goes in following order
- Concept
- Literature review
- Meeting with revenue Talati
- Techno Economic Survey.
- Collection of data
- Analysis of data
- Design proposals
- Future plan
- Acknowledgement

Fig. 4.2 Primary School

Fig. 4.3 Panchayat Building

4.2 Moti Parabadi Study Area Profile:

4.2.1 Study Area Location:

This Moti Parabadi village is Dhoraji Taluka, Rajkot district. The Moti Parabadi village this 24 km this nearest of the Junagadh. This village are available in panchayat office, education facilities, drinking facilities etc. in the village. Moti Parabadi village are pin cord 360360 is and postal head office is Dhoraji.

4.2.2 Base Location Map:

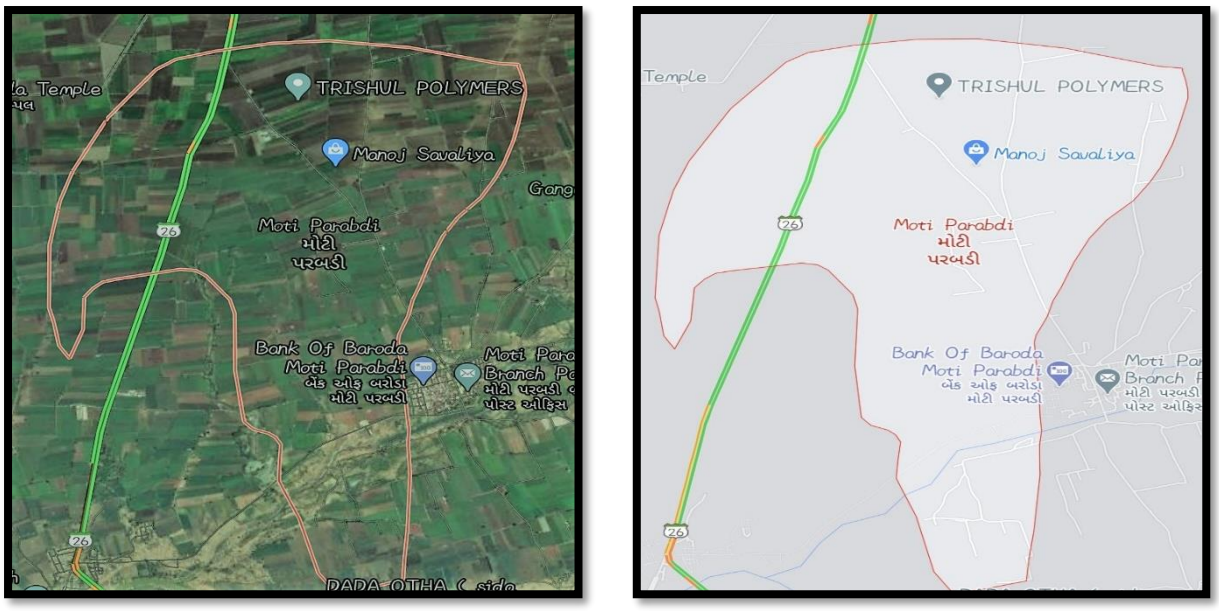


Fig. 4.4 Base Map of Moti Parabadi

4.2.3 Physical & Demographical Growth:

This is village out of total population 2413 and the total workers in which is 1262 of the males and 1151 are females.
The geographical area of village is 1065.65 hectare. Moti Parabadi has a total population of 2413. There are about 517 houses in Moti Parabadi.

4.2.4 Economic generation profile / Banks:

About the economic profile of this village, many citizen's work interest is farming and labour work. The village doesn't have any better facilities regarding infrastructure but has good electrification system which distributed 24*7 hours for domestic use and 8 hours for agricultural use.

The people of Moti Parabadi village are economically strong.

4.2.5 Actual Problem faced by Villagers and smart solution:

- In the village there is no high school and the student faces many problems in education. Need to build-up high school.
- There is no bank facility in the village. Its needs bank in the village.
- In the village street light is in not good condition. Need of solar panel LED Street lights.
- In the village there is no drainage facility. Need have closed drainage system to build.
- In the village there is no disposal of the waste. Provide an area for the disposal waste.

4.2.6 Social scenario

It was found that all the people of this village are not very much connected with today's technology environment rather than their main major working area. The major crops produced in the village are cotton, Groundnut and Castor. The major population is get income through the farming and there are no other job opportunities.

4.2.7 Migration Reasons / Trends

❖ **Migration reasons**

➢ In the village there is limited education so for the education the people migrate to the urban area for the education and after complete the education some of the people settle in the urban area.

➢ Employment is also reason for the migration in village.

❖ **Trends of migration:**

➢ The facility of the cities is attracting the rural people in cities.

➢ In the urban area many opportunity, employment, transport, industry, modem facility of life also attracts rural people.

4.3. Data Collection Moti Parabadi Photograph:

4.3.1 Methods for data collection

Base line survey is a standard for any intervention during and post application of any development program. A complete baseline survey was undertaken which involved household census survey, Bio-physical survey and Village level data collection from Sarpanch. This gave in the details of the demographic profile of the village, the literacy percentage, SC/ST population, cattle population and net consumption rate in the village, average milk production of the cattle and various schemes running and their benefits Bio-physical survey was undertaken to identify various natural resources available in the village. It included the soil typology, well in the area, crop taken in the field, cropping pattern, fertilizer used and various sources of irrigation in the field.

4.3.2 Primary survey details

Moti Parabadi village is in Dhoraji Taluka in Rajkot district of Gujarat state. It is a small village consisting population of 2413 only. Total area of the village is 1065.65 hectares. It includes 17.3 hectares' land for agricultural purpose.

The entire data collected by us is displayed in the form itself. A copy of the form is shown below which refers to the type of data collected and that the details in the form cover the facilities of the entire area of the village.

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

Some of the houses arepakka with facility and most of the houses arepakka. Few houses are kachha.

4.3.4 No of Human being in One House

There in one house around 5 to 6 people live. And there are small family 2 to 4 people and large family 6 to 10 people living.

4.3.5 Material available locally in the village and Material out Sourced by the villagers

- **Material used locally**
  The material used in the agriculture field is Organic material use as fertilizer.

- **Material out sourced by the villagers**
  Material of construction and fuel is not available in the village for this material is purchase out of the village market.

4.3.6 Geographical Detail

Moti Parabadi Village Gram Panchayat name is Moti Parabadi. Moti Parabadiis 89 km distance from District Head Quarter Rajkot and it is 9 km distance from Sub District Head Quarter Dhoraji. Nearest Statutory Town is Junagadh in 24 km Distance. Moti Parabadi Total

area is 1065.65 hectares, Non-Agricultural area is 17.3 hectares and Total irrigated area is 486.84 hectares.

4.3.7 Demographical Detail

Total population of the village is 2413 and the population of the male is 1151 and female 1262. Total literacy of the village is 67.8%.

4.3.8 Occupational Detail

The most of the people is in farming occupation.
Least amount of people in labour occupation.

4.3.9 Agricultural Details / Organic Farming / Fishery

More than 90% of the people are related to the farming. Peanut, cotton, wheat are grown in the agriculture. Power supply of 8 hr. in winter and 8 hr. in summer for the agriculture in the village. Total irrigated area of the village is 486.84 hectares.

4.3.10 Manufacturing HUB / Ware Houses

There is no facility of it.

4.3.11 .Tourism development in the village for attracting the tourist

There is no tourism in the village.

4.4 Infrastructure Details (With Exiting Village Photograph):

4.4.1 Drinking Water / Water Management Facilities:

There is two water facility overhead tank and underground sump. Overhead tank capacity is 70,000 lit. And underground sump capacity is 1.5 Lakh lit.

F
i
Fig. 4.5 Water Tank

4.4.2 Drainage Network / Sanitation Facilities

There is no Drainage and sanitation facility in the village.

4.4.3 Transportation & Road Network

There is a local transport available like, private bus, etc.

Fig. 4.6 Road Network

4.4.4 Housing condition

There is most of the houses is Pucca and the few is kutcha but the most of the houses is in good condition and few of the houses is in bad condition.

4.4.5 Social Infrastructure Facilities, Health, Education, Community Hall

Fig. 4.7 Education Facilities

Fig. 4.8 Community Hall

Fig. 4.9 Agricultural Co-op. Society

Fig. 4.10 Bank & ATM

4.4.6 Existing Condition of Public Buildings & Maintenance of existing Public Infrastructure

Needs of maintenance of Primary School, Gram Panchayat, and Road.

4.4.7 Technology Mobile/ WIFI / Internet Usage Details

No government WIFI is available in village. People use private network.

4.4.8 Sports Activity as Gram Panchayat

There is no activity like that.

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

No facility like that in village.

4.4.10 Other Facilities

No other facility.

4.4.11 any other details

Everything is as the above details.

4.5 Electrical Concept:

4.5.1 Renewable energy source planning particularly for villages

No Electrical student.

4.5.2 Irrigation Facilities

No Electrical student.

4.5.3 Electricity Facilities with Area

No Electrical student.

4.6 Existing Institution like - Village Administration – Detail Profile:

4.6.1 Bachat Mandali

There is no Bachat Mandali.

4.6.2 Doodh manadli

There is no Doodh manadli.

4.6.3 Mahila forum

There is no Mahila forum.

4.6.4 Plantation for the air pollution

In the village there were need plantation in some area.

4.6.5 Rain Water Harvesting - Waste Water Recycling

There is not available for water Harvesting.

4.6.6 Agricultural Development

Agriculture awareness and Technology implement is needed for Best Irrigation development.

4.6.7 Any Other

There was no any other facility.

Chapter 5:

Technical Options with Case Studies: (FOR ANY ONE TOPIC, Take a new concept design , prototype model with actual costing)

5.1 Concept (Civil):

5.1.1 Advance Sustainable construction techniques

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.

The construction industry is repeatedly criticized for being inefficient and slow to innovate. The basic methods of construction, techniques and technologies have changed little since Roman times. But the application of innovation in the construction industry is not straight forward.

Incorporating advanced construction technology into practice can increase levels of quality, efficiency, safety, sustainability and value for money. However, there is often a conflict between traditional industry methods and innovative new practices, and this is often blamed for the relatively slow rate of technology transfer within the industry.

The adoption of advanced construction technology requires an appropriate design, commitment from the whole project team, suitable procurement strategies, good quality control, appropriate training and careful commissioning.

Advanced construction technologies are commonly described as including advanced forms of:

- Materials.
- Building information modelling (BIM).
- Computer aided design and computer aided manufacturing (CAD/CAM).
- Computer numerical control.
- Construction plant.
- Modern methods of construction.
- Modular construction.
- Offsite manufacturing.
- Prefabrication and preassembly.
- Site investigations and surveying.
- Substructure works.
- Water engineering.
- Temporary works.
- Smart technology.

Modern methods of construction include:

Panellised units produced in a factory and assembled on-site to produce a three- dimensional structure.

Volumetric construction to produce three-dimensional modular units in controlled factory conditions prior to transport to site.

Floor or roof cassettes, pre-cast concrete foundation assemblies, pre formed wiring looms, mechanical engineering composites and innovative techniques such as tunnel form or thin-joint block work.

5.1.2 Soil Liquefaction:

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

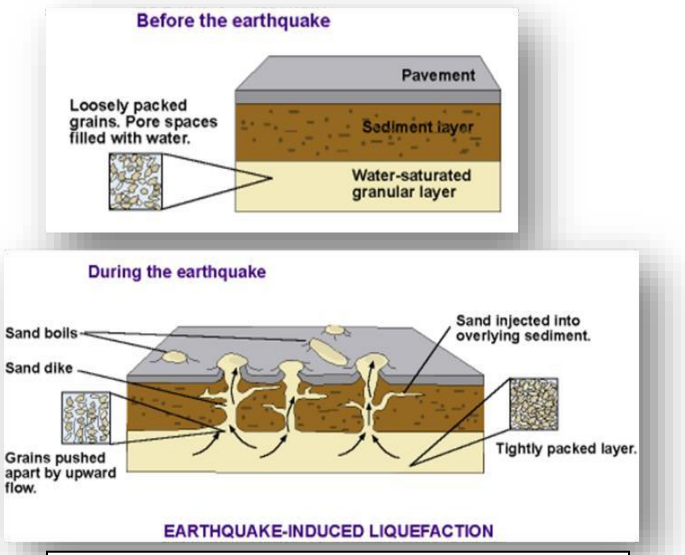


Fig. 5.1 Solid Liquefaction

The phenomenon is most often observed in saturated, loose (low density or uncompacted), sandy soils. This is because a loose sand has a tendency to compress when a load is applied. Dense sands, by contrast, tend to expand in volume. If the soil is saturated by water, a condition that often exists when the soil is below the water table or sea level, then water fills the gaps between soil grains. In response to soil compressing, the pore water pressure increases and the water attempts to flow out from the soil to zones of low pressure (usually upward towards the ground surface). However, if the loading is rapidly applied and large enough, or is repeated many times (e.g. earthquake shaking, storm wave loading) such that the water does not flow out before the next cycle of load is applied, the water pressures may build to the extent that it exceeds the force between the grains of soil that keep them in contact.

The effects of soil liquefaction on the built environment can be extremely damaging. Buildings whose foundations bear directly on sand which liquefies will experience a sudden loss of support, which will result in drastic and irregular settlement of the building causing structural damage, including cracking of foundations and damage to the building structure, or leaving the structure unserviceable, even without structural damage. Where athin crust of non-liquefied soil exists between building foundation and liquefied soil, a 'punching shear' type

foundation failure may occur. Irregular settlement may break underground utility lines. The upward pressure applied by the movement of liquefied soil through the crust layer can crack weak foundation slabs and enter buildings through service ducts, and may allow water to damage building contents and electrical services.

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.

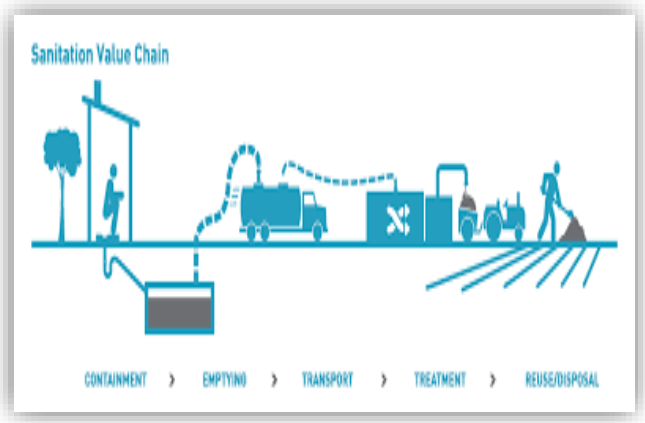


Fig. 5.2 Sustainable Sanitation

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.

- **Environment and natural resources**

  Environment and natural resources aspects involve the required energy, water and other natural resources for construction, operation and maintenance of the system, as well as the potential emissions to the environment resulting from use. It also includes the degree of recycling and reuse of excreta practiced and the effects of these, for example reusing the wastewater, returning nutrients and organic material to agriculture, and the protecting of other non-renewable resources, for example through the production of renewableenergy (e.g. biogas or fuel wood).

5.1.4 Transport Infrastructure / system

Transportation is the movement of goods and people from one place to another. In ancient times, people crafted simple boats out of logs, walked, rode animals and, later, devised wheeled vehicles to move from place to place. They used existing waterways or simple roads for transportation. Over time, people built more complex means of transportation. They learned how to harness various sources of power, such as wind, steam, and combustion, to move barges, ships, trains, automobiles, and airplanes. These new means of transportation required people to change their environments by building transportation infrastructure. Transportation infrastructure is the underlying system of public works designed to facilitate movement.

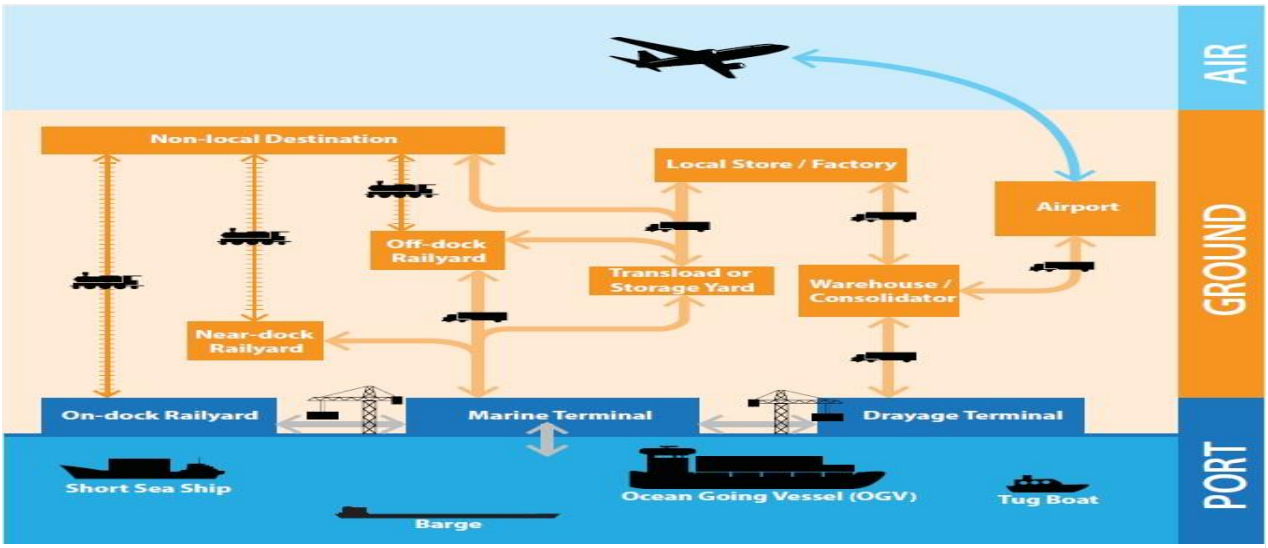


Fig 5.3 Transport Infrastructure

5.1.5 Vertical Farming

Vertical farming is the practice of producing food on vertically inclined surfaces. Instead of farming vegetables and other foods on a single level, such as in a field or a greenhouse, this method produces foods in vertically stacked layers commonly integrated into other structures like a skyscraper, shipping container or repurposed warehouse.

Advantages:

- It offers a plan to handle future food demands.
- Weather doesn't affect the crops.
- More organic crops can be grown.
- There is less exposure to chemicals and disease.
- Disadvantages:
- It would involve higher labour costs.

Fig 5.4 Vertical Farming

5.1.6 Corrosion Mechanism, Prevention & Repair Measures of RCC Structure

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. In the case of Reinforced concrete structure, the ingress of moisture or air may lead to corrosion of steel, cracking and spelling of concrete cover thereby reducing durability of concrete structure. Repair has been suggested as the protective solution for damaged structure due to corrosion.

Quality of workmanship in construction – The quality of construction entails good consolidation, proper rebar placement, sufficient concrete cover over the steel reinforcing bars, and other measures.

Initial costs – May need to consider more than just initial costs (i.e., life-cycle costs). As the rehabilitation and replacement costs increase, corrosion-control measures become more cost-effective.

Multiple protection strategies may be cost-effective for long-term corrosion protection. One such strategy is the use of epoxy-coated rebar in combination with a durable concrete containing corrosion inhibitors, having a low permeability, and adequate concrete cover. Silica fume and fly ash can be added to the concrete to reduce permeability and provide additional corrosion control. However, there is a need to balance the costs of the additional control measures against how much additional service life can be expected as a result of the added control measures. The additional costs can usually be justified based on a life- cycle cost analysis.

5.1.7 Sewage treatment plant

Sewage Treatment Plant is a plant or installation setup that is used to purify contaminated substances. These substances may be solid, liquid and semi-solids. Sewage treatment is one of the treatments that a waste treatment plant works on in the oil and gas industry and in other manufacturing industries. Treatment plants are named after their treated substances, for example:

- Wastewater treatment plant – treated wastewater
- Sewage treatment plant – treated sewage
- Water treatment plant – treated water

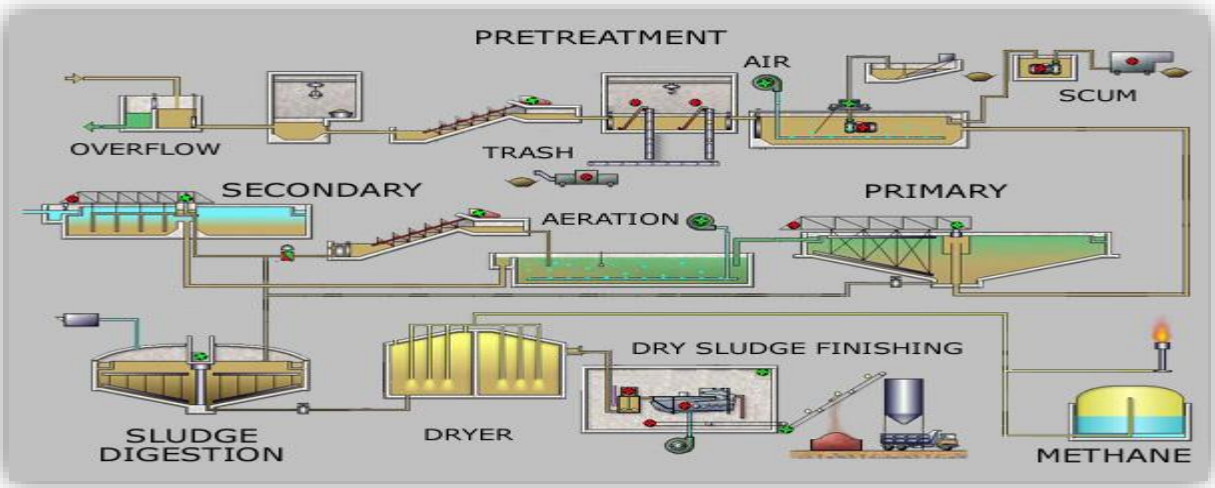


Fig. 5.5 Layout of plant

5.1.8 Technical Case Study On "Ahmedabad Metro"

Ahmedabad Metro is a rapid transit system for the cities of Ahmedabad and Gandhinagar in Gujarat, India. It is being built by Gujarat Metro Rail Corporation (GMRC) Limited (formerly Metro-Link Express for Gandhinagar and Ahmedabad or MEGA), a Special Purpose Vehicle company constituted in 2018 to implement all metro projects in Gujarat.

The company was established in February 2010 and the Phase–1 of the project was Average speed 18 km/h (11 mph) Top speed 25 km/h (16 mph) Map of under construction network Map of under construction network approved in October 2014. Construction of Ahmedabad Metro started on 14 March 2015 and Phase-1 is expected to be completed by 2023. A section of east– west corridor was inaugurated on 4 March 2019 by the Indian Prime Minister Narendra Modi and was opened to the public on 6 March 2019.

In 2003, Gujarat Infrastructure Development Board carried out the study for urban transport between Gandhinagar and Ahmedabad. It also carried out the detailed project report through Delhi Metro Rail Corporation and RITES and submitted it in June 2005 and received Central Government's approval in the same year. Following the estimated cost of ₹ 4295 crores and the study of the viability of the project, it was abandoned in 2005 to give priority to the Ahmedabad BRTS and suburban railway projects. In 2008, considering the future developments in and around Ahmedabad and Gandhinagar, the project was revived, and new corridors were designed to make the project viable. The special purpose vehicle company, Metro Link Express for Gandhinagar and Ahmedabad (MEGA) Company Ltd (now renamed GMRC), was established by Government of Gujarat on 4 February 2010 with Rs 200 crore. Later in 2014, it was decided that the Central Government will own 50% of the company.

Ahmedabad Metro

GMRC Logo

Table: 5.1 Overview & Technical of Ahmedabad Metro

Overview	
Owner	Gujarat Metro Rail Corporation Limited
Area served	Ahmedabad Future destinations: Gandhinagar GIFT City
Transit type	Rapid transit
Number of stations	6 (Operational) 32 (Phase 1) 22 (Phase-2)
Daily ridership	2 million (projected, 2022')
Website	Gujarat Metro
Began operation	4 March 2019
Character	Underground & Elevated
Train length	3 Coach
Technical	
System length	6.5 km (Operational) 40.03 km (24.87 mi) (Phase-1) 28.26 km (17.56 mi) (Phase-2)
Track gauge	1,435 mm (4 ft 8 1⁄2 in) Standard gauge
Average speed	18 km/h (11 mph)
Top speed	25 km/h (16 mph)
Electrification	750 V DC Third rail

❖ Phase-1:

Ahmedabad Metro North South Line Under construction near Sabarmati Powerhouse and Sabarmati Railway Station 9 July 2017**.**

On 19 October 2014, Union Cabinet of India approved ₹ 10,773 Crores for the Phase–1.The Central government approved use of unused Western Railways land along the Botad-Sabarmati meter gauge line in November 2014.

The original plan of Metro along Ashram Road was tweaked, and the track was moved westward. The new plan added cost of ₹ 500 crore and two more stations. It helped by fewer problems in land acquisition and less congestion on Ashram Road. In 2015 budget of Gujarat, ₹ 611 crore was further allocated for the metro.

The ground breaking ceremony was held on 14 March 2015 for the construction of 6.5 km long Vastral – Apparel Park stretch of east– west corridor in presence of then Gujarat Chief Minister, Anandiben Patel. The ground-breaking ceremony for North- South Corridor was held on 17 January 2016 in presence of the then Gujarat CM Anandiben Patel. The work started in March 2016. The Indian Railways permitted the construction of north–south corridor stretches on its land in June 2016.

The trial runs were carried out in February 2019 on 6.5 km long Vastral – Apparel Park section of Phase-1. The section was inaugurated on 4 March 2019 by Indian Prime Minister Narendra Modi. It opened to the public on 6 March 2019.

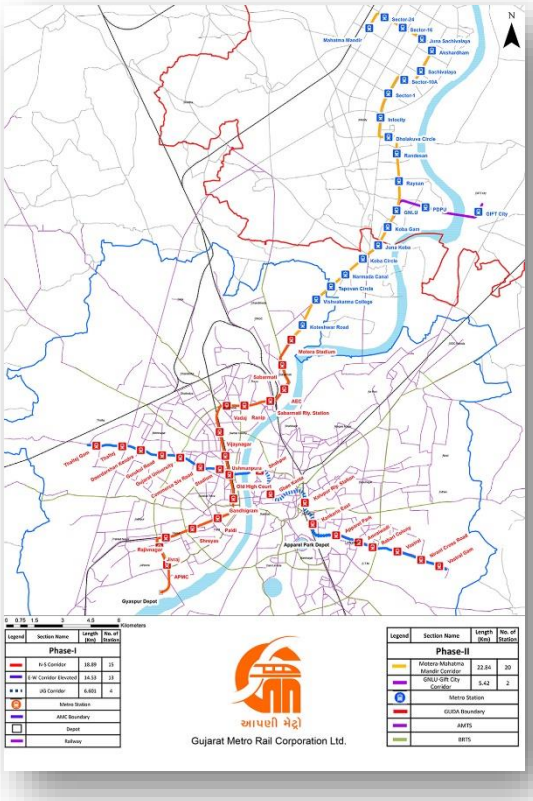
❖ Phase-2:

The Government of Gujarat gave approval for Phase-2 of project in October 2017 and revised it in October 2018. In February 2019, the Union cabinet approved the Rs 5384.17 crore second phase of the project. It will extend from Motera to Mahatma Mandir in Gandhinagar,(22.838 km) with a separate line from Gujarat National Law University (GNLU) linking Pandit Deendayal Petroleum University (PDPU) and GIFT City (5.416 km). The Phase-2 will have total 28.254 km long elevated corridor with 22 stations.

Tendering for the Phase 2 began in January 2020. On 18 January 2021, the foundation of the 28.25 km long Phase-2 connecting Ahmedabad with Gandhinagar was laid by Prime Minister Modi.

❖ Lines:

Network information:



Phase-1 (under construction)

Total Length: 40.03 km (24.87 mi)

North–south corridor: 18.87 km (11.73 mi)

East–west corridor: 21.16 km (13.15 mi)

Elevation:

Elevated: 33.50 km (20.82 mi)

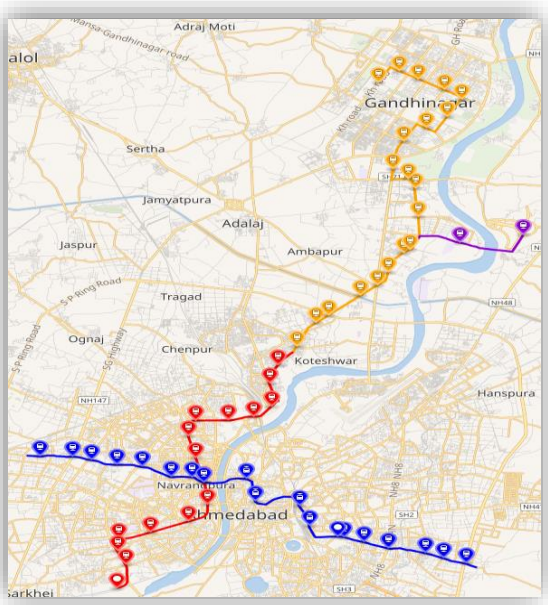
Underground: 6.53 km (4.06 mi)

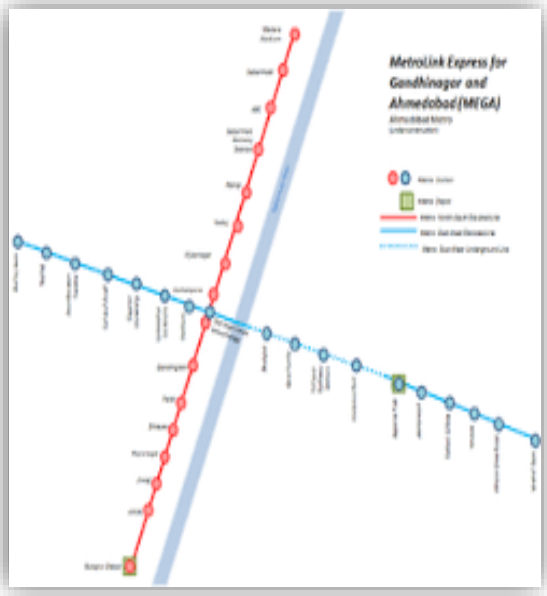
Phase-2 (under construction)

Total length: 28.254 km (all elevated)

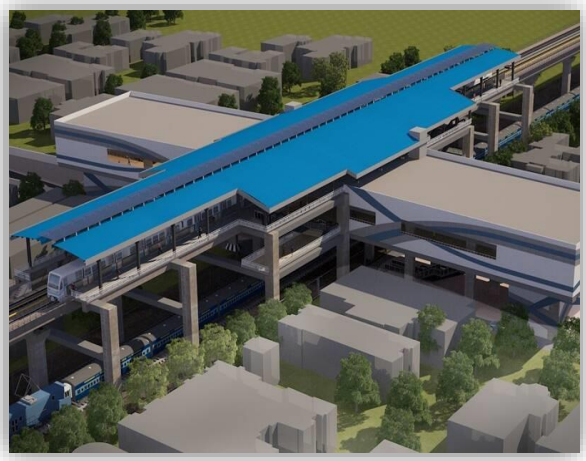
Motera-Mahatma Mandir corridor: 22.838 km

Gujarat National Law University (GNLU)-GIFT City corridor: 5.416 km





On site Construction:



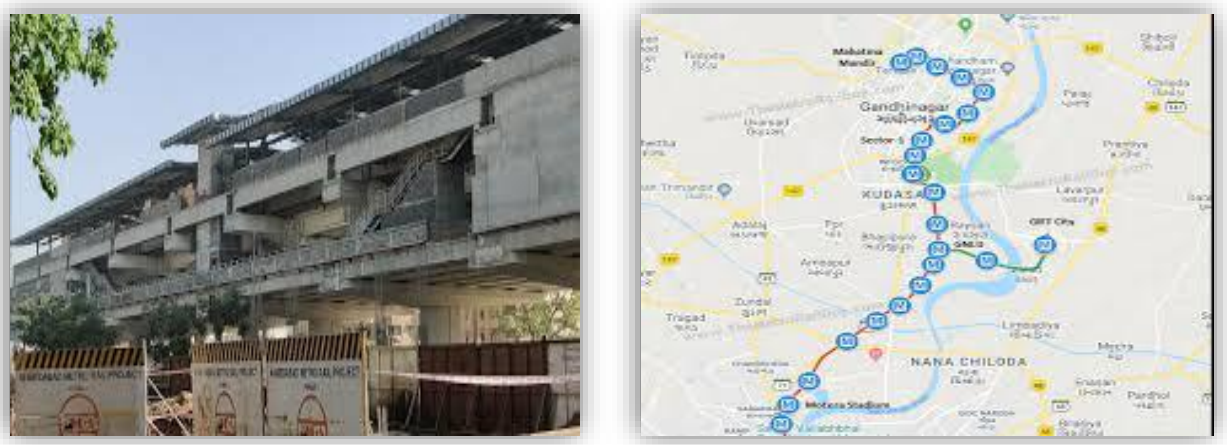


Fig.: 5.6 Construction Progress

5.2 Concept (Electrical):

5.2.1 Programmable Load Shedding

No Electrical student.

5.2.2 Railway Security System using LOT

No Electrical student.

5.2.3 Management through Energy Harvesting Concept

No Electrical student.

5.2.4 Moisture Monitoring System

No Electrical student.

5.2.5 Home Automation using LOT / Any other methodology

No Electrical student.

5.2.6 PC Based Electrical Load Control

No Electrical student.

5.2.7 Electrical Parameters Measurements

No Electrical student.

Chapter 6:

Swachh Bharat Abhiyaan (Clean India)

Swachh Bharat Abhiyaan (SBA) (or Swachh Bharat Mission (SBM) or Clean India Mission is a campaign in India that aims to clean up the streets, roads and infrastructure of India's cities, smaller towns, and rural areas. The objectives of Swachh Bharat include eliminating open defecation through the construction of household-owned and community owned toilets and establishing an accountable mechanism of monitoring toilet use. Run by the Government of India, the mission aims to achieve an Open-Defecation Free (ODF) India by 2 October 2019, the 150th anniversary f the birth of Mahatma Gandhi, by constructing 12 million toilets in rural India at a projected cost of Rs. 1.96 Lakh crore. The campaign was officially launched on 2 October 2014 at Rajghat, New Delhi by Prime Minister Narendra Modi. It is India's largest cleanliness drive to date with 3 million government employees, school students, and college students from all parts of India participating in 4,041 statutory cities, towns and associated rural areas.

Fig. 6.1Swatchh Bharat Abhiyaan

6.1 Swachh need in allocated village – Existing situation with Photograph:

The Swachh Bharat Abhiyaan is the most significant cleanliness campaign by the Government of India. Shri Narendra Modi led a cleanliness pledge at India Gate, which about thirty Lakh government employees across the country joined. He also flagged off a walkathon at Rajpath and surprised people by joining in not just for a token few steps, but marching with the participants for a long way.

6.2 Guidelines for the process of the implementation in your village with photograph:

Elimination of open defecation - Eradication of Manual Scavenging - Modern and Scientific Municipal Solid Waste Management - Generate awareness about sanitation and its linkage with public health - Capacity Augmentation for ULBs to create an enabling environment for private sector participation in Capex (capital expenditure) and Opex (operation and maintenance) Mission Strategy The estimated cost of implementation of SBM (Urban) based on unit and per capita costs for its various components.

- **Private Sector Participation**

Additional Resources from State Government/ ULB
Beneficiary Share
User Charges
Land Leveraging
Innovative revenue streams
Swachh Bharat Kush
Corporate Social Responsibility
Market Borrowing
External Assistance

- **Mission Components**

Household toilets, including conversion of insanitary latrines into pour-flush latrines Community toilets.

Public toilets and urinals Solid waste management.

Fig. 6.2 bio digester toilet

- Zero maintenance
- All faecal matter completely digested and converted into water, methane (bio gas) and CO2
- Bio digester tank sealed tank construction - no mixing with groundwater
- Rivers, lakes and water bodies will become clean on its own in a short period - as raw sewage do not enter
- Huge cost saving for govt on health care especially towards BPL families that depend on open-source water No need for STP as effluent from BIO DIGESTER is "safe".

6.3 Activities Done by Students for allocated village:

- ✓ Administration of pledge on Swatch Bharat Mission by DG to all employees, students and participants of ongoing training programmers in the Institute.
- ✓ Campus cleaning programmed with the participation of all employees, students and participants of ongoing training programmers.
- ✓ Interactive meeting with NIRD&PR Youth Club to discuss about the ways to implement Swachh Bharat Mission effectively.
- ✓ 'Nuked Natak' organized by students of BVBV School (NIRD&PR Campus) at various locations inside the campus to make aware the residents of the campus on the importance of cleanliness in our day-to-day life.
- ✓ Rural Technology Park (RTP) campus cleaning programmer undertaken by members of NIRD&PR Mahila Mandal. Campus-cum-office area cleaning programmer undertaken by employees and students of the Institute led by Director General.
- ✓ We are going to village and observe the actual condition of the village but we found out there isno any waste management in the village. The waste is throwing anywhere in the place by thepeople of village. Then we talk about the cleanliness and its importance, it's benefits, effect and how cleanliness is playing a major role inour life.
- ✓ We tell the how can the cleanliness will be done by regularly clean surrounding areas and don't throw the waste anywhere around the places andthe guideline for the cleanliness.
- ✓ In villages the problem of solid waste management is not as acute as in urban areas due to less generation and better Availability of land. However, it will be a good move to inculcate the habit of segregation of wet and dry waste. Wet waste can be treated in biogas plants where as dry waste can be recycled.

Chapter 7:

Village condition due to Covid-19

Due to COVID-19 pandemic, Ministry of Panchayat, Government of India in close collaboration with state governments has taken various initiatives. The guidance for the COVID 19 are not violated and norms of social distancing are scrupulously followed to contain the spread of the disease. 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. Most rural communities rely on untrained health workers. Over two-thirds of these rural health providers have no formal medical training, but remain the only option of medical support for most of the rural population.

7.1 Taken Step in allocated Village related to existing situation with Photograph:

❖ **Following step taken in village:**

- There is restriction in outdoor going, it's only allowed if work is important.
- Social distancing is compulsory to follow.
- Wearing mask in public is necessary.
- People from outdoor city & village are necessary to quarantine for 14 days.

7.2 Activities Done by Students for allocated village Clean:

We visited the village then get the permission of sarpanch for spreading awareness about COVID 19.

We meet many people of village and aware about covid-19 and give the information about hygiene, sanitizer & mask how to use it and what's importance of it and wash hands properly so corona virus will not affect our body also avoid crowded area and firstly make yourself home quarantined if you fill any COVID-19 symptom in your body.

7.3 Any other steps taken by the students / villagers:

➢ No other stapes taken.

Chapter 8:

Sustainable Design Planning Proposal

8.1 Design Proposals:

In Primary and techno-economical survey we collected information regarding to facilities like a primary facility, social facilities, educational facilities and sanitations facilitiesetc.

Design of Library

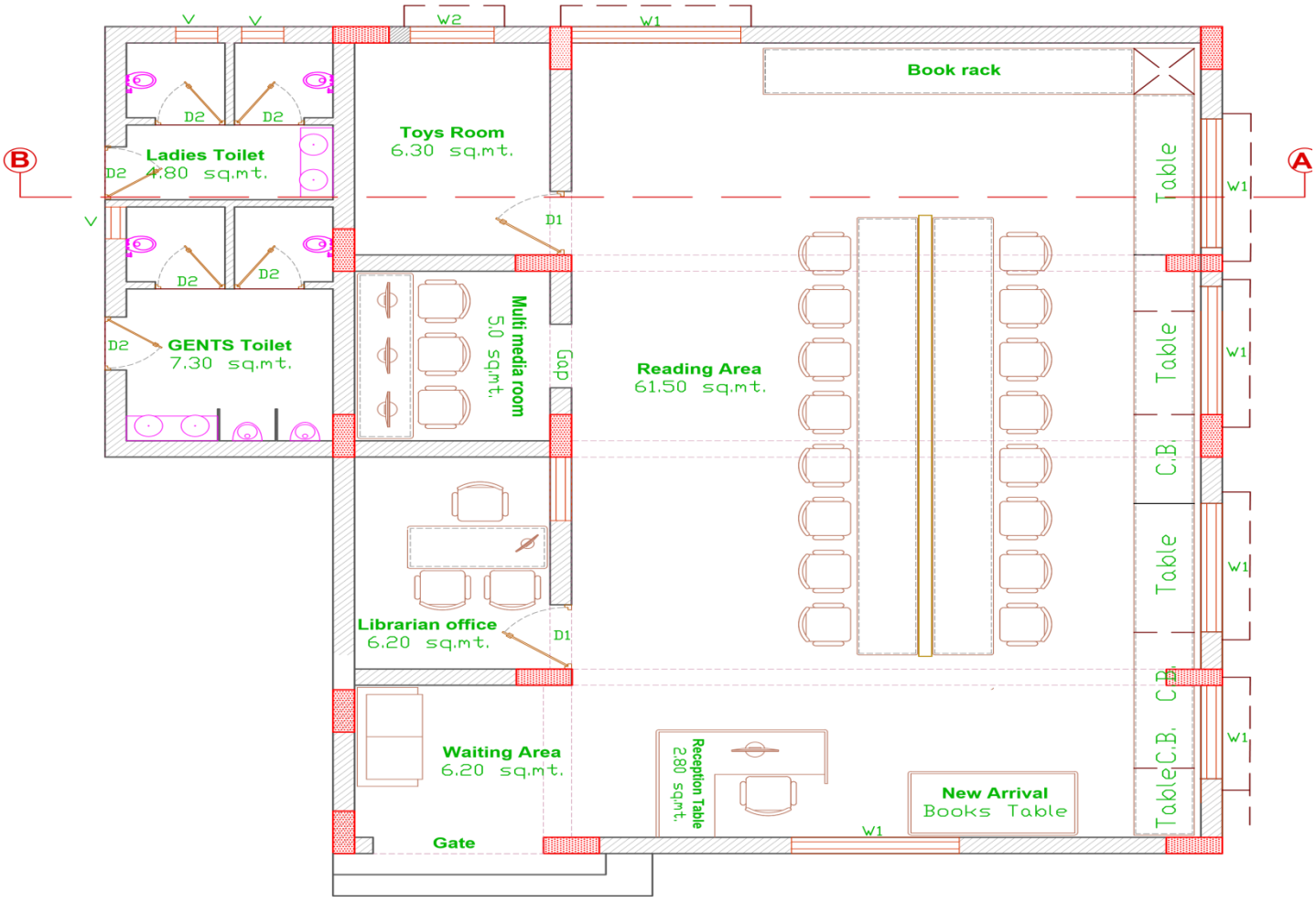


Fig. 8.1 Plan of Library

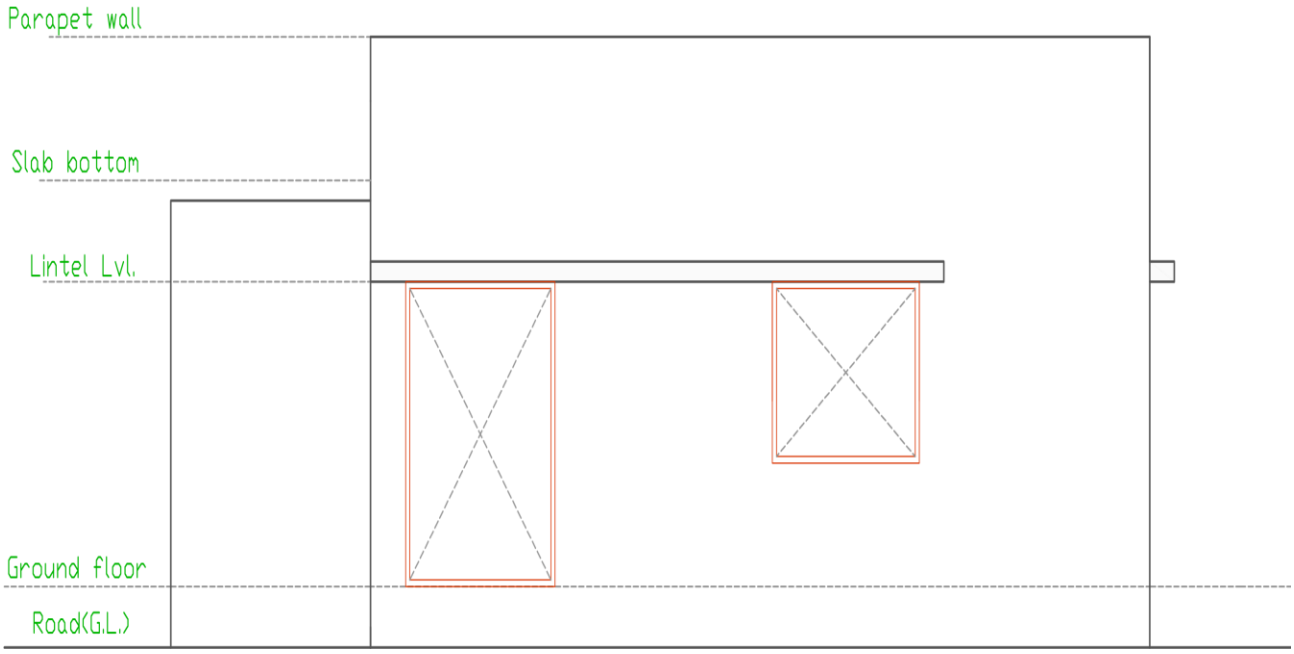


Fig. 8.2 Elevation of Library

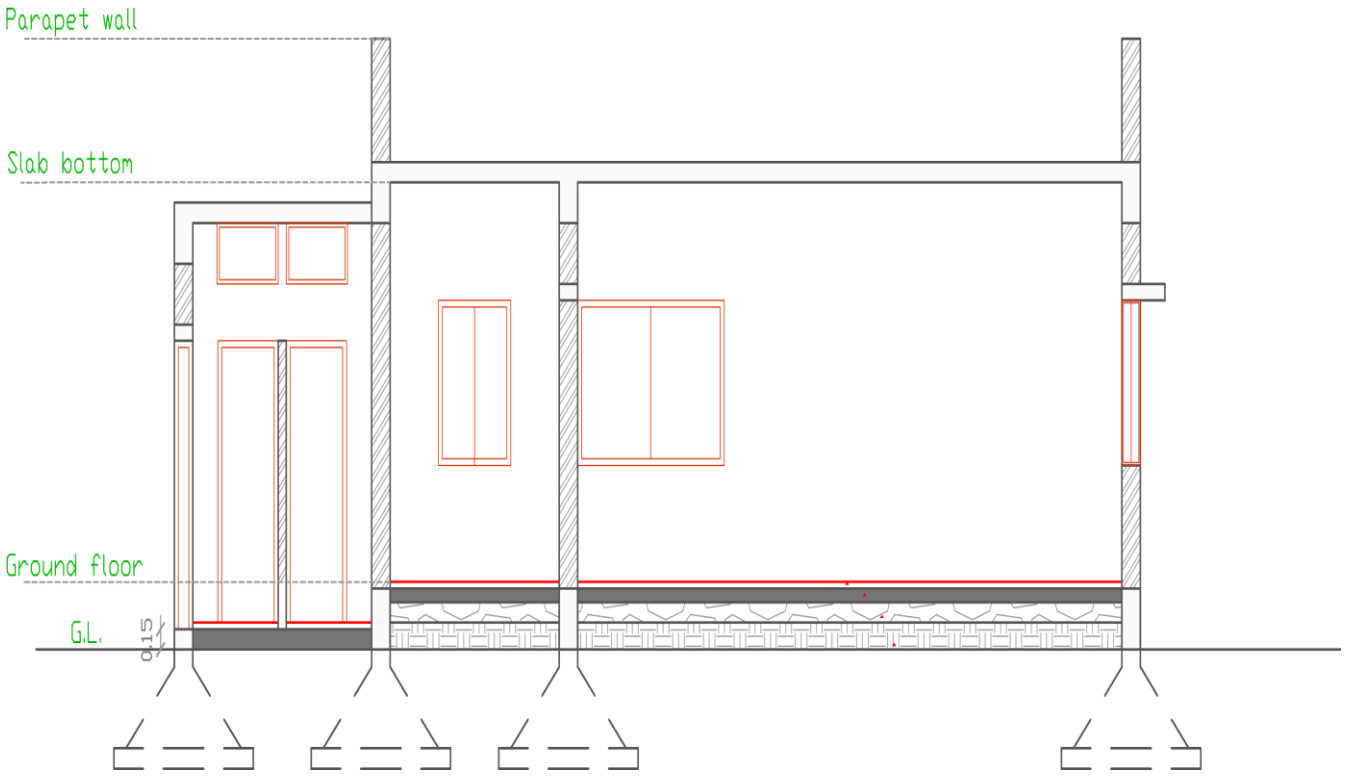


Fig. 8.3 Section of Library

ABSTRACT SHEET						
No.	**S.O.R. 2015-2016**	**PARTICULAR**	**QTY**	**UNIT**	**RATE**	**AMOUNT**
1	04002B	**Excavation** for foundation **up to 1.5 m** depth including sorting out and stacking of useful materials and disposing off the excavated stuff up to 50 Meter lead.	86.9	CU.M.	93.32	**8,113.24**
2	It. Co. 5023AA	Providing and laying controlled **cement concrete M.150** for curing complete excluding cost of formwork and reinforcement for reinforced concrete work in **Foundations, footings, Base of columns and Mass concrete.**	3.48	CU.M.	3204.05	**11,142.40**
3		Providing and laying **controlled Cement Concrete M200** and curing etc. complete including the cost of formwork and excluding the cost of reinforcement for reinforced concrete work for following work.				
	RA	**(a) For Column footing**	9.4	CU.M.	3,315.00	**31,213.94**
	RA	**(b)Column**	9.6	CU.M.	5,739.00	**54,882.37**
	RA	**(C) Plinth beam**	30.2	CU.M.	4399	**132,946.58**
	RA	**(d) Roof beam**	39.4	CU.M.	4672	**184,170.24**
	RA	**(e) Slab**	14.4	CU.M.	4589	**66,024.24**
4	It. Co. 05014C	Providing **TMT** Bar **FE 500** reinforcement for R.C.C. work including bending, binding andplacing in position complete.	#REF!	CU.M.	44.5	**#REF!**
5	It. Co. 06002BA + It. Co. 06006B	**Brick work** using common burnt clay building bricks having crushing strength not less than 35 Kg. /Sq.Cm. **in superstructure** in **Cement Mortar 1:6** (1-Cement : 6-Fine sand) conventional for upto floor two level.	0.0	CU.M.	2710	-

6	It. Co. 06008A2 A+It.Co. 6008E2A	**Half Brick Masonry** in common burnt clay building bricks having crushing strength not less than 35 kg/sq.cm. In C:M 1:4 (1-cement : 4-coarse sand) **in Super structure up to all floor level.**	26.9	sq. M.	394	**10,614.36**
7	It. Co. 17001B) + (It. Co. 17004) + It. Co. 17006)	Providing 10MM thk. **Cement plaster** in single coat on **Ceilling & Soffits of stair** for interior plastering of following finished even and smooth in **Cement Mortar 1:4** (1-Cement : 4-Sand) incl. finishing with a floating coat of neat cement slurry.	13.1	sq. M.	123	**1,615.92**
					Add 2% water charge and esta. Charges: - 10,014.50	
					Add 2% lump electrification: - 10,014.50	
					TOTAL APPROX ESTIMATED COST: - 5,00,723.29	

Design of Public toilet

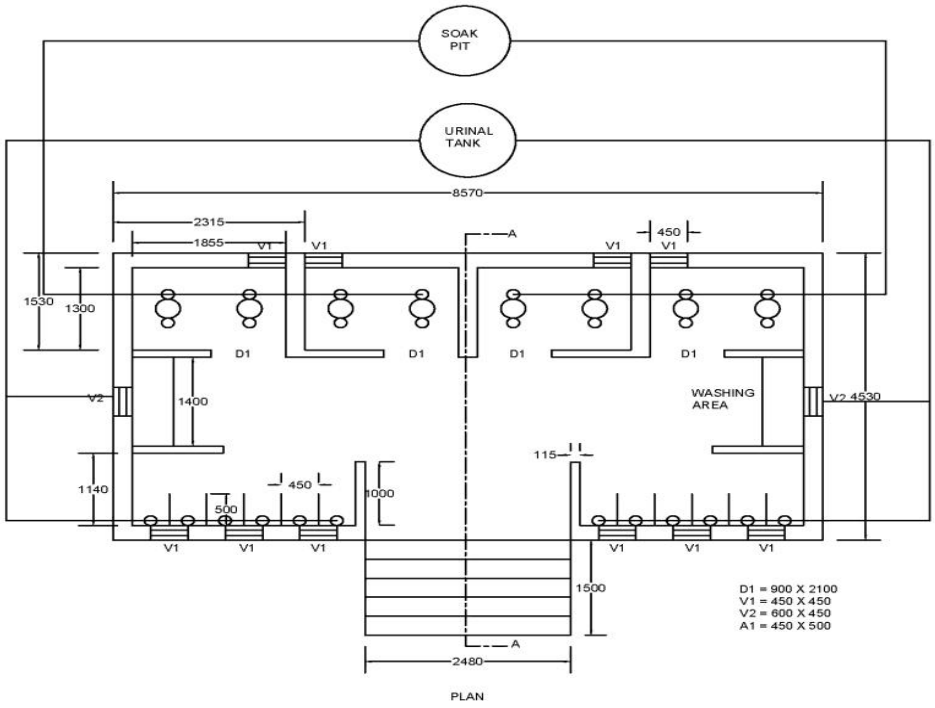


Fig. 8.4 Plan of Public Toilet

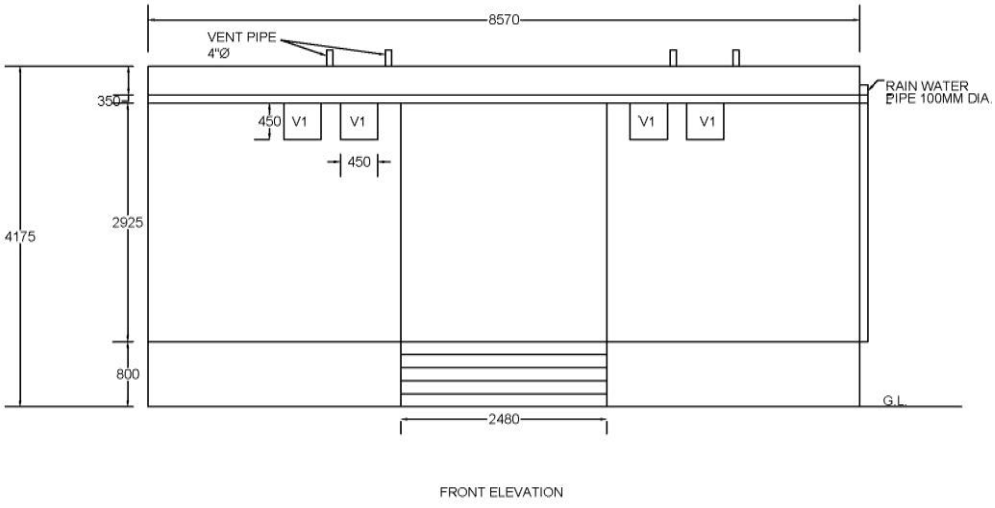


Fig. 8.5 Elevation of Public Toilet

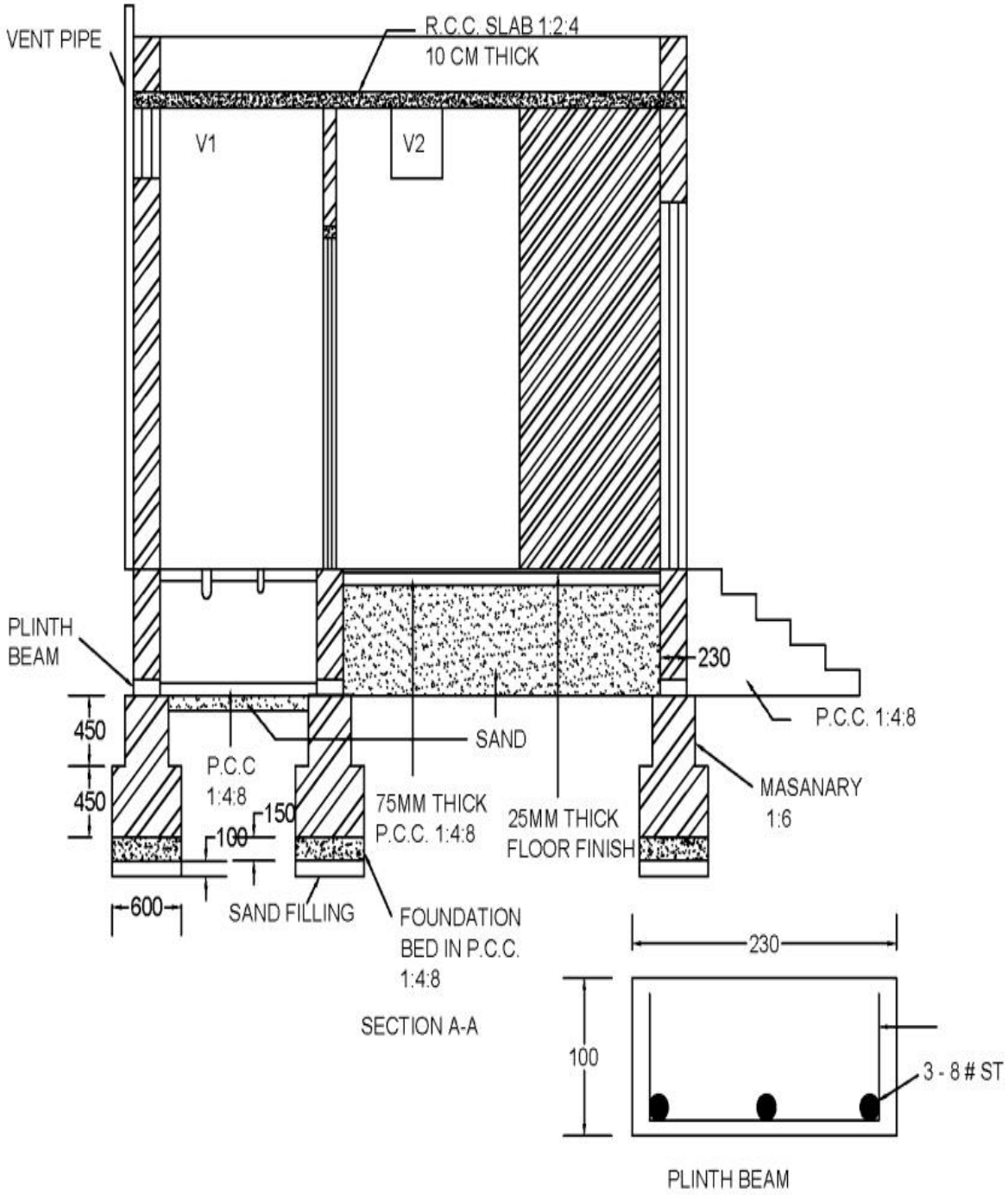


Fig. 8.6 Section of Public Toilet

Abstract sheet

IT. NO.	Description	Qty	UNIT	Rate	1% Labor cess	Net Rate	Amount
1.00	Excavation for foundation up to 1.5M depth including sorting out and stacking of useful materials and disposing of the excavated stuffup to 50 Meter lead.(A) Loose or softsoil	26.68	Cu.m	75.00	0.75	75.75	2021.01
2.00	Brick masonry block in foundation up to plinth with stone of approved quality in cement mortar 1:4(1 cement, 4 course sand) including of reclaim of joint etc. complete	10.33	Cu.m	3198.00	31.98	3229.98	33365.69
3.00	brick masonry block in foundation up to plinth with stone of approved quality in cement mortar	21.93	Cu.m	3206.20	32.06	3238.26	
4.00	Laying of P.C.C (1:4:8) Where (1 cement ,4 sand ,8 course aggregate)	27.95	Cu.m	3330.65	33.30	3363.95	93091.66

5.00	Sand filling	18.72	cu.m	410.04	4.10	414.14	7675.94
6.00	Providing and Laying ordinary cement concrete 1:2:4 (1- Cement 2-coarse sand : 4-graded stone aggregates 20 mm nominal size) and finishing smooth	2.99	cu.m	4996.44	49.96	5046.4	14939.35
	with curing etc.						
	complete including the cost of formwork but excluding the cost of reinforcement for R.C.C work in (iii) Slabs having more than 10 cm and up to 13 cm. Thickness.						
7.00	Providing 10mm thick cement plaster in single coat on brick/concrete walls for interior plastering up to floor two level and finished even and	236.45	Sq.m	92	0.92	92.92	21753.4

8.00	Painting Work (a) Internal white washing (b) External	141.78 93.47	Sq.m Sq.m	20 50	0.20 0.50	20.20 50.50	2835.6 4673.5

	cement painting (c) Painting Work for Door and Ventilation	15.63	Sq.m	70	0.70	70.70	1094.1
9.00	providing and laying cement concrete 1:5:10(1 cement, 5 sand, 10 graded brick aggregates 40 mm nominal size) and curing comp. plinth CERAMICTILES (a) Flooringtiles (b) wall	35.6 56.67	Sq.m Sq.m	814.16 857.88	8.14 8.57	822.3 866.45	28984.09 48616.05
10.00	Sanitary Fixtures (a) Eco san squatting span (b) Boys urinal pans with odortrap	8 12	No No	800 500	8 5	808 505	6400 6000
11.00	Water and sanitary fittings(inclusive of all materials and labors costs) (a) Water Pipe(1.25 inch diaGI) (b) Taps (c) Waste pipes (2 inchdiaPVC) (d) Waste waterandurinal	15 13 16 64	No No No No	250 175 125 185	2.5 1.75 1.25 1.85	252.5 176.75 126.25 186.85	3750 2275 2000

	Pipes from toilets (3-inch dia. PVC) (e) Vent and rain water pipes(4 inch dia PVC)	26	No	260	2.6	262.6	6760
12.00	Water tank (2000 liters)	1	No	9000	90	9090	9090
13.00	Urine tank (2000 liters)	1	No	9000	90	9090	9090
14.00	(a) DOOR (b) Ventilation (1) V1 (2) V2	4 10 2	No No No	1000 250 300	10 2.5 3	1010 252.5 303	4040 2525 606
15.00	INCINEATOR	1	No	1500	15	1515	1515
		Add 2% water charge and esta. Charges					7899.749
		Add 2% lump electrification					7899.749
		add 1 % contingencies lump					3949.474
		add quality control 1%					3949.474
		Net amount					418685.87
		Say					**418700**

Design of Community hall

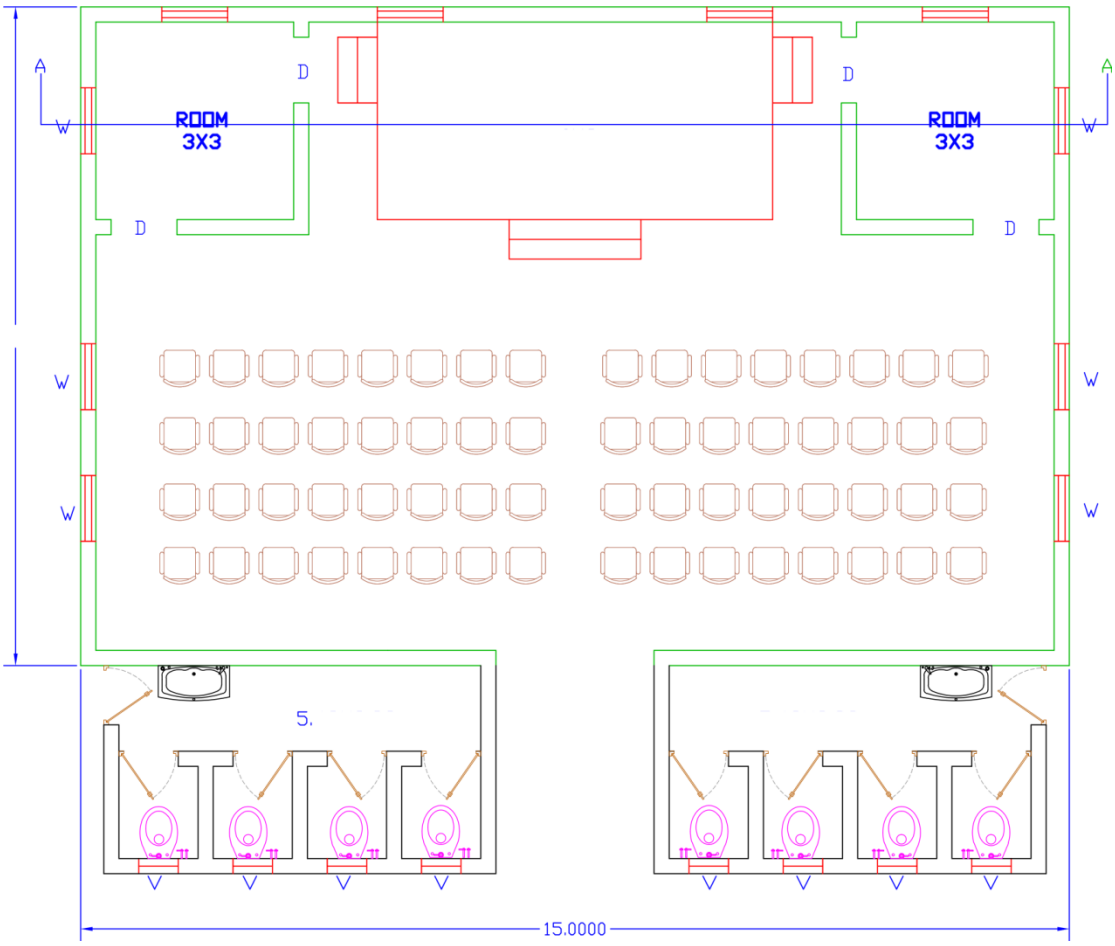


Fig. 8.7 Plan of Community hall

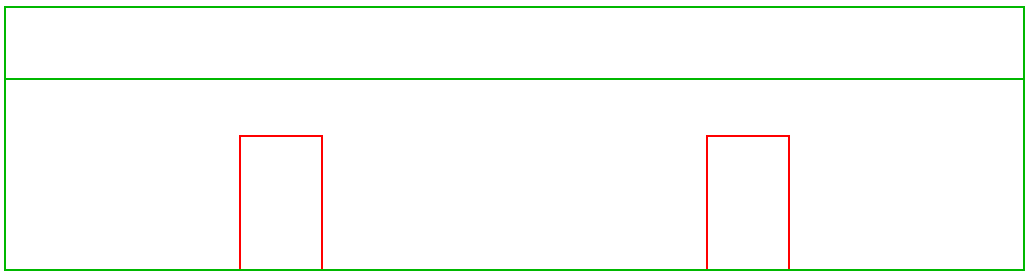


Fig. 8.8 Elevation of Community hall

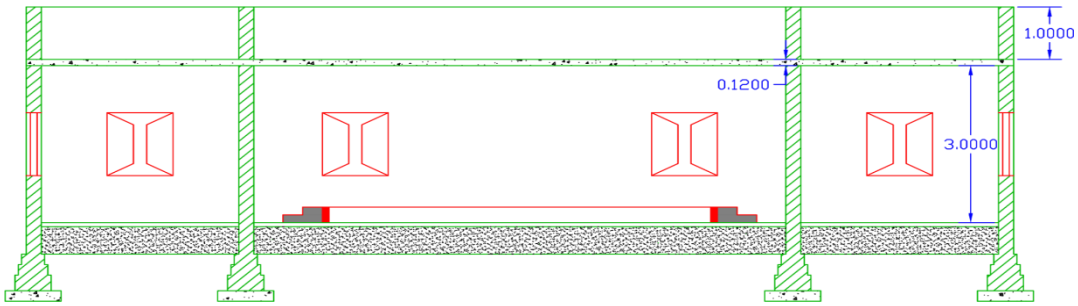


Fig. 8.9 Section of Community hall

OPENING SCHEDULE		
D1	1	2.4 x 2.1
D2	10	0.9 x 2.1
D	4	1 x 2.1
W	10	1 x 1.2
V	8	0.6 x 0.6

Abstract Sheet

	PARTICULARS	QUANTITY	RATE		TOTAL QUANTITY	TOTAL COST
1	Excavation to foundation lead 30 m lift 1.5 m	M3	94		66.5577	6256.4238
2	Providing and laying BBCC (1:5:10) etc. complete	M3	2710		14.7906	40082.526
3	Brick masonry up to plinth in cement mortar (1:6) etc complete	M3	45		38.60774	1737.3483

4	Providing and refilling in the trench etc. complete	M3	100		25.20124	2520.124
5	Providing yelloy soil filling in plinth etc. complete	M3	90		86.862195	7817.59755
6	Brick masonaryupto plinth in cement mortar (1:6) etc complete	M3	2710		38.60774	104626.9754
7	Providing and laying brick masonary above plinth upto slab in cement mortar (1:6) etc complete	M3	2710		54.13395	146703.0045
8	Providing constructing work in RCC work etc. complete	M3	3200		24.336	77875.2
9	Providing and laying external plaster in cement mortar (1:4) etc comp.	M3	123		195.67	24067.41
10	Providing and laying smooth plaster inside the room and celling in cement mortar (1:3) etc comp.	m2	123		359.3718	44202.7314
11	Wood work for door and window shutters	M3	3600		47.22	169992
				total amount	**625881.341**	

Design of Underground Sump

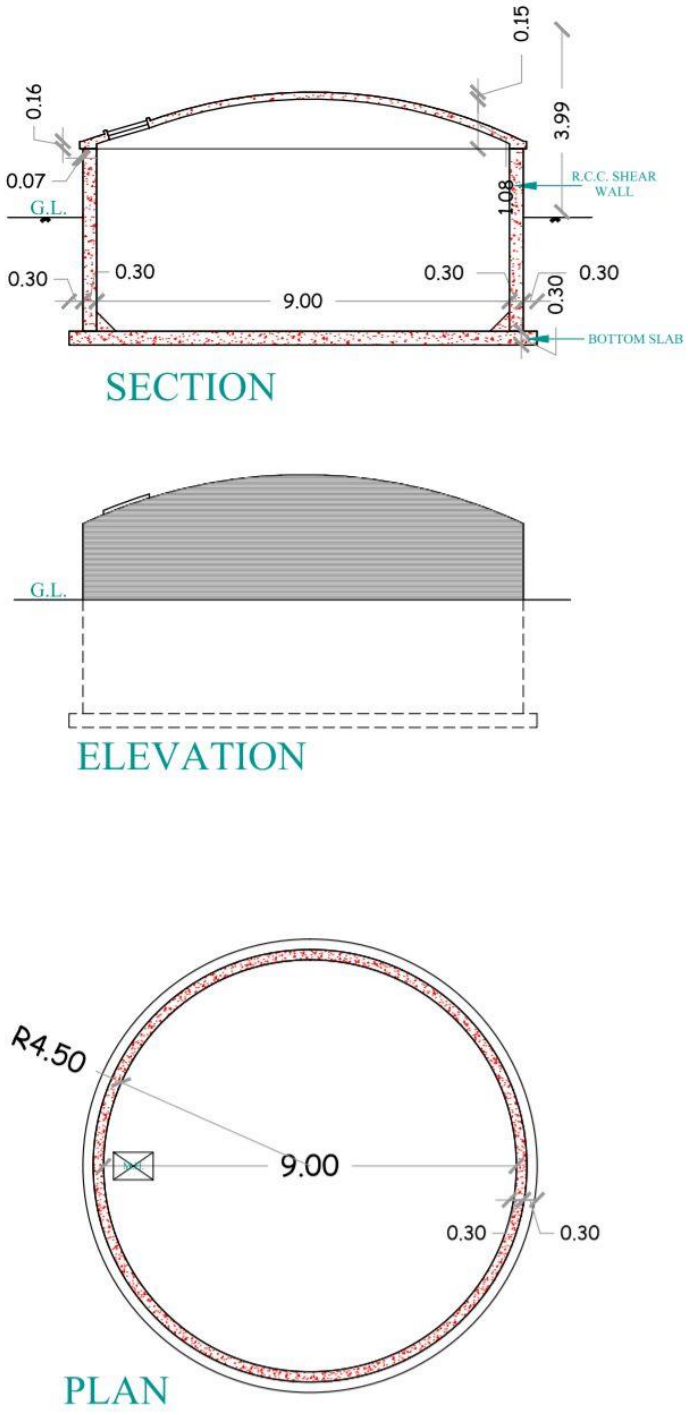


Fig. 8.10 Design of U/G Sump

Abstract Sheet

Sr No.	Item Description	Unite	SOR	Total Quantity	Total Rate
1	**Excavation**				
	Excavation for foundation up to 1.5 m depth including sorting out and stacking of useful materials and disposing off the excavated stuff up to 50 Meter lead.(B) Dense or Hard soil	cu.m	152	122.57	18630.64
	Excavation for foundation for depth from 1.5 m to 3.0 m including sorting out and stacking of useful materials and disposing off the excavated stuff up to 50 Meter lead.(B) Dense or Hard soil	cu.m	165	106.22	17526.3
2	**RCC Work**				
	RCC Work In Base Slab	cu.m	5620	24.52	137802.4
	RCC Work Cylindrical wall	cu.m	6210	35.06	217722.6
	RCC Work Top Dom	cu.m	5960	10.1	60196
3	**Plaster Work**				
	Out-Side Plaster				

	20mm thick sand faced cement plaster on walls up to height 10 meters above ground level consisting of 12mm thick backing coat of C.M. 1:3 (1-cement : 3-sand) and 8mm thick finishing coat of C.M. 1:1 (1-cement : 1-sand) etc. complete.	Sq.m	189	111.55	21082.95
	In-side Plaster				
	Providing 15mm thick cement plaster in single coat on Rough (Similar)side of single or half brick walls for interior plastering up to floor two level and finished even and smooth in (I) Cement mortar 1:3 (1-cement:3-sand)	Sq.m	108	248.2	26805.6
	Total Estimated Cost of Main Items				204321.59
	Add 20% cost of Miscellaneous Building Items				40864.318
	Add 10% contractor profit				24518.5908
	Final Estimated Cost Building				**269704.4988**

Design of Anganwadi Edu. Propose

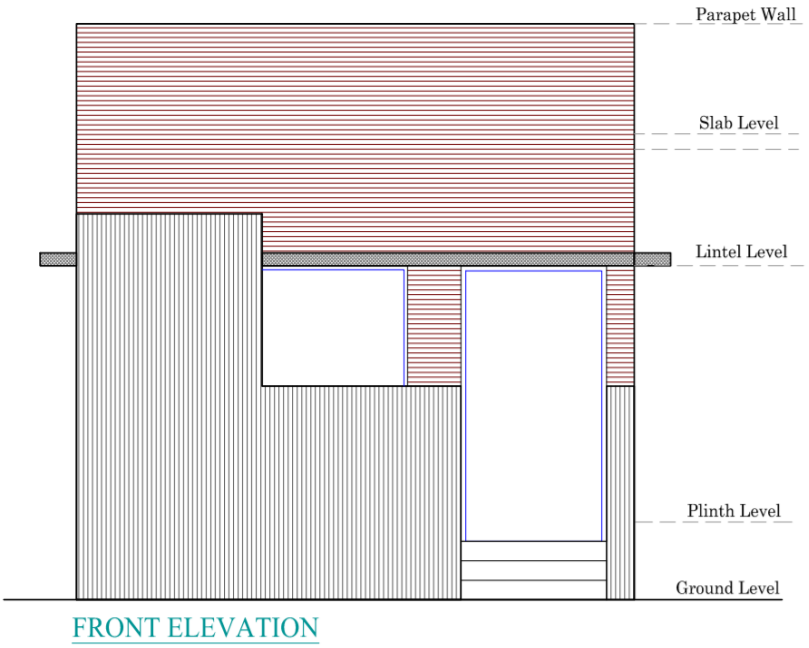


Fig. 8.11 Elevation of Anganwadi

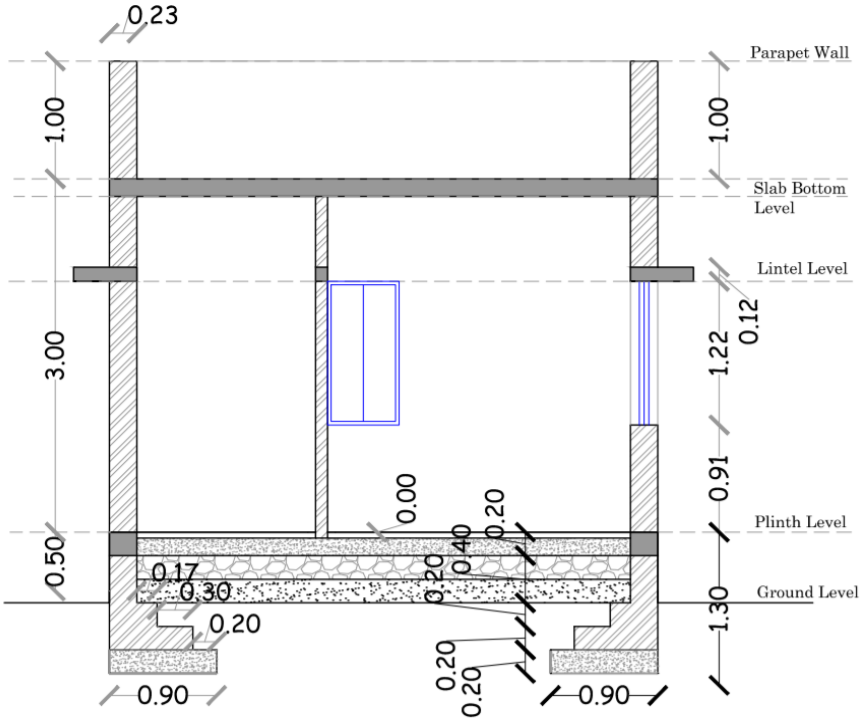


Fig. 8.12 Section of Anganwadi

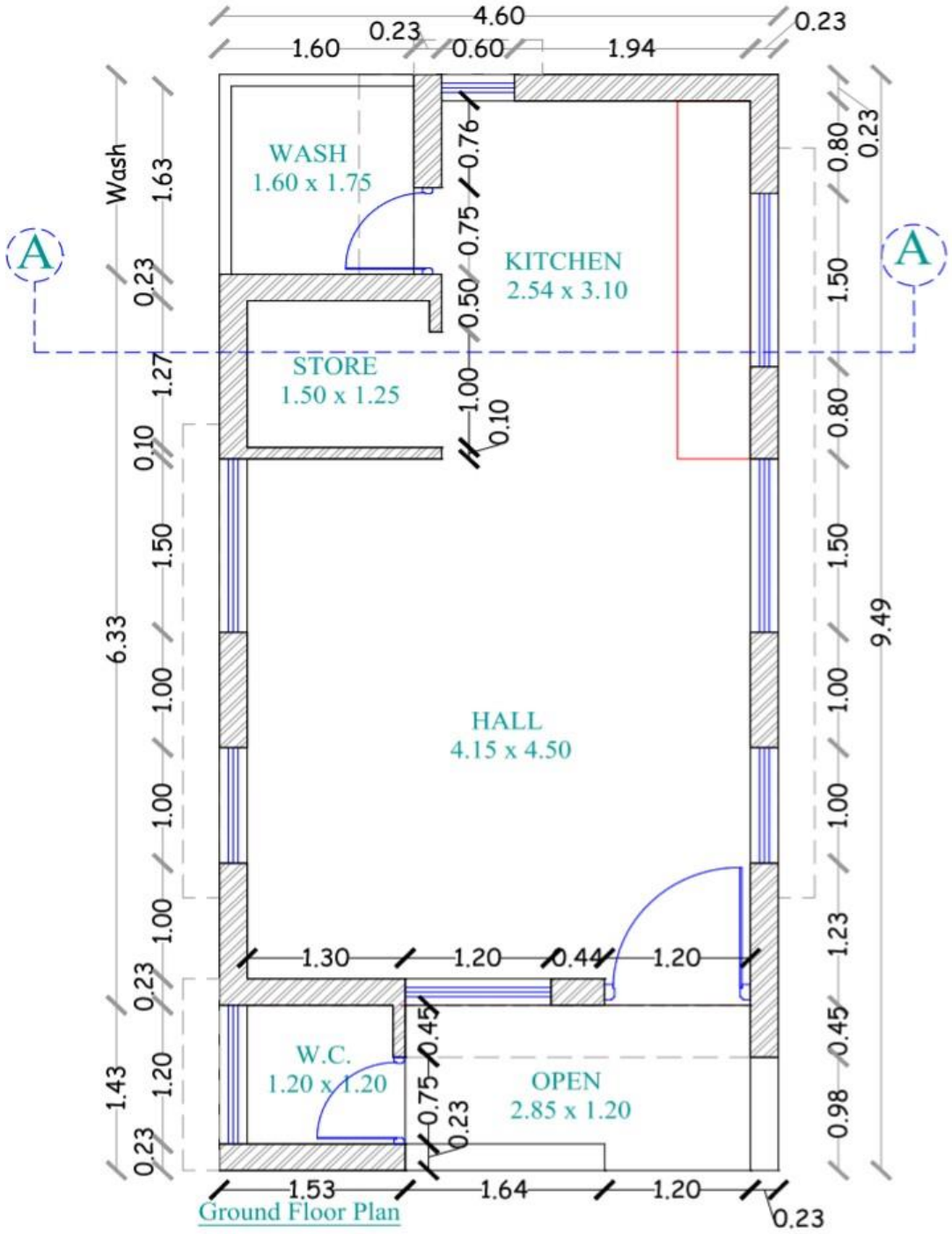


Fig. 8.13 Plan of Anganwadi

Abstract Sheet

Sr No.	Item Description	Unit	SOR	Total Quantity	Total Rate
1	**Excavation**				
	Excavation for foundation up to 1.5 m depth including sorting out and stacking of useful materials and disposing off the excavated stuff up to 50 Meter lead.(B) Dense or Hard soil	cu.m	152	19	2888
2	**PCC Work**				
	Providing and laying cement concrete 1:2:4 (1- Cement: 2- Coarse sand: 4- graded stone aggregates 20 mm nominal size) for reinforced concrete Chhajjas not exceeding 10cm. thickness up to floor two level including finishing the exposed surfaces with cement mortar 1:3 (1- cement, 3 Fine sand) to give a smooth and even surface centering and formwork and curing complete excluding cost of reinforcement. (more than 10 ton)	cu.m	4655	6.34	29512.7
3	**Brick Work In Foundation**				
	Brick work using common burnt clay building bricks having crushing strength not less than 35 kg/Sq.Cm. in foundation and plinth in Cement Mortar 1:5. (1- Cement : 5 -fine sand)(B) Conventional (up to 10 ton)	cu.m	2872	13.25	38054

4	**Earth Filling in Plinth & foundation tranches**				
	Filling available excavated earth in trenches. Plinth, sides of foundations etc. in layers not exceeding 20 cm. in depth consolidating each deposited layer by ramming and watering.	cu.m	85	19	1615
	Filling in foundation and plinth with Murom or selected soil in layers of 20 cm. thickness including watering ramming and consolidating etc. completed.	cu.m	250	7.3	1825
5	**Demp proof course**	Sq.m	350	8.72	3052
6	**Super Structure**				
	Brick work using common burnt clay building bricks having crushing strength not less than 35 kg./Sq.Cm. in Ground floor wall in Cement Mortar 1:6 (1-Cement : 6 -fine sand)(B) Conventional (up to 10 ton)	cu.m	2955	19.55	57770.25
7	**Lintel (ground floor)**	cu.m	6715	1.05	7050.75
8	**Chhajjas (ground floor)**	cu.m	5370	0.967	5192.79
9	**Slab (ground floor)**	cu.m	5938	5.52	32777.76
10	**Parapet Wall**				
	Brick work using common burnt clay building bricks having crushing strength not less than 35 kg./Sq.Cm. in parapet wall in Cement Mortar 1:6 (1- Cement : 6 -fine sand)(B) Conventional (up to 10 ton)	cu.m	2990	5.62	16803.8

11	**Plaster Work**				
	Out-Side Plaster				
	20mm thick sand faced cement plaster on walls up to height 10 meters above ground level consisting of 12mm thick backing coat of C.M. 1:3 (1-cement : 3-sand) and 8mm thick finishing coat of C.M. 1:1 (1-cement : 1-sand) etc. complete.	Sq.m	189	176.72	33400.08
	In-side Plaster				
	Providing 15mm thick cement plaster in single coat on Rough (Similar)side of single or half brick walls for interior plastering up to floor two level and finished even and smooth in (i) Cement mortar 1:3 (1-cement:3-sand)	Sq.m	108	102.7	11091.6
	Total Estimated Cost of Main Items				241033.73
	Add 20% cost of Miscellaneous Building Items				48206.746
	Add 10% contractor profit				28924.0476
	Final Estimated Cost Building				318164.5236

Design of Panchayat Building

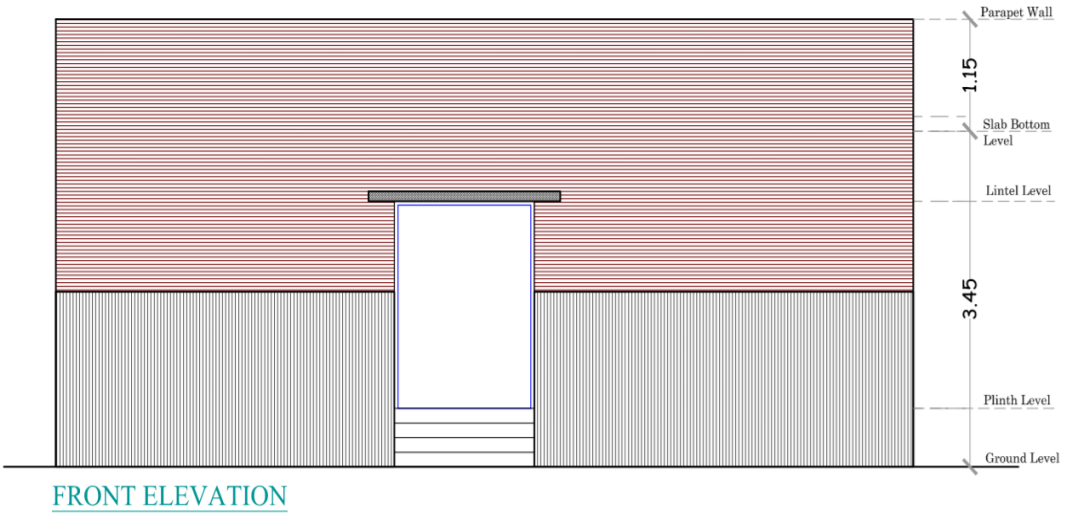


Fig. 8.14 Elevation of Panchayat Building

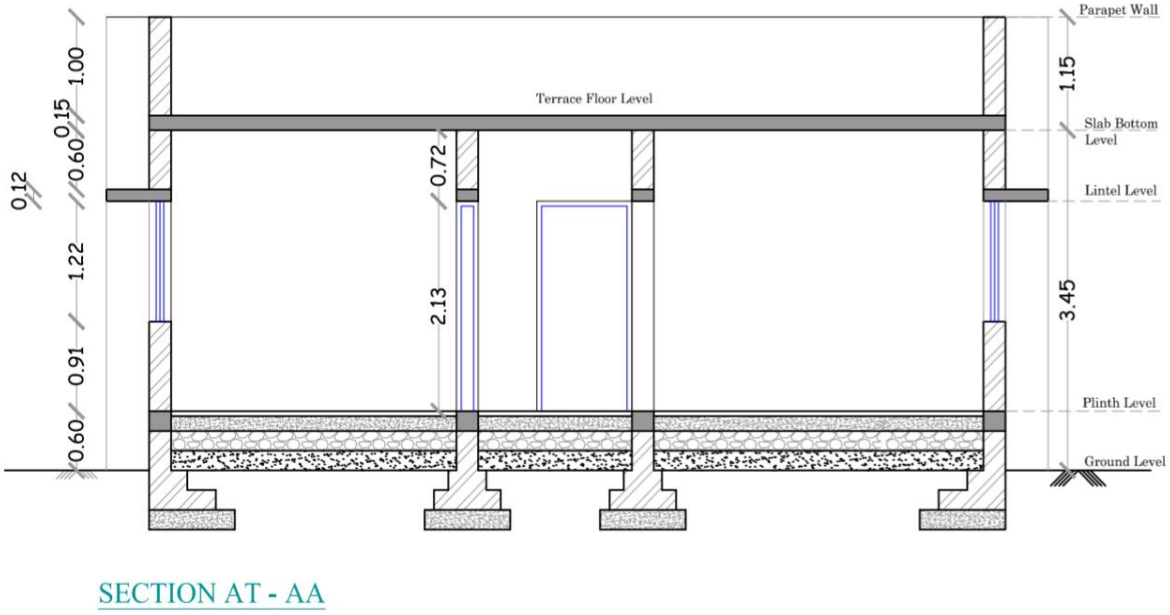
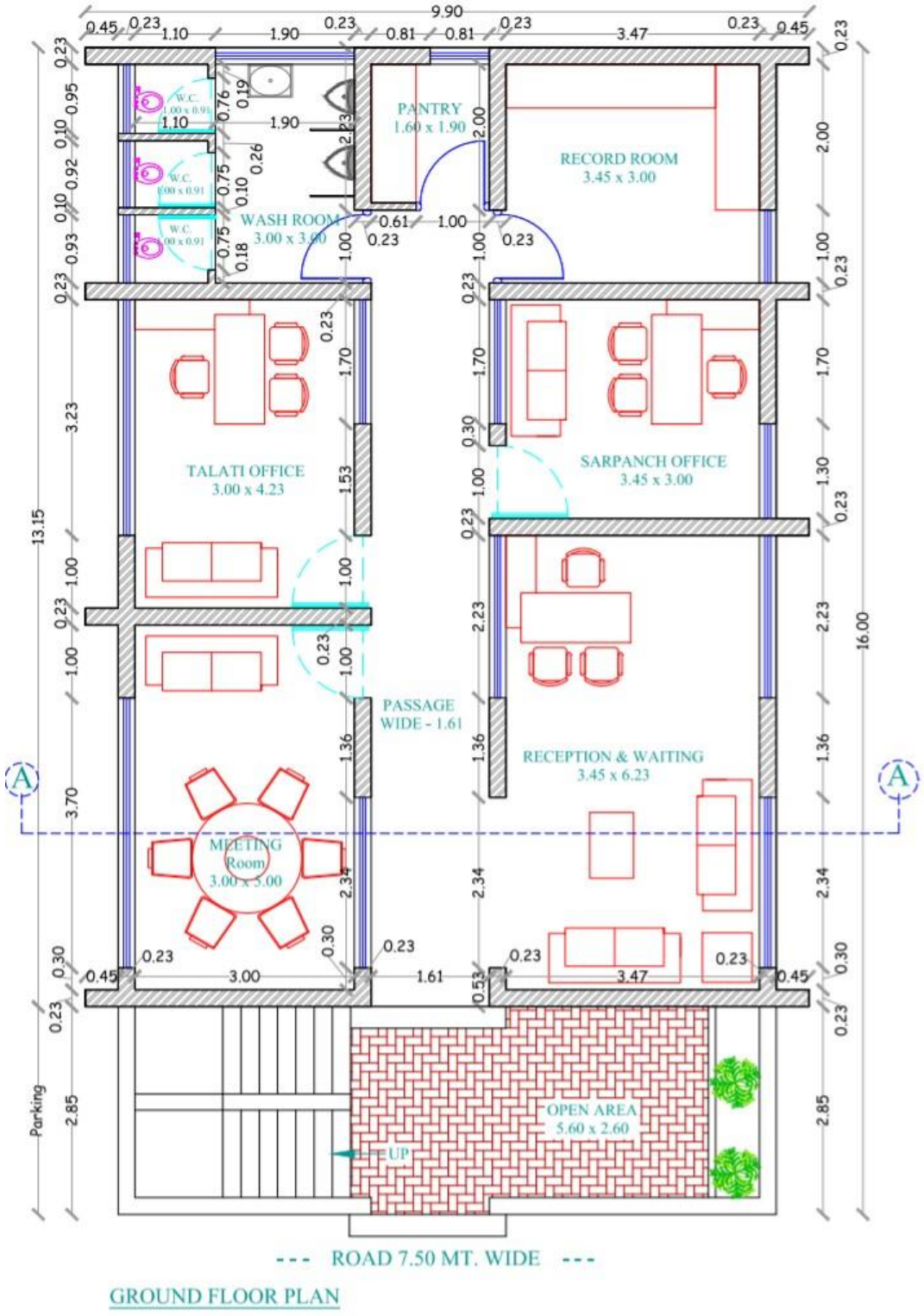


Fig. 8.15 Section Panchayat Building



GROUND FLOOR PLAN

Fig. 8.16 Plan of Panchayat Building

Abstract sheet

Sr No.	Item Description	Unit	SOR	Total Quantity	Total Rate
1	**Excavation**				
	Excavation for foundation up to 1.5 m depth including sorting out and stacking of useful materials and disposing off the excavated stuff up to 50 Meter lead.(B) Dense or Hard soil	cu.m	152	42.4	6444.8
2	**PCC Work**				
	Providing and laying cement concrete 1:2:4 (1- Cement: 2- Coarse sand: 4- graded stone aggregates 20 mm nominal size) for reinforced concrete Chhajjas not exceeding 10cm. thickness up to floor two level including finishing the exposed surfaces with cement mortar 1:3 (1- cement, 3 Fine sand) to give a smooth and even surface centering and formwork and curing complete excluding cost of reinforcement. (more than 10 ton)	cu.m	4655	14.13	65775.15
3	**Brick Work In Foundation**				
	Brick work using common burnt clay building bricks having crushing strength not less than 35 kg/Sq.Cm. in foundation and plinth in Cement Mortar 1:5. (1- Cement : 5 -fine sand)(B) Conventional (up to 10 ton)	cu.m	2872	29.1	83575.2

4	**Earth Filling in Plinth & foundation tranches**				
	Filling available excavated earth in trenches. Plinth, sides of foundations etc. in layers not exceeding 20 cm. in depth consolidating each deposited layer by ramming and watering.	cu.m	85	42.4	3604
	Filling in foundation and plinth with Murom or selected soil in layers of 20 cm. thickness including watering ramming and consolidating etc. completed.	cu.m	250	17.3	4325
6	**Demp proof course**	Sq.m	350	18.9	6615
7	**Super Structure**				
	Brick work using common burnt clay building bricks having crushing strength not less than 35 kg./Sq.Cm. in Ground floor wall in Cement Mortar 1:6 (1-Cement : 6 -fine sand)(B) Conventional (up to 10 ton)	cu.m	2955	40.43	119470.65
6	**Lintel (ground floor)**	cu.m	6715	2.27	15243.05
7	**Chhajjas (ground floor)**	cu.m	5370	2.06	11062.2
8	**Slab (ground floor)**	cu.m	5938	17.75	105399.5
9	**Parapet Wall**				
	Brick work using common burnt clay building bricks having crushing strength not less than 35 kg./Sq.Cm. in parapet wall in Cement Mortar 1:6 (1- Cement : 6 -fine sand)(B) Conventional (up to 10 ton)	cu.m	2990	10.19	30468.1
10	**Plaster Work**				

	Out-Side Plaster				
	20mm thick sand faced cement plaster on walls up to height 10 meters above ground level consisting of 12mm thick backing coat of C.M. 1:3 (1-cement : 3-sand) and 8mm thick finishing coat of C.M. 1:1 (1-cement : 1-sand) etc. complete.	Sq.m	189	225.16	42555.24
	In-side Plaster				
	Providing 15mm thick cement plaster in single coat on Rough (Similar)side of single or half brick walls for interior plastering up to floor two level and finished even and smooth in (I) Cement mortar 1:3 (1-cement:3-sand)	Sq.m	108	323.68	34957.44
11	**R.C.C work in stair cash**				
	Total cross sectional area of stair cash 1.4225	cu.m	5818	1.707	9931.326
	Total Estimated Cost of Main Items				539426.656
	Add 20% cost of Miscellaneous Building Items				107885.3312
	Add 10% contractor profit				64731.19872
	Final Estimated Cost Building				712043.1859

8.2 Recommendations of the Design:

- **Library Design:**
  In the village Library not Available for Education, Reading, etc..

- **Community hall:**
  In village the community hall provided for interaction of people purpose.

- **Public Toilet:**
  In Moti Parabadi village there no any public toilets so many people face they problem so we decide proposed design of public toilet.

- **Underground Sump:**
  In village we have provide a U/G Sump for water supply.

- **Anganwadi:**
  In Village we have provide Anganwadi for Batter Education of Children's.

- **Panchayat Building:**
  In the Village old Panchayat Building Condition is week so we provide a new Building For Village.

8.3 Suggestions / Benefit of the villagers:

There are following structures need to build up to Progress of village and their people:

8.3.1 Sustainable Design:

Facilities should need such as: Green building, organic waste controller, Natural Resources (petrol, diesel), Solar system, Biogas plant, Rain Water Harvesting, etc.

8.3.2 Physical Design:

Facilities should need such as: Higher secondary school, closed drainage system, panchayat building, sanitation facilities, Child Welfare centre etc.

8.3.3 Social Design:

Facilities should need such as: Police station, hospitals, community Housing, General market, etc.

8.3.4 Socio-Cultural Design:

Facilities should need such as: Govt. grocery shop, Community hall, Library, Auditorium, Recreational activities, pick up stand etc.

Chapter 9:

Future Development of Moti Parabadi

(For the PART-II Design)

In Future we will implement the new technologies to develop the facilities. And also try to catch the maximum economic output of a system. In the sense we will also try to give our best to complete our motto of Rurbanisation.

After completion of visit & data collection of the Moti Parabadi village, we have given some of the designs which were to be provided under this project.

Some of the designs which are left like Anganwadi, library, Bus Stand etc. will be Provided.

The study is aimed to know the basic scenario of village through techno economic survey form.

Our master development plan might include provision of all the facilities suggest by as, then our focus will be on the improvement in the existing amenities.

- In next semester we will provide Health Facilities design for the village. It will include the design of Primary Health Centre.
- We will also design Bio Gas Plant in the village.
- Fair and price shop
- Proper design of the underground facilities.
- Provided of the drinking water facilities.

Chapter 10:

Conclusion of the Entire Village Activities of the Project

- In this project, we are representing the advance facilities like Eco-friendly and less costing design for the easy development of the rural to urban village.

- The Vishwakarma Yojana given all the design which is implemented in the Moti Parabadi village to developed the rural area to urban area. I am perform all types of the survey which is discuss form wise in chapter 16 to collect all the information about the village to use the facilities provide in the village. All the design provides to use more effective all types of infrastructure.

- The main aim is to implement the project to provide all the facilities in both sides rural & urban to decrease the migration. The rural sector will under developed in which there are many employments promote from the agriculture areas and also boost to all peoples to livelihoods in good or attempt infrastructure.

- The **Smart Villages** have suitable energy resources or services for development to provision of good education, health facilities, clean water, sanitation and nutrition, to increase the productive enterprise to boost the income or wealth, security, generate equalities in both sides and many all types of infrastructures.

- This all the facilities provide in the rural village to develop or carry it to urban cities. To use the **Smart village (Ideal village)** in reference to developed all the villages in the India. To provide best infrastructure facilities in the village to promote the overall income wealth and economy in the areas. This main objective to carries **Vishwakarma Yojana:** to developed the entire village in one by one in the nearest cities to more away.

Chapter 11:

References

GTU Innovation Council – Guideline for Final Year B. E. Project & PMMS Activities.

The India Patent Office Database –http://ipindiaservices.gov.in/publicsearch/

The US Patent Database (USPTO) –http://worldwise.espacenet.com/advanceSearch

General Guidelines of Vishwakarma Yojana Phase – VIII Academic B. E. Final Year Project

for the management and the development solution –rurban@gtu.edu.in

To connect with the Nodal Officers to guideline for this project through the VY – VIII guidelines.

All the research for the information of the project – http://vishwakarmayojana/

- Smart city practices - Google Search www. Smart city mission.gov.in
- Local self-government in India - Wikipediaen.wikipedia.org
- What is Smart City: SMART CITIES MISSION, www.Indiasmartcities.gov.in
- Cyber security - Google Searchwww.google.co.in
- Rural Development &Panchayat Raj - Panchayat Raj: Fund Release Details www.tnrd.gov.in
- Rurban cluster gram panchayat - Google Searchwww.google.co.in
- Award Winning Gram Panchayat Pradhan's - Google Searchwww.google.co.in

Chapter 12: Annexure attachment

12.1 Scan Copy of Vadal (Ideal Village) Survey Details:

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:	Vadal
Name of Taluka:	Junagadh
Name of District:	Junagadh
Name of Institute:	our Eng. College
Nodal Officer Name & Contact Detail:	
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sarpanch [illegible]
Date of Survey:	

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	–	–	–	–
ii)	2011	7265	5277	3439	1557

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	~~1065.65 Hector~~ 1951.79 Hector
	Forest Area (In hect.)	4.23 Hector
	Agricultural Land Area (In hect.)	832.25 ~~486.81~~ Hector
	Residential Area (In hect.)	
	Other Area (In hect.)	63.22 Hector
	Water bodies	
	Nearest Town with Distance:	Junagadh – 7 km

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Techno Economic Survey

3. Occupational Details:

Name of Three Major Occupation groups in Village	1. Agriculture work 2. Labour work 3.

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	well Tubewell Borehole			
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	yes		
	Underground Sump	Capacity:	yes		
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)	yes	yes		
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	closed	yes		
	If Open than Pucca / Kutchcha				
	Whether drain water is discharged directly in to Water bodies/ Sewer plants	waterl bodies			
Suggestions if any:					

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Techno Economic Survey

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

	Electrification in Government Buildings/ Schools/ Hospitals	Yes	Yes		
	Renewable Energy Source Facilities (Y/ N)	NO			
	LED Facilities	yes			
Suggestions if any:					
H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	yes	10		
	Location Condition				
	Community Toilet (With bath/ without bath facilities)	NO	NO		
	Solid & liquid waste Disposal system available	yes			
	Any facility for Waste collection from road	NO			
Suggestions if any:					
I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	well Tubewell other			
Suggestions if any:					
J.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Pucca	yes		

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks

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Techno Economic Survey

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

	Condition:				
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	NO			
	Public Garden Location: Condition:	NO			
	Village Pond Location: Condition:	NO			
	Recreation Center Location: Condition:	NO			
	Cinema/ Video Hall Location: Condition:	NO			
	Assembly Polling Station Location: Condition:	NO			
	Birth & Death Registration Office Location: Condition:	yes Veraval			
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	Yes			
	Milk Co-operative Soc.	Yes			
	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	No			
P.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	~~Street~~ Light			
Q.	Any Other				

7. **Data Collection From Village**

Village Base Map Available: Hard Copy/Soft Copy	

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

8. **Additional Information/ Requirement:**

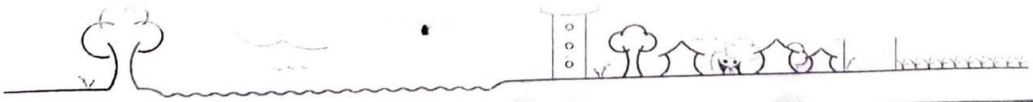
Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities(School Building, Health Center, Panchayat Building, Public Toilets & any other)	Yes	
2.	Additional Information/ Requirement	–	

9. **Smart Village Proposal Design**

Sr. No.	Descriptions	Information/ Detail	Remarks
1.			

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



12.2 Scanned copy of Choki (Smart Village) Survey details:

Gujarat Technological University, Ahmedabad, Gujarat

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:	Junagadh
Name of Taluka:	Junagadh
Name of Village:	Choki
Name of Institute:	G.M. Engineering College
Nodal Officer Name & Contact Detail:	H.M. Bhimjiyani Sir
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	ભિખાભાઈ કિટલીયા (સરપંચ)
Date of Survey:	25 - 10 - 2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	3022	1528	1494	719
2.	2011	3419	1850	1569	721

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1282 hec.
2.	Forest Area (In hect.)	4.50 hec.
3.	Agricultural Land Area (In hect.)	550 hec.
4.	Residential Area (In hect.)	620 hec.
5.	Other Area (In hect.)	107.5 hec.
6.	Distance to the nearest railway station (in kilometers):	10 Km

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Techno Economic Survey

7.	Name of Nearest Town with Distance:	Jetpur - 14 Km
8.	Distance to the nearest bus station (in kilometers):	10 km
9.	Whether village is connected to all road for the any facility or town or City?	NH

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. 2. 3.
Major crops grown in the village:	1. 2. 3.

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

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	Overhead Tank	Capacity:	Yes		
	Underground Sump	Capacity:			

Suggestions if any:

C.	The Type of Drainage Facility				
	A. UNDERGROUND DRAINAGE 1 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	open with outlet	Yes		

Suggestions if any:

D.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	Sol. Pucca			Sol. Kutcha
	Main road				
	Internal streets	Kutcha			
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH & MDR 10 Km			

Suggestions if any:

E.	Transport Facility				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	yes 10 km			
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	yes	yes		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	Yes		

Suggestions if any:

F.	Electricity Distribution				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes Gov. more than 6 hrs.	Yes		

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	Power supply for Domestic Use	Yes	Yes		
	Power supply for Agricultural Use	Yes	Yes		
	Power supply for Commercial Use	Yes	Yes		
	Road/ Street Lights	Yes	Yes		
	Electrification in Government Buildings/ Schools/ Hospitals	Yes	Yes		
	Renewable Energy Source Facilities (Y/ N)			NO	
	LED Facilities			No	

Suggestions if any:

G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	Yes	Yes	1	
	Location Condition	Community			
	Community Toilet (With bath/ without bath facilities)	Yes Without bath			
	Solid & liquid waste Disposal system available	Yes	Yes		Door to Door collect.
	Any facility for Waste collection from road	No.		No	

Suggestions if any:

H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL OTHER (SPECIFY)	Tube well other	Yes		

Suggestions if any:

I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Pucca	Yes		50 %

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	Anganwadi			
	Sub-Centre				
	PHC	PHC			
	BLOCK PHC				
	CHC/RH	Private			
	District/ Govt. Hospital	Clinic			
	Govt. Dispensary				
	Private Clinic	Nursing			
	Private Hospital/	Home			
	Nursing Home				
	AYUSH Health Facility				
	sonography /ultrasound facility				
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Anganwadi	Yes	3	Good condition
	Primary School	Yes	Yes	1	
	Secondary school	Yes	Yes	1	
	Higher sec. School	No		No.	
	ITI college/ vocational Training Center	No.			
	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.				

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

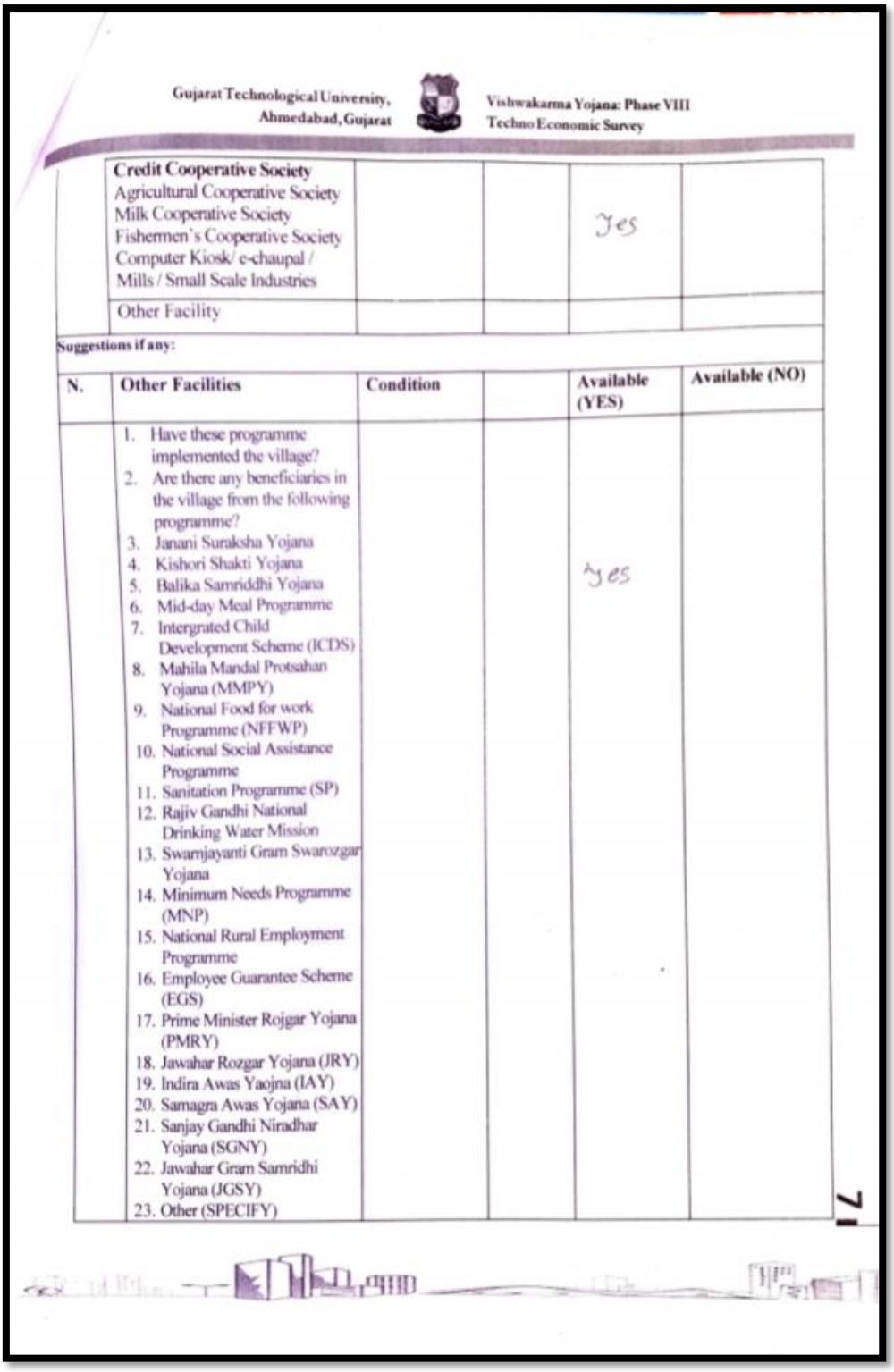
Suggestions if any:

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

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	choki	Yes	
	Telecommunication Network/ STD booth	Good	choki	Yes	
	General Market				No
	Shops (Public Distribution System)			Yes	
	Panchayat Building	Good		Yes	
	Pharmacy/Medical Shop			Yes	
	Bank & ATM Facility	Yes		Yes	
	Agriculture Co-operative Society				
	Milk Co-operative Soc.	~~No~~			
	Small Scale Industries	No			No
	Internet Cafes/ Common Service Center/Wi Fi	No			No
	Youth Club				No
	Mahila Mandal			Yes	



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village? 2. Are there any beneficiaries in the village from the following programme? 3. Janani Suraksha Yojana 4. Kishori Shakti Yojana 5. Balika Samriddhi Yojana 6. Mid-day Meal Programme 7. Intergrated Child Development Scheme (ICDS) 8. Mahila Mandal Protsahan Yojana (MMPY) 9. National Food for work Programme (NFFWP) 10. National Social Assistance Programme 11. Sanitation Programme (SP) 12. Rajiv Gandhi National Drinking Water Mission 13. Swarnjayanti Gram Swarozgar Yojana 14. Minimum Needs Programme (MNP) 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)			Yes	

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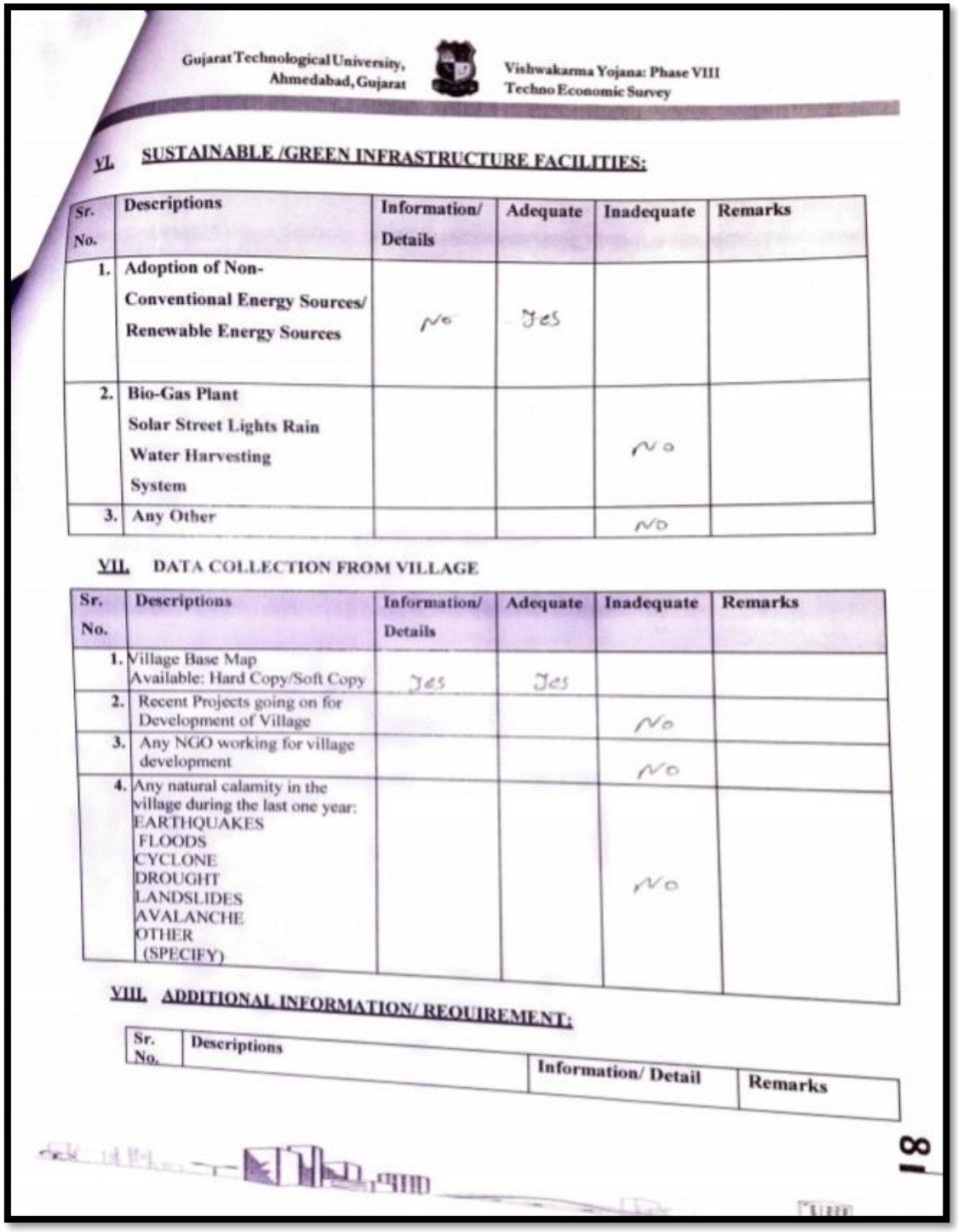

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy	Yes	Yes		
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)			No	

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	School buildings Panchayat buildings	
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?		

IX. Smart Village / Heritage Details

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

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

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

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12.3 Scanned copy of Moti Parabadi (Allocated Village) Survey details:

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Name of District:	Rajkot
Name of Taluka:	Dhoraji
Name of Village:	Moti Parabadi
Name of Institute:	OM Engineering collage
Nodal Officer Name & Contact Detail:	
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Santilal Jeramhhai Thoriya ग्रा. पं. सभ्य - शरपंच
Date of Survey:	7 / 11 / 2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	–	–	–	–
2.	2011	2413	1262	1151	517

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1065.65 Hecterer
2.	Forest Area (In hect.)	–
3.	Agricultural Land Area (In hect.)	486.84 Hecterer
4.	Residential Area (In hect.)	17.3 Heactyrer
5.	Other Area (In hect.)	–
6.	Distance to the nearest railway station (in kilometers):	Toraniya - 3 km Dhoraji - 10 km

7.	Name of Nearest Town with Distance:	Dhoraji - 9 km
8.	Distance to the nearest bus station (in kilometers):	
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.
	2.
	3.

Major crops grown in the village:	1. cotton
	2. wheat
	3. Peanut

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	Tube well Bore well	yes		
2.	**DUG WELL** Protected Well Un Protected Well	Protected well	yes		
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring				
	Rainwater Tanker Truck Cart With Small Tank				
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump	channel	~~yes~~	yes	Bhadar

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	Other(Specify)**Lake/ Pond**				
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	yes		More 1.5 lakh
	Underground Sump	Capacity:	yes		
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1		yes		
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road				
	Main road	Pucca	yes		
	Internal streets				
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH 151	-		
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Dhoraji 9 km		yes	
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Good	yes		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	5.T Bus	yes		
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	More than 6 hrs.			GTCO

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

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)				
	Sub-Centre				
	PHC				
	BLOCK PHC				
	CHC/RH			yes	
	District/ Govt. Hospital				
	Govt. Dispensary				
	Private Clinic				
	Private Hospital/ Nursing Home				
	AYUSH Health Facility				
	sonography /ultrasound facility				
	If any of the above Facility is not available in village than approx. distance from village: ………kms. Toraniya 3 km, ~~[illegible]~~ - Dhoraji - 10km				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	2	yes		
	Primary School	1	yes		
	Secondary school	–		yes/No	
	Higher sec. School	–		yes/No	
	ITI college/ vocational Training Center	–		yes/No	
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities			No	

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	If any of the above Facility is not available in village than approx. distance from village: .....kms. Dhoraji 9 kms
Suggestions if any:	

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)			yes	
	Public Library (With daily newspaper supply: Y/N)				NO
	Public Garden				NO
	Village Pond			yes	
	Recreation Center				NO
	Cinema/ Video Hall				NO
	Assembly Polling Station				NO
	Birth & Death Registration Office			yes	
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			yes	
	Telecommunication Network/ STD booth				NO
	General Market				NO
	Shops (Public Distribution System)			yes	
	Panchayat Building			yes	
	Pharmacy/Medical Shop			.	NO
	Bank & ATM Facility			yes	
	Agriculture Co-operative Society				NO
	Milk Co-operative Soc.			yes	
	Small Scale Industries			yes	.
	Internet Cafes/ Common Service Center/Wi Fi				NO
	Youth Club				NO
	Mahila Mandal			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				
	Other Facility				

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village? 2. Are there any beneficiaries in the village from the following programme? 3. Janani Suraksha Yojana 4. Kishori Shakti Yojana 5. Balika Samriddhi Yojana 6. Mid-day Meal Programme 7. Intergrated Child Development Scheme (ICDS) 8. Mahila Mandal Protsahan Yojana (MMPY) 9. National Food for work Programme (NFFWP) 10. National Social Assistance Programme 11. Sanitation Programme (SP) 12. Rajiv Gandhi National Drinking Water Mission 13. Swarnjayanti Gram Swarozgar Yojana 14. Minimum Needs Programme (MNP) 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)				3 4 5 } NO

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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	NO		✓	
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	NO			
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	Yes			
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)	–			

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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	-	-
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	-	/

IX. Smart Village / Heritage Details

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

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

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

મોટી પરબડી ગ્રામ પંચાયત
પોસ્ટ: જેતપુર (જે.) તા. ધોરાજી
જી.રાજકોટ, પીન નં.360 360

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12.4 Gap Analysis:

VILLAGE GAP Analysis

Village Name: Moti Parabadi.

Village Facilities	Planning Commission/UDPFI Norms	Population: Existing	Required as per Norms	Smart Vilage / Cities / Heritage Future Projection Design	Gap
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	2	1		1
Primary School	Each Per 2500 population	1	1		0
Secondary School	Per 7,500 population	0	2		2
Higher Secondary School	Per 15,000 Population	0	0		0
College	Per 125,000 Population	0	0		0
Tech. Training Institute	Per 100000 Population	0	0		0
Agriculture Research Centre	Per 100000 Population	0	0		0
Skill Development Center	Per 100000 Population	0	0		0
Health Facility		0	0		0
Govt/Panchyat Dispensary or Sub PHC or Health Centre	Each Village	0	1		1
Primary Health & Child Health Center	Per 20,000 population	0	1		1
Child Welfare and Maternity Home	Per 10,000 population	0	1		1
Multispeciality Hospital	Per 100000 Population	0	0		0
Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum pockets & kutcha house)	2	2	Yes	0
Physical Infrastructure Facilities					
Transportation		Adequate / Inadequate			
Pucca Village Approach Road	Each village	Adequate			
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	inadequate		Yes	
Drinking Water (Minimum 70 lpcd)		Adequate / Inadequate			
Over Head Tank	1/3 of Total Demand	Adequate			
U/G Sump	2/3 of Total Demand	Adequate			
Drainage Network - Open		Adequate / Inadequate			
Drainage Network - Cover		Adequate			
Waste Management System		Adequate / Inadequate			
Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	1	1		0
community hall and Public Library	Per 15000 Population	0	1		1
Cremation Ground	Per 20,000 population	0	0		0
Post Office	Per 10,000 population	1	1		1
Gram Panchayat Building	Each individual/group panchayat	1	1		1
APMC	Per 100000 Population	0	0		0
Fire Station	Per 100000 Population	0	0		0
Public Garden	Per village	0	1	Yes	1
Police post	Per 40,000Population	0	0		0
Shopping Mall		0	0		0
Electrical Design					
Electricity Network		Adequate / Inadequate			
Any Smart Village Facility					
Technology					
		ESR cap	0		
		Sump cap	1.5 Lak 0		
		Lat	0		

12.5 Summary of All Villages Designs as Part-I and Part-II

Table 12.1 Summary of All Villages Design

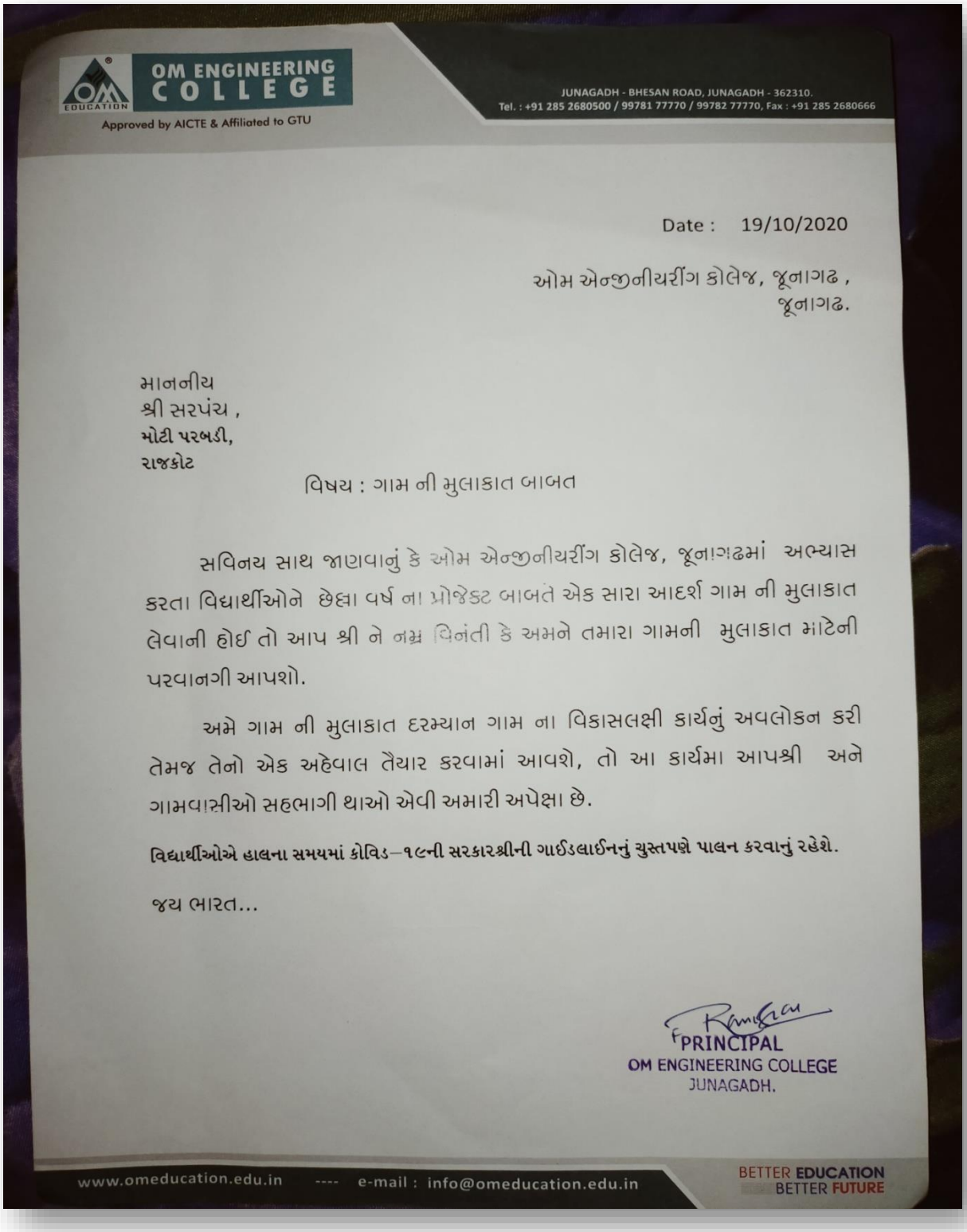
VILLAGE	DICIPLINE	PART-1	PART-2
Moti Parabadi	Civil	Community Hall Library Public Toilet U/G Sump Anganwadi Panchayat Building	P H C Primary School Garden Bank Bus Stand
Khambhaliya	Civil	P H C Primary School Garden Bust Stop Door to door waste collection Soak pit &Septic tank	Public Toilet Post Office ATM Bank
Toraniya	Civil	Panchayat Office WBM Road (Maintenance) Public Toilet Library P H C A T M	Post Office Street Light U/G Sump Anganwadi

12.6 Summary of Good Photographs (Village visits, Ideal, Allocated Village or Any other):

12.7 Village Interaction Report with the photograph as a report format:

Fig. 12.1 Village Interaction Photography

12.8 Sarpanch Letter:



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Date : 19/10/2020

ઓમ એન્જીનીયરીંગ કોલેજ, જૂનાગઢ ,
જૂનાગઢ.

માનનીય
શ્રી સરપંચ ,
મોટી પરબડી,
રાજકોટ

વિષય : ગામ ની મુલાકાત બાબત

સવિનય સાથ જાણવાનું કે ઓમ એન્જીનીયરીંગ કોલેજ, જૂનાગઢમાં અભ્યાસ કરતા વિદ્યાર્થીઓને છેલ્લા વર્ષ ના પ્રોજેક્ટ બાબતે એક સારા આદર્શ ગામ ની મુલાકાત લેવાની હોઈ તો આપ શ્રી ને નમ્ર વિનંતી કે અમને તમારા ગામની મુલાકાત માટેની પરવાનગી આપશો.

અમે ગામ ની મુલાકાત દરમ્યાન ગામ ના વિકાસલક્ષી કાર્યનું અવલોકન કરી તેમજ તેનો એક અહેવાલ તૈયાર કરવામાં આવશે, તો આ કાર્યમા આપશ્રી અને ગામવાસીઓ સહભાગી થાઓ એવી અમારી અપેક્ષા છે.

વિદ્યાર્થીઓએ હાલના સમયમાં કોવિડ–૧૯ની સરકારશ્રીની ગાઈડલાઈનનું ચુસ્તપણે પાલન કરવાનું રહેશે.

જય ભારત...

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BETTER EDUCATION
BETTER FUTURE

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:

In tachometric survey done by us, we observed that the basic physical infrastructure, sociocultural infrastructure, sustainable infrastructure, physical infrastructure includes sours of drinking water, water tank, drainage system, road network, electricity distribution, sanitation facilities and irrigation system, social infrastructure includes school, colleges, Anganwadi, hostel, sub canter, clinics, sustainable infrastructure include Bio-gas plant, solar street lights, rain water harvesting, renewable energy source social- cultural facilities include community hall, public library, public garden, pond cerebration canter, cinema hall, assembly polling station, birth and death rogation office etc.

13.1.1 Sustainable Design (Primary school)

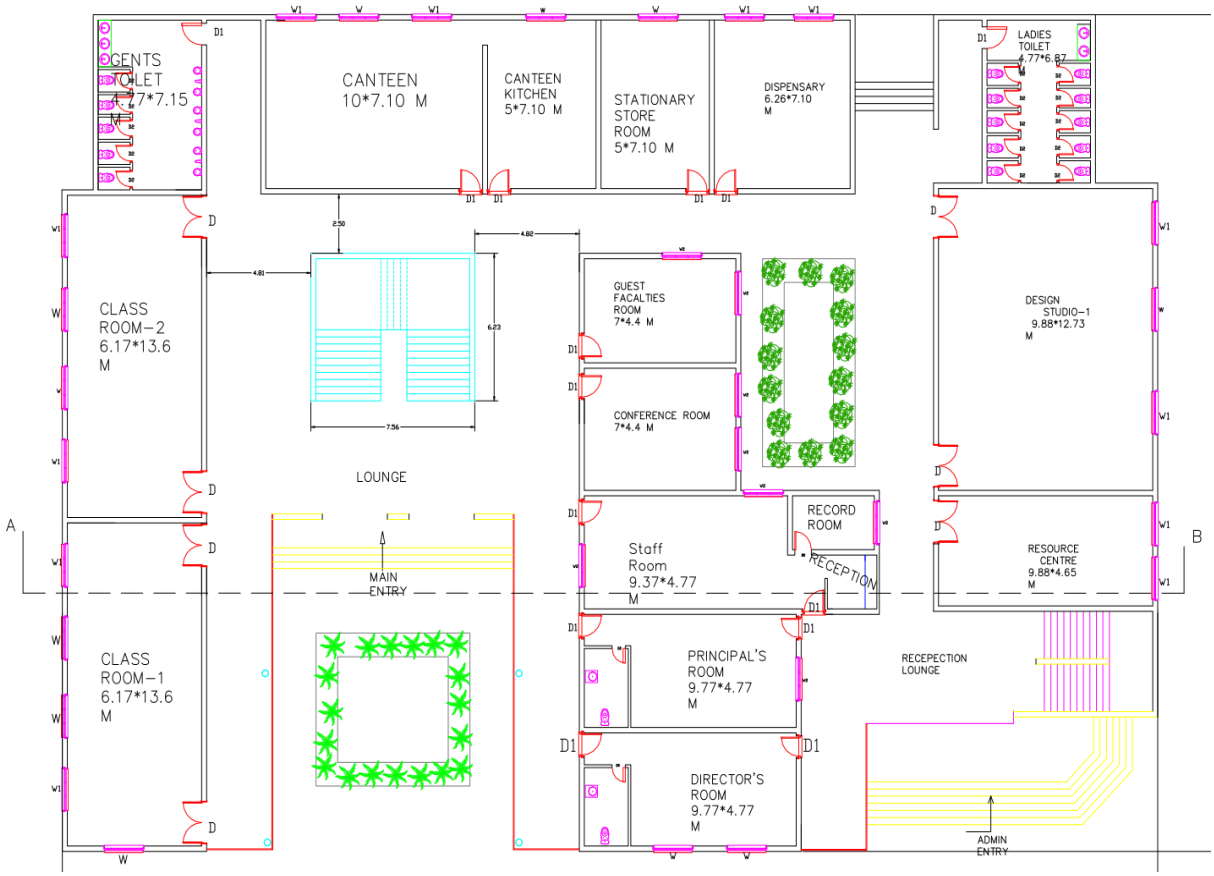


FIG. 13.1 Ground plan of primary school

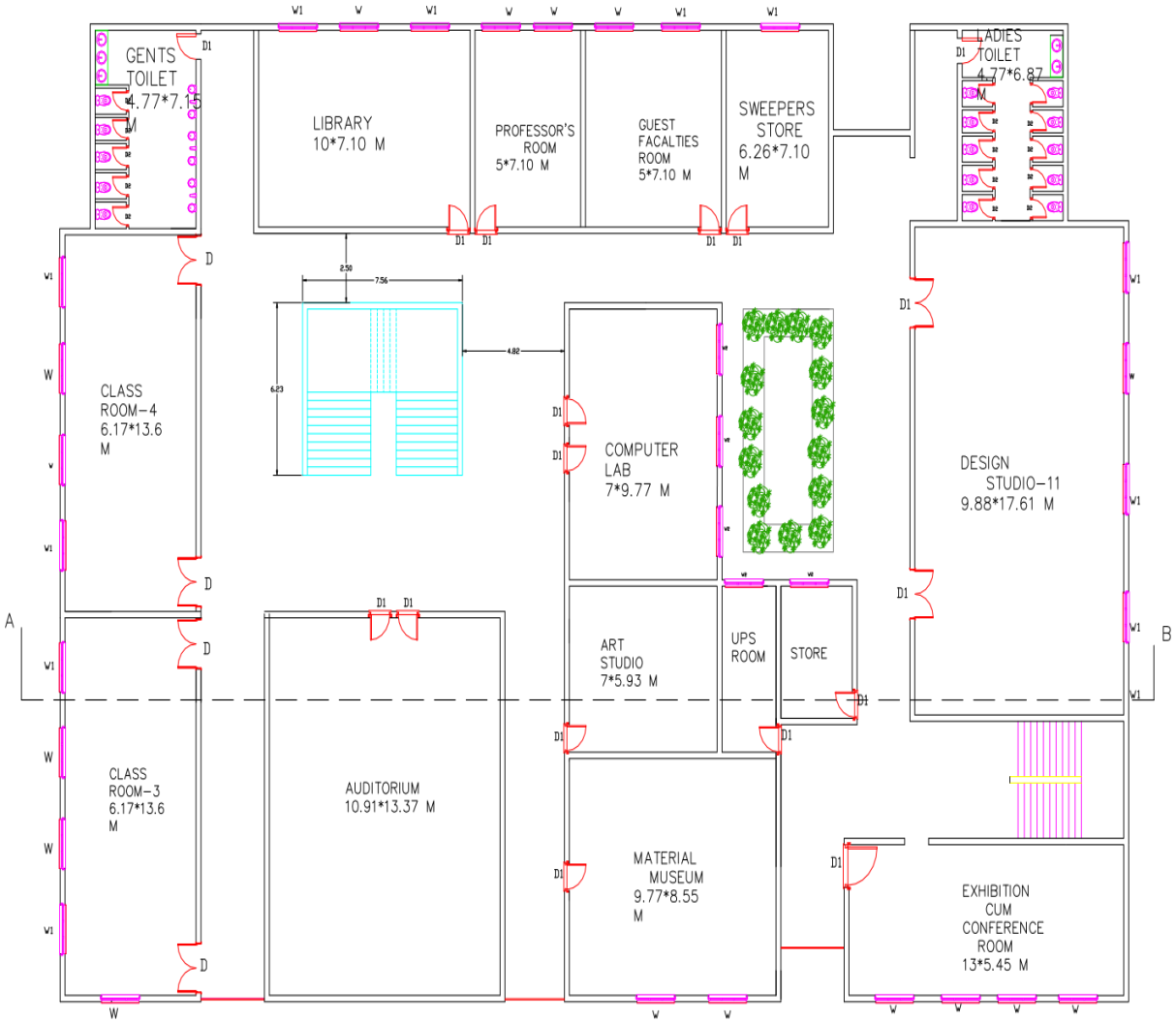


Fig. 13.2 First floor plan of primary school

Schedule of Door & Windows (Meter)	
D	1.80 x 2.10
D1	1.20 x 2.10
D2	0.90 x 2.10
W	1.80 x 1.20
W1	1.40 x 1.20
W2	1.20 x 1.20

Fig. 13.3 Elevation

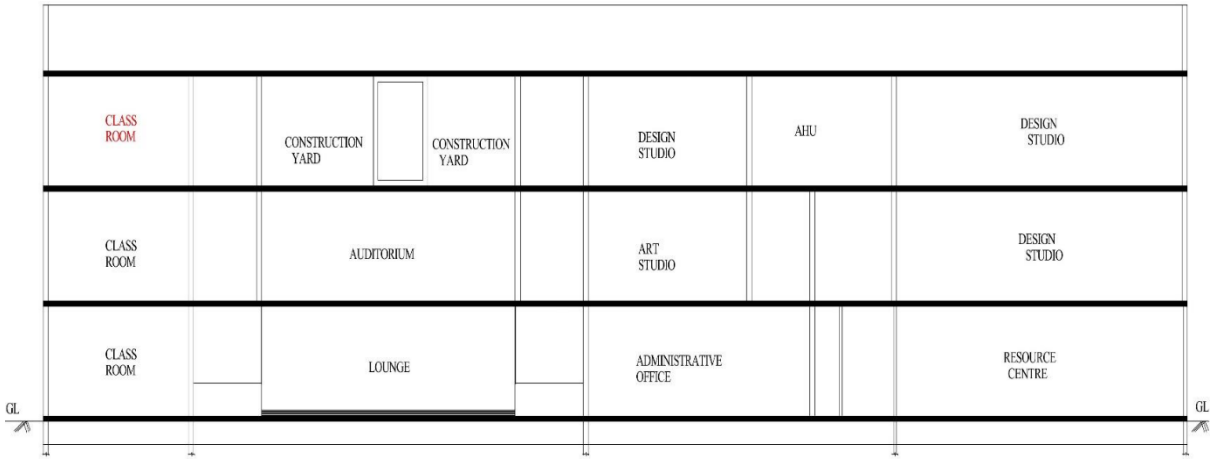


Fig. 13.4 Section

Table 13.1 Estimate and Cost of Primary school

Primary school Material Estimate quantity with Cost					
Item No.	**Particulars of Items**	**Quantity**	**Rate**	**Per**	**Amount Rs.**
1	Earthwork in excavation for foundation	776.66	85.00	M^3	66016.10
2	P.C.C. work for foundation includingcompaction and curing	164.14	300.00	M^3	49242
3	Brick masonry in C.M.1:6 in foundation andplinth including curing, etc.	302.93	3200.00	M^3	969376
4	Brick masonry in C.M.1:6 in superstructure including curing.	10159.89	3500.00	M^3	35,559,615
5	Smooth plaster inside the room including scaffolding, racking of masonry joints, curing, and complete.	7611.66	160.00	M^2	1,217,865.6
6	R.C.C. work in slab, chajja (0.6 projection) and lintel (0.1 m bearing on wall) including reinforcement steel, centering, finishing, curing.	824.37	8800.00	M^3	7,254,456
7	Wood work for doors and windows	442.26	200.00	M^2	88,452
8	Mosaic tiles flooring work	3724.02	170.00	M^2	633083
9	Damp proof course above plinth	108.48	150.00	M^3	16272
Total					**45,854,377**

13.1.2 Social design (Bus Stop)

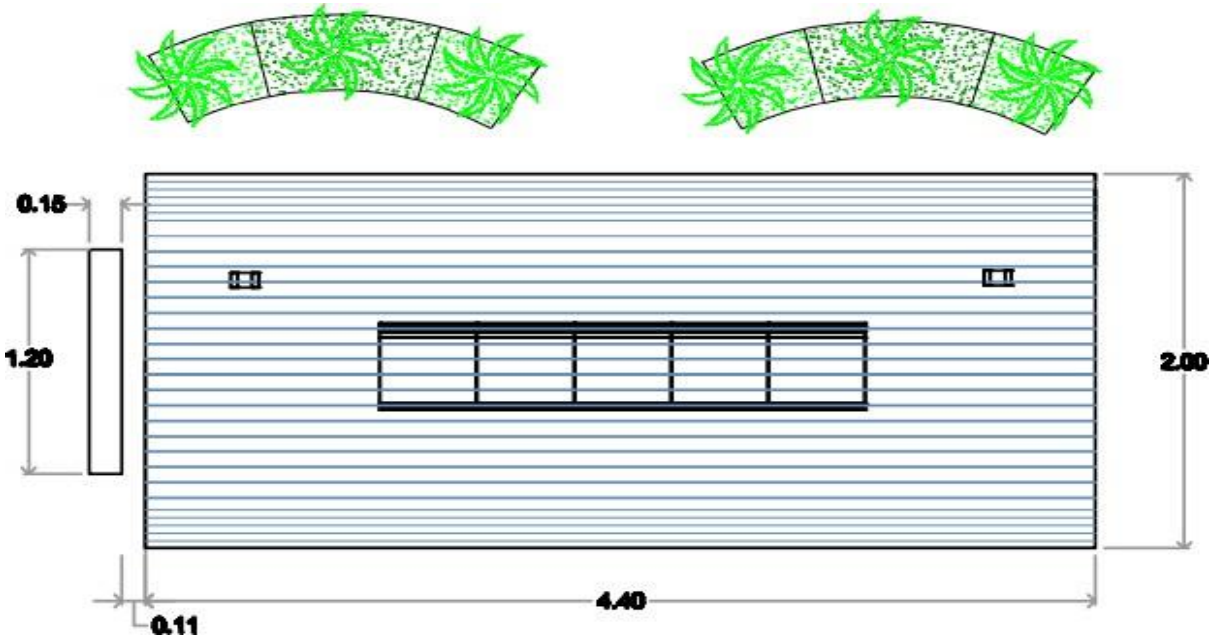


Fig. 13.5 Bus Stop Plan

Fig. 13.6 Elevation

Fig. 13.7 Section

Table 13.2 Estimate and Cost of Bus Stop

Bus Stop Material Estimate quantity with Cost					
Sr. No.	**Particulars of Items**	**Quantity**	**Rate**	**Per**	**Amount Rs.**
1	Concrete work for ground base.	10	50.00	M^3	500
2	Marble black sheet for bus time andschedule.	7	120.00	Sq. foot	840
3	Marble granite sheet for people sitting.	8	140.00	Sq. foot	1120
4	Kota stone	3	80.00	Sq. foot	240
5	Steel sheet (ISI)	15	140.00	Foot	2100
6	Cold rolled coil pipe	60	70.00	Kg.	4200
Total					**9000**
5% bhisti (450), 3% water charges (284) TOTAL					**9734**

13.1.3 Primary Health Canter:

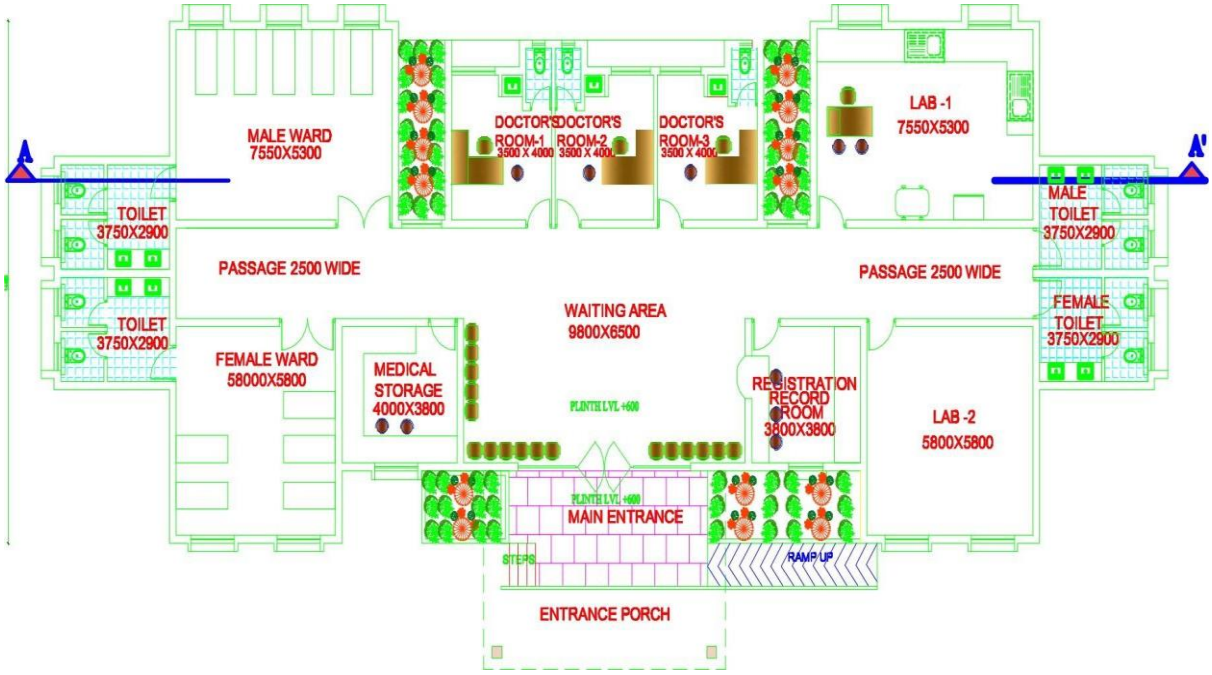


Fig. 13.8 Primary Health Center Plan

Fig. 13.9 Elevation

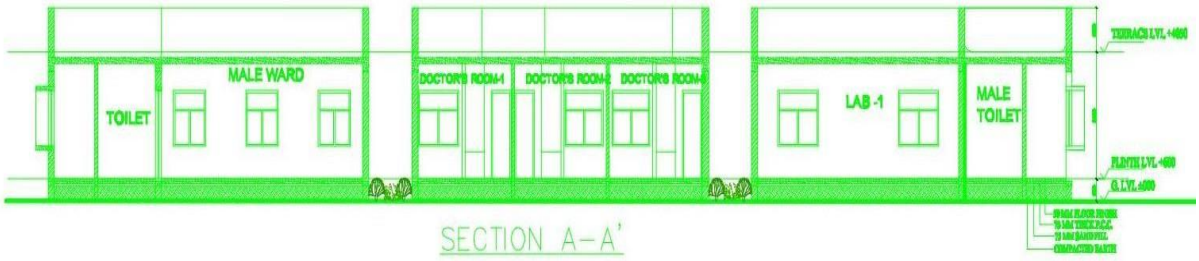


Fig. 13.10 Section

Table 13.3 Primary Health Center Measurement Sheet

Primary Health Center Measurement Sheet						
Sr. No.	**Item description**	**No.**	**Length (m)**	**Bright (m)**	**Height (m)**	**Quantity (M^3)**
1	Earthwork in excavation for foundation	1	248.25	0.90	1.4	312.795
2	Brick bat cement concrete (1:4:8) forfoundation	1	248.25	0.90	0.2	44.685
3	Brick masonry above plinth upto slab level c.m. 1:6	1	262.95	0.3	3	236.65
4	Brick masonry upto plinth in c.m. 1:6	1	248.25	0.3	0.90	67.02
5	Deduction for door and windows					
	D	1	1.80	0.3	2.10	1.13
	D1	8	1.10	0.3	2.10	5.54
	D2	4	0.90	0.3	2.10	2.26
	D3	11	0.70	0.3	2.10	4.85
	W	13	1.80	0.3	1.20	8.42
	V	11	0.60	0.3	0.60	1.18
					Total deduction	23.38
					Net quantity	213.28

Table 13.4 Primary Health Center Abstract Sheet

Primary Health Center Abstract Sheet					
Sr. No.	**Particular of item**	**Quantity**	**Rate**	**Per**	**Amount Rs.**
1	Excavation in foundation	312.80	85	M^3	27353
2	Brick bat cement concrete (1:4:8)for foundation	44.70	2700	M^3	120690
3	Brick masonry up to plinth in c.m. 1:6	241	3200	M^3	684800
4	Brick masonry above plinth up to slab in 1:6	210.29	3500	M^3	736015
5	Smooth plaster inside the room and ceiling	1179.06	160	M^2	188649.6
6	R.C.C. work in slab, chajja and lintel	86.94	8800	M^3	765072
Total					**2522579**

13.1.4 Design for door-to-door waste collection:

Table 13.5 Abstract for door-to-door waste collection

SR. NO.	Description	No.	Rete Per Unit NOS.	Cost (Rs.)
Purchase Cost				
1	Waste collection tricycle	1	23000/-	23000/-
2	Public Dustbin	20	670/-	13400/-
3	Skip Container bin	2	60000/-	120000/-
Maintenance Cost (Monthly)				
4	Man required (for collection of waste)	1x30	300/-	9000/-
			Total purchase cost	**156400/-**
			Total maintenance cost	**9000/-**
			Total initial cost	**165400/-**

❖ **Detail of waste collection trip:**

- Timing for waste collection = 7:30 am to 11:30 am
- Public dustbin empties every day.
- Community container empty at every 3-alternate day.
- Total no. of house hold in village = 591 (census 2011)

$$\text{Maintenance charge from each house hold} = \frac{9000}{591}$$

❖ **Tricycle specification:**

- Material – Mild steel
- Colour – Black
- No. of box – 8
- No. of well – 3

❖ **Dustbin Specification:**

- Capacity – 240 lit.
- Double bin (separate for dry and liquid waste)
- Material – FRP

❖ **Community skip container specification:**

- Material – steel
- Green colour

Fig. 13.11 Community skip container

Fig. 13.12 Dustbin

13.1.5 Design of Garden:

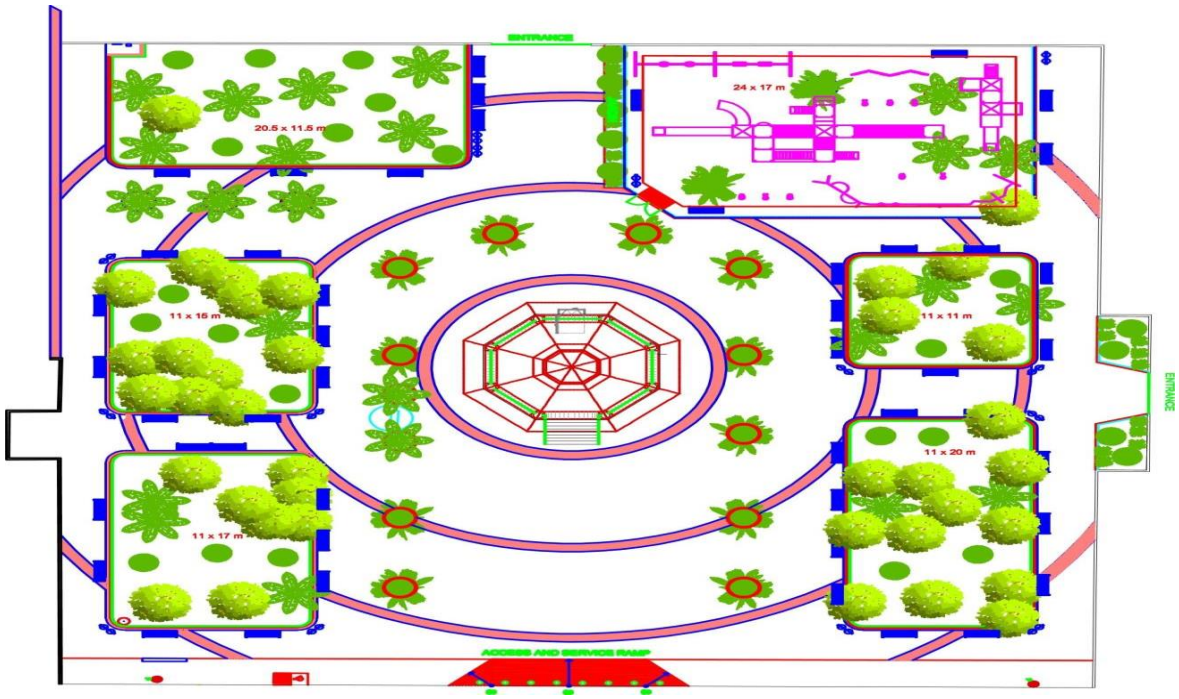


Fig. 13.13 Garden

Table 13.6 Estimate and Cost of Garden

Garden Material Estimate quantity with Cost					
Sr. No.	**Item Description**	**Quantity**	**Rate**	**Per**	**Amount Rs.**
1	Excavation of foundation	198	745	M^3	147510
2	P.C.C. work for foundation	54	4100	M^3	221400
3	Masonry work in foundation up to plinthlevel	40	1300	M^3	52000
4	R.C.C. work for plinth coping	24	8800	M^3	211200
5	Masonry work in super structure.	120	1700	M^3	204000
6	Plaster work	1200	450	M^2	540000
7	Filing in garden	5880	45	M^2	264600
				Total	**1640710**

13.1.6 DESIGN OF BIO-GAS PLANT:

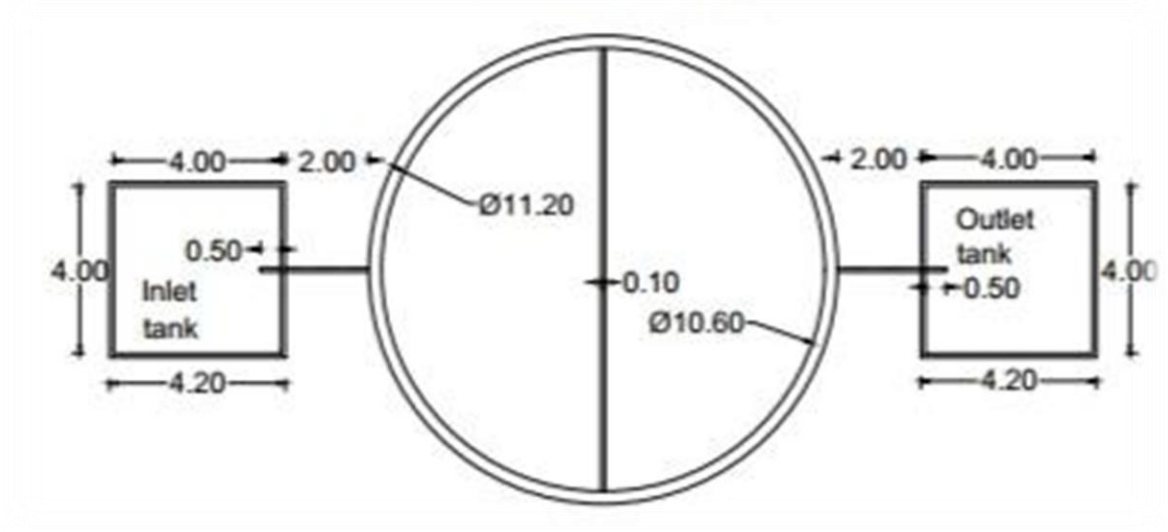


Fig. 13.14 Plan of Bio-Gas Plant

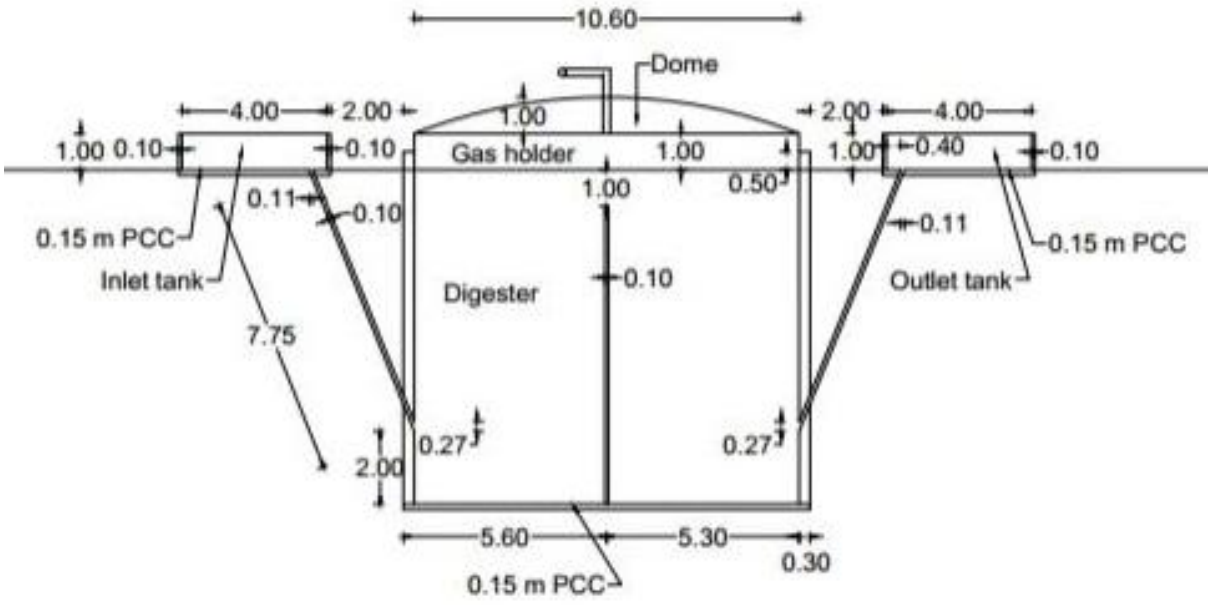


Fig. 13.15 Section of Bio-Gas Plant

Table 13.7 Estimate and Cost of Bio-Gas Plant

ABSTRACT SHEET					
SR. NO	**DESCRIPTION**	**QUANTITY**	**RATE**	**PER**	**AMOUNT (RS)**
1.	Excavation for biogas plant Digester				
A	Exaction up to 1.5m	147.78	75	M^3	11083.5
B	Excavation up to 1.5 to 3m	147.78	105	M^3	15516.9
C	Excavation up to 3 to 9.5m	640.38	110	M^3	70441.8
2	Providing and laying PCC, d =11.2m	20.57	1360	M^3	27975.2
3	First class brick masonry C:M(1:6) for digester ,0.3m	107.83	1500	M^3	161745
4	Brick work for inlet and outlet tank,0.1m	95.1	1450	M^2	137895
5	RCC work of dome of gas holder dome	7.61	2100	M^3	15981
6	Providing mild steel reinforcement in RCC work	597.68	60	Kg	35860.8
		TOTAL:			476499.2
		3 % CONTIGENCY:			14294.97
		2 % WORKCHARGE ESTABLISHMENT:			9529.984
		TOTAL:			500324.15
		5 % CONTRACTOR PROFIT:			25016.20
		GRAND TOTAL:			**525340.35**

13.2 Reason for Student Recommending this Design:

- Primary School: In the village primary school physical condition are so bad then we proposed primary school design.
- Garden: In village the garden provided for interaction of people purpose.
- Bus Stop: In the village there is no facility of bus stop so we proposed bus stop design.
- Primary Health Center: It is provided for the health safety for people of village.
- Door to Door waste collection:

13.3 About design Suggestions/Benefit of the Villagers:

- In the village there is primary school is in bad condition so we provide new primary school to get batter facility for students.
- Benefit of garden is people of village is interacting with each other.
- In the village if there are bus stop is available then the people get easily use the transport facility.
- Primary health centre is good for the people of the village for their health care.

Chapter 14

Technical Options with Case Studies

14.1 Civil Engineering:

14.1.1Advanced Earthquake Resistant:

The violent vibration caused by the sudden movement of the tectonic plates in the earth's crust following the release of tremendous amount of heat is known as earthquake. In the diagram shown, the two tectonic plates which are in the earth's crust moves to and for because of which an epicentre is created on the surface of earth. At this epicentre the intensity of that vibration is the maximum resulting in the release of seismic waves which moves in a way of making concentric circles and the intensity of vibrations gradually decreases. In spite of great advancement in science and technology, earthquake is one natural disaster which cannot be predicted. The design of earthquake resistant structure is an initiative from where many new developments are possible in future. The following are some of the developments which can be made in near future.

A. A complete probabilistic analysis.

B. Performance-based design codes.

C. Multiple annual probabilities for the response of spectral accelerations and peak ground accelerations

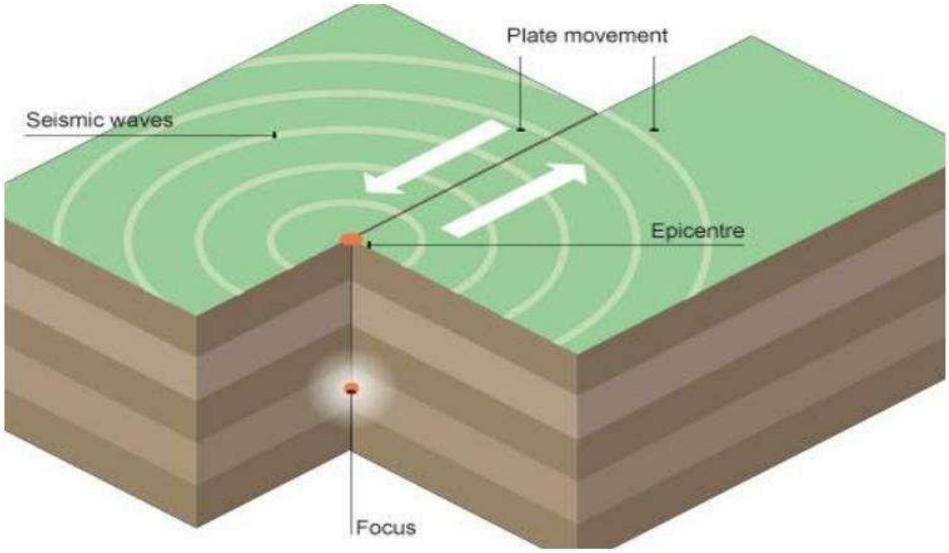


Fig. 14.1 Earthquake

The new structural system and materials are used which reduces the seismic risk. The structure designed to withstand the effect of earthquakes is referred to as earthquake resistant structure.

The main objective of earthquake resistant construction of buildings is basically to make structures that are strong enough to withstand earthquake or any other seismic activity.

Earthquake prone zone in India: -

Generally, the areas having trap rock or basaltic rock are prone to earthquakes. Basically, our country India has been divided into the following four zones:

(A) Zone 5

This zone covers the areas with the highest risks that suffers earthquakes of intensity MSK IX or greater.

Zone 5 is associated with the highest level of seismicity. It is referred to as the Very High Damage Risk Zone.

The region of Kashmir, the western and central Himalayas, North and Middle Bihar, the North-East Indian region and the Ran of Kutch, the Andaman and Nicobar group islands fall in this zone.

(B) Zone 4

Zone 4 is liable to an intensity of MSK VI to MSK IXI is referred to as the High Damage Risk Zone.

The Indo Genetic basin and the capital of the country (Delhi), Jammu and Kashmir fall in Zone 4. In Maharashtra, the Patna area (Koyananager) and in Bihar the northern part of the state like- Rasual, near the border of India and Nepal, also in zone 4.

(C) Zone 3

This zone is liable to an intensity of MSK VI. The Andaman and Nicobar Islands, parts of Kashmir, Western Himalayas fall under this zone.

This zone is referred to as Moderate Damage Risk Zone

(D) Zone 2

This region is liable to MSK VI or less and is referred to as the Low Damage Risk Zone. This zone is associated with the lowest level of seismicity.

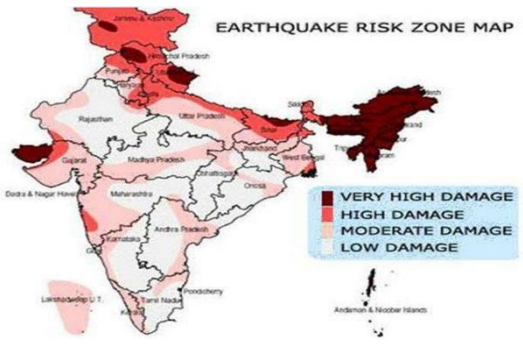


Fig. 14.2 Earthquake Risk Zone Map

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. With better understanding of seismic demand on structures and with our recent experiences with large earthquakes near urban centers, the need of seismic retrofitting is well acknowledged.

Prior to the introduction of modern seismic codes in the late 1960s for developed countries and late 1970s for many other parts of the world, many structures were designed without adequate detailing and reinforcement for seismic protection.

In view of the imminent problem, various research work has been carried out. State-of-the-art technical guidelines for seismic assessment, retrofit and rehabilitation have been published around the world. These codes must be regularly updated the 1994 Northridge earthquake brought to light the brittleness of welded steel frames, for example.

The retrofit techniques outlined here are also applicable for other natural hazards such as tropical cyclones, tornadoes, and severe winds from thunderstorms. Whilst current practice of seismic retrofitting is predominantly concerned with structural improvements to reduce the seismic hazard of using the structures, it is similarly essential to reduce the hazards and losses from non-structural elements.

It is also important to keep in mind that there is no such thing as an earthquake-proof structure, although seismic performance can be greatly enhanced through proper initial design or subsequent modifications.

Infill shear trusses:

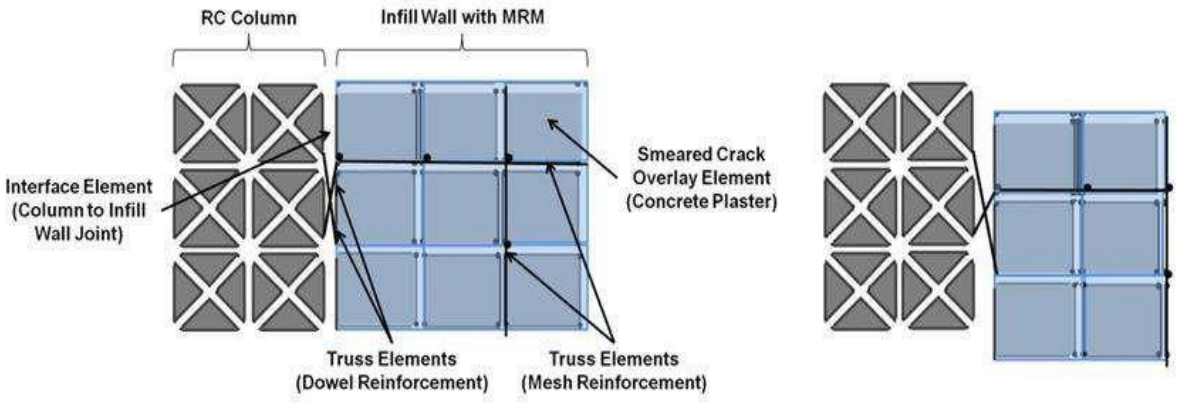


Fig. 14.3 Infill Shear truss

Shown here is an exterior shear reinforcement of a conventional reinforced concrete dormitory building. In this case, there was sufficient vertical strength in the building columns and sufficient shear strength in the lower stories that only limited shear reinforcement was required to make it earthquake resistant for this location near the Hayward fault.

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

CONTRUCTION MODERN MATERIAL:

Autoclaved aerated concrete:

"Aerated concrete" redirects here. For cellular concrete (foamed concrete), see Types of concrete & Cellular concrete. For lightweight blocks, see Expanded clay aggregate.

Autoclaved aerated concrete (AAC) is a lightweight, precast, foam concrete building material suitable for producing concrete masonry unit (CMU) like blocks. Composed of quartz sand, calcined gypsum, lime, cement, water and aluminum powder, AAC products are cured under heat and pressure in an autoclave. Invented in the mid-1920s, AAC simultaneously provides structure, insulation, and fire- and mold-resistance. Forms include blocks, wall panels, floor and roof panels, cladding (facade) panels and lintels.

AAC products may be used for both interior and exterior construction, and may be painted or coated with a stucco or plaster compound to guard against the elements, or covered with siding materials such as veneer brick or vinyl siding. In addition to their quick and easy installation, ACC materials can be routed, sanded, or cut to size on site using standard power tools with carbon steel cutters.

❖ **Advantages:**

AAC has been produced for more than 70 years, and it offers several advantages over other cement construction materials, one of the most important being its lower environmental impact.

- Workability allows accurate cutting, which minimizes the generation of solid waste during use.
- Lightweight saves cost and energy in transportation, labour expenses, and increases chance of survival during seismic activity.
- Accuracy: the panels and blocks made of autoclaved aerated concrete are production to the exact sizes needed before leaving the factory. There is less need for onsite trimming. Since the blocks and panels fit so well together, there is less use of finishing materials such as mortar.

❖ **Disadvantages:**

AAC has been produced for more than 70 years, however, some disadvantages were found when it was introduced in the UK (where cavity wall with clay brick two-skin construction has been the norm).

- Installation during rainy weather: AC is known to crack after installation, which can be avoided by reducing the strength of the mortar and ensuring the block are dry during and after installation.
- Brittle nature: they need to be handled more carefully than clay bricks to avoid breakage.
- Attachments: the brittle nature of the blocks requires longer, thinner screws when fitting cabinets and wall hangings and wood-suitable drill bits or hammering in. Special, large diameter wall plugs (anchors) are available at a higher cost than common wall plugs.
- Insulation requirements in newer building codes of northern European countries would require very thick walls when using AAC alone. Thus, many builders choose to use traditional building methods installing an extra layer of insulation around the entire building.

Construction modern techniques:

- **Tunnel Formwork System:**

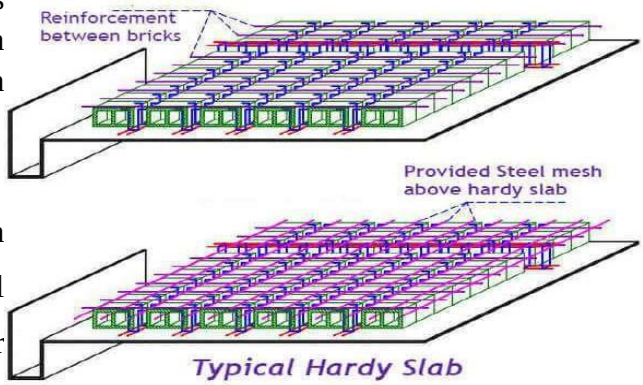
With this tunnel technique, construction is paced up for cellular structures of repetitive patterns through the building of monolithic walls or units in a single operation per day.

Expeditious work is achieved by deploying formwork and readily mixed concrete with the convenience and agility of factory conditions. Formworks in tunnel form are stacked and used at the site with cranes.

Fig. 14.4 Tunnel Formwork System

- **Flat Slabbing Technology:**

This technique utilizes the simplicity of contemporary formwork for quickly building flat slabs to facilitate easy and swift placing of horizontal amenities and for partitioning. Maximization of pre-fabricated services occur as services can be carried out in an uninterrupted manner in zones underneath the floor slabs.



Every top-notch building Construction Company is using the same as internal layouts can be conveniently modified for accommodatingalterations at a later date.

Fig. 14.5 Flat slabbing Technology

- **Thin Joint Masonry Technique:**

Utilization of this technique leads to the reduction of the quantum of mortar applied by slashing it depth from 10mm to lesser than 3mm. Consequently, mortar can be laid swiftly with enhanced productivity on the longer wall panels.

With large sized concrete blocks, higher construction efficiency along with significant cost reduction can be achieved. Within a single day, the number of mortar courses laid is higher as curing of mortar takes place quickly without compromising on bonding strength resulting in the elimination of floatingproblem.

Fig. 14.6 Thin Joint Masonry Technique

❖ **Construction Modern Equipment:**

Backhoe:

Backhoe is another widely used equipment which is suitable for multiple purposes. The name itself saying that the hoe arrangement is provided on the back side of vehicle while loading bucket is provided in the front.

This is well useful for excavating trenches below the machine level and using front bucket loading,

Unloading and Lifting of Material can be done.

Fig. 14.7 Backhoe

Bulldozers:

Bulldozers are another type of soil excavating equipment which are used to remove the topsoil layer up to particular depth. The removal of soil is done by the sharp-edged wide metal plate provided at its front. This plate can be lowered and raised using hydraulic pistons.

These are widely used for the removal of weak soil or rock strata, lifting of soil etc.

Fig. 14.8 Bulldozers

TOWER CRANES

Tower cranes are fixed cranes which are used for hoisting purposes in construction of tall structures. Heavy materials like pre-stressed concrete blocks, steel trusses, frames etc. can be easily lifted to required height using this type of equipment.

They consist mast which is the vertical supporting tower, Jibwhich is operating arm of crane, counter jib which is the other arm carries counter weight on rear side of crane and an operator cabin.

Fig. 14.9 Tower Cranes

Telehandlers:

Telehandlers are hoisting equipment used in construction to lift heavy materials up to required height or to provide construction platform for workers at greater heights etc. It contains a long telescopic boom which can be raised or lowered or forwarded.

Different types of arrangements like forklifts, buckets, cabin, lifting jibs etc. can be attached to the end of telescopic boombased on the requirement of job.

Fig. 14.10 Telehandlers

14.1.4 Engineering Aspects of Soil mechanics - Environmental ImpactAssessment

Environmental Impact Assessment (EIA) is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socioeconomic, cultural and human-health impacts, both beneficial and adverse. UNEP defines Environmental Impact Assessment (EIA) as a tool used to identify the environmental, social and economic impacts of a project prior to decision-making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers. Environment Impact Assessment in India is statutorily backed by the Environment Protection Act, 1986 which contains various provisions on EIA methodology and process.

Process:

EIA involves the steps mentioned below. However, the EIA process is cyclical with interaction between the various steps.

- Screening: The project plan is screened for scale of investment, location and type of development and if the project needs statutory clearance.
- Scoping: The project's potential impacts, zone of impacts, mitigation possibilities and need for monitoring.
- Collection of baseline data: Baseline data is the environmental status of study area.

- Impact prediction: Positive and negative, reversible and irreversible and temporary and permanent impacts need to be predicted which presupposes a good understanding of the project by the assessment agency.

- Mitigation measures and EIA report: The EIA report should include the actions and steps for preventing, minimizing or by passing the impacts or else the level of compensation for probable environmental damage or loss.
- Public hearing: On completion of the EIA report, public and environmental groups living close to project site may be informed and consulted.
- Decision making: Impact Assessment Authority along with the experts consult the projection-charge along with consultant to take the final decision, keeping in mind EIA and EMP (Environment Management Plan).
- Monitoring and implementation of environmental management plan: The various phases of implementation of the project are monitored.
- Assessment of Alternatives, Delineation of Mitigation Measures and Environmental Impact Assessment Report: For every project, possible alternatives should be identified, and environmental attributes compared. Alternatives should cover both project location and process technologies.
- Once alternatives have been reviewed, a mitigation plan should be drawn up for the selected option and is supplemented with an Environmental Management Plan (EMP) to guide the proponent towards environmental improvements.

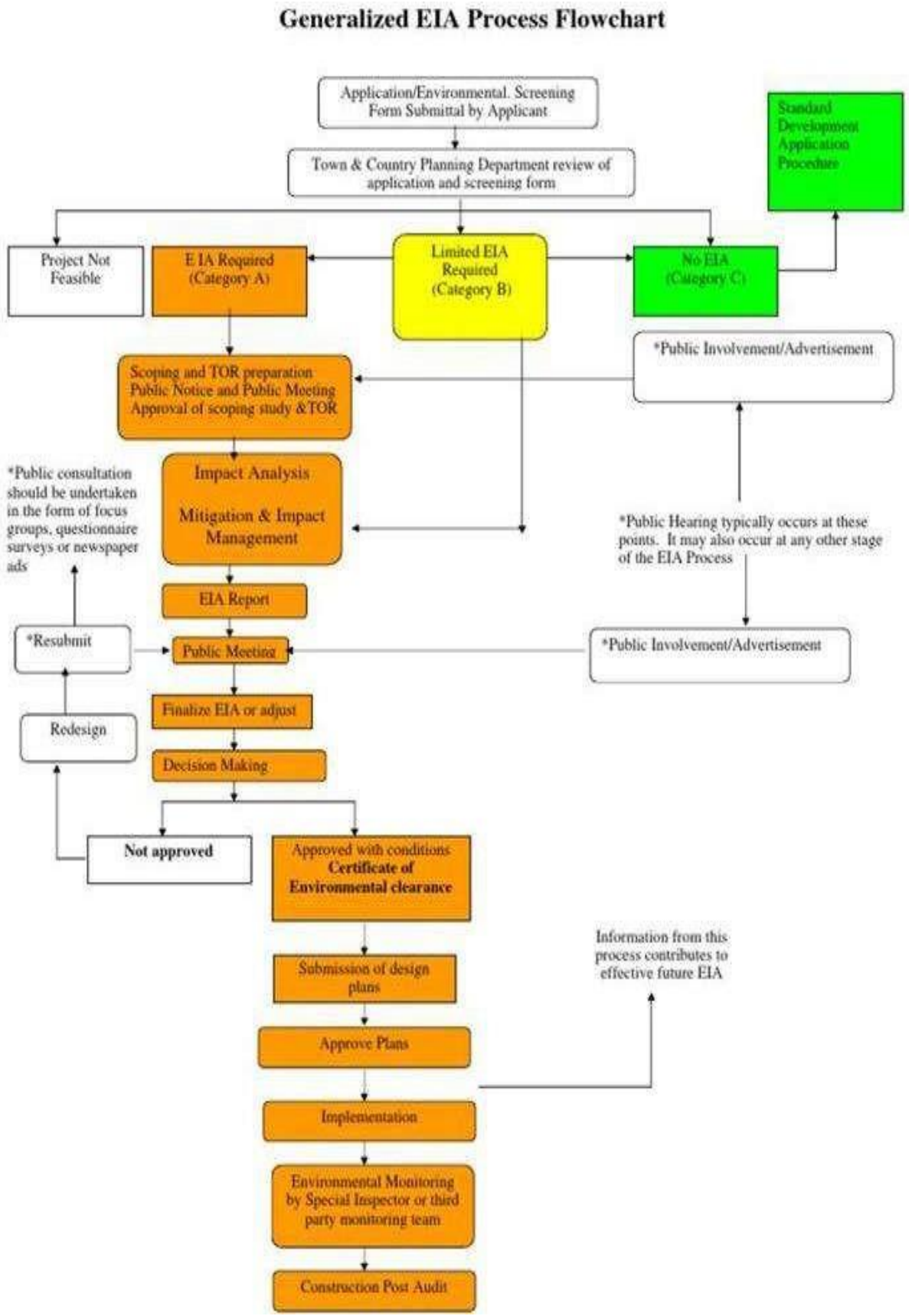


Fig. 14.11 Generalized EIA process Flowchart

WAY FORWORD:

- Independent EIA Authority.
- Sector wide EIAs needed.
- Creation of a centralized baseline data bank.
- Dissemination of all information related to projects from notification to clearance to local communities and the general public.
- Applicability: All those projects where there is likely to be a significant alteration of ecosystems need to go through the process of environmental clearance, without exception.
- No industrial developmental activity should be permitted in ecologically sensitive areas.
- Public hearing: Public hearings should be applicable to all hitherto exempt categories of projects which have environmental impacts.
- The focus of EIA needs to shift from utilization and exploitation of natural resources to conservation of natural resources.
- It is critical that the preparation of an EIA is completely independent of the project proponent.
- Grant of clearance: The notification needs to make it clear that the provision for site clearance does not imply any commitment on the part of the impact Assessment agency togrant full environmental clearance.
- Composition of expert committees: The present executive committees should be replaced by expert people from various stakeholder groups, who are reputed in environmental and other relevant fields.
- Monitoring, compliance and institutional arrangements:
- The EIA notification needs to build within it an automatic withdrawal of clearance if the conditions of clearance are being violated and introduce more stringent punishment for noncompliance. At present the EIA notification limits itself to the stage when environmental clearance is granted.
- The composition of the NGT needs to be changed to include more judicial persons from the field of environment.
- Citizen should be able to access the authority for redressed of all violation of the EIA notification as well as issues relating to non-compliance.
- Capacity building: NGOs, civil society groups and local communities need to build their capacities to use the EIA notification towards better decision making on projects.

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

Water Supply:

Dead End Water Distribution System:

Dead end system, the name itself defining that it contains dead ends in the pipe system. So, the water does not flow continuously in the dead-end system.

In this system the whole pipe network is divided into several sub networks. Those are namely main line, sub mains, branch lines and service connections.

Firstly, one main line is laid through the center of the city or area. Sub mains are laid on both sides of the main line and then sub mains divided into branch lines from which service connections are given.

At every starting point of sub main line, a cut off valve is provided to regulate the flow during repair works etc.

On the whole, this network diagram will look like a tree shape, so it is also called as tree system. This type of system is used mostly for the olden cities which are built in irregular manner without any planning. Nowa days, this system is not preferable.

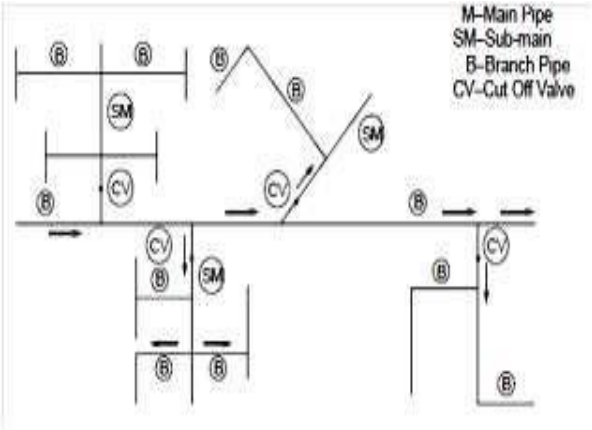


Fig. 14.12 Dead End System

Advantages of DEAD-END system

- Pipes in this network can be laid easily.
- The pressure and discharge in each pipe can be determined very easily and accuratelywhich makes design calculations very simple.
- The diameters of pipes of main, sub mains and branches can be designed based on therequired demand of population. So, cost of the project can be reduced.
- Dead end system requires a smaller number of cut-off valves.

Disadvantages of DEAD-END system

- The pressure is not constant and is very less at remote parts.
- Because of dead ends water stagnation takes place which results in deposition of sediment. To remove these sediments, a greater number of scour valves are to be provided at the dead ends which increase economy.
- If there is any damage occurs in the branch line, the whole portion should be stopped to repair that which creates discomfort to the other users in that sub main line.

Sewerage System:

On the basis of the system to convey the sewage, the sewerage system can be further classified. Let us study some of the important systems to know their characteristic, their merits, it their limitations or their demerits.

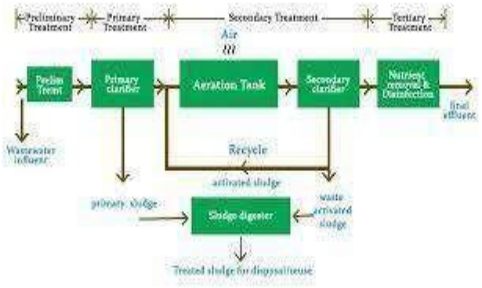


Fig. 14.13 Sewerage System

1) The Combined System:

When only one set of sewers is laid to convey both the sanitary sewage and the storm water, it is known as the combined system. This system has the following merits:

(A) The merits of combined system:

In this system. No flushing or pumping Is required because due to mixing of the storm water, it gets the required self-cleaning velocity.
Due to dilution of the sewage through the storm water i.e., the rainwater, it becomes easy to treat the sewage after it reaches the final point of treatment.
The house plumbing become easy and cheap as only one set of pipelines is required in this system.

(B) The demerits or the limitations of combined system:

It needs to have higher Initial cost of construction.

This system is not suitable for the areas where the rainy season is limited to a small portionof the year, as the dry-weather-sewage flow will be limited with lesser velocity which would be Insufficient to develop self-cleaning velocity. This leads to blocking of the sewers due to siltation.
It becomes non-economical if the whole sewage is required to be disposed of by pumping.
In case of heavy rain falls, the sewers get overflowed which create public health problems.

2) The Separate System:

In this system, the domestic and the Industrial sewage are carried by one set of sewers and the storm and the surface water are carried by another separate set of sewers. It has the following merits and demerits or limitations.

A) The merits of the separate system:

As separate sets are used to convey the sewage and the storm water the quantity of sewage to be treated remains limited, so the design of the treatment plant can be made economical i.e., needs less cost for treatment.

The initial cost of the sewers is less in this system because the foul sewage is carried through the closed sewers while, the storm water, surface flow which is not of foul nature, is carried through the open gutters or drains.

There no danger of over flowing of sewage and so no danger of sub-soil pollution.

If the sewage is to be pumped during the process of disposal; this system always is economical, as it has to handle less load.

B) The demerits or limitations of the separate system:

As the sewage is carried separately, it does not have the capacity, to generate the self-cleaning velocity. So additional flushing points are required to be provided, so get smooth conveying this adds to the cost.

In case, the storm water enters into the sanitary sewers, it may cause over-flowing condition and also may create extra load on the treatment plant.
As it has to maintain two sets of sewers, the maintenance cost is always higher than the combined system.

It is difficult to lay two sets of sewers, in busy lane, mainly at the time of repairs; it creates problem to the heavy traffic.

3) The Partially separate system:

It is like separate system only but the only difference between these two systems is that in this, a part of the storm water is allowed to enter into the sewage carrying sewers while the rest of the surface and storm water is allowed to flow through the separate sewers.

(A) The merits of the partially separate system:

This being an Improved "separate system" it has all the advantages of combined and separate systems.
As, only part of the storm water is allowed to enter the sewage sewers, the size of the sewers is economical i.e., not too large, to increase the cost.

The house plumbing works also can be carried by one single pipe which can carry the sullage from the bathrooms and kitchens together with the rain water received on the roofs and for the water, from the other sources like toilets can be carried through another pipe line.

No flushing is necessary because by using a part of the storm-water the quantity of sewageis increased.

(B) The demerits of the partially separate system:

As a part of the storm-water is mixed with the sanitary sewage it needs to have pumping facilities at the point of disposal. This increases the initial cost of this system.
There is a chance of over-flow condition due to increase in the storm-water.

During dry-summer season this system does not have self-cleaning velocity. So, it needs to have regular cleaning of the sewers that adds the maintenances cost.

Waste Water:

Wastewater treatment is a process used to remove contaminants from wastewater or sewage and convert it into an effluent that can be returned to the water cycle with acceptable impact on the environment, or reused for various purposes (called water reclamation). The treatment process takes place in a wastewater treatment plant (WWTP), also referred to as a Water Resource Recovery Facility (WRRF) or a Sewage Treatment Plant (STP) in the case of domestic wastewater. Pollutants in wastewater are removed, converted or broken down during the treatment process.

The treatment of wastewater is part of the overarching field of sanitation. Sanitation also includes the management of human waste and solid waste as well as storm water (drainage) management. The main by-product from wastewater treatment plants is sewage sludge which is usually treated in the same or another wastewater treatment plant.

Processes:

The processes involved in waste-water treatment include physical processes such as settlement or flotation and biological processes such as aerated lagoons, activated sludge, or bio-films in trickling filters. Other physical methods such as filtration through sieves may be used in specialized circumstances such as de-watering waste-water sludge.

Sedimentation:

Further information: Sedimentation (water treatment) and Sewage treatment

Solids such as stones, grit, and sand may be removed from wastewater by gravity when density differences are sufficient to overcome dispersion by turbulence. This is typically achieved using a grit channel designed to produce anoptimum flow rate that allows grit to settle and other less-dense solids to be carried forward to the next treatment stage.

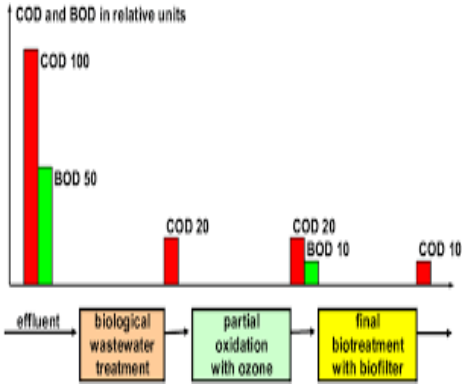


Fig. 14.14 Sedimentation

Gravity separation of solids is the primary treatment of sewage, where the unit process is called "primary settling tanks" ``or "primary sedimentation tanks." It is also widely used for the treatment of other types of wastewaters. Solids that are denser than water will accumulate at the bottom of quiescent settling basins. More complex clarifiers also have skimmers to simultaneously remove floating grease such as soap scum and solids such as feathers, wood chips, or condoms. Containers like the API oil-water separator are specifically designed to separate non-polar liquids.

Biochemical oxidation:

Secondary treatment by biochemical oxidation of dissolved and colloidal organic compounds is widely used in sewage treatment and is applicable to some agricultural and industrial wastewaters.

Biological oxidation will preferentiallyremove organic compounds useful as a food supply for the treatment ecosystem. Concentration of some less digestible compounds may be reduced by co- metabolism. Removal efficiency is limited by the minimum food concentration required to sustain the treatment ecosystem.

Fig. 14.15 biochemical oxidation

Sustainable development techniques:

Sustainability is defined the desire to perform activities without any depletion of resources or bringing any harmful effect on the environment. Practicing sustainable construction methods will help avoiding harmful effects from construction activities. Construction involves activities like use of building materials from various sources, use of machineries, demolition of existing structures, use of green fields, cutting down of tress etc. which can impact

environment in one or more ways. Civil engineering field being the major part of the economy, it is very essential that sustainable construction practice dominate the past followed conventional construction practice and methods.

Creating Healthy Environment:

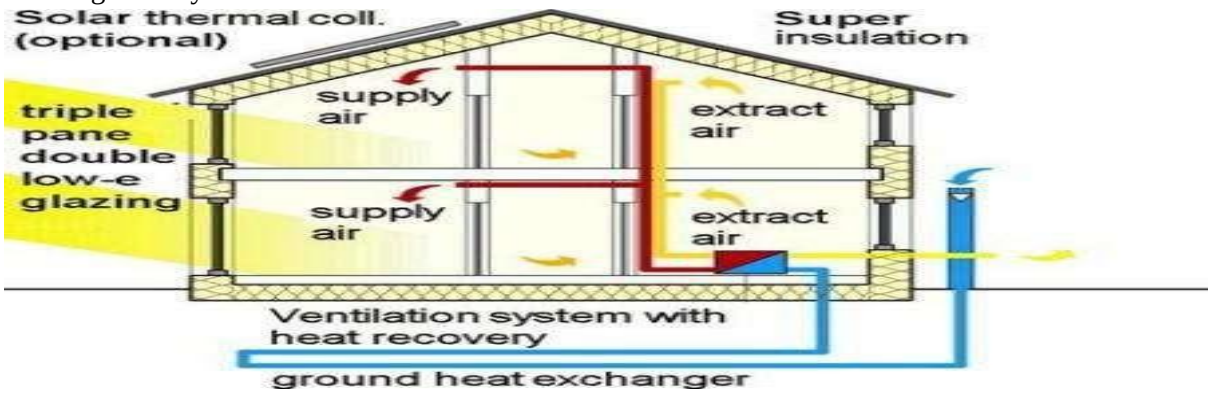


Fig. 14.16 Creating healthy environment

Instead of endangering the health of worker, builders and occupants' construction must enhance leisure, living and the working environments.

Around 40% of total energy consumption and greenhouse gas emissions are directly due to construction and operation of buildings. The best of to reduce this impact is the use of green buildings construction techniques.

Effective use of resources:

Overconsumption of misappropriate number of resources like land, money, use or disposal, construction must be stopped. Wastage of resources, materials, water, poor design is not recommended. The building constructed have to be affordable and manageable.

Sand and Gravel are being used for thousands of years in construction. The demand for these is increasing day by day as demand for infrastructure development is increasing.

Over use of construction materials such river sand and gravels also have negative impact on environment. Excessive sand-and-gravel mining causes the degradation of rivers. Sand mining results in the lowering of the stream bottom, that results in bank erosion.

This results in the destruction of aquatic and riparian habitat through large changes in the channel morphology. The harmful effects include bed degradation, lowered water tables and channel instability.

Chapter 15

Smart and/or Sustainable features of Chapter 8 & 13 designs, Impact on society.

(For Moti Parabadi village development, villagers' happiness, comfortable and for enhancement of the village)

A) Immediately B) **Within 1 year** C) **Long term (3-5 years) along with cost estimation.**

Table 15.1 Impact on society

Sr. No	Design Name	Period to Implement	Amount (Rs)	Benefit
1	**PHYSICAL INFRASRUCTURE**			
	BUS – STATION	Within 1 year	2,35,916.93	-For easily and reliable facility transportation. -People waiting for the bus can sit well.
	PUBLIC – TOILET	Immediately	4,18,700	-Decrease health issue and improve cleanliness in village. -To keep clean the village.
2	**SOCIAL INNFRASTRUCTURE**			
	ANGANWADI	Within 1 year	3,18,164.53	-Studying & playing for village children -Extra activity
	P H C	Within 1 year	25,22,579	-easily available medicine -better information about medicine
3	**SUSTAINBLE INFRASTRUCTURE**			
	BIO – GAS PLANT	Immediately	5,89,735.2	-It is very sustainable way to get energy in the village there is lot of dung so it is very economical -This is natural recourses and nonpolluting.
	UNDERGROUND SUMP	Within 1 year	2,69,704.50	
4	**SOICIO – CULTURE INFRASTRUCTURE**			
	COMMUNITY HALL	Immediately	6,25,881.35	-For general meetings & othersmall functions -Helpful for awareness program

	LIBRARY	Immediately	5,00,723.29	-improve literacy & increaseeducation facility -learn about modern newtechnology. -provide computer center in library.
5	**SMART VILLAGE DESIGN**			
	GARDEN	Immediately	16,40,710	-Playing for village children -Extra activity

B) If possible, List the sources of the funding available with the Village gram panchayat:

- Fourteen (14^{th}) finance commission.
- ATVT Grant (Apno Taluko Vibrant Taluko)
- MLA Grant
- Member of Parliament Grant
- MGNREGA Grant (Mahatma Gandhi National Rural Employment Guarantee Act 2005)
- NREGA (National Rural Employment Guarantee act)
- Gram Panchyat Grant

Chapter 16

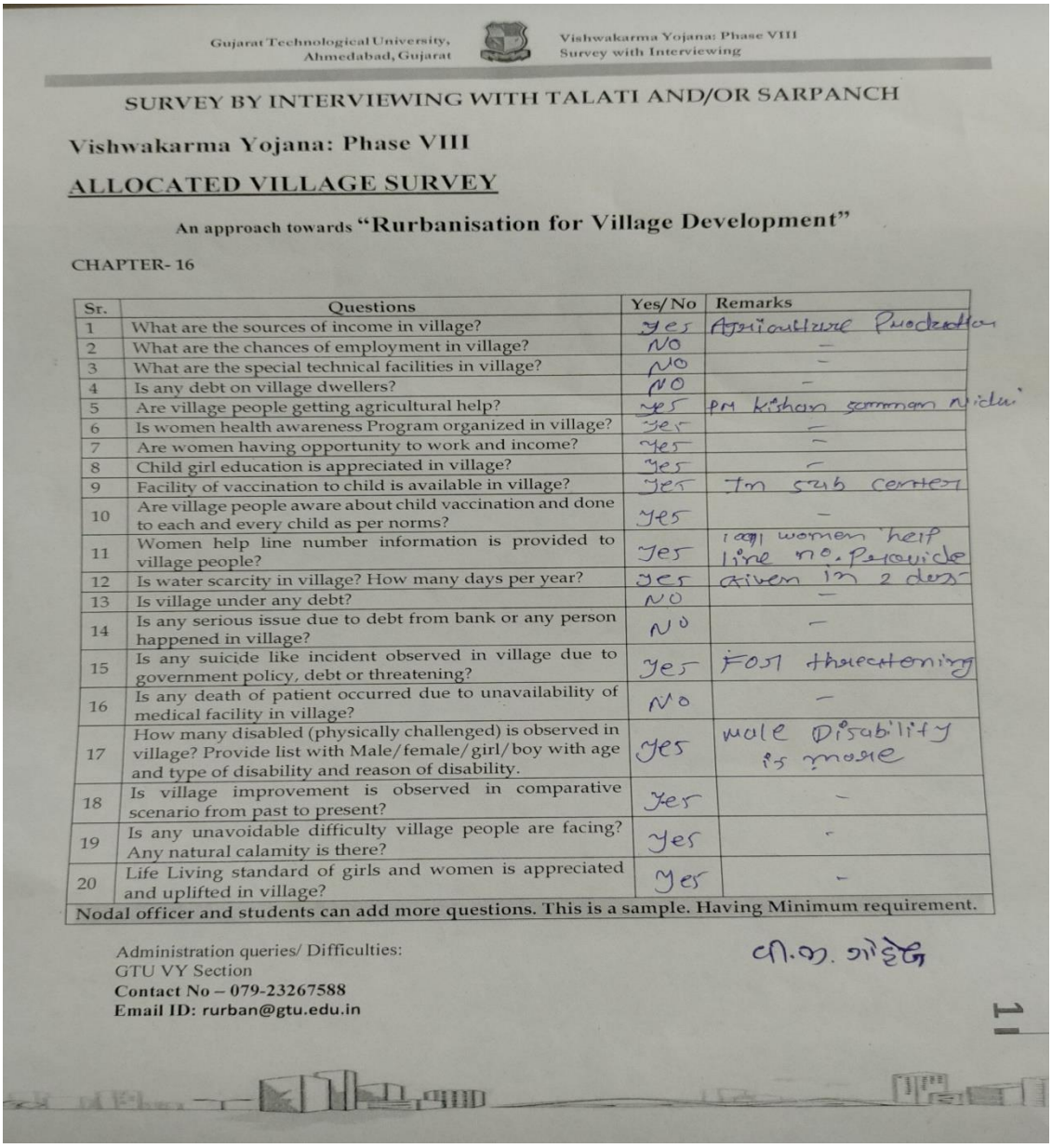
Survey by Interviewing with Talati and / or Sarpanch

Vishwakarma Yojana: Phase VIII

MOTI PARABADI VILLAGE SUREY

As approach towards **"Rurbanisation for village development"**.

Table 16.1 Survey interview report



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
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"

CHAPTER- 16

Sr.	Questions	Yes/ No	Remarks
1	What are the sources of income in village?	Yes	Agriculture Production
2	What are the chances of employment in village?	No	–
3	What are the special technical facilities in village?	No	–
4	Is any debt on village dwellers?	No	–
5	Are village people getting agricultural help?	Yes	PM kishan sammman Nidhi
6	Is women health awareness Program organized in village?	Yes	–
7	Are women having opportunity to work and income?	Yes	–
8	Child girl education is appreciated in village?	Yes	–
9	Facility of vaccination to child is available in village?	Yes	In sub center
10	Are village people aware about child vaccination and done to each and every child as per norms?	Yes	–
11	Women help line number information is provided to village people?	Yes	181 women help line no. Provide
12	Is water scarcity in village? How many days per year?	Yes	Given in 2 days
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?	Yes	For threatening
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	Male Disability is more
18	Is village improvement is observed in comparative scenario from past to present?	Yes	–
19	Is any unavoidable difficulty village people are facing? Any natural calamity is there?	Yes	–
20	Life Living standard of girls and women is appreciated and uplifted in village?	Yes	–

Nodal officer and students can add more questions. This is a sample. Having Minimum requirement.

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

Chapter 17

Irrigation / Agriculture Activates and Agro Industry, Alternate Technics and Solution

GREEN HOUSE:

Growing plants is both an art and a science. About 95% of plants, either food crops or cash crops are grown in open field. Since time immemorial, man has learnt how to grow plants under natural environmental conditions. In some of the temperate regions where the climatic conditions are extremely adverse and no crops can be grown man has developed methods of growing some high value crop continuously by providing protection from the excessive cold, which is called as Greenhouse Technology. So, Greenhouse Technology is the technique of providing favorable environment condition to the plants. It is rather used to protect the plants from the adverse climatic conditions such as wind, cold, precipitation, excessive radiation, extreme temperature, insects and diseases. It is also of vital importance to create an ideal micro climate around the plants. This is possible by erecting a greenhouse / glass house, where the environmental conditions are so modified that one can grow any plant in any place at any time by providing suitable environmental conditions with minimum labor.

Greenhouses are framed or inflated structures covered with transparent or translucent material large enough to grow crops under partial or fully controlled environmental conditions to get optimum growth and productivity.

CLASSIFICATION OF GREEN HOUSE:

Greenhouse structure of various types is used for crop production. Although there are advantages in each type for a particular application, in general there is no single type greenhouse, which can be constituted as the best. Different types of greenhouses are designed to meet the specific needs. The different types of greenhouses based on shape, utility, material and construction are briefly given below:

1. Greenhouse type based on shape:

For the purpose of classification, the uniqueness of cross section of the greenhouses can be considered as a factor. The commonly followed types of greenhouses based on shape are:

a) Lean to type greenhouse.

A lean-to design is used when a greenhouse is placed against the side of an existing building. It is built against a building, using the existing structure for one or more of its sides. It is usually attached to a house, but may be attached to other buildings.

The roof of the building is extended with appropriate greenhouse covering material and the area is properly enclosed. It is typically facing south side. The lean-to type greenhouse is limited to single or double-row plant benches with a total width of 7 to 12 feet. It can be as long as the building it is attached to. It should face the best direction for adequate sun exposure.

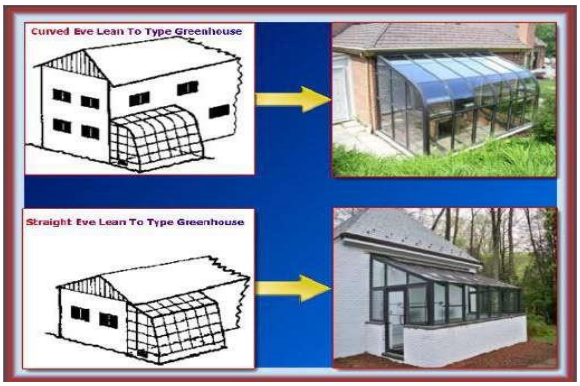


Fig. 17.1 lean to type greenhouse

b) Even span type greenhouse:

The even-span is the standard type and full-size structure, the two roof slopes are of equal pitch and width. This design is used for the greenhouse of small size, and it is constructed on level ground. It is attached to a house at one gable end.

It can accommodate 2 or 3 rows of plant benches. The cost of an even-span greenhouse is more than the cost of a lean-to type, but it has greater flexibility in design and provides for more plants. Because of its size and greater amount of exposed glass area, the even-span will cost more to heat. The design has a better shape than a lean-to type for air circulation to maintain uniform temperatures during the winter heating season.

A separate heating system is necessary unless the structure is very close to a heated building. It will house 2 side benches, 2 walks, and a wide centre bench. Several single and multiple span types are available for use in various regions of India. For single span type the span in general, varies from 5 to 9 m, whereas the length is around 24 m. The height varies from 2.5 to 4.3 m.

Fig. 17.2 Even span type greenhouse

c) Uneven span type greenhouse:

This type of greenhouse is constructed on hilly terrain. The roofs are of unequal width; make the structure adaptable to the side slopes of hill. This type of greenhouses is seldom used now-a- days as it is not adaptable for automation.

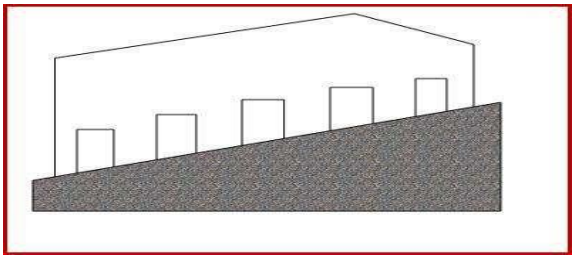


Fig. 17.3 uneven span type greenhouse

d) Ridge and furrow type:

Designs of this type use two or more A-frame greenhouses connected to one another along the length of the eave. The eave serves as furrow or gutter to carry rain and melted snow away. The side wall is eliminated between the greenhouses, which results in a structure witha single large interior, Consolidation of interior space reduces labor, lowers the cost of automation, improves personal management and reduces fuel consumption as there is less exposed wall area through which heat escapes.

Fig. 17.4 Rigid and furrow type greenhouse

The snow loads must be taken into the frame specifications of these greenhouses since the snow cannot slide off the roofs as in case of individual free-standing greenhouses, but melts away. In spite of snow loads, ridge and furrow greenhouses are effectively used in northern countries of Europe and in Canada and are well suited to the Indian conditions.

e) Saw tooth type:

These are also similar to ridge and furrow type greenhouses except that, there is provision for natural ventilation in this type. Specific natural ventilation flow path develops in a saw- tooth type greenhouse.

Fig. 17.5 Saw tooth type greenhouse

f) Interlocking ridges and furrow type Quonset greenhouse:

Designs of this type use two or more A- frame greenhouses connected to one another along the length of the eave. The eave serves as furrow or gutter to carry rain and melted snow away. The side wall is eliminated between the greenhouses, which results in a structure with a single large interior, Consolidation of interior space reduces labour, lowers the cost of automation, improves personal management and reduces fuel consumption as there is less exposed wall area through which heat escapes.

Fig. 17.6 Interlocking ridges

2. Greenhouse type based on Utility:

Classification can be made depending on the functions or utilities. Of the different utilities, artificial cooling and heating are more expensive and elaborate. Hence based on this, they are classified in to two types.

a) Greenhouses for active heating:

During the night time, air temperature inside greenhouse decreases. To avoid the cold bite to plants due to freezing, some amount of heat has to be supplied. The requirements for heating greenhouse depend on the rate at which the heat is lost to the outside environment. Various methods are adopted to reduce the heat losses, viz., using double layer polyethylene, thermo pane glasses (Two layers of factory sealed glass with dead air space) or to use heating systems, such as unit heaters, central heat, radiant heat and solar heating system.

Fig. 17.7 Greenhouse for active heating

b) Greenhouses for active cooling:

During summer season, it is desirable to reduce the temperatures of greenhouse than the ambient temperatures, for effective crop growth. Hence suitable modifications are made in the green house so that large volumes of cooled air are drawn into greenhouse, this type of greenhouse either consists of evaporative cooling pad with fan or fog cooling. This greenhouse is designed in such a way that it permits a roof opening of 40% and in some cases nearly 100%.

Fig. 17.8 Greenhouse for active cooling

3. Greenhouse type based on construction:

The type of construction predominantly is influenced by structural material, though the covering material also influences the type. Higher the span, stronger should be the material and more structural members are used to make sturdy tissues. For smaller spans, simple designs like hoops can be followed. So based on construction, greenhouses can be classified as

a) Wooden framed structure:

In general, for the greenhouses with span less than 6 m, only wooden framed structures are used. Side posts and columns are constructed of wood withoutthe use of a truss Pine wood 8 is commonly used as it is inexpensive and possesses the required strength.

b) Truss framed structure:

If the greenhouse span is greater than or equal to 15m, truss frames are used. Flat steel, tubular steel or angular iron is welded together to form a truss encompassing rafters, chords and struts. Struts are support members under compression and chords are support members under tension. Angle iron purlins running throughout the length of greenhouse are bolted to each truss. Columns are used only in very wide truss frame houses of 21.3 m or more. Mostof the glass houses are of truss frame type, as these frames are best suited for pre-fabrication.

Fig. 17.9 Truss Framed Structure

4. Greenhouse type based on covering material:

Covering materials are the important component of the greenhouse structure. They have direct influence on greenhouse effect, inside the structure and they alter the air temperature inside. The types of frames and method of fixing also varies with covering material. Hence based on the type of covering material they may be classified as

a) Glass glazing:

Only glass greenhouses with glass as the covering material existed prior to 1950. Glass as covering material has the advantage of greater interior light intensity. These greenhouses have higher air infiltration rate which leads to lower interior humidity and better disease prevention. Lean- to type, even span, ridge and furrow type of designs are used for constructionof glass greenhouse.

Fig. 17.10 Glass Glazing

b) Fiber glass reinforced plastic (FRP) glazing:

Polyvinyl chloride rigid panels, fiber glass-reinforced plastic, acrylic and polycarbonate rigid panels are employedas the covering material in the Quonset typeframes or ridge and furrow type frame. This material is more resistant to breakage and the light intensity is uniform throughout the greenhouse when compared to glass or plastic. High grade panels have long life even up to 20 years. The main disadvantage is that these panels tend to collect dust as well as to harbor algae, which results in darkening of the panels and subsequent reduction in the light transmission. There is significant danger of fire hazard.

Fig. 17.11 fiber glass reinforced plastic glazing

c) Net house:

Net houses are basically naturally ventilated climate controlled. Jain Net houses have a variety of applications, the majority being, growing of vegetables, floriculture,fruit crop growing for export market.

Fig. 17.12 Net House

Jain Net houses are built of a pre-galvanized channel cum tubular structure/ Tubular Structure wherein crops are grown under a favorable controlled environment and other conditions viz. temperature, humidity, light intensity, soil media, disease control, irrigation, Fustigation and other agronomical practices throughout the season irrespective of the natural conditions outside.

In conventional Agronomical practices, the crops are being grown / cultivated in the open field under natural conditions where the crops are more susceptible to sudden changes in climate i.e., temperature, humidity, light intensity, photo period and other conditions due to which the quality, yield of a particular crop can get affected and may be decreased.

d) Based on the cost of construction involved (which includes various factors mentioned from a to c)

1. High-cost Green House:

High level greenhouses have a wall height of at least 4 m with the roof peak being up to 8 m above ground level. These structures offer superior crop and environmental performance. High technology structures will have roof ventilation and may also have side wall vents. Cladding may be plastic film (single or double), polycarbonate sheeting or glass.

Fig. 17.13 High-cost green house

Environmental controls are almost always automated. These structures offer enormous opportunities for economic and environmental sustainability. Use of pesticides can be significantly reduced. High technology structures provide a generally impressive sight and, internationally, are increasingly being involved in agribusiness opportunities. Although these greenhouses are capital intensive, they offer a highly productive, environmentally sustainable opportunity for an advanced fresh produce industry. Investment decisions should, wherever possible, look to install high technology greenhouses.

Greenhouses vary in style, size and materials that are used to build it in order to fulfill any requirements and to suit any type of crop. The materials used to build the main structure of a greenhouse are timber, aluminum or steel. Timber frames are the traditional choice for garden greenhouses and hardwoods require low maintenance.

Aluminum alloy frames are more lightly, need only minimum maintenance but are extremely sturdy. Steel frames are very strong but must be treated regularly to prevent them from rust, but they are also cheaper than timber or aluminum frames. For glazing you can use glass or plastic panels. Size may also vary according to your necessities.

Many styles of greenhouses are available on the market, every one of them with specific qualities: some provide optimum ventilation, or best use of space, or conserve heat well or allow better light penetration but all of them are made in order to fulfil your personal preferences.

2. Medium cost Green House:

Medium level greenhouses are typically characterized byvertical walls more than 2m but less than 4 m tall and a total height usually less than 5.5 m. They may have roof or side wall ventilation or both. Medium level greenhouses are usually clad with either single or double skin plastic film or glass and use varying degrees of automation.

Medium level greenhouses offer a compromise between cost and productivity and represent a reasonable economic and environmental basis for the industry. Production in medium level greenhouses can be more efficient than field production. Hydroponic systems increase the efficiency of water use. There is greater opportunity to use non-chemical pest and disease management strategies but overall, the full potential of greenhouse horticulture is difficult to attain.

Fig. 17.14 Medium Cost Green House

3. Low-cost Green House:

These greenhouses are less than 3 m in total height. Tunnel houses, are the most common type. They do not have vertical walls. They have poor ventilation. This type of structure is relatively inexpensive and easy to erect. Little or no automation is used. While this sort of structure provides basic advantages over field production, crop potential is still limited by the growing environment and crop management is relatively difficult.

Low level greenhouses generally result in a suboptimal growing environment which restricts yields and does little to reduce the incidence of pests and diseases. Pest and disease control, as a result, is normally structured around chemical spray program Low technology greenhouses have significant production and environmental limitations, but they offer a cost-effective entry to the industry.

Fig. 17.15 Low-Cost Green House

❖ **ADVANTAGE OF GREEN HOUSE:**

- The yield may be 10-12 times higher than that of outdoor cultivation depending upon thetype of greenhouse, type of crop, environmental control facilities.
- Reliability of crop increases under greenhouse cultivation.
- Ideally suited for vegetables and flower crops.
- Year-round production of floricultural crops.
- Off-season production of vegetable and fruit crops.
- Disease-free and genetically superior transplants can be produced continuously.
- Efficient utilization of chemicals, pesticides to control pest and diseases.
- Water requirement of crops very limited and easy to control.
- Maintenance of stock plants, cultivating grafted plant-lets and micro propagated plant-lets.
- Hardening of tissue cultured plants
- Production of quality produce free of blemishes.
- Most useful in monitoring and controlling the instability of various ecological system.

Chapter 18

Social Activities – Any Activities Planned by Student

❖ Beti bachao beti padhavo:

Manu smriti has written – "Where women are respected, God resides there." But at present, it is happening in the opposite direction. Hon'ble Prime Minister Shri Narendra Modi launched a campaign dedicated to daughters on January 22, 2015, in Panipat, Haryana, called "Beti Bachao Beti Padhavo Abhiyan".

Our country, the number of women is decreasing compared to men. Between 0-6 years of age, the number of girls in the ration of 1000 boys is continuously declining from the year 1961. The number of girls is the year 1991 was 945 and in 2001 it decreased to 927 and in 2011 it was 918.

Fig. 18.1 Beti Bachao Beti Padhavo

This campaign has been started in 100 districts with low sex ratio. The main objectives of this campaign include the elimination of female feticide, increasing the level of girl child literacy, curbing prejudice of gender discrimination and awareness campaign, improving girl child nutrition and health level, opportunities for girls to go ahead and providing a safe environment, etc.

If the daughters of the country will not be safe and educated, the condition of the country and society will not change. It is not just a government scheme but the collective responsibility of every citizen of the country. If we do not be cautious today, we will invite a terrible crisis not only for our own generation, but also for the next generation.

❖ One-day Health Awareness / Education Camp:

Health is a causative factor that affects country's aggregate level of economic growth. Since development is a consequence of good health, even the poorest developing countries should make it a priority to invest in the health sector. Unfortunately, health hasbeen poorly invested in by countries with low human development, and the health sector still remains largely untapped and continues to suffer neglect.

India's rank in the Human Development Index Report 2018 (130 out of 189 countries) issued by the UNDP depicts the level of ignorance of the health sector in a country like India.

Fig. 18.2 Health Awareness Camp

❖ Swachata Abhiyan in Village:

Cleanliness is not a job which we have to do to earn money however, it is a very good habit which we should do to earn a good health and healthy life. Cleanliness is a greatest virtue which should be followed by everyone as a great responsibility to enhance the standard of life. We should take care of our personal cleanliness, pet animal cleanliness, environment cleanliness, surrounding cleanliness and work place cleanliness. We should not cut trees and do more plantations for maintaining the cleanliness of our environment.

Moti Parabadi have become Open defecation free village. In this village every house has Toilet.

The only Part at which it is lacking is the Drainage system which is still not implemented in the village.

The cleanliness of village needs more frequent approach. Fogging technology need to be used more frequently so the disease due to flies and mosquitoes get reduced.

Fig. 18.3 Swachata Abhiyan in Village

Chapter 19

MOTI PARABADI VILLAGE SAGY Questionnaire Survey formwith the Sarpanch Signature

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Moti Parabadi Gram Panchayat: Moti Parabadi Ward No. 5

Block: - District: Rajkot

State: Gujarat L S Constituency:

1. Family Identity and Size

Name of Head of Household	Videshbhai Giradharbhai Gohel.							Male/ Female	Male
SECC Survey ID:		Family Size	11	Over 18	7	6 to 18	4	Under 6	-

2. Category & Entitlement Details (Tick as appropriate)

Social Category[1]		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	Is any woman in the family member of an SHG? Yes / No	
PDS (If NFSA is implemented)		Annapurna	Antyodaya	Priority	Other		

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]
Kundanben Gohel	57	F	N	Y	-	Y	Y	N
Gautambhai Gohel	34	M	No	Yes	-	Y	Y	N
Hetalben Gohel	32	F	No	Yes		Y	Y	N

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
Bhargav Gohel	16	M	N	N		School	9th	N
Kumkum Gohel	8	F	N	N		"	6th	N
Foram Gohel	7	F	N	N		"	3th	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

[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*
[4] *Level of Education: Not Literate – 01, Literate – 02, Completed Class 5 - 03, Class 8th – 04, Class 10th-05, Class 12th-06, ITI Diploma-07, Graduate-08, Post Graduate/Professional – 09 (write the highest level applicable)*
[5] No Pension – 0, Old Age Pension – 1, Widow Pension – 2, Disability Pension – 3, Other Pension – 4 (mention)

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	No	No
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	No
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	Yes
Community Water Tap	Yes / No	No
Hand Pump (Public / Private)	Yes / No	No
Open Well(Public / Private)	Yes / No	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. Cultivable Area	
3. Irrigated Area		4. Uncultivable Area	

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
Do you use Chemical Insecticides	~~Yes~~/No
Do you use Chemical Weedicide	Yes/~~No~~
Do you have Soil Health Card	Yes/~~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
Peanuts	1 Hectare	3 bag

17. Livestock Numbers

Cows: 1	Bullocks: -	Calves: 1
Female Buffalo: -	Male Buffalo: -	Buffalo Calves: -
Goats/ Sheep: -	Poultry/ Ducks: -	Pigs: -
Any other: Type -		No. -
Shelter for Livestock: Pucca / Kutcha / None		
Average Daily Production of Milk(Litres):		

18. What games do Children Play
Video game in mobile

19. Do children play musical instrument (mention)
No

Schedule Filled By: Neha, Ankit
Principal Respondent:
Date of Survey: 25-6-21

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: Moti Parabadi

b. Block: _____

c. District: Rajkot

d. State: Gujarat

e. Lok Sabha Constituency: _____

f. Number of Wards in the Gram Panchayat: _____

g. Number of Villages in the Gram Panchayat: _____

h. Names of Villages: Moti Parabadi

Demographic Information

Number of Households 517 Total Population 2413 Male 1262 Female 1151

SC HHs 62 ST HHs 0 OBC HHs 368 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	No	
b.	Nearest Primary Health Centre (PHC)	Yes	
c.	Nearest Community Health Centre (CHC)	No	
d.	Nearest Post Office	Yes	
e.	Nearest Bank Branch (Any)	Yes	
f.	Nearest Bank with CBS Facility	No	
g.	Nearest ATM	Yes	
h.	Nearest Primary School	Yes	
i.	Nearest Middle School	No	
j.	Nearest Secondary School	No	
k.	Nearest Higher Secondary School / +2 College	No	
l.	Nearest Graduate College	No	
m	Nearest ITI / Polytechnic Centre	No	
n	Kisan Seva Kendra	No	

1

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	N	
p	MSP based Government Procurement Centre	N	
q	Milk Cooperative Collection Centre	YES	
r	Veterinary Care Centre	N	
s	Ayurveda Centre	N	
t	E Seva Kendra	N	
u	Bus Stop	YES	
v	Railway Station	N	
w	Library	N	
x	Common Service Centre	NO	

IV. Sports Facilities in the Gram Panchayat

a. Number of Play Grounds in the GP: Total 00 Public NO Private NO

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

V. Education, ICDS

a. Number of Angan Wadi Centres: 1

b. Number of villages without Angan Wadi Centres -

Names of such villages: -

c. Schools (Number)

Primary Private: 0 Primary Govt.: 1

Middle Private: 0 Middle Govt.: 0

Secondary Private: 0 Secondary Govt.: 0

Higher Secondary Private: 0 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)			NO	(Gondl Parabadi)			
b.	Kerosene			NO				
c.	Other (mention)			NO				

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		
b.	Hand Pump Coverage in Villages:	Covered ✓ / Not Covered Not		
c.	Coverage under Covered Drains:	Covered / Not Covered Not		
d.	Coverage under Open Drains:	Covered / Not Covered Not		
e.	Villages with Household Electricity Connection (Numbers)	Connected ✓ / Not Connected		

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	No
b.	Irrigated Land		e.	Forests/ Plantations		h.	Wells/Bore Wells	✓ 1
c.	Un-irrigated Land		f.	Other Common Land		i	Tanks /Ponds	1 Jam K

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

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)	
b)	Number of Households receiving pension (old age, widow, disability)	
c)	Number of eligible Households who are not receiving pension	
d)	Number of Households eligible for Ration Card	
e)	Number of eligible HHs having ration cards	
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	
k)	Number of BPL families	
l)	Number of landless households	
m)	Number of IAY beneficiaries	
n)	Number of FRA[2] beneficiaries	
o)	Number of Community Sanitary Complexes	
p)	Number of Households headed by single women	
q)	Number of Households headed by physically handicapped persons	
r)	Total number of Persons with Disability in the village	
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'

Neha Solanki Ankit Ratolisa Surveyor	PRI Respondent (Preferably Gram Panchayat Chairperson)	મોટી પરબડી ગ્રામ પંચાયત Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	26-6-21 Date of Survey

[2] The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

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: Moti Parabadi

b. Ward Number: _____

c. Gram Panchayat: Moti Parabadi

d. Block: _____

e. District: Rajkot

f. State: Gujarat

g. Lok Sabha Constituency: _____

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

i. Names of Habitations / Hamlets:

Demographic Information

Number of Households 517 Total Population 2413 Male 1262 Female 517

SC HHs 62 ST HHs 0 OBC HHs 1368 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	Yes	
b.	Nearest Middle School	No	
c.	Nearest Secondary School	No	
d.	Kisan Seva Kendra	No	
e.	Milk Cooperative /Collection Centre	Yes	
g.	Health Sub Centre	No	
h.	Bank	Yes	
i.	ATM	Yes	
j.	Bus Stop	Yes	
k.	Railway Station	No	

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

1

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	N	-
m	Common Service Centre	N	-
n	Veterinary Care Centre	N	-

ii. Road Connectivity

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

If 3 mention the name of the habitations where not available: None

iii. Drinking Water Facilities

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

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

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: 3 *(1-All 2-None 3-Some)*

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

b. Coverage under Open Drains: _____ *(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)*

If 3 mention the name of the habitations not covered: 2 - None

v. Coverage of Habitations under Electrification

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

If 3 mention the name of the habitations not covered: 1. All

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

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

vi. Sports Facilities in the Village

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

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

vii. Education, ICDS

a. Number of Anganwadi Centres: 2 NO

c. Schools (Number)

Primary Private: YES Primary Govt.: ____

Middle Private: YES Middle Govt.: _____

Secondary Private: _____ Secondary Govt.: _____

Higher Secondary Private: NO Higher Secondary Govt: NO

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	No
b.	Irrigated Land		e.	Forests/ Plnatations		h.	Wells/Bore Wells	1
c.	Un-irrigated Land		f.	Other Common Land		I	Tanks /Ponds	Tank 1

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	
4	Number of BPL families	
5	Number of landless households	
6	Number of IAY beneficiaries	
7	Number of FRA beneficiaries	
8	Number of common sanitation complexes	
9	Number of SHGs	
10	Number of active SHGs	
11	Existence of SHG Federation in the Village (Yes / No)	
12	Number of Youth Clubs	
13	Number of Bharat Nirman Volunteers	

Name and Signature of Surveyor and Respondent'

- Neha Solanki - Ankit Pabodiya		સરપંચ મોટી પરબડી ગ્રામ પંચાયત	26-06-2021
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

Chapter 20

TDO-DDO-Collector email sending soft copy attachment inthe report

Gmail Ankit Patoliya <ankitpatoliya8@gmail.com>

(no subject)
1 message

Ankit Patoliya <ankitpatoliya8@gmail.com> Thu, Aug 5, 2021 at 6:20 PM
To: tcm.motiparbadi@gmail.com

Dear Sir,

I am Patoliya Ankit and Solanki Neha, Student of Civil Engineering at Om Engineering College, Junagadh. I am sending this email with the attached soft copy Report of Moti Parabadi Village, Which is Part of our undergraduate final year semester Project and Vishwakarma Yojna phase VIII. Please find the attachments.

MOTI PARABADI FINAL REPORT.pdf
9964K

Chapter 21

Comprehensive report for the entire village

- As per the guideline of Vishwakarma yojana VIII we visited Moti Parabadi village is a Dhoraji taluka in Rajkot district of Gujarat state, India.
- Moti Parabadi is a Village in Dhoraji Taluka in Rajkot District of Gujarat State, India. It is located 89 KM towards South from District headquarters Rajkot. 11 KM from. 332 KM from State capital Gandhinagar.
- To know or to understand the actual necessities of village and interact with Sarpanch, Talati and other village dowelled.
- Techno-economic surrey forms give much information about village by interacting with Sarpanch and Talati. But interactions with village dealers and observation of village condition are required.
- We visited all the internal part of the village and interacted with villagers directly and ask them about the present situation of village. We conducted a techno-economic the gap analysis and provide the necessary facilities to village. We saw that as per UDPEI Norma there are some non-adequate facilities.
- We provide Bio-gas Plant, Bus-Stand, Public-toilet, Community Hall and Library, P H C. We explained all the parameters of various design such as sustainable, physical, social, socio-culture, smart and heritage village design.
- Our team of VY thanked all the member of the village for their support during this work period and made than understand that the implantation of such facilities can build implantations of such facilities can build a better village and hence lead to build a strangulation.
- The presentation was very much interactive and helpful to understand various amenities to be designed at village level for me overall development of the Moti Parabadi village as Rurbanisation.
- Social facilities are the basic needs which is necessary to develop a community in a well manner. In the Moti Parabadi, social facilities like school, health facilities, etc.
- In the village, there are many houses which have not toilet blocks included. So that it is advisable to provide a common public toilet block in village. In Moti Parabadi, there is already an existing toilet block, but it is not in well condition so people refuse to use it.

- In this time, everyone is living in high mind stress. So, there should be some amenities which are useful for the refreshment like Garden. Thus, to maintain the health and mind fresh of the villagers, we proposed the design of Garden. It will help the villagers to be fresh.

- There should be a stable design selected which can help the village to develop properly with low expense and high quality. By providing all these amenities, village will move forward in the direction of the development and by which the development of the villagers will be held.

- Proper disposal of this waste is necessary for the village. A waste is a non-functional thing, but if we utilize it properly, we can dispose it with little bit income from it. This little income can also give its big help to Gram Panchayat to develop the village.

After observation and primary and secondary survey village requirement based on present and future:

- The village requires some repairing work to government building and schools.
- The present roads are in not good condition and most of them have to rebuilt in future.
- In the future village require water treatment plant and the other necessary equipment's because they used water from outsource from check dam or river which generally require treatment.
- Rain water harvesting system for government buildings should be implement in the village for developing of village.
- Street lights are required in the village at most of the places for better transportation and other facilities.
- The village require at least on fire station in the future.
- Any kinds of awareness programme are not held at the village. The awareness programme regarding to health, social and other should be done in this village for developing people and community as a whole.

- By implanting given design proposals, all the missing amenities can be provided which will stop the migration of rural people towards the urban area which will in turn reduce pressure on cities.

- The amenities designed under this Vishwakarma project phase viii will be helpful for better development of the village as physically as well as socially, which improves the overall lifestyle of people along with nation with preserving nature bit by bit.