DETAIL PROJECT REPORT

"VISHWAKARMA YOJANA: AN APPROACH TOWARDS RURBANISATION FOR VADPURA VILLAGE, MEHSHANA DISTRICT"

Civil Engineering Department

PREPARED BY

NAME OF TEAM MEMBERS	BRANCH NAME	ENROLMENT NUMBER
Jaimin N Joshi	Civil Engineering	180393106001
Chirag H Panchal	Civil Engineering	180393106006

NODAL OFFICERS NAME
Prof. Rajat Mishra
Civil Engineering Department

S. P. B. PATEL ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

YEAR:2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmadabad– 382424 Gujarat

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Gujarat Technological University,
Chandkheda, Ahmedabad– 382424 Gujarat

CERTIFICATE

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

Detail Project Report for,

VILLAGE: VADPURA

DISTRICT: MAHESANA

Under

Vishwakarma Yojana: Phase-VIII

In partial fulfillment of the project offered by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

During the academic year 2020-21

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

Date of Report Submission:	**10/11/2020**
Principal Name and Signature:	**Dr. N.K Serasiya**
VY-Nodal Officer Name and Signature:	**Prof. Rajat Mishra**
Internal (Evaluator) Guide Name and Signature:	**Prof. Rajat Mishra**
College Name:	**S.P.B.PATEL ENGINEERING COLLAGE**
College Stamp:	

ABSTRACT

"My vision for the Gujarat state is to urbanize rural area. What amenities are available in the cities must be available in the villages." Our allocated village is Vadpura. According to Census 2011 information the location code or village code of Vadpura village is 509618. Vadpura village is located in Kadi Taluka of Mehsana district in Gujarat, India. It is situated 15km away from sub-district headquarter Kadi and 27km away from district headquarter Mehsana. As per 2009 stats, Vadpura Kaiyal is the gram panchayat of Vadpura village. Vadpura has a total population of 967 peoples. There are about 197 houses in Vadpura village. Kadi is nearest town to Vadpura which is approximately 15km away. There are many facilities in the village, like health center, proper roads, closed drainage system, electricity, garden, dairy and overhead tank for daily use, village have good condition of panchayat building. Village has connected with good weather road.

We decide to propose a design of educational building (primary school) and community hall for villagers also decide to manage solid waste for creating hygiene and healthy environment as per survey and gap analysis. We conclude that the basic amenities and facility are not available in a village and give a proposal of those basic amenities which are useful and help in a development of village.

The primary area to improve should be providing employment in rural areas. Often villages in our countries are not in sync with the urban areas because of bad connectivity. Eventually, this leads to segregation and a social divide between urban and rural areas. In essence, the infrastructure of rural areas should drastically improve. Quality education can help in achieving the goal of eradication of such social evils. The dwindling literacy rates in rural India, especially for females. It can be easily concluded, that for the development of an economy in both rural and urban areas need to be focused upon. Rural areas need drastic changes in areas like infrastructure, literacy, poverty etc.

The schemes that are already in place with the aim of rural development need a new outlook and proper updating. Accordingly, the government needs to act for the upliftment of rural India.

Key Words: Education, Solid waste management, Environment, Rurbanization, reduce migration

ACKNOWLEDGEMENT

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

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

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

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

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

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

An act of gratitude is expressed to our internal guide / Evaluator / Nodal Officer **Prof. Manan Mori** from college **S.P.B.PATEL.ENGINEERING COLLAGE** for their invaluable guidance, constant inspiration and active involvement in our project work.

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

We are also thankful to **Ms. Darshana Chauhan, Vishwakarmrma Yojana**, for all support during our work. We therefore, take this opportunity for this Project work expressing our deep gratitude and sincere thanks for her cooperation to produce this project work in the present form.

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

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ABBREVIATIONS

SHORT NAME / SYMBOL	FULL NAME
VY	Vishwakarma Yojana
GTU	Gujarat Technological University
TDO	Taluka Development Officer
DDO	District Development Officer
PIF	Physical Infrastructure Facility
SIF	Social Infrastructure Facility
UDPFI	Urban Development Plans Formulation and Implementation
RURBAN	Rural and Urban
RCC	Reinforced concrete structure
WBM	Water Bound Macadam
BM	Brick Masonry
D	Door
W	Window
V	Ventilation
WC	Water Closet
O	Opening
GDP	Gross Domestic Product
SAGY	Sansad Adarsh Gram Yojana
NH	National Highway
SH	State Highway
ODR	Other district roads
MDR	Major district Road
SBA	Swatch Bharat Abhiyan
NGO	Non-Governmental Organization
SWOT	Strength, Weakness, Opportunity, Threats

CHAPTER: 01
1. Ideal Village (Punsari Village – Civil Concept)

1.1 Background & Study Area Location

- **Punsari** is a village located in Sabarkantha district in the state of Gujarat, India. Punsari is considered as India's smartest village. The village is located at about 80km from the state capital, Gandhinagar. Punsari is 20km from Parvati Hills. Parvati Hills is the largest table top land of India. The village follows the Panchayati raj system. The village extent is about 65 km. The land in use of agriculture is 6 hectares. The main non farming activity is dairy in this village. The village has undergone a transformation under the panchayat. There has been use of new and advanced technology in education. This village has Wi-Fi connection for all people. Efforts have been made for the empowerment of women and increasing security in the village. Some of the facilities provided by the panchayat include local mineral water supply, sewer & drainage project, a healthcare Centre, banking facilities and toll-free complaint reception service. Consequently, Punsari received the award of being the best Gram Panchayat in Gujarat. The village's model has been appreciated by delegates from Nairobi and they are keen to replicate this in Kenyan villages.

Figure 2Village map of Punsari

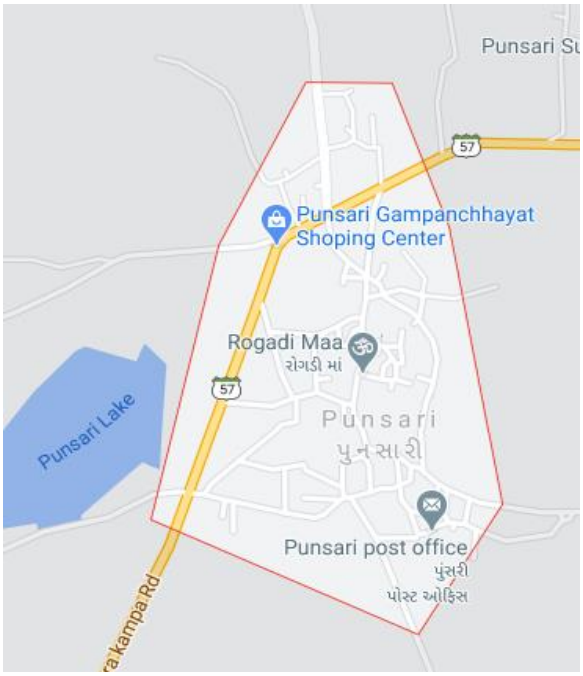


Figure 1 Village map

Table 1 Location of study area

Location of Study Area	
Village Name	Punsari
District	Sabarkantha
Taluka	Sabarkantha
State	Gujarat, India
Distance From Gandhinagar	80kms
Pin code	383307`
Coordinates	23°20′59.46″N 73°8′12.48″E
Population (2011)	5500

1.2 Concept: Ideal Village, Normal Village

1.2.1 Objectives

- To Provide awareness about government schemes & policies to farmers.
- To Provide urban amenities to improve the quality of life in rural areas.
- To Create and sustain a culture of cooperative living.
- To provide Functional solid / liquid waste management system.
- To provide 100% institutional delivery.
- To provide Wi-Fi connectivity in the entire village.

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

1. **Sokhda:** According to Census 2011 information the location code or village code of Sokhda village is 519828. Sokhda village is located in Vadodara Tehsil of Vadodara district in Gujarat, India. It is situated 12km away from Vadodara, which is both district & sub-district headquarter of Sokhda village. As per 2009 stats, Sokhda village is also a gram panchayat. The total geographical area of village is 1180.14 hectares. Sokhda has a total population of 12,610 peoples. There are about 2,454 houses in Sokhda village. Ranoli is nearest town to Sokhda which is approximately 8km away.

2. **Chansad (Vadodara):** Chansad village located in Vadodara district (Gujarat). chansad village is first in Vadodara to updation of urban elements in rural area. chansad village is located 26 km from Vadodara district. chansad village won a prize in fastest growing village in Vadodara. population of this village is 2775.

3. **Kolavada:** Kolavada are located in Gandhinagar (Gujarat). kolavada is first smart Village of Gandhinagar district. Kolavada village the facility of road and water supply are awesome. physical infrastructure condition is good. This village clean and literacy of village up to 85 %. kolavada village is located 3.7 km from Gandhinagar.

4. **Hiware Bazaar:** Hiware bazaar village in the Ahmednagar District of Maharashtra, India. It is noted for its irrigation system and water conservation program, with which it

has fought the drought and drinking water problems. Village continuously faced a problem of water crisis then villager change an agriculture to horticulture and at present village have 54 millionaires in village.

5. **Odanthurai (Tamil Nadu):** Odanthurai, a panchayat situated in Mettupalayam Taluka of Coimbatore district, has been a model village for the other villages for more than a decade. The panchayat has not only been generating electricity for their own use, but also selling power to Tamil Nadu Electricity Board. Having already won international acclaim through its unique welfare schemes and energy self-sufficiency drives, Odanthurai near Mettupalayam has begun efforts to develop a corpus of Rs 5 crores to install wind and solar energy farms. This project will enable free supply of electricity to over 8,000 residents.

1.2.3 The Idea of a model/Smart Village

- The concept of smartness is popular in respect and honor of human development regardless of rural or urban area, literate or illiterate in all country and India is not omission to it. The ideas of smart village will also attention to multiple challenges such as unplanned urbanization, under development of village and smart villages.

- In smart village access sustainable energy services acts as a catalyst for development – enabling the provision of good education and health care, access to clean water, sanitation and nutrition, the growth of productive enterprise to boost income and enhanced security.

1.2.4 Ancient History Civil about Indian Village / other Countries Perspective about village and its new Development

The village in India holds a unique place, both in the social and economic spheres. There were 212.6 million people living in rural areas in 1901, in 2001 rural population has increased to 721.1 million naturally the density of population has increased, land under agriculture has diminished, affected the forests and exodus to urban areas accelerated agricultural labor continued to be exploited. The phenomenon of Rural Development is becoming more and more complex despite technological advancement and availability of resources as well as continued efforts from the pre independence period. Rural Development has a long history in India.

There are various approaches, strategies, philosophies, policies, programmers, enactments, efforts, experiments, methodologies, which needs to be studied and analyzed to understand the Rural Development. Present chapter is an attempt to discuss historical analysis of Rural Development programmer's right from pre-independence

period to present period until 2009 – 10. Starting with the conceptual clarity from national and international perspectives

This chapter gives the historical background of Rural Development from the pre independence period. It describes the review of various experiments in the pre- and post-independence period. It gives brief detail of Gandhi an ideas and contribution in the area of rural development. There is analytical description of five-year plans, major schemes and performances of Rural Development. The chapter includes major issues of Rural Development.

- **India:**

The soul of India lives in its villages," declared M. K. Gandhi at the beginning of 20th century. According to the 2011 census of India, 68.84% of Indians (around 833.1 million people) live in 640,867 different villages.

The size of these villages varies considerably. 236,004 Indian villages have a population of fewer than 500, while 3,976 villages have a population of 10,000+. Most of the villages have their own temple, mosque, or church, depending on the local religious following.

1.3 Detail study (Socio economic, physical, demographic and infrastructure details) of Ideal village / Smart Village with photograph

1.3.1 Socio Economic

Table 2 Socio economic

Name of Three Major Occupation groups in Village	1. Farming
	2. Dairy Udhyog
	3. Labor Work
Major crops grown in the village	1. Wheat
	2. Cotton
	3. Potato

1.3.2 Physical and Demographic

- The population of Punsari was 5500 as per 2011 census of India which has increased to 5500 in 2011.
- As of June 2012, the population is 6000.

1.3.3 Infrastructure Facilities








Figure 3Infrastrucure facilities

1.4 SWOT analysis of Ideal village / Smart Village

Table 3SWOT analysis

Sr No.	strength	weakness	opportunity	Threats
1	Proper drainage facilities	No recreation facilities	To make a village with full industrial 100 % employment	Lack of funds and technical knowledge in agricultural fields
2	Proper solid waste management	No public library	To rise the living standards of people	Out migration especially of young people
3	Wi-Fi connectivity	Poor quality of constructors' work	To make whole village digital	Fuel poverty

1.5 Future prospects of Development of the Ideal village / Smart Village

- After successfully serving for two terms as village headman, Himanshu Patel stepped down from the post since this time it was reserved for a female candidate. He now wants to focus on preparing a team of young local level leaders who are not only from his own state but from across the country. He has already networked with a thousand such young village headmen from different corners of India, cutting across party ideologies.

1.6 Benefits of the visits of Ideal village / Smart Village

- We saw many types of amenities available in the village.
- We discussed the good and bad thing about village from village people.
- Know about a behavior of different village people.
- To know the strength and weakness of village.
- We see some different type of little requirements of village.

1.7 Civil aspects required in Ideal village / Smart Village

- We making smart village by taking smart decisions using smart technologies and services like variety of tools in the course of their work, including computers, distance meters, levels, tape measures, traffic counters, and software, such as analytical or scientific, computer-aided design (CAD)

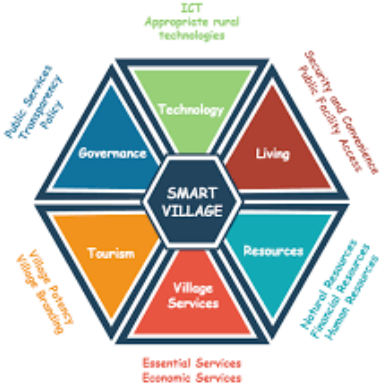


Figure 4Smart Chart

CHAPTER: 02
2. Literature Review – (Civil Concept)

2.1 Introduction: Urban & Rural

- Urban Area: An urban area is the region surrounding a city. Most inhabitants of urban areas have nonagricultural jobs. 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.
- Rural area: A rural area is an open swath of land that has few homes or other buildings, and not very many people. A rural areas population density is very low. Many people live in a city, or urban area. Their homes and businesses are located very close to one another.

2.2 Importance of the Rural development

Rural development has assumed greater importance in India today than in the earlier period in the process of the development of the country. It is a strategy package seeking to achieve enhanced rural production and productivity, greater socio-economic equity, and aspiration, balance in social and economic development.

2.3 Ancient Villages / Different Definition of: Rural Urban Villages

In ancient time villages were a usual form of community for societies that practice subsistence agriculture, and also for some non-agricultural societies. A village is a clustered human settlement or community, larger than a hamlet but smaller than a town, with a population ranging from a few hundred to a few thousand. Although many patterns of village life have existed, the typical village is often small, consisting of perhaps 5 to 30 families. Rural area settlements are based more on natural resources and events.

Planning Commission: Defines A rural area is a town with a maximum population of 15,000 is considered rural in nature.

National geographic society: Defines A rural area is an open swath of land that has few homes or other buildings and not very many people.

United States development of agriculture: Defines rural areas as any area other than a city or town that has a population of greater than 50,000 inhabitants and the urbanized areas contiguous and adjacent to such town or a city.

2.4 Scenario: Rural / Urban village of India population Growth

The population of India is projected close to 1.380 billion or 1,380 million or 138 crores people in 2020. The total population in India is estimated at 1.366 billion or 1,366 million or 136.6 crores people in 2019.

There are 71.7 cr males and 66.3 cr females living in India. India is the second most populous country in the world behind China. It is now estimated that by 2027, India will most likely overtake China to become the most populous country in the world with 1.47 billion people. And by 2030, India will cross the 1.5 billion milestones. India's population will peak in 2059 with 1.65 bn people.

India accounts for a meager 2.4 percent of the world surface area yet it supports and sustains a whopping 17.7 percent of the world population. Since Population of India is increasing with slower rate than the world, its global share is decreasing.

By 2100, 13.34% of the earth population will be in India that is 4.42% less than the peak level of 17.76% in 2013.

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

Out of total population of Gujarat, 42.60% people live in urban regions. The total figure of population living in urban areas is 25,745,083 of which 13,692,101 are males and while remaining 12,052,982 are females.

The urban population in the last 10 years has increased by 42.60percent. Sex Ratio in urban regions of Gujarat was 880 females per 1000 males.

For child (0-6) sex ratio the figure for urban region stood at 852 girls per 1000 boys.

Total children (0-6 age) living in urban areas of Gujarat were 2,952,359. Of total population in urban region, 11.47 % were children (0-6).

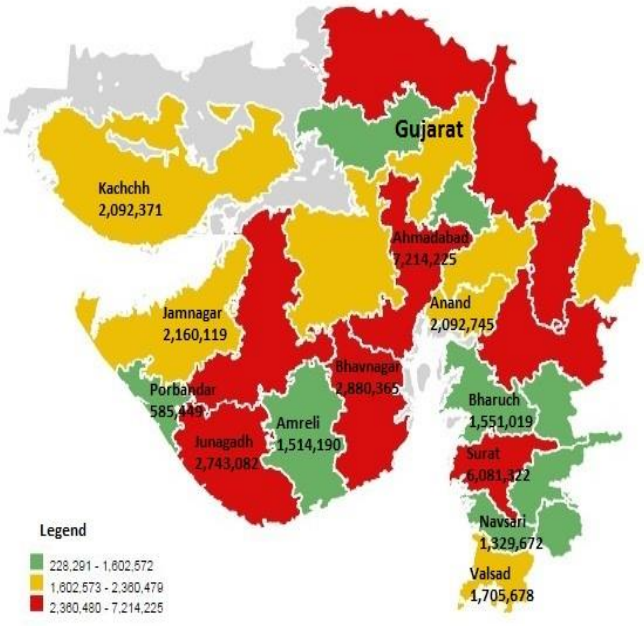


Figure 5 Scenario

Average Literacy rate in Gujarat for Urban regions was 86.31 percent in which males were 90.98% literate while female literacy stood at 70.26%. Total literates in urban region of Gujarat were 19,672,516.

2.6 Rural Development Issues - Concerns – Measures

The major problems consist of the agriculture, the ownership of the land, the lack of cottage industries, lack of education social evils, death of animal, wealth, bad wealth and so on. These problems are the result of traditionalism and conservatism of the Rural Society.

Problem:

1. Poor related problem:
   - Low level education to understand development effort and new technology.
   - Lack of confidence.
   - Poor awareness.

2. Agriculture related problem:
   - Lack of expected awareness, knowledge, skill and attitude.
   - Unavailability of inputs
   - Poor marketing facility

3. Infrastructure related problem:
   - Water supply
   - Electricity
   - Transport
   - Education institutions
   - Communication
   - Health
   - Employment
   - Storage facility

4. Economic problem:
   - Un favorable economic condition to adopt high cost technology
   - High cost of inputs
   - Under privileged rural industries

5. Leadership related problem:
   - Leadership among the hand of inactive and incompetent people
   - Self-interest of leaders

6. Administrative problem:
   - Political interference
   - Lack of motivation and interest
   - Improper utilization of budget

2.7 Various guideline / Norms for villages the provisions Different infrastructure facilities

Table 4 Various guideline

Village Facilities	Planning Commission/UDPFI Norms	Required as per Norms
Social Infrastructure Facilities		
Education		
Anganwadi	Each or Per 2500 population	1
Primary School	Each Per 2500 population	1
Secondary School	Per 7,500 population	0
Higher Secondary School	Per 15,000 Population	0
College	Per 125,000 Population	0
Tech. Training Institute	Per 100000 Population	0
Agriculture Research Centre	Per 100000 Population	0
Skill Development Center	Per 100000 Population	0
Health Facility		
Gov/Panchayat Dispensary or sub PHC or health center	Each Village	1
Primary Health & Child Health Center	Per 20,000 population	0
Child Welfare and Maternity Home	Per 10,000 population	1
Multi specialty Hospital	Per 100000 Population	0
Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum pockets & kutcha house)	1
Physical Infrastructure Facilities		
Transportation		
Pucca Village Approach Road	Each village	1
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	BUS STAND

Drinking Water (Minimum 70 lpcd)		1
Over Head Tank	1/3 of Total Demand	1
U/G Sump	2/3 of Total Demand	1
Drainage Network - Open		1
Drainage Network - Cover		1
Waste Management System		1
Socio- Cultural Infrastructure Facilities		
Community Hall	Per 10,000 Population	1
community hall and Public Library	Per 15,000 Population	0
Cremation Ground	Per 20,000 Population	1
Post Office	Per 10,000 Population	1
Gram Panchayat Building	Each individual/group panchayat	1
APMC	Per 1,00,000 Population	0
Fire Station	Per 1,00,000 Population	0
Public Garden	Per Village	0
Police post	Per 40,000 Population	0

2.8 Literature Review:

2.8.1 Literature Review – Research Paper (Studied by Jaimin Joshi 01)

Table 5Research paper

Authors	Raj Parmar, Dr Arti Pamnani
Title	Revolution in Rural India through Solid Waste Management
Year	FEB/2018
Affiliation	International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE)
Volume	05
Key words	Rural solid waste management, Vermi composting, Gram Panchayat, Door to door collection, Environmental Hazards.

Problem definition of this research paper (work):

To develop functional solid waste management system for dispose generated solid waste to the dumping yard by the method of door to door collection, Dustbin etc. it will decrease the amount of waste on streets and also decrease the rate of disease related to it.

What: To develop functional solid waste management system.
Why: dispose generated solid waste to the dumping yard

How: door to door collection, Dustbin
Outcome/Features/Originality: decrease the amount of waste on streets and also decrease the rate of disease

Objectives of this research paper (work):

Objective 1: To manage Solid Waste from village using door to door waste collection, tipper and tractor directly transport the waste to disposal site after collection of waste for protection of the environment and the health of the population also rate of the disease will be decrease.

What: To manage Solid Waste
Why: for protection of the environment and the health of the population
How: using door to door waste collection, tipper and tractor
Outcome/Features/Originality: rate of the disease will be decrease.

Objective 2: To increase the environment protection by the Educating people will help to increase awareness among the society about solid waste disposal and management and understand the importance of better solid waste management for composting, reuses& recycle of the waste

What: To increase the environment protection
Why: to increase awareness among the society about solid waste disposal and management and understand the importance of better solid waste management
Ho: by the Educating people
Outcome/Features/Originality: composting reuses& recycles of the waste

Objective 3: To growing Vermicomposting plant for generate more useful fertilizer, by Vermicomposting method, These are used as fertilizers and enhance soil quality. In addition, the amount of nitrogen and phosphorus in the vermicompost was more than that in aerobic compost, making it more appropriate for plant growth will decrease the load on land filling.

What: To growing Vermicomposting plant
Why: generate more useful fertilizer
How: by Vermicomposting method
Outcome/Features/Originality: decrease the load on land filling

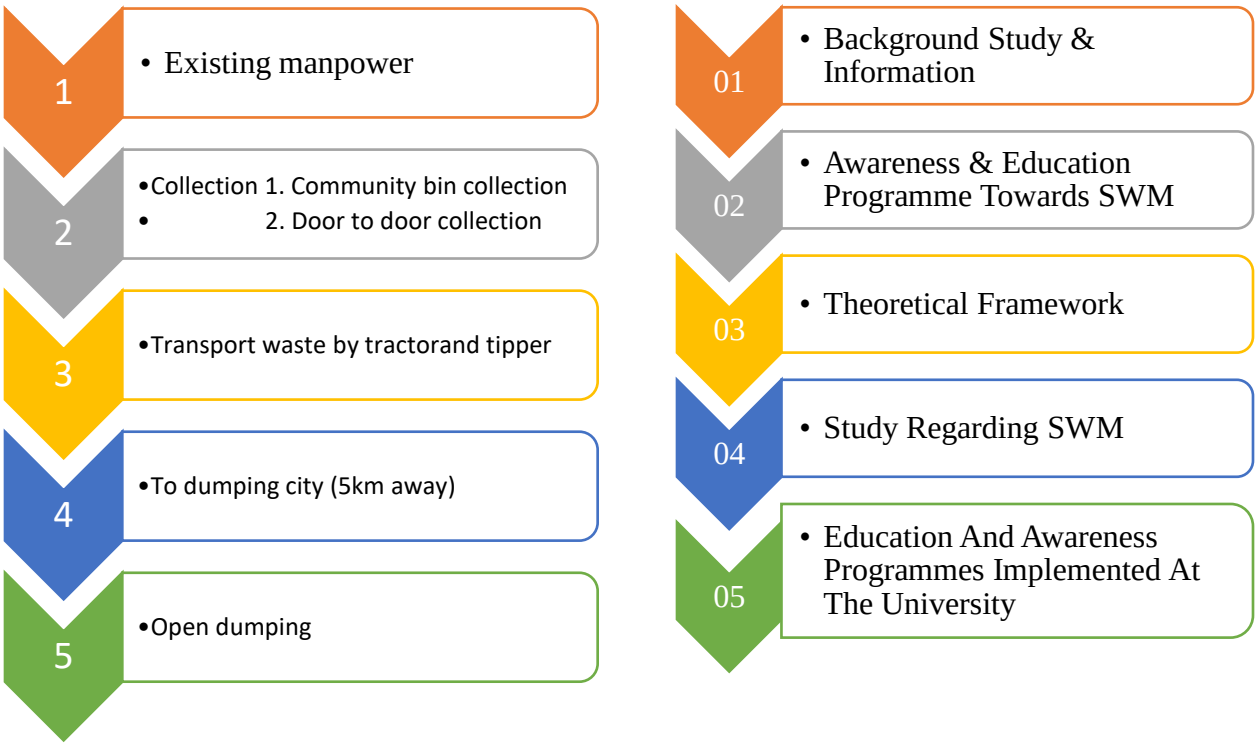
Solution offered by the paper (work):

In Proper Collection of waste will decrease the amount of waste on streets and also decrease the rate of disease related to it.

Future scope of this research paper (work):

The waste generated in the village was used as domestic fuel, animal feeder and organic fertilizer for crop production. Also, in many parts of the nation recycling or reusing of the organic waste has been started. Easily job available for manual Labour are available for required solid waste management.

Methodology of this research paper (work):



2.8.2 Literature Review – Research Paper (Studied by Jaimin Joshi 02)

Table 6Research paper2

Authors	Ritu Chandra
Title	Role of Education in Rural Development
Year	FEB/2018
Affiliation	International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE)
Keywords	Education, Rural Development
Volume	02

Problem definition of this research paper (work)

To develop rural Education for the process of improving the quality of life and economic well-being of people living in relatively isolated and sparsely populated areas by the government for providing education to every child up to the eighth standard, free of cost.

What: To develop rural Education.

Why it has been done: for the process of improving the quality of life and economic well-being of people living

How it has been done: By the government

Outcome/Features/Originality: providing education to every child up to the eighth standard, free of cost.

Objectives of this research paper (work):

Objective 1: To providing trained manpower in rural areas for increasing labour force productivity, and developing leadership in rural area by the government process of improving the quality of life and economic well-being of people living in relatively isolated and sparsely populated areas.

What has been done to achieve the objective: To providing trained manpower in rural areas
Why it has been done: increasing labour force productivity, and developing leadership
How it has been done: government process of improving the quality of life
Outcome/Features/Originality: relatively isolated and sparsely populated areas.
Objective 2: To provide high education for providing education to every child up to the eighth standard, free of cost, irrespective of class and gender, for increase the education rate in rural area by government and its emphasis on profession based vocational training.

What has been done to achieve the objective: To provide high education.
Why it has been done: for providing education to every child up to the eighth standard, free of cost, irrespective of class and gender,
How it has been done: by Government.
Outcome/Features/Originality: by government and its emphasis on profession based vocational training
Objective 3: To environment awareness, science and technology education, and introduction by The National Policy on Education (NPE)for increase the knowledge, its emphasis on profession based vocational training to help students attain skills for finding a vocation of his/her choosing.

What has been done to achieve the objective: To environment awareness, science and technology education, and introduction
Why it has been done: for increase the knowledge.
How it has been done: by The National Policy on Education (NPE).
Outcome/Features/Originality: its emphasis on profession based vocational training to help students attain skills for finding a vocation of his/her choosing.

Solution offered by the paper (work):

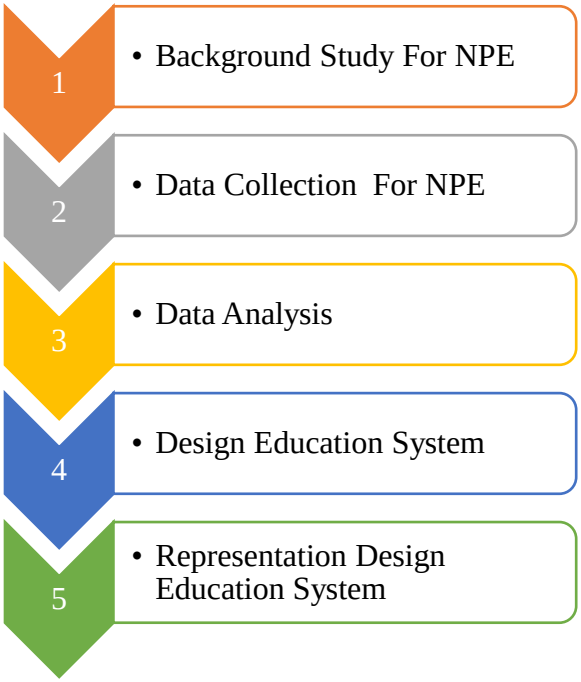
Education has a key role in rural systems of supply, production, marketing, personnel maintenance, education, health care, and governance. By the Government will be responsible for providing education to every child up to the eighth standard, free of cost, irrespective of class and gender

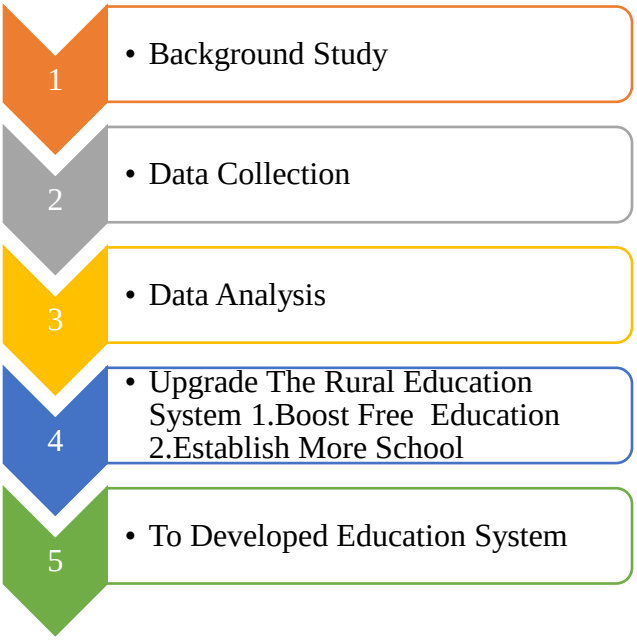
Future scope of this research paper (work):

To increases the high education in village development
Providing employment and income opportunities, increasing labour force productivity, and developing leadership.

Methodology of this research paper (work):

OBJECTIVE 1





2.8.3 Literature Review – Research Paper (Studied by Jaimin Joshi 03)

Table 7 Research paper3

Authors	Swapnil B. Kale, Kiran R. Varpe, Rohit S. Chothave, Khushal S. Borse,Prof. P.H. Khairnar
Title	THE DEVELOPMENT OF VILLAGE (Smart Sustainable Village for Community)
Year	March-2017
Affiliation	International Journal of Advance Research Sciences and Engineering (IJARSE)
Keywords	06
Volume	Smart village, Atmosphere, rural area.

Problem definition of this research paper (work):

To the development smart sustainable village by the Gujarat Government to various program and scheme for development, enabling E-education and local market opportunities, improving health and welfare problem, Communication, Information Technology has proved its potential in various sectors of development in city and village areas.

What: To the development smart sustainable village.

Why: for development, enabling E-education and local market opportunities, improving health and welfare problem, Communication, Information Technology

how: by The Gujarat Government to various program and scheme

Outcome/Features/Originality: it's potential in various sectors of development in city and village areas.

Objectives of this research paper (work):

Objective 1: To Providing effective agriculture methods and marketing facilities by The Gujarat Government to various program and scheme for smart Village to increase facilities are provide and improve and make a smart village help to adopt new technology

What: To Providing effective agriculture methods and marketing facilities.

Why: to increase facilities are provide and improve and make a smart village.

How: By the Gujarat Government to various program and scheme for smart Village.

Outcome/Features/Originality: to adopt new technology

Objective 2: To Proving basic health facilities in Health care centre by The Gujarat Government to various program and scheme for smart Village for increase Life style of village peoples, this facility is providing, improve and make a smart village.

What: To Proving basic health facilities in Health care centre.

Why: by the Gujarat Government to various program and scheme for smart Village.

How: for Increase Life style of village people.

Outcome/Features/Originality: so these facilities are providing and improve and make a smart village.

Objective 3: To Providing appropriate Education system, by government for increase the taking advance method of education, training for youth generation, etc.

What: To Provide appropriate Education system

Why: increase the taking advance method of education, training

How: by government.

Outcome/Features/Originality: for youth generation, etc.

Solution offered by the paper (work):

Increase the Taking advance method of education, training for youth generation, etc. An educated youth migrate in cities and being tried to prove itself as perfect in field without any burden. And at most the overall development of the country can be possible with the development of the villages only.

Future scope of this research paper (work):

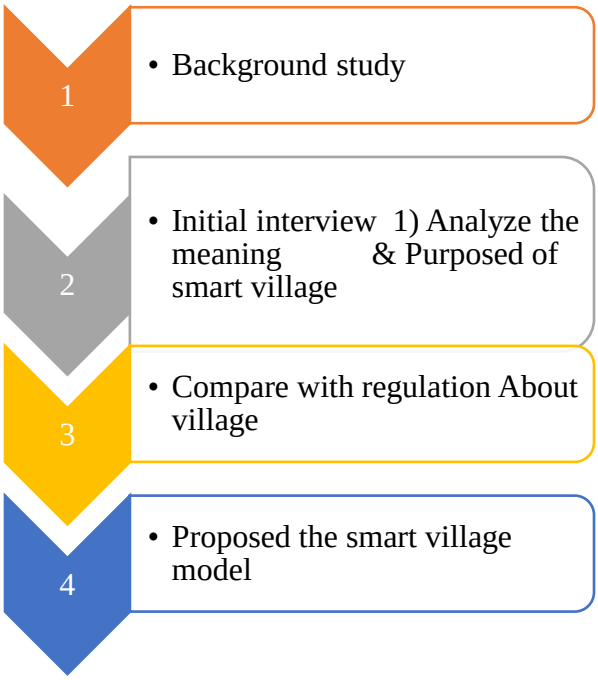
To make villages in dependable & provide good healthy environment to people living style.

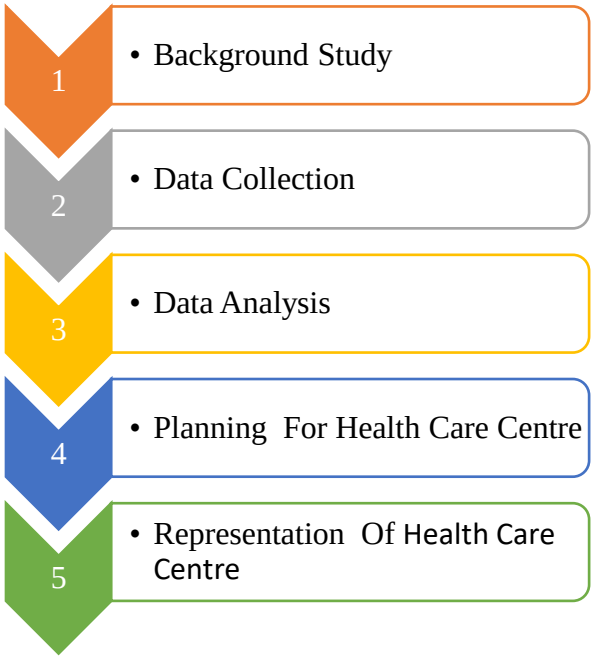
To stop migration of people from village to city.

To make developed nation.

Methodology of this research paper (work):

OBJECTIVE 1





2.8.4 Literature Review – Research Paper (Studied by Jaimin Joshi 04)

Table 8Research paper4

Authors	V. Ratna Reddy, Bhagirath Behera
Title	Impact of Water Pollution on Rural Communities: An Economic Analysis
Year	June 2006
Affiliation	IJIRST –International Journal for Innovative Research in Science & Technology (June 2006)
Volume	02
Keywords	Environment; Water pollution; Costs; Impact; Rural communities

Problem definition of this research paper (work):

The study of Impact of water pollution on rural communities to estimate the coast of industrial pollution on various aspect of rural livelihood in a systematic manner with data collected from an intensive study of two villages one a pollution affected and another not affected by pollution for water pollution in the rural communities at economical coast

What: The study of Impact of water pollution on rural communities

Why: to estimate the coast of industrial pollution on various aspect of rural livelihood in a systematic manner

How: With the help of primary (household level) data collected from an intensive study of two

villages one a pollution affected village and another control village for free from the air pollution in rural area.

Outcome/Features/Originality: for water pollution in the rural communities at economical coast

Objectives of this research paper (work):

Objective 1: Water sources, ground as well as surface, have been badly affected by pollution, For the purpose of understanding the extent of water pollution, with Water samples were collected in sterilized bottles from different sources such as bore well and tank water. water test like colour, Oder, turbidity, ph.etc. Doing this to reduce the future ground water pollution.

What: Water sources, ground as well as surface, have been badly affected by pollution
Why: For the purpose of understanding the extent of water pollution,
How: with Water samples were collected in sterilized bottles from different sources such as bore well and tank water. water test like colour, Oder, turbidity, ph etc.
Outcome/Features/Originality: Doing this to reduce the future ground water pollution.

Objective 2: To decrease the water born disease like skin infection, teeth corrosion, joint pain, loss of appetite, defective vision, fever for a health of the people of village using water purifying devices like filters, RO unit, etc., regularly serviced and maintained for safe clean drinking water can decreasing rate of borne disease

What: To decrease the water born disease
Why: for a health of the people of village
How: using water purifying devices keep regularly serviced and maintained
Outcome/Features/Originality: can decreasing rate of borne disease

Objective 3: To improve Environmental economics focuses on the impact on human health due to bad environmental conditions, and the effect this has on the individuals and society's productive potential, by environment division. Doing this economic growth caused by improved technology can enable higher output with less pollution.

What: To improve Environmental economics
Why: the impact on human health due to bad environmental conditions, and the effect this has on the individuals and society's productive potential
how: by environment division
Outcome/Features/Originality: technology can enable higher output with less pollution.

Solution offered by the paper (work)

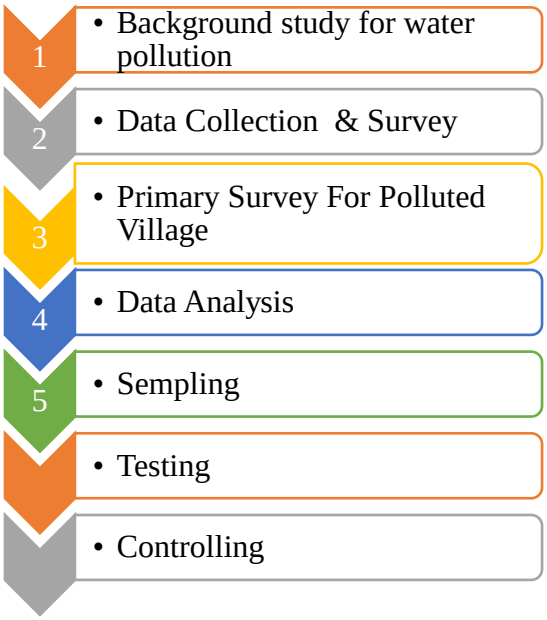
To decrease the all water born disease using various water test from rural area and increase the human facilities.

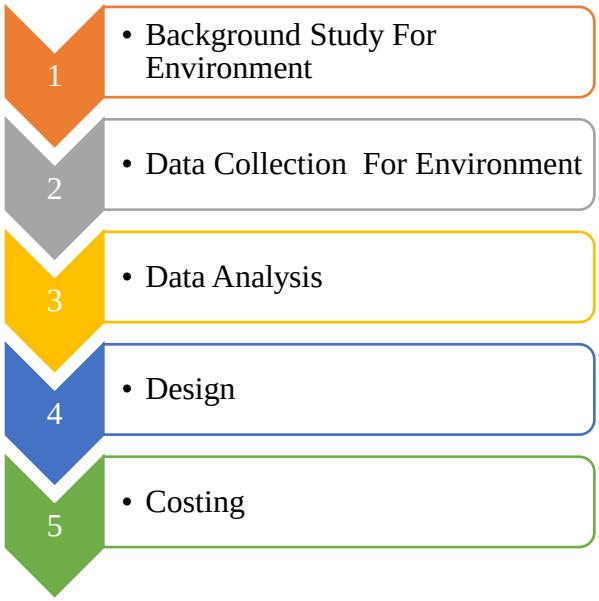
Future scope of this research paper (work)

To improve the quality and quantity of water in rural area.
To decrease the air pollution near the rural area.

Methodology of this research paper (work):

OBJECTIVE1





2.8.5 Literature Review – Research Paper (Studied by Jaimin Joshi 05)

Table 9Research paper5

Authors	Bhagya Niranjanbhai Patel, Prof. Rinni Shah
Title	Smart village a case study of kolavada village
Year	Dec-2017
Volume	02
Affiliation	International Research Journal of Engineering and Technology (IRJET) Dec 2017
Keywords	Smart village, Sanitation, Solid waste Management

Problem definition of this research paper (work):

Smart village a case study of kolavada village For increase citizen services, create atmosphere of healthy competition. By The Gujarat Government to various program and scheme for smart Village. Our integrated design is a way forward to be deal with the Demographic deficit & also achieve the goals of inclusive growth.

What: Smart village a case study of kolavada village

Why: For increase citizen services, create atmosphere of healthy competition

How: By the Gujarat Government to various program and scheme for smart Village.

Outcome/Features/Originality: Our integrated design is a way forward to be deal with the Demographic deficit & also achieve the goals of inclusive growth.

Objectives of this research paper (work):

Objective 1: To improve solid waste management using suitable method in rural area and some facilities are not proper and not effective methods are available so this facility is improving or make a smart village.

What: To improve solid waste management
Why: some facilities are not proper and not effective methods are available
How: suitable method in rural area
Outcome/Features/Originality: make a smart village.

Objective 2: To Proving good basic health facilities in Health care centre by the Gujarat Government to various program and scheme for smart Village to increase Life style and quality of health of village people so, that facility make a smart village.

What: To Proving good basic health facilities in Health care centre.
Why: to increase Life style and quality of health of village people
How: By the Gujarat Government to various program and scheme for smart Village.
Outcome/Features/Originality: make a smart village.

Objective 3: To manage Solid Waste in village using door to door waste collection and tipper and tractor directly transport the waste to disposal site after collection of waste for protection of the environment and the health of the population the rate of the disease will be decrease.
What: Solid Waste Management
Why: for protection of the environment and the health of the population
How: using door to door waste collection and tipper and tractor
Outcome/Features/Originality: The rate of the disease will be decrease.

Solution offered by the paper (work):

The visual observation for Facilities Not Available to provide good facilities in the village.
The poor condition in the village to providing facilities and become a smart village.

Future scope of this research paper (work):

Scope of this project proper dividing for to Normal village to smart village for providing or improving facilities solid waste management, sanitation, Swachhta to Development of village and Increase living of slanders and employment
Trying to providing or improving this solid west management, sanitation facilities, cleanness implement facility between Village development & supplement.
Above facilities is to be improved or provided through government scheme and fund and under campaign for smart village.

Methodology of this research paper (work):

Objective 1

1. Background Study For SWM
2. Required Man Power
3. Solid Waste Collection
4. Transportation
5. Open Dumping

OBJECTIVE 2

1. Background Study
2. Village Survey
3. Amenities
4. Current Amenities
   Required Amenities
5. Desired Amenities Of Village
6. Planning Proposal
7. Design Proposal

2.9 Other Projects / Schemes of Gujarat / Indian Government

Kisan Suryodaya Yojana: In a bid to provide a day-time power supply to farmers for irrigation, the BJP-led Gujarat government had recently announced the Kisan Suryodaya Yojana. Under this scheme, farmers will be able to avail power supply from 5 AM to 9 PM. The state government has allocated a budget of Rs 3,500 cores for installing transmission infrastructure under this scheme by 2023.

Paediatric Heart Hospital: The institute is undergoing expansion at the cost of Rs 470 crores. After the completion of the expansion project, the number of beds will increase from 450 to 1251. The Institute will also become the biggest single super specialty cardiac teaching institute in the country and one of the biggest single super specialty cardiac hospitals in the world.

Girnar ropeway: A distance of 2.3 km will now be covered in just 7.5 minutes through the ropeway. Moreover, the ropeway will also provide a scenic view of the lush green beauty surrounding the Girnar Mountain.

CHEPTER: 03

3. Smart (Cities/ Village) Concept Idea and its Visit (Civil concept)

3.1 Introduction: Concepts, Definitions and Practices

- Smart Village is a concept adopted by national, state and local governments of India.
- As an initiative focused on holistic rural development, derived from Mahatma Gandhi's vision of Adarsh Gram.

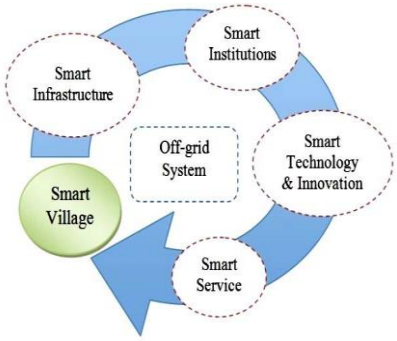


Figure 6Smart concept

3.2 Vision-Goals, Standards and Performance Measurement Indicators

- **VISION =** A smart city is a municipality that uses information and communication technologies to increase operational efficiency, share information with the public and improve both the quality of government services and citizen welfare.
- **STRATEGY =** In essence, a smart city uses connected sensors and information technology to improve the quality of life of residents. ... A vast range of cities across the world are attempting to deploy technology to reimagining urban living and are adopting an array of strategies to do so

Figure 7 Measurement Indicators

- **OBJECTIVES =** In the approach to the Smart Cities Mission, the objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions.

- **CSFs** = Smart cities are already a reality. Government and private sector initiatives worldwide are exploring innovative ways to make cities in the 21st Century more efficient, more livable, and more competitive.

Top 10 Smart City Success factor

1. Stakeholder benefits
2. Engagement & buy-in
3. Regional alignment with a community focus
4. Strategy momentum and foundational initiatives
5. Clarity
6. "Dust-proofing" the strategy
7. Lessons learned
8. Urban integration
9. Performance indicators
10. Creating a lasting smart city culture

Figure 8Smart cities

- **KPIs =** Local government KPIs for smart cities can be grouped into six divisions: economy, governance, mobility, environment, people and quality of life. Six types of KPIs are established in each division: inputs, outputs and impacts.

1. **Smart Economy**

Among the many local government KPIs that have to do with the economy are those related to the cost of a smart city project and the structures it generates, as well as general micro- and macroeconomic parameters. Some examples would be:

- Growth of technology and science parks.
- Number of new start-ups per year.
- Unemployment rate.
- Number of jobs created per year.
- Unemployment rate in technology and creative sectors.

2. **Smart Governance**

The area of governance brings together the local government KPIs applicable to the administration of the smart city. Here you can control aspects such as:

- Implementation of electronic systems to regulate the administration-citizen relationship.
- Number of infrastructures with connected sensors.
- Amount of online information available to city inhabitants.

3. Smart Mobility

The local government KPIs related to urban mobility take into accounts both transport and ICT (Information & Communication Technology). Urban mobility indicators include:

- Number of electric vehicle charging stations.
- Number of public Wi-Fi zones.
- Number of public transportation journeys per year.
- Kilometers of bike lanes per 100,000 inhabitants.
- Percentage of the territory with broadband internet coverage.

4. Smart Environment

With regard to the environment, it's about monitoring energy consumption and the effects of human activity on the environment. To monitor these, we have KPIs for smart cities such as:

- Number of intelligent street lamps.
- Water pollution levels.
- Noise pollution levels.
- Percentage of energy consumed coming from renewable energies.
- Rate of chronic respiratory diseases per 100,000 inhabitants.
- Proportion of solid waste that is recycled.

5. Smart People

Given that the improvement of living conditions for its inhabitants is the ultimate goal of any smart city, local government KPIs for smart cities also focus on measuring the training and skills acquired by citizens, calculating data such as:

- Number of computers per student.
- School dropout rate.
- Percentage of the population with a university degree.
- Adequacy of local training to meet the demands of the labor market
- Accessibility to educational resources.

6. Smart Living

To determine the quality of life in the smart city, we use KPIs associated with health, safety and well-being**.** Here are some ideas:

- Average waiting time at medical centers.
- Average emergency service response time.
- Gini coefficient of economic inequality.
- Index of energy poverty.
- Suicide rate per 100,000 inhabitants.
- Rate of violent crime per 100,000 inhabitants.

- Implementation of online health services.
- Level of cyber security.

- **ACTIONS =** A smart city is about human-centric approaches to create and implement an ecosystem of smart city solutions that creates added value and transforms into collective good. The term "smart" includes technology as an enabler but a smart city strategy is by far not limited to technological solutions.

3.3 Technological Options

1. Smart Economy
2. Smart Governance
3. Smart Mobility
4. Smart Environment
5. Smart People
6. Smart Living

3.4 Road Map and Safe Guards

Smart Maps capture a broad range of detailed data, such as roads (with details including lanes, speed limits, and turn restrictions), shops, (types, user ratings), and other information (bike and transit routes, building shapes, etc.) Smart Maps are designed so that users can quickly and intuitively interact with them despite having virtually no training, ensuring that information reaches the widest possible audience. Smart Maps are built to update quickly and correctly as cities change and evolve

3.5 Issues & Challenges

Smart cities face challenges and opportunities

- Technology challenges with coverage and capacity.
- Digital security.
- Legislation and policies.
- Lack of confidence or reluctance shown by citizens (lack of clarity around benefits).
- Funding and business models.
- Interoperability.
- .Existing infrastructure for energy, water and transportation systems.

3.6 Smart Infrastructure

Smart Infrastructure intelligently connects energy systems, buildings and industries to adapt and evolve the way we live and work. From intelligent grid control and electrification to smart storage solutions, from building automation and control systems to switches valves and sensors.

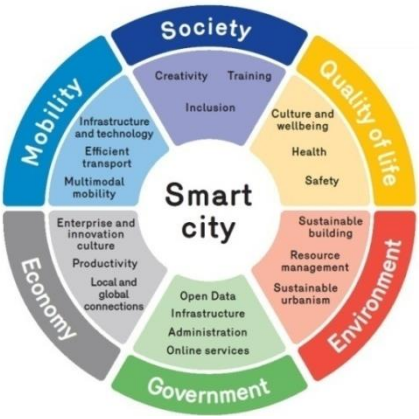


Figure 9 Smart infrastructure

3.7 Cyber Security

Cyber security is concerned with the security of data, and the applications and infrastructure used to store, process and transmit the data. It is understood as the process of protecting data and info by preventing, detecting and responding to cyber security events. Such that events, which include intentional attacks and accidents, are changes that may have an impact on organizational operations

3.8 Retrofitting- Redevelopment- Greenfield Development District Cooling

These four are the advanced techniques to be implemented for the fulfillment of projects under smart cities initiatives taken all over the world. The purpose of the Smart Cities Projects is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to Smart outcomes. Area- based development will transform existing areas (retrofit and redevelop), including slums, into better planned ones, thereby improving livability of the whole City. New areas (Greenfield) will be developed around cities in order to accommodate the expanding population in urban areas.

Application of Smart Solutions will enable cities to use technology, information and data to improve infrastructure and services. Comprehensive development in this way will improve quality of life, create employment and enhance incomes for all, especially the poor and the disadvantaged, leading to inclusive Cities. With the help of green retrofitting of a building both owner and tenants can attain the benefits which are either tangible or intangible benefits. It will result in reduction in consumption of energy, utilities and water. Maintenance, new technologies and occupancy changes also need to be continually dealt with. Upgrading existing buildings not only helps to preserve the character of a place; it is an optimal solution for owners, tenants, the community and the environment.

3.9 Strategic Options for Fast Development

- It starts with having a realistic plan.
- Smart cities require extensive experimentation.
- A smart city vision should energize the private sector.
- Smart cities demand smart data.
- Get creative when rethinking transportation.
- Don’t downplay digital security.
- Smart city initiatives should complement low-tech initiatives.

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

The water supply and sanitation in India has increased greatly from 1980 to present. Still, many people lack access to clean water, toilets, and sewage infrastructure. Various government programs at national, state, and community level have brought rapid improvements in sanitation and the drinking water supply. These various programs are ongoing.

In 1980 rural sanitation coverage was estimated at 1% and reached 95% in 2018. Also, the share of Indians with access to improved sources of water has increased significantly from 72% in 1990 to 88% in 2008.

At the same time, local government institutions in charge of operating and maintaining the infrastructure are seen as weak and lack the financial resources to carry out their functions. In addition, only two Indian cities have continuous water supply and according to an estimate from 2018 about 8% of Indians still lack access to improved sanitation facilities.

3.11 Initiatives in village development by local self-government

The function of a Government can be categorized into National, State and Local. Local Self Governments are those bodies that look after the administration of a area and small community such as small village, town or a city. These bodies are appointed by the Government representing the local inhabitants, which raises its revenue partially through local taxation and other types of means.

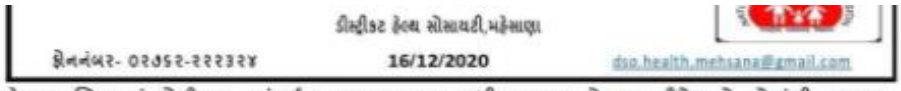
The Local Self- Government can be divided into various classes like Corporations, Cities, Town Municipalities and Town Panchayat on the basis of population. The administration system has 3 levels: village, block and district.

Panchayat operate at a village level. The Panchayat of India is the local bodies working for the welfare of the village. Panchayat is a form of Indian political system which combines five neighboring villages known as panch.

The primary units of administration in Panchayat shree the gram panchayats. The members of the Panchayat are known as "panch", who take decisions regarding the disputes among the villagers and villages.

According to the Indian Constitution, Panchayat have the authority to work as organizations of self-government. Panchayat is playing a vital role in the administration of the rural areas of India.

3.12 Smart Initiatives by Mehsana District Municipal Corporation



ડીસ્ટ્રીક્ટ હેલ્થ સોસાયટી,મહેસાણા

ફોનનંબર- ૦૨૭૬૨-૨૨૨૩૨૪ 16/12/2020 dsp.health.mehsana@gmail.com

મહેસાણા જિલ્લામાં કોવીડ-૧૯ અંતર્ગત ૧૬/૧૨/૨૦૨૦ સુધી ૩૩૩૨૧ સેમ્પલ લીધેલ છે. તેમાંથી ૩૦૩૩૯ સેમ્પલ નેગેટીવ આવેલ છે. આજરોજ ૫૬૭ સેમ્પલનું રીઝલ્ટ આવેલ છે. જેમાં ૫૪૯ સેમ્પલનુ રીઝલ્ટ નેગેટીવ છે અને ૧૮ સેમ્પલના રીઝલ્ટ પોઝીટીવ આવેલ છે. તેમજ અન્ય લેબ. ખાતે ૧૬ પોઝીટીવ કેસ નોંધાયેલ છે.

અ.નં	Covid-19 અંતર્ગત આજની વિગત	
૧	લીધેલ સેમ્પલની સંખ્યા	૫૦૨
૨	પોઝીટીવ કેસની સંખ્યા	૩૪
૩	પેન્ડીંગ રીઝલ્ટ	૫૦૨
૪	ડીસ્ચાર્જ	૨૭
૫	કુલ એકટીવ કેસ	૫૮૨
૬	અર્બન પોઝીટીવ કેસ	૧૮
૭	રૂરલ પોઝીટીવ કેસ	૧૬

પોઝીટીવ કેસ

અનુ	તાલુકાનુ નામ	અર્બન			અનુ	તાલુકાનુ નામ	રૂરલ		
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૨	મહેસાણા	અર્બન બેંક રોડ	૬૬	સ્ત્રી	૨	મહેસાણા	ગોઝારીયા	૪૫	પુ
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૬	મહેસાણા	અર્બન બેંક રોડ	૩૧	પુ	૬	વિસનગર	કાંસા એન એ	૪૧	પુ
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૧૦	મહેસાણા	ટી.બી.રોડ	૬૩	પુ	૧૦	ઉંઝા	મક્તુપુર	૬૫	સ્ત્રી
૧૧	મહેસાણા	રાધનપુર રોડ	૬૮	પુ	૧૧	ઉંઝા	મક્તુપુર	૬૦	પુ
૧૨	ઉંઝા	ઉંઝા	૬૯	સ્ત્રી	૧૨	ઉંઝા	સુણોક	૬૯	સ્ત્રી
૧૩	ઉંઝા	ઉંઝા	૬૭	સ્ત્રી	૧૩	કડી	પીરોજપુરા	૮૦	સ્ત્રી
૧૪	ઉંઝા	આશીર્વાદ પાર્ક સામે	૧૩	સ્ત્રી	૧૪	વિજાપુર	ટીટોદણ	૫૭	પુ
૧૫	ઉંઝા	ઉંઝા	૪૧	પુ	૧૫	વિજાપુર	દગાવાડીયા	૩૯	સ્ત્રી
૧૬	ઉંઝા	કલ્યાણ સોસા.	૫૧	પુ	૧૬	સતલાસણા	સુદાસણા	૭૧	પુ
૧૭	ઉંઝા	નેતાજી પાર્ક રોડ	૬૩	પુ	-	-	-	-	-
૧૮	વિજાપુર	ચબુતરા વાસ	૩૫	પુ	-	-	-	-	-

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

The village is almost fulfilled with all types of facilities and it does not need any more facility. Other than this, A Composed Pit is being constructed by government in the village.

3.14 How to implement other Countries smart villages projects in Indian village context (Regarding Environment , Employment)

Similar to Vishwakarma Yojana, Students of engineering colleges can be given chance to visit foreign countries' smart villages and survey and study it properly as they study the smart villages of Gujarat. Than with the help of other government or private engineers, one can implement other countries smart village projects in Indian villages.

CHAPTER: 04

4. ALLOCATED VILLAGE VADPURA

4.1 Introduction

4.1.1 Introduction about Vadpura Village details

- According to Census 2011 information the location code or village code of Vadpura village is 509618. Vadpura village is located in Kadi Tehsil of Mehsana district in Gujarat, India. It is situated 15km away from sub-district headquarter Kadi and 27km away from district headquarter Mehsana.

- As per 2009 stats, Vadpura Kaiyal is the gram panchayat of Vadpura village. Vadpura has a total population of 967 peoples. There are about 197 houses in Vadpura village. Kadi is nearest town to Vadpura which is approximately 15km away.

4.1.2 Need of the study

To provide the basic requirement and need of people in the village such as:

- Water Facilities
- Drainage Facilities
- Education
- Primary Health Centre
- Transportation Facilities
- Post office
- Public Toilets
- Dairy & Agriculture co-operative soc.
- Community hall and other amenities
- For the development and progress of the village.
- To enhance the rural people in terms of employment, education, health etc.
- To reduce the migration of people from rural area to urban area

Figure 10 Need of the study

4.1.3 Study Area

- Allocated village from GTU name as Vadpura. Vadpura is a small village which allocated in Kadi Tehsil.
- Vadpura is 15km away from sub-district headquarter Kadi and 27km away from district headquarter Mehsana.

Figure 11Study area

4.1.4 Objectives of the study

- To renovation of the school building, to provide structural strengthen, aesthetically good and safe for students by doing physical interviewing questions with principal and knowing their basic needs and problems with proper site survey, image interpretation planning and estimation.

- To design a community hall in Vadpura village by survey, planning, design and estimation. To provide facilitate for social and cultural development of village, it should describe the village will developed after providing facilities to villagers.

- To manage solid waste for creating hygiene and healthy environment by using method of collection of waste and sanitary landfill to decompose the waste, for Vadpura village.

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/ Study Frame Work

For objective 01

For objective 02

For objective 03

4.1.7 List of Objects Available related to civil

- Data of ideal village
- Data of smart village
- Water Tank
- Drainage System
- Gram Panchayat
- Anganwadi
- Health Centre
- Road
- Community Hall
- Public Toilets
- Underground Sumps

4.2 Study Area Profile

4.2.1 Study Area Location with brief History land use details

Table 10Location of study area

Location of Study Area	
Village Name	Vadpura
District	Mehsana
Taluka	Kadi
State	Gujarat, India
Distance From Mehsana	27kms
Pin code	382705
Coordinates	23.4141° N, 72.4075° E
Population (2011)	967

4.2.2 Base Location map, Land Map, Gram Tal Map

Figure 12 Base map

4.2.3 Physical & Demographical Growth

Vadpura is a Village in Mehsana district of Gujarat, India. It falls under Kadi Taluka. Vadpura population in 2020/2021 is between 938 and 1,180 and total households residing are 197.The Vadpura Village located in Kadi Taluka, 967 People are living in this Village, 508 are males and 459 are females as per 2011 census. Expected Vadpura population 2020/2021 is between 938 and 1,180. Literate people are 682 out of 394 are male and 288 are female. People living in Vadpura depend on multiple skills, total workers are 293 out of which men are 286 and women are 7. Total 143 Cultivators are depended on agriculture farming out of 140 are cultivated by men and 3 are women. 75 people works in agricultural land as a labour in Vadpura, men are 74 and 1 are women.

Vadpura (Kaiyal) village is located in the UTC 5.30 time zone and it follows Indian standard time (IST). Vadpura (Kaiyal) sun rise time varies 40 minutes from IST. The vehicle driving side in Vadpura (Kaiyal) is left, all vehicles should take left side during driving. Vadpura (Kaiyal) people are using its national currency which is Indian Rupee and its international currency code is INR. Vadpura (Kaiyal) phones and mobiles can be accessed by adding the Indian country dialing code +91 from abroad. Vadpura (Kaiyal) people are following the dd/mm/yyyy date format in day-to-day life. Vadpura (Kaiyal) domain name extension(cTLD) is. in.

4.2.4 Economic profile

About the economic profile of this village, many citizens' works interest is farming and labor work. The village doesn't have any better facilities regarding infrastructure but has good

electrification system which distributed 24*7 hours for domestic use and 8 hours for agricultural use. Village has good drainage system etc. Dairy and milk production is also work proper building and trust member on dairy mandali. 40 % people are work in an industrial area as an employee in a company.

4.2.5 Actual Problem faced by Villagers and smart solution

Vadpura village, no facility of animal excreta due to this night urinal the foul gases and dirtiness are created in the road of village. during rainy season these excreta are flow through the village and create a various decease. for that problem we conclude a solution of bio gas plant and small-scale natural fertilizer storage. village also faced a solid waste management problem.

4.2.6 Social scenario – Preservation of traditions, festivals, cuisine

Vadpura village, people are not knowing about that basic facility provide by gov. also in the village basic crop are grown are cotton, castor and tobacco. village people are not that much connected with technology and digitalization. people basic income is connected with their agriculture product value and industrial area. people are also connected with another village and stay connected with culture. people are belonging to Hindu religion and celebrate all Hindu festival with good spirit like Diwali, Navratri, new year etc.

Navratri festival is celebrated with a durga pooja. This 10-day celebration, people do Durga Pooja, and enjoy with music and play dandiya and Garba. Festival like Diwali, bhai duj, vasant Panchami, Holi, kevadi etc. all festival is celebrating in full spirit of god. this village is concerned with fully Hindu religion people. People also celebrate a nation festival like Freedom Day, Gandhi Jayanti, etc. are celebrated.

4.2.7 Migration Reasons / Trends

1. Employment
2. Marriage
3. Education
4. Lack of Security

In Vadpura village, employment is available for all people which are live in Vadpura village, because surround industry is providing a local to employment. Marriage of girls is migrant in her husband residence after marriage so this trend is never being stop. In village primary education is available. lack of security Is a reason for people of which are migrant.

4.3 Data Collection Vadpura (Photograph/Graphs/Charts/Table)

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

Vadpura village is located in Kadi Taluka of Mehsana district in Gujarat, India. It is situated 27km away from district headquarter Mehsana. Vadpura has population of 967 as per census of India 2011.

4.3.3 Average size of the House

Average size of house is 3.5 m x 6m.

4.3.4 Geo-Tagging of House

The **geo-tagging** system involves marking the geographical coordinates of the site location as well as photographing of the progress of a given work. It has now been enabled for the PMAY scheme, under which funds are provided to build a **house** for those who already own land.

4.3.5 No of Human being in One House

There are 197 household in the village and average no. of human in family is 4.

4.3.6 Which Material used locally

There are 197 houses in the village out of them 80% of the houses are Pucca houses. Pucca houses are mostly made of Beam and Column type structure with Reinforced Cement Concrete Slab, very less 20% amount of house are Kachha house which may be made up of stones and bricks.

Figure 13Materials

4.3.7 Out Sourced Material

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

4.3.8 Labor work doing

In the village 42 to 50 % people doing agriculture work as well as labour work in nearest GIDC for money Other people are doing small-scale business-like Tiffin supplier etc.

4.3.9 Geographical Detail

- Elevation / Altitude: 58 meters. Above Sea level
- Vadpura village code 509618.

4.3.10 Demographical Detail

Table 11 Demographic details

Particular	Male	Female	Total
Population	508	459	967
Child (0-6)	68	54	122
Schedule Cast	12	12	24
Literacy	89.55	71.11	80.71
Total Workers	286	7	293
Main Workers			291

4.3.11 Occupational Detail

Table 12Occupational detail

Private Business	70%
Animal Husbandry	15%
Agriculture	15%

4.3.12 Agricultural Details

Farmer grows crops which are mainly consumed by Animals and are used in Animal Husbandry. These includes grains like Bajra, Juvar, Wheat etc.

4.3.13 Physical Infrastructure Facilities

- Primary school
- Anganwadi
- Panchayat building
- Drinking water supply network
- Underground drainage
- Post office
- WBM and CC roads

4.3.14 Tourism Cluster

There isn't any attractive place for Tourists.

4.4 Infrastructure Details (With Exiting Village Photograph)

4.4.1 Drinking Water / Water Management Facilities

The drinking water supply of Vadpura village can be divided into tap water, well and tube well but major source of drinking water provided by tube well.

There are 2 wells in village. Not available hand pumps in village. There are also 2 overhead tanks and 1 underground sump. The overhead tank has 50,000 liters capacity. Underground sump capacity is 25,000 liters but it is not working condition.

Figure 16Water

Figure 14 Over head tank

Figure 15 Rectangular tank

4.4.2 Drainage Network / Sanitation Facilities

Vadpura has average drainage facility. Drainage system in village is Pucca. 95% of village is covered under drainage system. The drain water disposed in to the pond so there is need proper disposal facility in the village.

Figure 17Drainage network

4.4.3 Social Infrastructure Facilities, Health, Education, Community Hall, Library.

In Vadpura village there are 2 Anganwadi, 1 primary school, 6 temples, 1 Panchayat building. There is 1 public garden. There are no secondary and higher secondary schools. Village does not have any health care center, public latrine and recreational area.

4.4.4 Transportation & Road Network

The Mehsana – Ahmedabad nation highway passes along the village. The approach road of village is made of bituminous road and internal streets roads across the village are also made of R.C.C.

Figure 19 Bus stand

Figure 18 RCC Road

4.4.5 Housing condition

Village house are made of basic component like brick, cement, sand etc. The Pucca house is 80% And Kachha house is 20%. Condition of house is well maintained and properly constructed in line. house have basic facility like water supply tap, own toilet, clean house, electricity line etc.

Figure 21 Pokka house

Figure 20 Kachha hose

4.4.6 Social Infrastructure Facilities, Health, Education, Community Hall, Library.

In Vadpura village there are 2 Anganwadi, 1 primary school, 6 temples, 1 Panchayat building. There is 1 public garden. There are no secondary and higher secondary schools. Village does not have any health care center, public latrine and recreational area.

4.4.7 Technology Mobile/ WIFI / Internet Usage Details

90% of village population is using Internet services through their Mobile. Besides, Panchayat Building is fully connected with Wi-Fi. Many private Wi-Fi centers are also available at Parlour, etc.

4.4.8 Sports Activity as Gram Panchayat

No activity of sports is conducted by gram panchayat but all school are conducted a sport activity during a sport week or any function.

4.4.9 Existing Condition of Public Buildings & Maintenance of existing Public Infrastructures

Figure 22 Panchayat building

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

Combination *playground* structure for *small* children slides, climbers (stairs in this case) playhouse thematic playground with agricultural machine

A *playground*, play park, or play area is a place specifically designed to enable children to play.

Figure 23Garden

4.4.11 Any other details

Figure 25 Main temple

Figure 24 Bird house

4.6 Existing Institution like - Village Administration – Detail Profile

4.6.1 Bachat Mandali

Village has no bachat mandali. required a small scale bachat mandali in village because surround is covered with industrial area and need a small branch of bank for better transaction and help to village in development by giving a loan.

4.6.2 Dudh Mandali

Vadpura village have one government Dudh mandali in working condition but maintenance is required.

Figure 26Dudh Deri

4.6.3 Mahila forum

No Mahila forum in village.

4.6.4 Plantation for the Air Pollution

In a village every year plantation program is arranged by many industrial group and panchayat.

Figure 27Plantation of Vadpura village

4.6.5 Rain Water Harvesting - Waste Water Recycling

No facility of rain water harvesting in a village. by many industrial groups are conduct an awareness program about important of rain water harvesting method.

4.6.6 Agricultural Development

Last 2 to 5-year village people are aware about irrigation technology and adopt a technology like drip irrigation, sprinkler system etc. which are reduced a water loss and increase an infiltration rate.

Figure 28 Sprinkler system

Figure 29Irrigtion system

Agricultural development is one of the most powerful tools to end extreme poverty, boost shared prosperity and feed a projected 9.7 billion people by 2050. Growth in the agriculture sector is two to four times more effective in raising incomes among the poorest compared to other sectors

CHAPTER: 05
5. Technical Options with Case Studies

5.1 Concept Civil

5.1.1 Advance Sustainable construction techniques / Practices and Quantity Surveying

The most sustainable way is to not make things. The second most sustainable way is to make something very useful, to solve a problem that hasn't been solved.

Thomas Sigsgaard

1. Synthetic Roof Underlayment

Synthetic underlayment is a roofing accessory created by weaving/spinning together polypropylene or polyethylene and a polymer to form an all-over protective barrier to put between the roofing material and the roof deck.

Figure 30 Synthetic Roof Underlayment A

Figure 31 Synthetic Roof Underlayment B

The underlayment on roofs is typically asphalt-based, which breaks down relatively quickly. Replacing this layer is necessary to keep moisture out of the building& interior. Synthetic roof underlayment offers an alternative that weighs less and holds up to the wear and tear of an exterior environment. This material uses polymer that comes from recycled scrap materials. It also eliminates VOCs from the underlayment.

2. Grid Hybrid System

Solar hybrid power systems are hybrid power systems that combine solar power from a photovoltaic system with another power generating energy source. The diesel genets' are used to

constantly fill in the gap between the present load and the actual generated power by the PV system.

Renewable energy sources provide a sustainable way for organizations to power their commercial properties, but many grid systems lack storage to power facilities during times of low solar availability. A hybrid system stores excess energy and allows the renewable source to function at night, during overcast days and in other conditions that area.

Figure 32 Grid Hybrid System

3. Passive Solar

Another way to leverage a sustainable solar energy source is to construct the building based on the passive solar concept. The facility location and design maximize solar energy for heating during winter, while reducing its impact during warmer months.

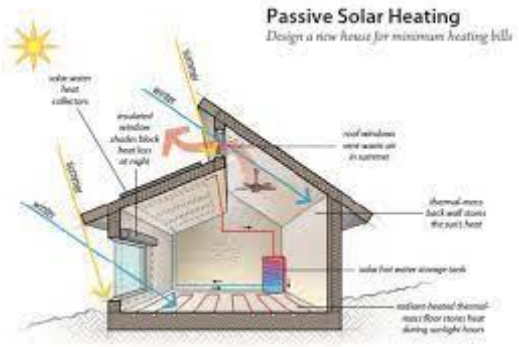


Figure 33 Passive Solar

4. Grey water Plumbing Systems

Grey water systems reduce the facility need for fresh water, as everything except for toilet streams can be processed for reuse. The most common uses for this water include irrigation and supplying toilets with water.

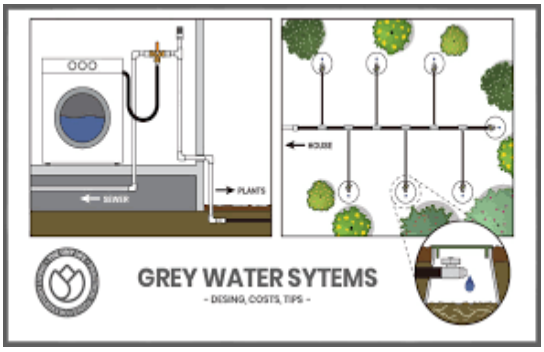


Figure 34 Grey water Plumbing Systems

5. Root zone Sewage Treatment Plant

Sewage treatment comprises an artificially constructed and lined wetland planted with common reeds (Phragmites austral is or Karla). The sewage flows through a bed of either soil or gravel in which the reeds grow. The treatment is mainly biological as the reed roots break down the sewage, hence 'root-zone', though filtration through the soil bed also helps the treatment. The treatment requires considerable land but becomes an attractive option because of the negligible running costs as the reed plants are almost self- sustaining. The process is environmentally friendly and free from the nuisance of mosquitoes and smell as it is subsurface.

6. Solid waste management

Solid waste management is a vital service from the point of view of hygiene and environment, yet, often neglected. The problem cannot be solved by mere installation of dustbins. This project should envisages landscaping to bind earth on open spaces, which reduces solid waste on streets, siltation in the pipes and improves road aesthetics and village level organization of waste collection.

5.1.2 Soil liquefaction

Liquefaction describes the phenomenon wherein saturated, loose, cohesion less soil (sands) loses the friction-dependent strength and acts like a fluid when subjected to static or dynamic loading. In such scenarios, structures on the surface can partially or fully sink beneath the surface and buried structures could potentially become buoyant and rise to the ground surface. Liquefaction occurs when saturated cohesion less soil particles lose inter- granular friction due to increased pore water pressure. This can happen during an earthquake when loose sand is cyclically loaded and pour water pressures build up. The soil particles then effectively are suspended in water, losing virtually all strength, and the soil mixture acts like "quick sand". Liquefaction occurs in loose sands and thus is influenced by the void ratio of the soil (the ratio between the volume of voids and the volume of solids). Dense soils (soils at void ratios less than their critical void ratio), are too dense for liquefaction to occur. Hence, liquefaction occurs most often in loose sandy soils beneath the water table.

Figure 36 Soil liquefaction

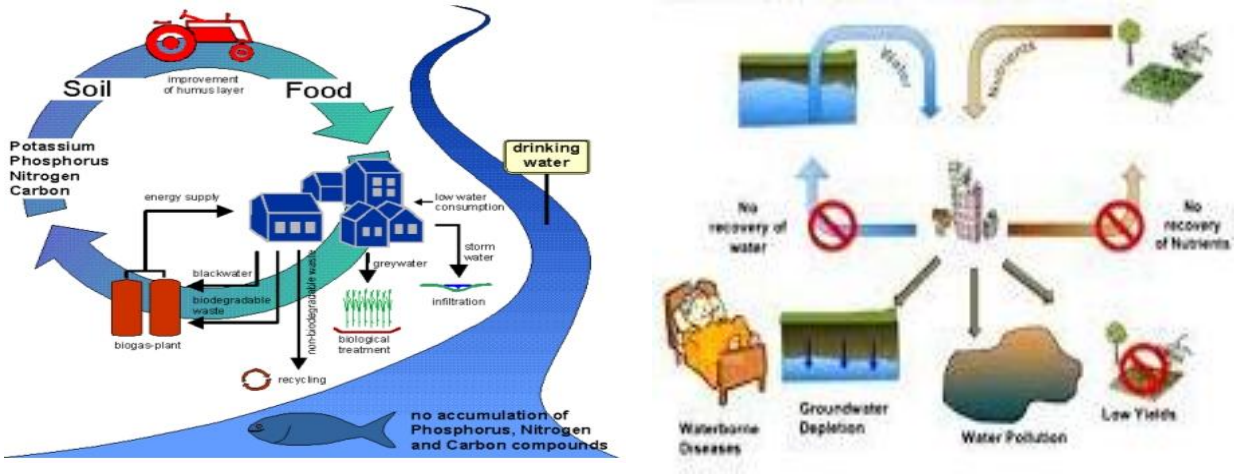
Figure 35 Soil liquefaction on road

5.1.3 Sustainable sanitation

Interest in sustainability continues to rise as local, national, and global events strive to bring insight to the human impact on the natural environment.

Storm surge events along the East and Gulf Coasts of the U.S., rising sea levels, depletion of natural resources, and the increasing global population are indicators that are raising awareness that a sustainability movement, particularly with regards to reducing the

anthropogenic influence, is needed. Since sustainability is defined as “meeting the needs of the present without compromising future generations to meet their own needs” secondary school students are the generation that will have to innovate, plan, and develop in ways that reduce



negative impacts on the environment, society and economy.

5.1.4 Transport system

A transportation system may be defined as a planned network of elements or physical components that play different roles in the transportation of goods and persons from one place to another. The elements or physical components of a transport system are referred to as the facilities. A transport system can therefore be considered as consisting of fixed facilities, the flow entities, and control system that permit people and goods to overcome the friction of geographical space efficiently in order to participate in a timely manner in some desired activity.

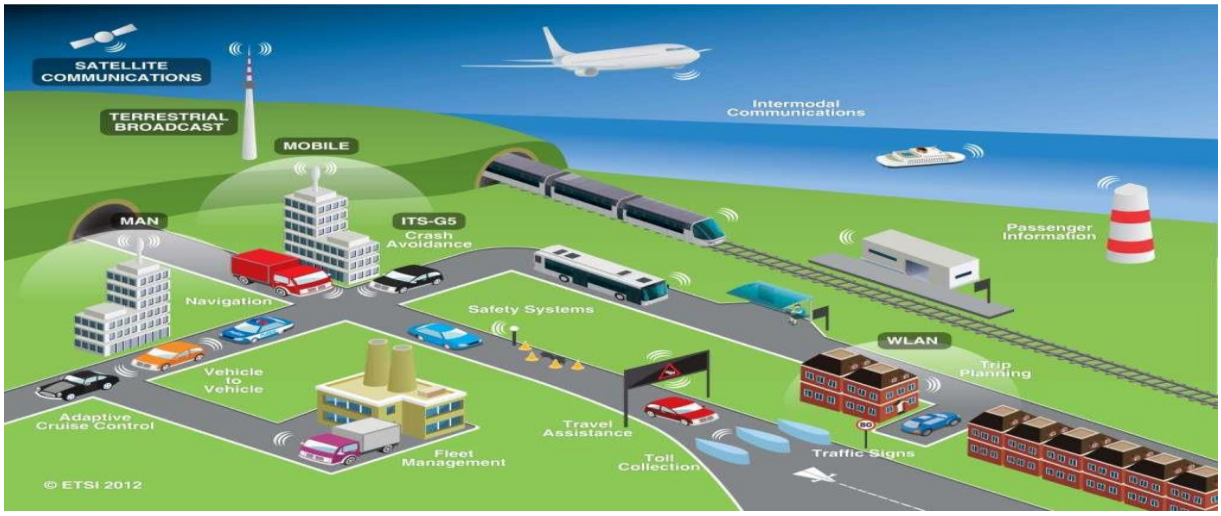


Figure 37 Transportation

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. Using Controlled Environment Agriculture (CEA) technology, this modern idea uses indoor farming techniques. The artificial control of temperature, light, humidity, and gases makes producing foods and medicine indoor possible. In many ways, vertical farming is similar to greenhouses where metal reflectors and artificial lighting augment natural sunlight. The primary goal of vertical farming is maximizing crops output in a limited space.

Figure 38 Vertical Farming

Advantages of Vertical Farming

- Ensures Consistent Crop Production.
- Uses Space Optimally.
- Reduces Usage of Water.
- Cuts Down on Transport Cost.
- Less Labour Costs.
- Energy Efficient.
- Doesn't Involve Chemicals or Pesticides.
- Limits Occupational Hazards.

Disadvantages of Vertical Farming

- Less Pollination. As you probably know at this point, Vertical farming is performed in a controlled, indoor environment. ...
- Technology Dependent. Developing newer and more advanced technologies can boost efficiency while also reduce costs. ...
- Affects Communities.

5.1.6 Corrosion Mechanism, Prevention & Repair Measures of RCC Structure

1. Corrosion Mechanism in concrete

The mechanism of reinforcement corrosion in concrete due to chloride attack is basically an electrochemical process by which the passivating layer of steel is lost by means of formation of micro cells on the surface of steel by chloride ions.

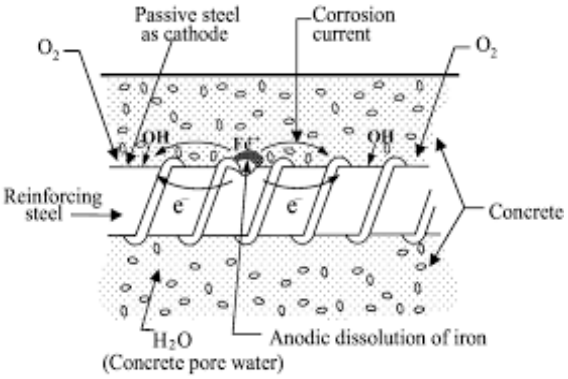


Figure 39 Corrosion

Corrosion in concrete is induced by the generation of the electrochemical potentials in following ways:

1. When two different metals are present in concrete, such as steel rears, aluminum conduit pipes, or when significant variation exist in surface characteristics of the steel, formation of composition cell can occur.

2. Concentration cells may be formed near reinforcing steel because of the differences in the concentration of dissolved ions, such as alkali's and chlorides

2. Chloride Induced Corrosion

The chloride binding in concrete affects the rate of chloride ingress, which in turn determines the chloride-induced corrosion initiation. The pore solution concentration, which is the driving agent of chloride diffusion process, is reduced due to the chloride binding reducing the chloride transport process.

Figure 40Chloride induced corrosion

3. Prevention of chloride attack

For new structures, there are several methods to prevent or reduce chloride attack:

- Increase concrete cover (min. 50 mm)
- Use epoxy coated rears

- Use stainless steel rears
- Catholic protection
- Use low water/cement ratio
- Apply of anti-carbonation concrete coating

For existing structures suffering from chloride attack the following repair methods can be applied:

- Apply of anti-carbonation concrete coating to slow down the corrosion process
- Use of corrosion inhibitors
- Install a catholic protection system
- In the case of extensive spelling or section loss, a comprehensive concrete repair or a section replacement will be required

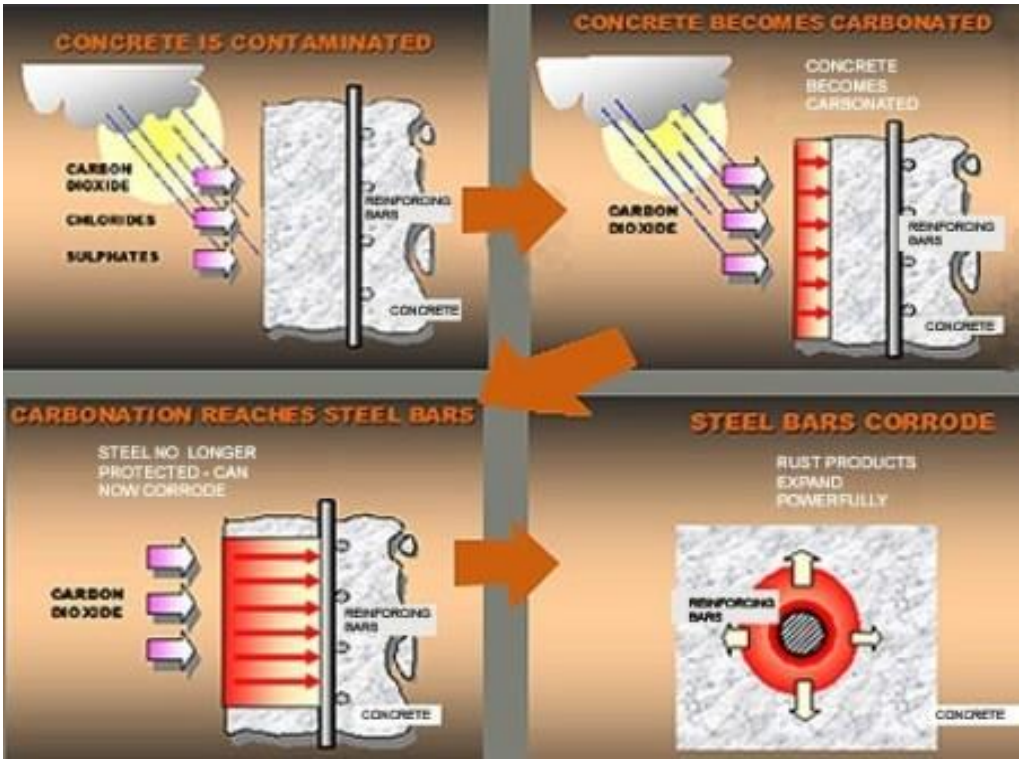


Figure 41 Prevention in chloride attach

5.1.7 Sewage treatment plant

Essentially, a sewage treatment plant operates by circulating air to encourage the growth of bacteria to break down sewage. The goal being to deliver much cleaner more environmentally friendly effluent, It involves a similar process to a typical septic tank but has some key differences.

The importance of sewage treatment plant design is to withhold all the solids as much as possible and before the leaving water called an effluent is discharged to the environment. The solid matter decays it uses oxygen that are needed by the water plants and animals.

Sewage Treatment refers to the process of removing contaminants, micro-organisms and other types of pollutants from wastewater. Wastewater, or raw sewage, is water that drains from toilets, sinks, showers, baths, dishwashers, washing machines and liquid industrial waste.

5.1.8 Technical Case Study On "The Statue Of Unity"

The Statue of Unity is a colossal statue of Indian statesman and independence activist Sardar Vallabhbhai Patel (1875-1950) who was the first Home minister of India and the chief adherent of Mahatma Gandhi during the non-violent Indian Independence movement; highly respected for his leadership in uniting the 562 princely states of India to form the single large Union of India.

It is located in the state of Gujarat, India. It is the world's tallest statue with a height of 182 meters (597 ft). It is located on a river island facing the Sardar Sarovar Dam on river Narmada in Kevadiya colony, 100 kilometers (62 mi) southeast of the city of Vadodara.

Figure 42 Location of Kevadiya

Environmental law refers to rules and regulations governing human conduct likely to affect the environment. It reflects the legislative measures, and the administrative and judicial structures to protect the environment.

The statue of Unity Project was first announced on 7lh October, 2010 is a monument of 182 meter of Sardar Vallabhbhai Patel facing Narmada Dam, 3.2 km away on the river island Sadhu bet of Narmada river near Bharuch in Gujarat is facing trouble Around 50 environmentalists from across the country have written to the Union Environment Ministry that Chief Minister Narendra Modi's pet project, Statue of Unity, downstream of Sardar Sarovar Dam and School paneshar Sanctuary, has commenced working without environment approval.

CHAPTER: 06
6. Swatch Bharat Abhiyan (Clean India)

Swachh Bharat Mission (SBM) or **Clean IndiaMission** isa campaign in India that aims to clean up the streets, roads and infrastructure ofIndia's cities, smaller towns, and rural areas. The objectives of Swachh Bharat includeeliminating open defecation through the construction of household-owned and community-owned toilets and establishing an accountable mechanism of monitoring toilet use. Run bythe Government of India, the mission aims to achieve an Open-Defecation Free (ODF) Indiaby 2 October 2019, the 150th anniversary of the birth of Mahatma Gandhi, by constructing 12million 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 PrimeMinister Narendra Modi. It is India's largest cleanliness drive to date with 3 milliongovernment employees, school students, and college students from all parts of Indiaparticipating in 4,041 statutory.

6.1 Existing Situation of Vadpura village with photograph

In the Vadpura village need of swachhta is more, because there is unavailability of solid waste management in the village, the villagers use the land near garden for dumping garbage. There is also a lack of solid liquid waste management as well as collection of west management.

Figure 43 Existing Situation of Vadpura village with photograph

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

6.2 Guidelines - Implementation in allocated village with Photograph

As the work of cleaning the old type of dustbins of Municipal Corporation comes under the Gram Panchayat or Municipal Corporation, it should be properly emptied and new dustbins for dry and wet waste should be provided separately and it should be maintained properly and regularly. The design of Public sanitary blocks would be given by us, so they should be constructed by the government if designed properly. At rest of the few places left, the villagers should clean it themselves as very less area would be come under that part.

6.3 Activities Done by Students for Vadpura village with Photograph:

Firstly we took a permission from village Talati and Sarpanch for doing one Swachhta awareness camp and then we have done one activity of swachhta awareness in the village and we have done an

Interaction with villagers and aware them about the importance of swachhta in our life and told them to keep the village and infrastructure clean and safe. We have also done a cleaning of village street. We have suggested them for not dumping the waste in village streets and dispose it at right place.

So that we have also proposed one design of Solid Waste Management as part 2 design in the Vadpura village.

CHAPTER: 07

7. Village condition due to Covid-19

7.1 Taken steps in Vadpura village related to covid-19 situation with photographs

Villagers were informed by the village teachers about the pandemic situation and were also informed about the norms given by Government to fight this situation.

With help of Government officers, Sarpanch and other village people they sanitized the village streets and houses and other places.

Figure 44Photographs of Vadpura

7.2 Steps taken by students while visiting the village

There is no step taken by the students.

7.3 Any other steps taken by the students / villagers

There is no step taken by the students.

CHAPTER: 08

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

8.1 School Design

8.1.1 Plan of School (Final Design)

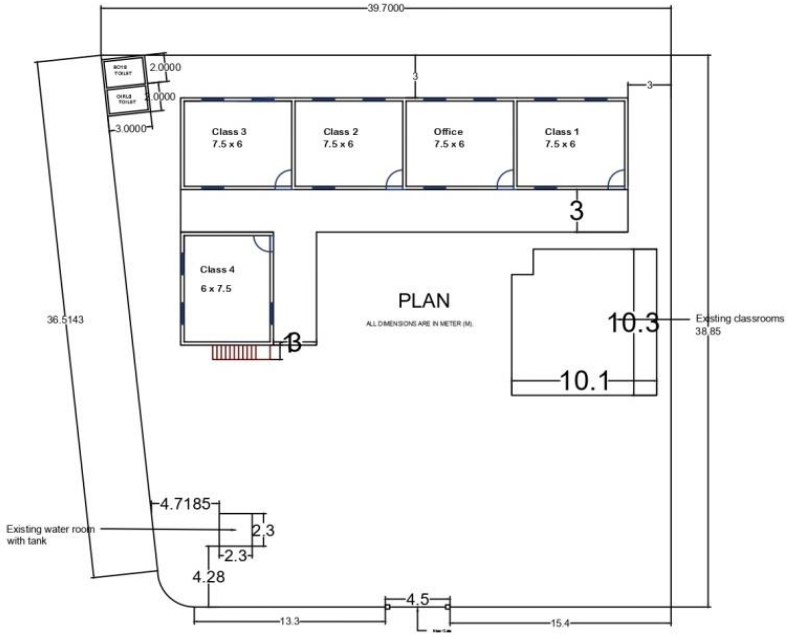
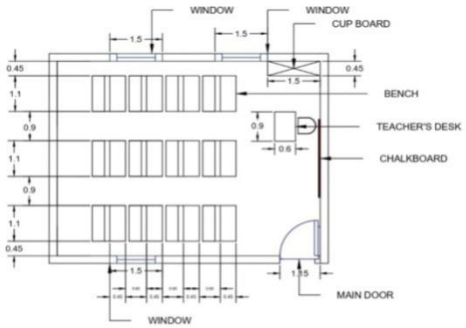


Figure 45School plan

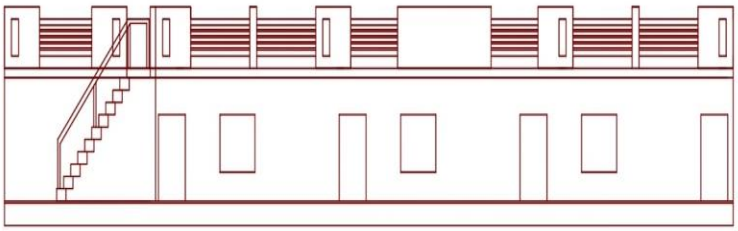
8.1.2 Design of classroom (as per the IS 8827 (1978):



CLASSROOM

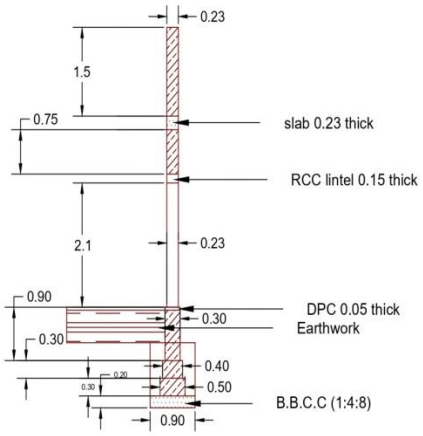
ALL DIMENSIONS ARE IN METER (M).

8.1.3 Elevation of School:



ELEVATION

8.1.4 Foundation Detail of School:



FOUNDATION DETAILS

ALL DIMENSIONS ARE IN METER (M).

8.1.5 Final 3D design:

(ISO VIEW)

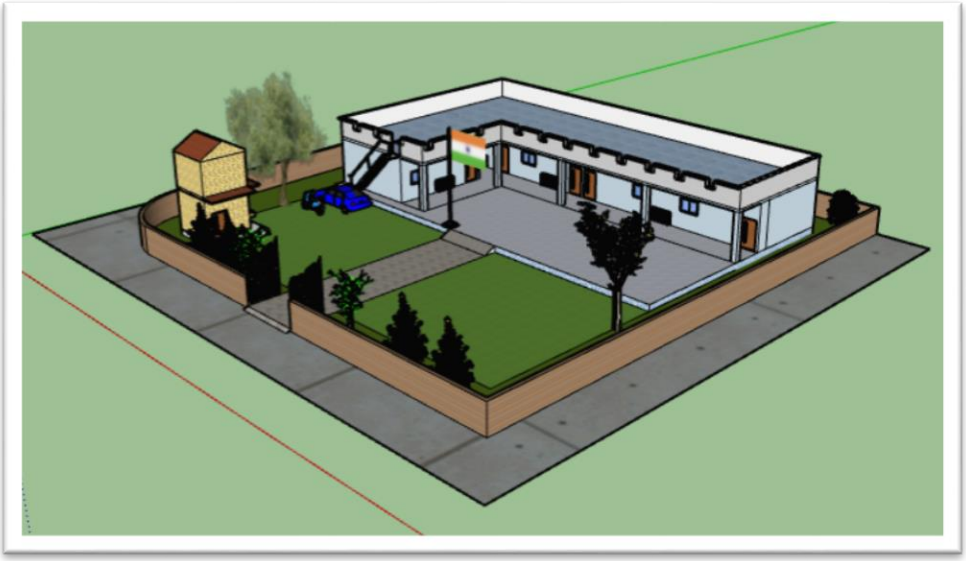


Figure 46 ISO view

(TOP VIEW)

Figure 47 Top view

8.1.6 Estimation and Costing

SR NO.	ITEM DESCRIPTION	NO	L	B	H	QUANTITY	TOTAL QUANTITY	UNIT
1	**EXCAVATION FOR FOUNDATION**							
	L1= 7.73+7.73+7.73+7.73+0.9	2	31.82	0.9	1.1	63.00		
	L2= 6.23+0.9	2	7.13	0.9	1.1	14.12		
	S1= 6.23-0.9	5	5.33	0.9	1.1	26.38		
	S2 = 7.73-0.9	2	6.83	0.9	1.1	13.52		
	TOTAL QUANTITY OF EXCAVATION						**117.03**	**M^3**
2	**P.C.C**							
	L1	2	31.82	0.9	0.2	11.46		
	L2	2	7.13	0.9	0.2	2.57		
	S1	5	5.33	0.9	0.2	4.80		
	S2	2	6.83	0.9	0.2	2.46		
							21.28	**M^3**
3	**1ST STEP BRICK WORK IN FOUNDATION**							
	L1=31.82-0.4	2	31.42	0.5	0.3	9.43		
	L2=7.13-0.4	2	6.73	0.5	0.3	2.02		
	S1=5.33+0.4	5	5.73	0.5	0.3	4.30		
	S2=6.83+0.4	2	7.23	0.5	0.3	2.17		
							17.91	**M^3**
4	**2ND STEP BRICK WORK IN FOUNDATION**							
	L1=31.42-0.1	2	31.32	0.4	0.3	7.52		
	L2=6.72-0.1	2	6.62	0.4	0.3	1.59		
	S1=5.73+0.1	5	5.83	0.4	0.3	3.50		
	S2=7.23+0.1	2	7.33	0.4	0.3	1.76		

							14.36	**M³**
5	**3RD STEP BRICK WORK IN FOUNDATION BELOW G.L**							
	L1=31.32-0.1	2	31.22	0.3	0.3	5.62		
	L2=6.62-0.1	2	6.52	0.3	0.3	1.17		
	S1=5.83+0.1	5	5.93	0.3	0.3	2.67		
	S2=7.33+0.1	2	7.43	0.3	0.3	1.34		
							10.80	**M³**
6	**TOTAL BRICK WORK IN FOUNDATION**						**43.07**	**M³**
7	**GL TO PLINTH**							
	L1=31.22	2	31.22	0.3	0.6	11.24		
	L2=6.52	2	6.52	0.3	0.6	2.35		
	S1=5.93	5	5.93	0.3	0.6	5.34		
	S2=7.43	2	7.43	0.3	0.6	2.67		
							21.60	**M³**
8	**(A)PLINTH TO SUPER STRUCTURE**							
	L1=31.22-0.07	2	31.15	0.23	3	42.99		
	L2=6.52-0.07	2	6.45	0.23	3	8.90		
	S1=5.93+0.07	5	6	0.23	3	20.70		
	S2=7.43+0.07	2	7.5	0.23	3	10.35		
							82.94	**M³**
	(B)FROM SLAB TOP TO PERAPET TOP BRICK WORK							
	L1	2	31.15	0.24	1.5	22.43		
	L2	2	6.45	0.24	1.5	4.64		
	S1	5	6	0.24	1.5	10.80		
	S2	2	7.5	0.24	1.5	5.40		
							43.27	**M³**

	TOTAL BRICK WORK IN SUPER STRUCTURE						**126.21**	**M³**
9	**DEDUCTION IN SUPER STRUCTURE**							
	(A)FOR LINTLE							
	D1=1.15x2.1	5	1.45	0.24	0.15	0.26		
	W=1.5x1.4	15	1.8	0.24	0.15	0.97		
							1.23	**M³**
	(B) DOOR AND WINDOW							
	D1=1.15x2.1	5	1.15	0.24	2.1	2.90		
	W1=1.5x1.4	15	1.5	0.24	1.4	7.56		
							10.46	**M³**
	TOTAL QUANTITY BRICK WORK IN SUPER STRUCTURE AFTER DEDUCTION						**114.52**	
10	**R.C.C WORK**							
	(A)SLAB NO.1	1	31.2	10.98	0.23	78.79		
	SALB NO.2	1	9.48	7.98	0.23	17.40	**96.19**	**M³**
	(B)R.C.C CHAJJA							
	W1=1.5x1.4	10	1.5	0.6	0.1	0.90		
						0.00	**0.90**	**M³**
	(C)LINTLE							
	D1=1.15x2.1	5	1.45	0.24	0.15	0.26		
	W=1.5x1.4	15	1.8	0.24	0.15	0.97		
							1.23	**M³**
	TOTAL R.C.C WORK						**98.33**	**M³**
10	**FLOORING**							
	CLASSROOM 1 TO 3 & OFFICE = 7.5X6	4	7.5	6		180.00		
	CLASSROOM 4 = 6X7.5	1	6	7.5		45.00		
	LOBI 1	1	31.2	3		93.60		
	LOBI 2	1	3	7.98		23.94		

						0.00		
						0.00	**342.54**	**M²**
	TOTAL QUANTITY OF FLOORING						**342.54**	
11	**SMOOTH PLASTER INSIDE THE ROOMS AND CELINGS**							
	(A)ONLY WLL							
	CLASSROOM 1 TO 3 & OFFICE = 7.5X6	8	7.5		3	180.00		
		8	6		3	144.00		
	CLASSROOM 4 = 6X7.5	2	6		3	36.00		
		2	7.5		3	45.00		
						0.00	**405.00**	**M²**
	(B) CEILING PLASTER							
	CLASSROOM 1 TO 3 & OFFICE = 7.5X6	4	7.5	6		180.00		
	CLASSROOM 4 = 6X7.5	1	6	7.5		45.00		
						0.00	**225.00**	**M²**
	(c) DEDUCTIOND IN PLASTER							
	D1=1.15x2.1	5	1.5		2.1	15.75		
						0.00		
	W1=1.5X1.4	15	1.5		1.4	31.50		
							47.25	**M²**
12	**TOTAL QUANTITY OF PLASTER WORK**						**582.75**	**M²**

ABSTRACT SHEET OF SCHOOL

SR . NO.	ITEM DESCRIPTION	TOTAL QUANTITY	PER	RATE	AMOUT RS.		
1	EXCAVATION IN FOOTI.	117.03	CUMEC	90.00	10532.51		
2	PCC	21.28	CUMEC	3500.00	74472.30		
4	BRICK WORK IN FOU.	43.07	CUMEC	3500.00	150756.90		
5	BRICK WORK IN S.S.	114.52	CUMEC	3500.00	400816.50		
6	RCC WORK	98.33	CUMEC	9000.00	884925.65		
7	TILES BOX (4 PEACE)	25	BOX	350.00	8750.00		
8	PLASTER	582.75	SQ.M	500.00	291375.00		
			TOTAL		**1821628.86**		
	ADD 3% CONTINGENCIES RS.				9445.28		
	ADD2% WORK CHARGED ESTABLISHMENT				6296.85		
	GRAND TOTAL				**1837370.99**		

8.2 Community Hall Design

To design a community hall in Vadpura village by survey planning, design and estimation. To provide facilitate for social and cultural development of village, it should described the village will developed after providing facilities to villagers.

8.2.1 Introduction

The word ‘community’ is derived from the Latin word ‘communutas’ means the same. According to Merriam (2008), community is an interacting population of various kinds of individuals in a common location and having common interests.

Village and community halls are the smallest buildings that can accommodate a sports programme alongside the customary social and arts pursuits.

Keeping consistency with the meaning of community, community center (CC) means premises operated by or on behalf of a government or non-profit organization for providing

community activities, which may include but is not limited to arts, crafts, physical, social, charitable and educational activities (CCD, 2005).

8.2.2 Location :

A central location with sufficient car parking is best, close to shops and other well-used facilities and to public transport. A site that is equally accessible to established and new areas of development can instill a sense of ownership across the community.

8.2.3 Aims of Community Hall

- Promotes the values and worth of all people.
- Encourages the active involvement of all residents and groups.
- Celebrates the cultural richness and diversity of the community.
- Creates opportunities for the development of individual potential and wellbeing.
- Fosters a cohesive and harmonious community.

8.2.4 Objective of community hall

- To provide an inviting, accessible and safe community facility as a focal point for all residents and groups to meet
- To develop programmes, services and activities that the address the social, cultural, recreational, welfare and educational needs of the community, which includes the needs of those from non-English speaking backgrounds and Aboriginal or Torres Strait Islander backgrounds
- To establish networks with other groups, community leaders and key agencies to pool resources and take up issues of concern for the benefit of the community
- To competently administer the centre to operate efficiently and ensure financial and ensure financial and community accountability
- To establish strategic partnerships with key organizations, and in particular, Ash field Municipal Council
- To establish a skilled team of volunteers to function as an essential support for the centre's operations
- To provide information to residents about their rights, community services available, and referral assistance to the relevant agencies for individuals who need help
- To attract resources to the centre through fund raising, applying for grants and seeking sponsorships
- To promote strong membership of the Summer Hill Community Centre so that it is representative of the local community, its issues and its needs, and that it is viable in the long term as an organization association

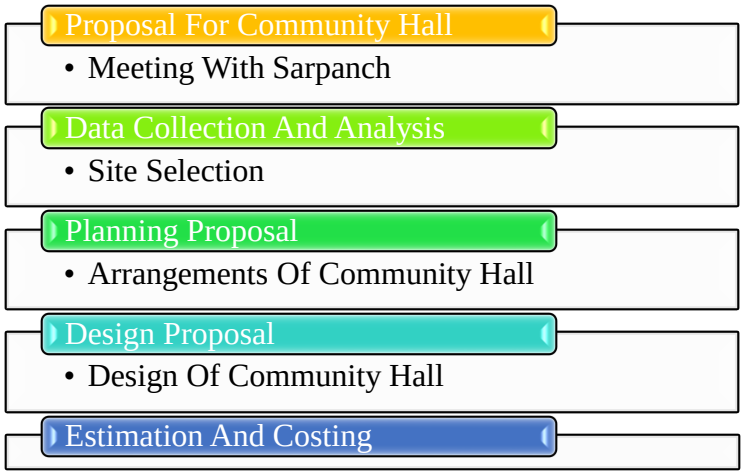
8.2.5 Planning of community hall

The proposed functions of the building must be carefully considered to achieve an efficient plan form that permits flexibility and concurrent occupation by different user groups a

drama rehearsal in the main hall and a simultaneous yoga class in a smaller, nearby room, for example. Good acoustic separation is essential and is achieved through careful planning and specification of construction materials. Implementing separation is made more difficult by the need to arrange for the kitchen, and perhaps a bar, to serve two or more spaces.

Lobbied or back-to back double doors can help isolate noise. Routes through the building should allow for reasonable segregation of user groups. On account should the main hall or other public rooms be used for general access, and stores should always be directly accessible from the spaces they serve.

8.2.6 Methodology of community hall



8.2.7 Plan of Community hall (Final Design)

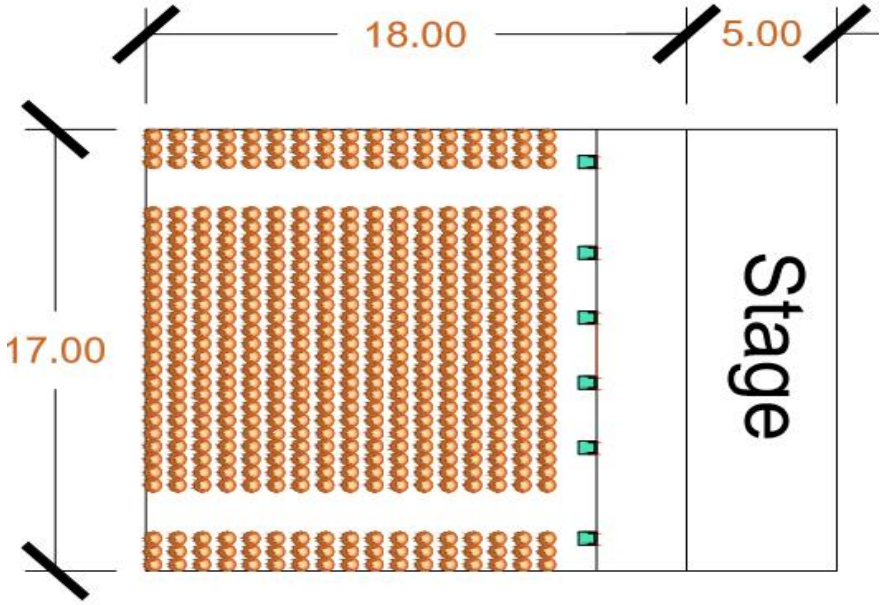


Figure 48 Plan of community hall

8.2.8 Final Design

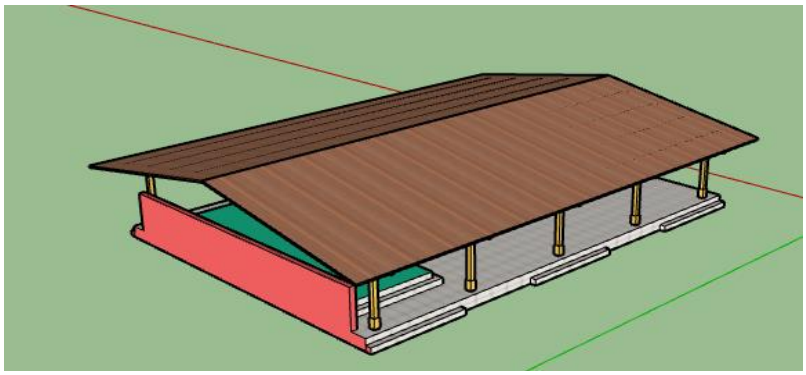


Figure 49ISO view

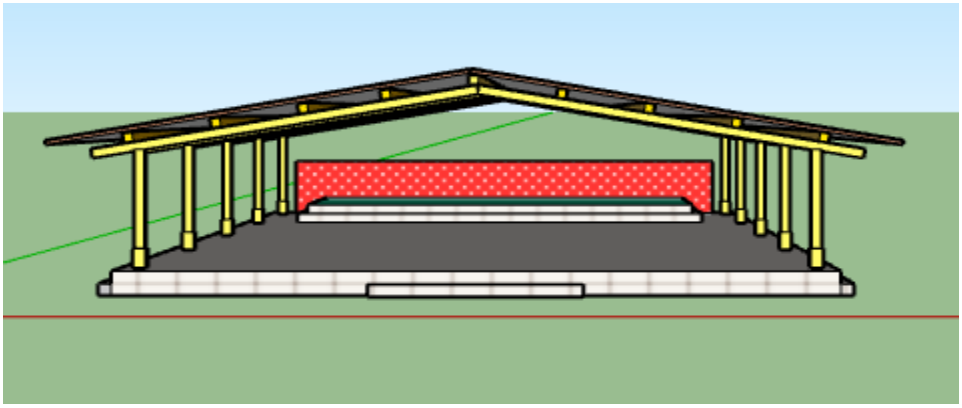


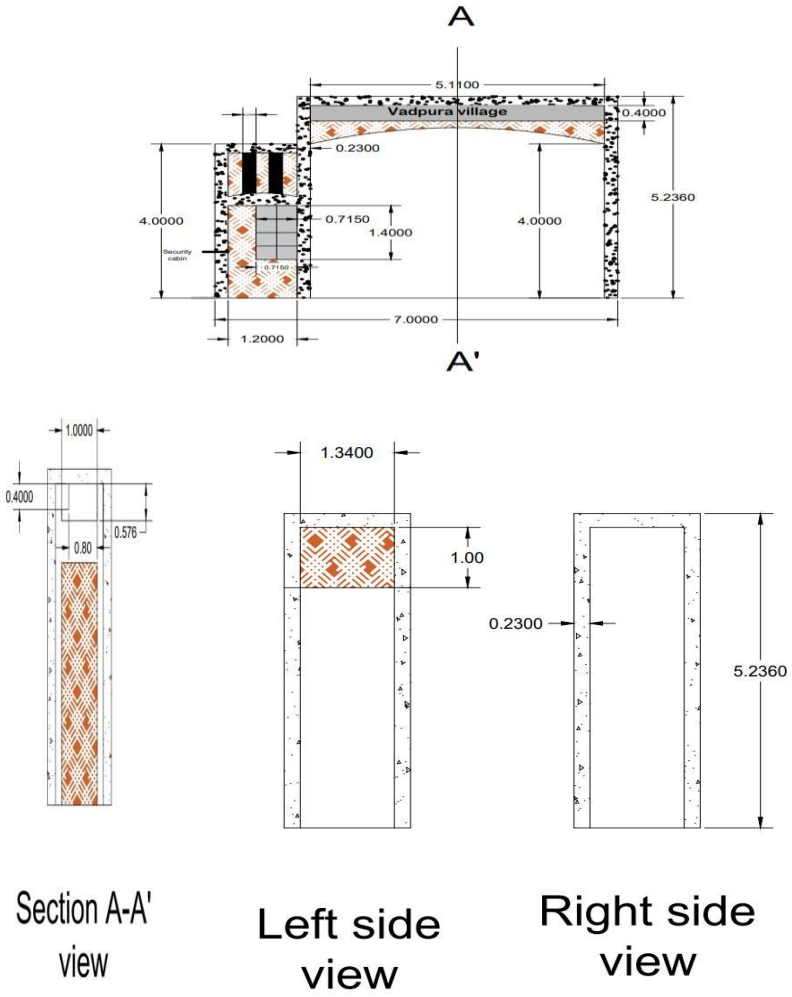
Figure 50Front view

8.3 Main Gate Design

8.3.1 Location of main gate

Figure 51 Location of gate

8.3.2 Design of main gate



8.3.3 Estimation and Costing of gate

ESTIMATION

SR NO.	ITEM DESCRIPTION	NO	L	B	H	QUANTITY	TOTAL QUANTITY	UNIT
1	**EXCAVATION FOR FOUNDATION**							
	For Column	6	0.9	0.9	1.3	6.318	**6.318**	m3
2	Concreting in foundation (rectangular portion)	6	0.9	0.9	0.5	2.43		
	Concreting in foundation (Triangle portion)	6	0.5	0.9	0.5	1.35		

	Concreting in foundation (Slab with 0.23 wall portion)	1	7	2.26	0.3	4.746	**8.526**	m3
3	Concreting in column							
	long column	4	0.23	0.23	5.24	1.108784		
	Short column	2	0.23	0.23	4	0.4232	**1.531984**	m3
4	concreting in slab							
	slab1	1	5.11	2.26	0.2	2.30972		
	slab2	1	1.2	2.26	0.2	0.5424	**2.85212**	m3
5	concreting in below slab	1	5.11	2.26	0.4	4.61944	**4.61944**	m3
6	Concreting in curve portion	1	5.11	2.26	0.4	4.61944	**4.61944**	m3
							9.23888	m3
7	Brickwork in super structure							
	wall (side)	3	1.8	0.23	4.21	5.22882		
	wall (Front and back)	2	1.5	0.23	4.21	2.9049	**8.13372**	m3
8	Deduction in S.S							
	Door	1	0.9	0.23	2.4	0.4968		
	Window	1	1.4	0.23	0.715	0.23023	**0.72703**	
9	**Total brick work**						**7.40669**	**m3**
10	**Total concreting work**						**22.148984**	**m3**

Abstract sheet of hall

SABSTRACT OF QUANTITIES							
SR . NO.	**ITEM DESCRIPTION**	**TOTAL QUANTITY**	**PER**	**RATE**	**AMOUT RS.**		
1	EXCAVATION IN COLUMN	6.32	CUMEC	90.00	568.62		
2	PCC	8.53	CUMEC	3500.00	29841.00		
3	EARTH FILLING	0	CUMEC	50.00	0.00		

4	BRICK WORK IN FOU.	5.00	CUMEC	3500.00	17500.00		
5	BRICK WORK IN S.S.	7.41	CUMEC	3500.00	25923.42		
6	RCC WORK	22.15	CUMEC	9000.00	199340.86		
7	TILES BOX (4 PEACE)	0	BOX	350.00	0.00		
8	PLASTER	0.00	SQ.M	500.00	0.00		
			TOTAL		**273173.89**		
	ADD 3% CONTINGENCIES RS.				9445.28		
	ADD2% WORK CHARGED ESTABLISHMENT				6296.85		
	GRAND TOTAL				**288916.02**		

8.4 Anganwadi Design

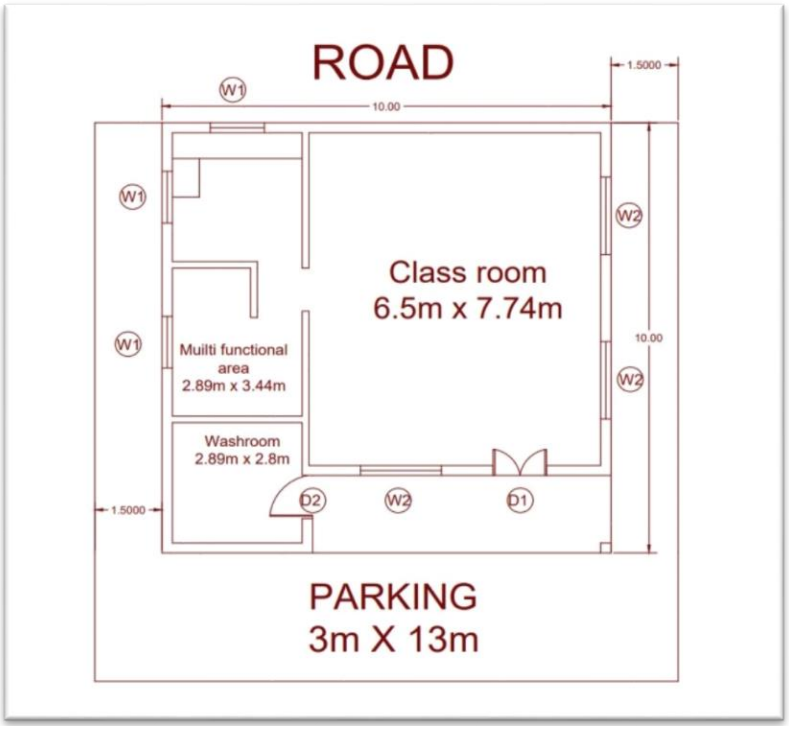


Figure 52Plan of Anganwadi

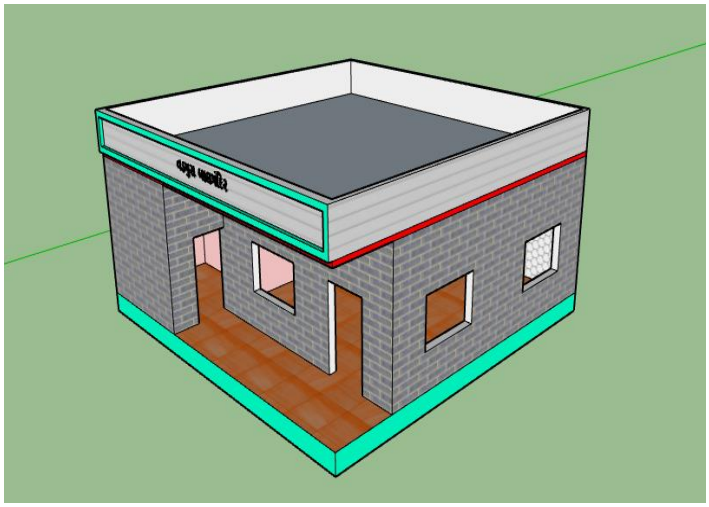


Figure 53 ISO view of Anganwadi

8.4.1 Estimation and costing

ESTIMATION

SR NO.	ITEM DESCRIPTION	NO	L	B	H	QUANTITY	TOTAL QUANTITY	UNIT
1	**EXCAVATION FOR FOUNDATION**							
	CENTER LINE LENGTH	1	38.47	0.9	1.2	41.5476	**41.5476**	M3
	L=10-0.23X4							
	L=38.92							
2	PCC IN FOUNDATION	1	41.76	0.9	0.3	11.2752	**11.2752**	M3
3	1ST STEP BRICKWORK							
	L=38.92-0.5*0.8*1	1	41.36	0.8	0.2	6.6176		
4	2nd STEP BRICKWORK							
	L=38.92-0.5*0.6*1	1	41.46	0.6	0.2	4.9752		
5	3RD STEP							
	L=38.92-0.5*0.4*1	1	41.56	0.4	0.2	3.3248		
6	4TH STEP							

	L=38.92-0.5*0.23*1	1	41.645	0.23	0.3	2.873505		
7	**TOTAL BRICKWORK IN FOUNDATION**						**17.791105**	M3
8	SUPER STRUCTURE	1	41.645	0.23	3	28.73505	**28.73505**	M3
9	DEDUCTION IN S.S							
	DOOR	1	1.2	0.23	2.1	0.5796		
	WINDOW 1	3	1.2	0.23	1.2	0.9936		
	WINDOW 2	3	1.8	0.23	1.2	1.4904		
	VENTILATION	1	0.9	0.23	0.9	0.1863		
							3.2499	M3
10	**TOTAL BRICKWORK IN S.S**						**25.48515**	M3
11	SLAB	1	10	10	0.2	20	**20**	M3
12	PERAPET WALL	1	40	0.23	1.5	13.8	**13.8**	M3
13	PLASTER	4	10		3	120	**120**	M2

COSTING

ABSTRACT OF QUANTITIES							
SR . NO.	**ITEM DESCRIPTION**	**TOTAL QUANTITY**	**PER**	**RATE**	**AMOUT RS.**		
1	EXCAVATION IN FOOTI.	41.55	CUMEC	90.00	3739.28		
2	PCC	11.28	CUMEC	3500.00	39463.20		
3	EARTH FILLING	0	CUMEC	50.00	0.00		

4	BRICK WORK IN FOU.	17.79	CUMEC	3500.00	62268.87		
5	BRICK WORK IN S.S.	25.49	CUMEC	3500.00	89198.03		
6	RCC WORK	20.00	CUMEC	9000.00	180000.00		
7	TILES BOX (4 PEACE)	25	BOX	350.00	8750.00		
8	PLASTER	120.00	SQ.M	500.00	60000.00		
			TOTAL		**443419.38**		
	ADD 3% CONTINGENCIES RS.				9445.28		
	ADD2% WORK CHARGED ESTABLISHMENT				6296.85		
	GRAND TOTAL				**459161.50**		

8.5 Solid waste management

8.5.1 Introduction

To manage solid waste for creating hygiene and healthy environment by using method of collection of waste vermicompost method and sanitary landfill to decompose the waste for Vadpura village.

8.5.2 Location

Figure 54Location of solid waste

8.5.3 Vermicompost

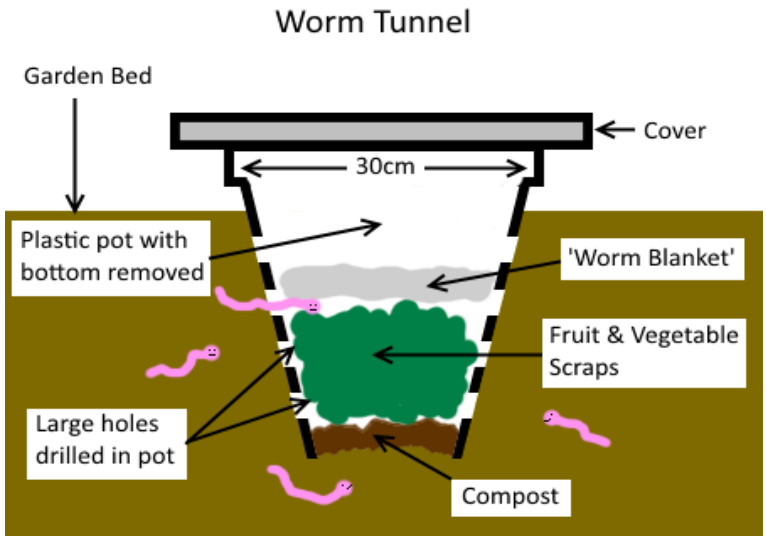
Vermicompost is the product of the decomposition process using various species of worms, usually red wigglers, white worms, and other earthworms, to create a mixture of decomposing vegetable or food waste, bedding materials, and vermicast.

Benefits of Vermicompost/casting on the soil

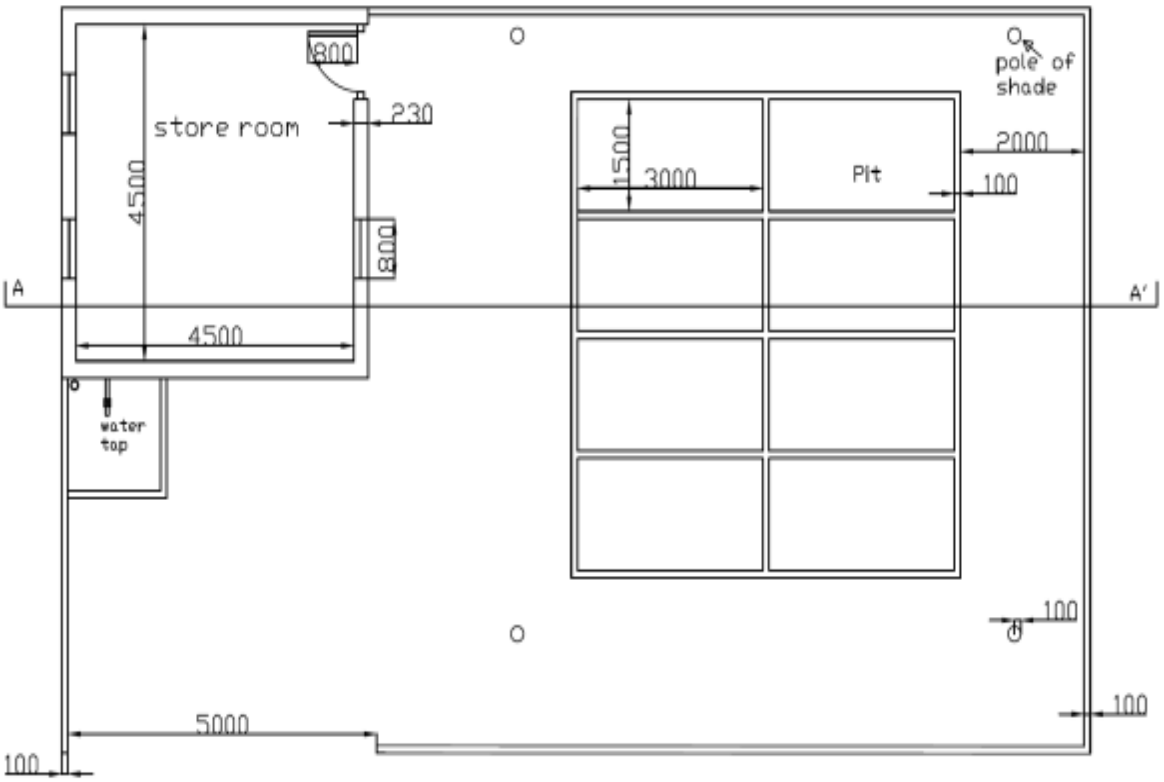
- Increase moisture and nutrient retention of the soil.
- Improves aeration and root penetration.
- Reduces crusting of soil surface.
- Micronutrients are added.
- Increases the number of beneficial soil microorganisms.
- Pathogen suppression.
- Nutrient Delivery.
- Water Retention.
- Increased Microorganism Populations.
- Pest Suppression.
- Plant Growth Regulation and Higher Yields.
- Polluted Soil Remediation.

Disadvantages of Composting

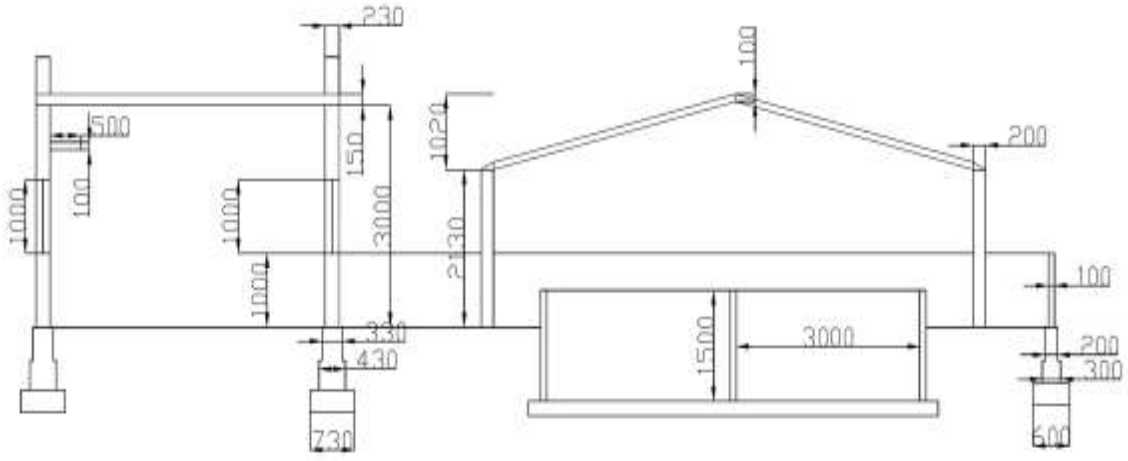
- Requires initial investment.
- Efficiency depends on your amount of organic waste.
- Unpleasant smell.
- Neighbors may complain.
- May attract rats, snakes and bugs.
- Rather unpleasant physical appearance.
- Involves plenty of work.
- Needs some monitoring.



8.5.4 Vermicompost Method Design



PLAN



section at A-A'

8.5.5 Estimation and Costing

Measurement Sheet

SR.NO	ITEM	TOTAL COST
1	Brick Work Total built up = 23.4 m3 Required num. of brick – Rs12,000 Cost of brick – Rs4	Total cost of brick =48,000
2	Rate of slab – 3686 Rs/m^3(labour + formwork + lifting) -Total 18 m^3	Total cost of slab – 18x3686 = Rs66,350
3	Interior plastering –Rs. 156 / m^2 Total 54 m^2 Plastering	Total cost of Interior plastering – 54x156= Rs. 8,430
4	Flooring (40 mm thick)- Rs. 227 Rs /m^2 Total 18 m^2	Total cost of flooring– 18 x 227= Rs. 4,090/-
5	Number of window = 3	Cost of window (1x1) @ Rs 500. = Rs1500.
6	Number of door = 1	Total cost of door (2x1.2) @ Rs 1900 = Rs1900
7	Reinforcement - Rs. 80 Rs/m^3	Total cost of Reinforcement – 30,000Rs
8	Other cost	Rs 10,000
9	Add 30 % for Sub Structure	*Total cost of excavation, foundation, etc = Rs51,081*
10	Total Cost	*Rs2,21,351*

Abstract Sheet

ABSTRACT OF QUANTITIES							
SR . NO.	**ITEM DESCRIPTION**	**TOTAL QUANTITY**	**PER**	**RATE**	**AMOUT RS.**		
1	EXCAVATION IN FOOTI.	50.00	CUMEC	90.00	4500.00		
2	PCC	20.00	CUMEC	3500.00	70000.00		
3	EARTH FILLING	0	CUMEC	50.00	0.00		
4	TOTAL BRICK WORK	23.40	CUMEC	3500.00	81900.00		
5	BRICK WORK IN S.S.	0.00	CUMEC	3500.00	0.00		
6	RCC WORK	3686.00	CUMEC	20.00	73720.00		
7	TILES BOX (4 PEACE)	0	BOX	350.00	0.00		
8	PLASTER	54.00	SQ.M	500.00	27000.00		
9	FLOORING	20	SQ.M	500.00	10000.00		
			TOTAL		**257120.00**		
	ADD 3% CONTINGENCIES RS.				9445.28		
	ADD2% WORK CHARGED ESTABLISHMENT				6296.85		
	GRAND TOTAL				**272862.13**		

8.6 Septic Tank Design

8.6.1 Introduction

A septic tank can be defined as primary sedimentation tank with large detention time (12 to 36hrs against a period of 2hrs in an ordinary sedimentation tank).

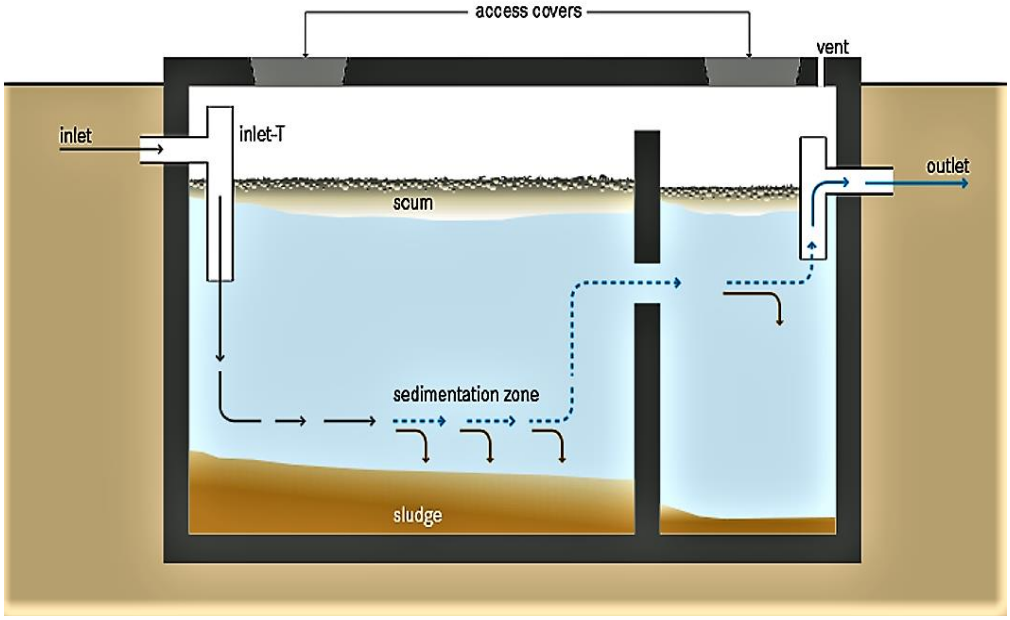


Figure 55Front view of septic tank

8.6.1 Design of Septic Tank

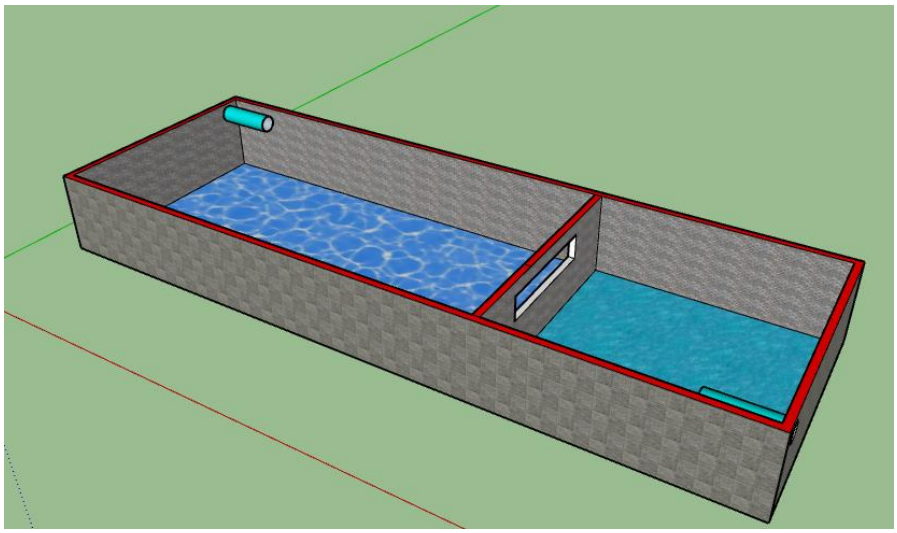


Figure 56ISO view of septic tank

8.6.2 Estimation and Costing

ESTIMATION

SR NO.	ITEM DESCRIPTION	NO	L	B	H	QUANTITY	TOTAL QUANTITY	UNIT
1	EXCAVATION	1	23.91	8.2	2.8	548.97	548.97	M^3
2	PCC	1	23.91	8.2	0.3	58.82	58.82	M^3
3	BRICKWORK IN FOUNDATION							
	L1	2	23.91	0.23	2.8	30.80		
	L2	2	7.74	0.23	2.8	9.97		
	L3	1	7.74	0.23	1.4	2.49		
4	TOTAL BRICKWORK IN FOUNDATION						43.26	M^3
5	SLAB	1	23.91	8.2	0.2	39.21	39.21	M^3
6	PLASTER							
	L1	4	23.91		2.8	267.79		
	L2	4	7.74		2.8	86.69		
	L3	2	7.74		1.4	21.67		
7	TOTAL PLASTER						376.15	M^2

COSTING

ABSTRACT OF QUANTITIES							
SR . NO.	**ITEM DESCRIPTION**	**TOTAL QUANTITY**	**PER**	**RATE**	**AMOUT RS.**		
1	EXCAVATION	548.97	CUMEC	90.00	49407.62		
2	PCC	78.42	CUMEC	1000.00	78424.80		
3	EARTH FILLING	0	CUMEC	50.00	0.00		
4	TOTAL BRICK WORK	43.26	CUMEC	2500.00	108143.70		
5	BRICK WORK IN S.S.	0.00	CUMEC	3500.00	0.00		
6	RCC WORK	34.69	CUMEC	1000.00	34690.80		
7	TILES BOX (4 PEACE)	0	BOX	350.00	0.00		
8	PLASTER	376.15	SQ.M	100.00	37615.20		
			TOTAL		**308282.12**		
	ADD 3% CONTINGENCIES RS.				9445.28		
	ADD2% WORK CHARGED ESTABLISHMENT				6296.85		
	GRAND TOTAL				**324024.25**		

CHAPTER: 09

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

After completion of visit & data collection the project carried out in the current semester. By the help of this data we predict the future development of Vadpura village in the field are:

- The village still lacks in many building and various structures. Taking this into consideration the estimation of its rehabilitation with other necessary amenities will be designed in the next semester.
- Future scope would be study over other different urban amenities that would be sustainable in rural areas of Mehsana.
- In the next semester, we can provide Milk dairy, Water tank, Post office, Bus stand, Library and PHC

1. **Bus stand:** In the village there is bus stand but it is in maintenance there is no buses are coming for that we have planning to design one of the most attractive bus stands for villagers to made easy travel experience in nearby cities.

2. **Panchayat building:** In the village there is panchayat building but it is in maintenance. For easiness of villager we design the panchayat building.

3. **PHC:** In village health center is required for Public by undertaking the requirement of the villagers we have design the Public health center.

4. **Milk dairy:** In the village there is Dairy but it is in maintenance. For better use of building and other facility of villager we provide the dairy.

5. **Library:** In Vadpura village has no library, so we planning, design, estimation and Costing of Library in Vadpura village

6. **Over head water tank:** in the village there is a water tank but it is required maintenance. For better use of tank and other facility of villager we provide in the village.

CHAPTER: 10

10. Conclusion of the Entire Village Activities of the Project

With help of Gap analysis we conclude that some of different smart village facilities are required as basic or primary level which still lack in village. So according to Gap analysis of Vadpura village such as Primary school, Water tank, Road network, Solid waste management etc Smart village can solve their problem itself can become a smart village example to other village too. According Urban Development Plans Formulation and Implementation (UDPFI) norms, lacking in basic amenities and smart amenities can be provided as Public library, Children's Play Ground, Community hall, Solid Waste Management system by providing required amenities to village, development of village can be possible. So, ultimately migration to the city from village will be reduced and livelihood of villagers will increase. So healthy and prosperous life can be possible for the villagers Ultimate growth of village and people is base step for the development of country. India is developing country and GDP is highly depended on farming. As the development of village would be possible, farming techniques will increase and percentage of GDP will increase.

This project is proved as very knowledge gaining and interesting for us. After doing this project we have understood that the development of villages is equally important as urban area for country‘s overall growth. the village needs some infrastructural facilities to make village a better place we have tried our best by applying our technical knowledge in this project by proposing designs for some basic amenities which required. By this project we have learned so many things and it was the great experience of village culture and environment.

We are proposing a design base on our survey, knowledge and Gap analysis to village for its development. Following are all design we propose for village are:

1. School building
2. Main gate
3. Community hall
4. Solid waste management
5. Anganwadi
6. Septic tank

CHAPTER: 11

11. References refereed for this project

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www.censusgujarat.gov.in
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URDPFI norms
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CHAPTER: 12

12. Annexure attachment

12.1 Survey form of Smart Village

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:	Sabarkatha
Name of Taluka:	Gandhinagar
Name of Village:	Pansari
Name of Institute:	S P B patel engineering college
Nodal Officer Name & Contact Detail:	Prof Rajat mishra. (HOD) (6355632102)
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	SMT Sumandaben patel Ashishbhai chaudhary Sejalben patel.
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	4677	2221	2456	1199

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1531-65-76
2.	Forest Area (In hect.)	219-60-45
3.	Agricultural Land Area (In hect.)	1085-63-62
4.	Residential Area (In hect.)	18-57-57
5.	Other Area (In hect.)	1015-03-62
6.	Distance to the nearest railway station (in kilometers):	10 km away (dharmaj)

7.	Name of Nearest Town with Distance:	Ambasan (4km) Nana chekhla (4km)
8.	Distance to the nearest bus station (in kilometers):	Ambasan (4km)
9.	Whether village is connected to all road for the any facility or town or City?	Ambasan (4km) Nana chekhla (4km)

III. OCCUPATIONAL DETAILS:

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

Major crops grown in the village:	1.	Potato
	2.	Sugarcane
	3.	Wheat

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
1.	**PIPED WATER** Piped Into Dwelling Piped To Yard/Plot Public Tap/Standpipe Tube Well Or Bore Well	Tube-well	✓		NO
2.	**DUG WELL** Protected Well Un Protected Well	protected well	✓		NO
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring	protected Spring	✓		NO
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump	other specify	✓		NO

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	Other(Specify)**Lake/ Pond**				
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:			
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1	under-ground drainage	✓		NO
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	C C Road	✓		NO
	Main road	Bitumen	✓		No
	Internal streets	C.C Road	✓		No
	Nearest NH/SH/MDR/ODR Dist. in kms.	Bitumen Road	✓		NO
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)		✓		NO
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)			✓	Must required
	Local Transportation (Auto/ Jeep/~~Chhakda~~/ Private Vehicles/ Other)		✓		NO
Suggestions if any: NO					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes UGVCL more then 6 hrs	✓		NO

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	Power supply for Domestic Use	24 hrs	✓		No
	Power supply for Agricultural Use	8 hrs		✓	More required
	Power supply for Commercial Use	24 hrs	✓		No
	Road/ Street Lights	In night	✓		No
	Electrification in Government Buildings/ Schools/ Hospitals	24 hrs	✓		No
	Renewable Energy Source Facilities (Y/ N)	No		✓	Required.
	LED Facilities	No		✓	Required
Suggestions if any:	No				
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	No		✓	Required.
	Location Condition	Good			No
	Community Toilet (With bath/ without bath facilities)	Yes.	✓		No
	Solid & liquid waste Disposal system available	Available	✓		No
	Any facility for Waste collection from road	By Municipal			No
Suggestions if any:	No				
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Tube-well	✓		No
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	85% Pucca 15% kutchha	✓		No

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	Yes	✓		
	Sub-Centre				
	PHC	yes	✓		
	BLOCK PHC				
	CHC/RH	Yes	✓		
	District/ Govt. Hospital	Yes	✓		NO
	Govt. Dispensary				
	Private Clinic	yes	✓		
	Private Hospital/	Yes	✓		
	Nursing Home	Yes	✓		
	AYUSH Health Facility				
	sonography /ultrasound facility	Yes	✓		
	If any of the above Facility is not available in village than approx. distance from village: ……kms.				
Suggestions if any:	No				
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Yes	✓		NO
	Primary School	Yes	✓		NO
	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	Yes	✓		NO

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

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

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

Suggestions if any:

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

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

Suggestions if any: NO

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)	—	—	—	—

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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	Nothing			
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	No			
3.	Any Other	CCTV			

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	Yes		✓	More development needed.
3.	Any NGO working for village development	Yes	✓		
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	No			

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

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

IX. Smart Village / Heritage Details

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

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

સરપંચ
વડપુરા ગ્રામ પંચાયત
તા.કડી, જી.મહેસાણા

9

12.2 Survey form of Ideal Village

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:	Sabarkatha
Name of Taluka:	Gandhinagar
Name of Village:	Pansari
Name of Institute:	S P B patel engineering college
Nodal Officer Name & Contact Detail:	Prof Rajat mishra. (HOD) (6355632102)
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	SMT Sumandaben patel Ashishbhai chaudhary Sejalben patel.
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	4677	2221	2456	1199

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1531-65-76
2.	Forest Area (In hect.)	219-60-45
3.	Agricultural Land Area (In hect.)	1085-63-62
4.	Residential Area (In hect.)	18-57-57
5.	Other Area (In hect.)	1015-03-62
6.	Distance to the nearest railway station (in kilometers):	10 km away (dhansura)

7.	Name of Nearest Town with Distance:	Ambasar (4km) Nana chekhla (4km)
8.	Distance to the nearest bus station (in kilometers):	Ambasar (4km)
9.	Whether village is connected to all road for the any facility or town or City?	Ambasar (4km) Nana chekhla (4km)

III. OCCUPATIONAL DETAILS:

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

Major crops grown in the village:	1. Potato 2. Sugarcane 3. Wheat

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

	Other(Specify)**Lake/ Pond**				
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:			
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1	under-ground drainage	✓		NO
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	C C Road	✓		NO
	Main road	Bitumen	✓		No
	Internal streets	C.C Road	✓		No
	Nearest NH/SH/MDR/ODR Dist. in kms.	Bitumen Road	✓		NO
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)		✓		NO
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)			✓	Must required
	Local Transportation (Auto/ Jeep/~~Chhakda~~/ Private Vehicles/ Other)		✓		NO
Suggestions if any: NO					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes UGVCL more then 6 hrs	✓		NO

	Power supply for Domestic Use	24 hrs	✓		No
	Power supply for Agricultural Use	8 hrs		✓	More required
	Power supply for Commercial Use	24 hrs	✓		No
	Road/ Street Lights	In night	✓		No
	Electrification in Government Buildings/ Schools/ Hospitals	24 hrs	✓		No
	Renewable Energy Source Facilities (Y/ N)	No		✓	Required.
	LED Facilities	No		✓	Required
Suggestions if any:	No				
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	No		✓	Required.
	Location Condition	Good			No
	Community Toilet (With bath/ without bath facilities)	Yes.	✓		No
	Solid & liquid waste Disposal system available	Available	✓		No
	Any facility for Waste collection from road	By Municipal			No
Suggestions if any:	No				
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL OTHER (SPECIFY)	Tube-well	✓		No
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	85% Pucca 15% Kutchha	✓		No

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	Yes	✓		
	Sub-Centre				
	PHC	yes	✓		
	BLOCK PHC				
	CHC/RH	Yes	✓		
	District/ Govt. Hospital	Yes	✓		NO
	Govt. Dispensary				
	Private Clinic	yes	✓		
	Private Hospital/	Yes	✓		
	Nursing Home	Yes	✓		
	AYUSH Health Facility				
	sonography /ultrasound facility	Yes	✓		
	If any of the above Facility is not available in village than approx. distance from village: ……kms.				
Suggestions if any:	No				
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Yes	✓		NO
	Primary School	Yes	✓		NO
	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	Yes	✓		NO

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

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

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

Suggestions if any:

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

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

Suggestions if any: NO

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)	—	—	—	—

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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	Nothing			
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	No			
3.	Any Other	CCTV			

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	Yes		✓	More development needed.
3.	Any NGO working for village development	Yes	✓		
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	No			

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

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

IX. Smart Village / Heritage Details

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

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 Survey form of Allocated Village

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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:	Mehsana
Name of Taluka:	Kadi
Name of Village:	Vadpura
Name of Institute:	S.P.B Patel engineering college,
Nodal Officer Name & Contact Detail:	Prof. Rajat mishra (HOD) 6355632102
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Kanubhai A Patel (Sarpanch) Maheshbhai Patel (Talati)
Date of Survey:	10/10/2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	967	508	456	

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	595-58-19
2.	Forest Area (In hect.)	285-39-55
3.	Agricultural Land Area (In hect.)	
4.	Residential Area (In hect.)	
5.	Other Area (In hect.)	257-25-27
6.	Distance to the nearest railway station (in kilometers):	9 km away from Amboliyu station

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7.	Name of Nearest Town with Distance:	Kadi (27 km)
8.	Distance to the nearest bus station (in kilometers):	2km away from village
9.	Whether village is connected to all road for the any facility or town or City?	Yes.

III. OCCUPATIONAL DETAILS:

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

Major crops grown in the village:	1.	Potato
	2.	Sugarcane
	3.	Wheat.

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

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	Other(Specify)**Lake/ Pond**	NO			
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:			
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1	under-ground drainage	✓		NO
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	C C Road	✓		NO
	Main road	Bitumen	✓		No
	Internal streets	C.C Road	✓		No
	Nearest NH/~~SH~~/~~MDR~~/~~ODR~~ Dist. in kms. (1.5 km)	Bitumen Road	✓		NO
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	NO Ambaliyasan 9 km	✓		NO
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes 2 km away from vadpu...		✓	Must required
	Local Transportation (Auto/ Jeep/~~Chhakda~~/ Private Vehicles/ Other)		✓		NO
Suggestions if any:	NO				
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes UGVCL more then 6 hr	✓		NO

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	Power supply for Domestic Use	24 hrs	✓		No
	Power supply for Agricultural Use	8 hrs		✓	More required
	Power supply for Commercial Use	24 hrs	✓		No
	Road/ Street Lights	In night	✓		No
	Electrification in Government Buildings/ Schools/ Hospitals	24 hrs	✓		No
	Renewable Energy Source Facilities (Y/ N)	No		✓	Required.
	LED Facilities	No		✓	Required

Suggestions if any: Some more facilities are required using solar system.

G.	Sanitation Facility				
	Public Latrine Blocks If available than Nos.	No		✓	Required.
	Location Condition				
	Community Toilet (With bath/ without bath facilities)	No		✓	Required
	Solid & liquid waste Disposal system available	Not available		✓	we segeting warmi compost
	Any facility for Waste collection from road	Manuel		✓	Required

Suggestions if any: No

H.	Main Source of Irrigation Facility:				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Tube-well	✓		No

Suggestions if any:

I.	Housing Condition:				
	Kutchha/Pucca (Approx. ratio)	85% Pucca 15% Kutchha	✓		No

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	Yes	✓		
	Sub-Centre				Most of the facilities are away from village.
	PHC	NO		✓	
	BLOCK PHC			✓	
	CHC/RH	NO		✓	
	District/ Govt. Hospital			✓	
	Govt. Dispensary	NO		✓	
	Private Clinic	yes	✓		
	Private Hospital/	NO		✓	
	Nursing Home	Yes		✓	
	AYUSH Health Facility				
	sonography /ultrasound facility	NO		✓	
	If any of the above Facility is not available in village than approx. distance from village: .25...kms.				
Suggestions if any:	No				
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Yes	✓		NO
	Primary School	Yes	✓		NO
	Secondary school	NO	✓		NO
	Higher sec. School	NO	✓		NO
	ITI college/ vocational Training Center	No	✓		No
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	NO	✓		NO

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

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

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

Suggestions if any:

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

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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	Good		✓	
	Other Facility				

Suggestions if any: No

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village?	Not implemented			
	2. Are there any beneficiaries in the village from the following programme?	No.			
	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)				

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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	Nothing		✓	Need of Sustainable Infrastructure facilities
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	No		✓	Need these facilities to develop of Village
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	✓		
2.	Recent Projects going on for Development of Village	Yes		✓	More development needed.
3.	Any NGO working for village development	Yes	✓		
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	No			

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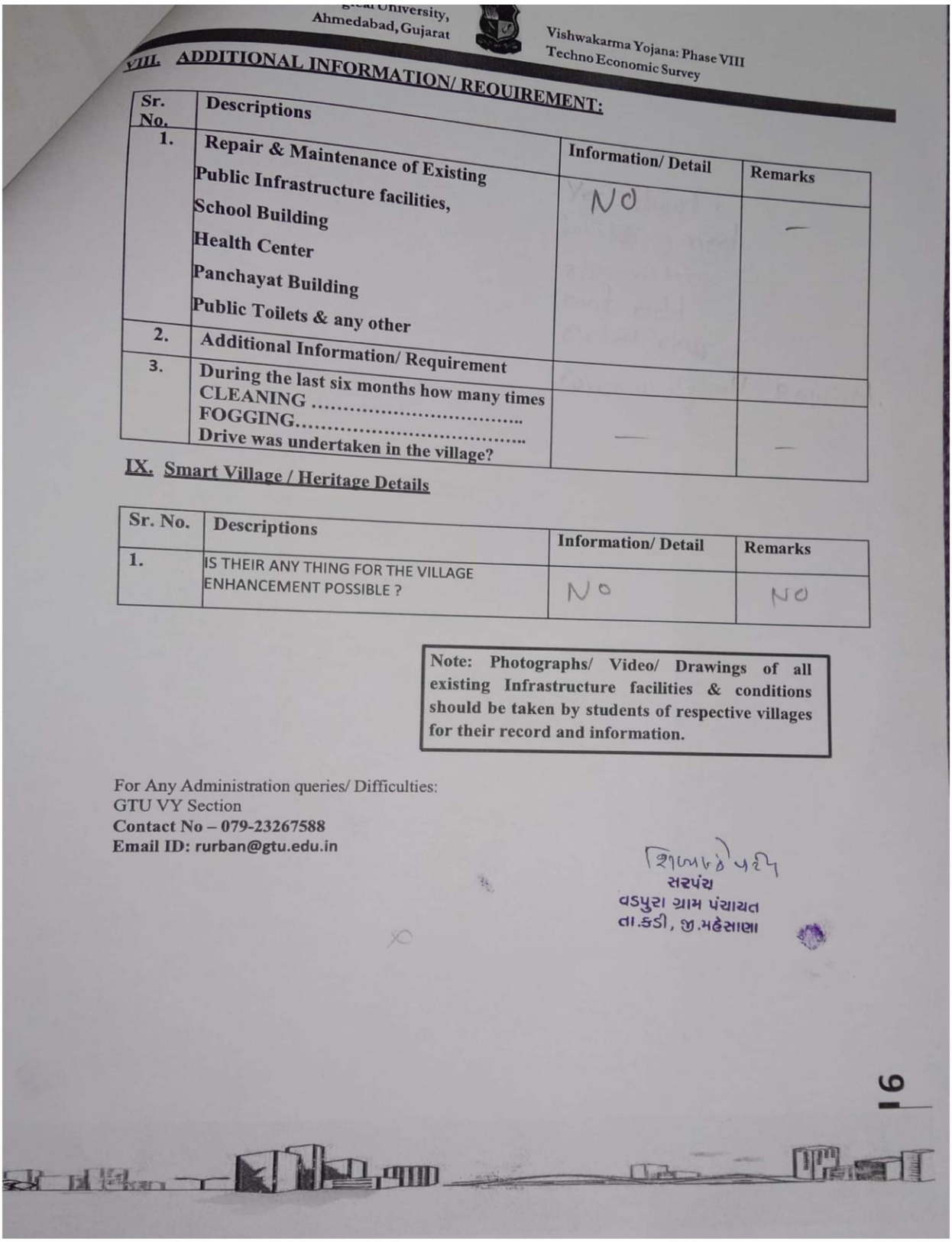

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VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	NO	—
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 ?	NO	NO

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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12.4 Gap Analysis of the Allocated Village

VILLAGE GAP Analysis

Village Facilities	Planning Commission/UDPFI Norms	Village Name:	VADPURA		
		Population:	967		
		Existing	Required asper Norms	Smart Vilage /Cities / Heritage Future Projection Design	Gap
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	1	1	-	0
Primary School	Each Per 2500 population	1	1	-	0
Secondary School	Per 7,500 population	0	0	-	0
Higher Secondary School	Per 15,000 Population	0	0	-	0
College	Per 125,000 Population	0	0	-	0
Tech. Training Institute	Per 100000 Population	0	0	-	0
Agriculture Research Centre	Per 100000 Population	0	0	-	0
Skill Development Center	Per 100000 Population	0	0	-	0
Health Facility					
Govt/Panchyat Dispensary or Sub PHC or Health Centre	Each Village	1	1	-	0
Primary Health & Child Health Center	Per 20,000 population	1	1	-	0
Child Welfare and Maternity Home	Per 10,000 population	0	0	-	0
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)	Per house 1	1	-	0
Physical Infrastructure Facilities					
Transportation		**Adequate / Inadequate**			
Pucca Village Approach Road	Each village	Adequate	Available	Not required	0
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	Adequate	Available	Not required	0
Drinking Water (Minimum 70 lpcd)		**Adequate / Inadequate**	Available	Not required	0
Over Head Tank	1/3 of Total Demand	Adequate	Available	Not required	0
U/G Sump	2/3 of Total Demand	Adequate	Available	Not required	0
Drainage Network - Open		**Adequate / Inadequate**	Available	Not required	0
Drainage Network - Cover		Adequate	Available	Not required	0
Waste Management System		**Adequate / Inadequate**	Available	Not required	0
Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	0	1	-	1
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	-	0
Gram Panchayat Building	Each individual/group panchayat	1	1	-	0
APMC	Per 100000 Population	1	1	-	0
Fire Station	Per 100000 Population	1	1	-	0
Public Garden	Per village	1	1	-	0
Police post	Per 40,000Population	1	1	-	0
Shopping Mall					
Electrical Design					
Electricity Network		**Adequate / Inadequate**	Adequate		

Any Smart Village Facility					
Technology					
		ESR cap	24		
		Sump cap	12		
		Lat	12		

12.5 Summary of All Villages Designs as Part-I and Part-II, in Table Format

Sr. No.	Village Name	Discipline	Part-1	Part-2
1	VADPURA	CIVIL	School renovation	Bus stand
			Community hall	Panchayat building
			Main gate	PHC
		CIVIL	Anganwadi	Milk dairy
			Solid waste management	Library
			Septic tank	Over head water tank
			-	
2	BAMNASA	CIVIL	Design of Bus Stand	Design of Post Office
			Design of Community Hall	Design of SchoolBuilding
			Design of Public Toilet	PHC Building
		ELECTRICAL	Design of Electrical Plan of Bus Stand	Electrical plan Post Office
			Design of Electrical plan of Community Hall	Electrical plan Of school Building
			Design Of Electrical Plan of Public Toilet	Electrical Plan of PHC Building
			Design of Solar street light for village	Design Of Solar irrigation
			Design of Public Library	Public Toilet
			Design of Post Office	Design of Anganwadi
		ELECTRICAL	Design of Electrical plan of Community Hall	Electrical plan Public Garden
			Design of Electrical plan of Public library	Electrical plan Of anganwadi

12.7 Summary of Good Photographs in Table Format (village visits, Ideal, Smart Village or any other)


RESIDENTIAL AREA ; VADPURA


GARDEN ; VADPURA
InShOt

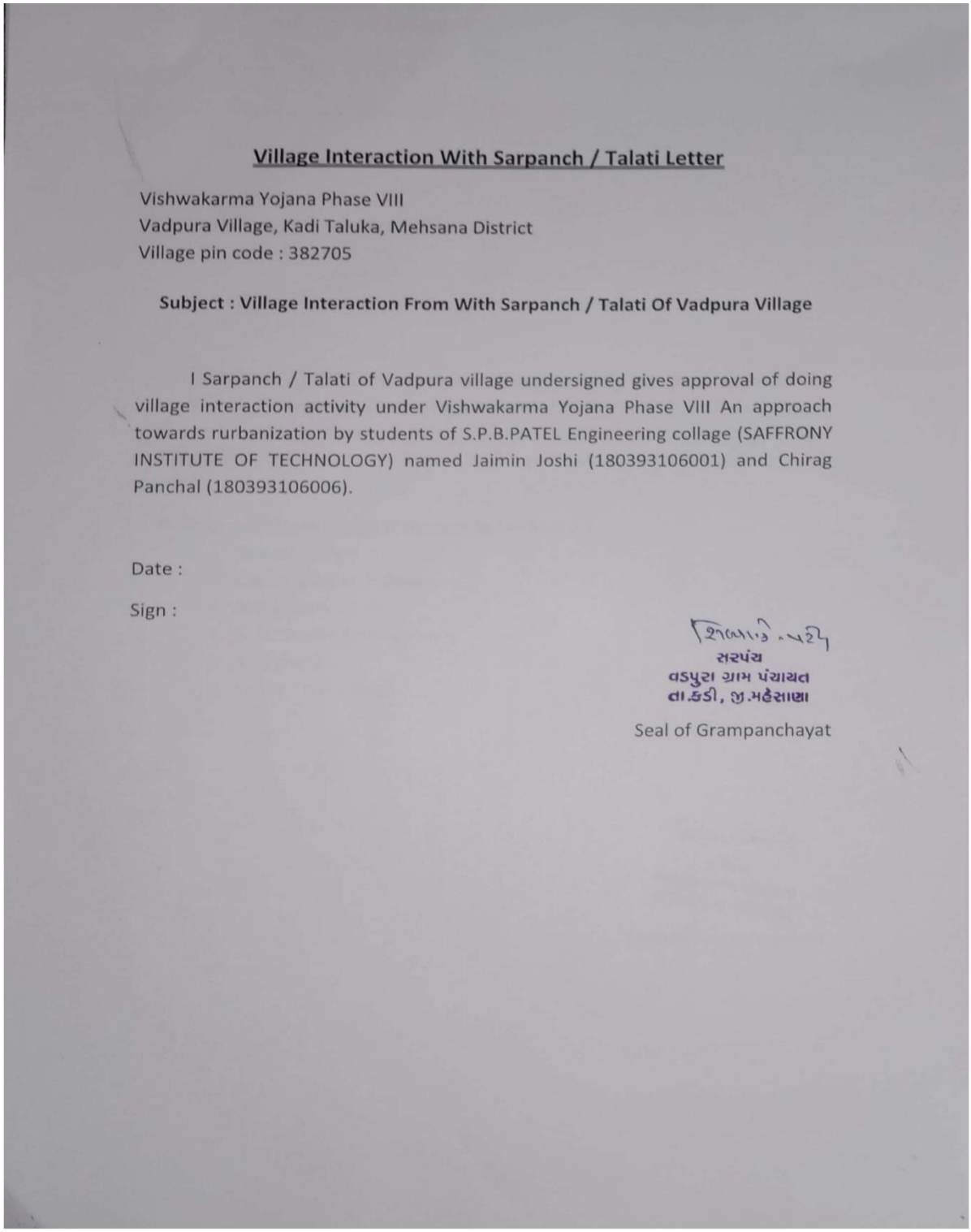

GATEWAYS
FACILITIES IN VADPURA VILLAGE






Figure 57 Good Photographs of village

12.8 Village Interaction Report with Sarpanch and Talati and photograph



Village Interaction With Sarpanch / Talati Letter

Vishwakarma Yojana Phase VIII
Vadpura Village, Kadi Taluka, Mehsana District
Village pin code : 382705

Subject : Village Interaction From With Sarpanch / Talati Of Vadpura Village

I Sarpanch / Talati of Vadpura village undersigned gives approval of doing village interaction activity under Vishwakarma Yojana Phase VIII An approach towards rurbanization by students of S.P.B.PATEL Engineering collage (SAFFRONY INSTITUTE OF TECHNOLOGY) named Jaimin Joshi (180393106001) and Chirag Panchal (180393106006).

Date :

Sign :

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Seal of Grampanchayat

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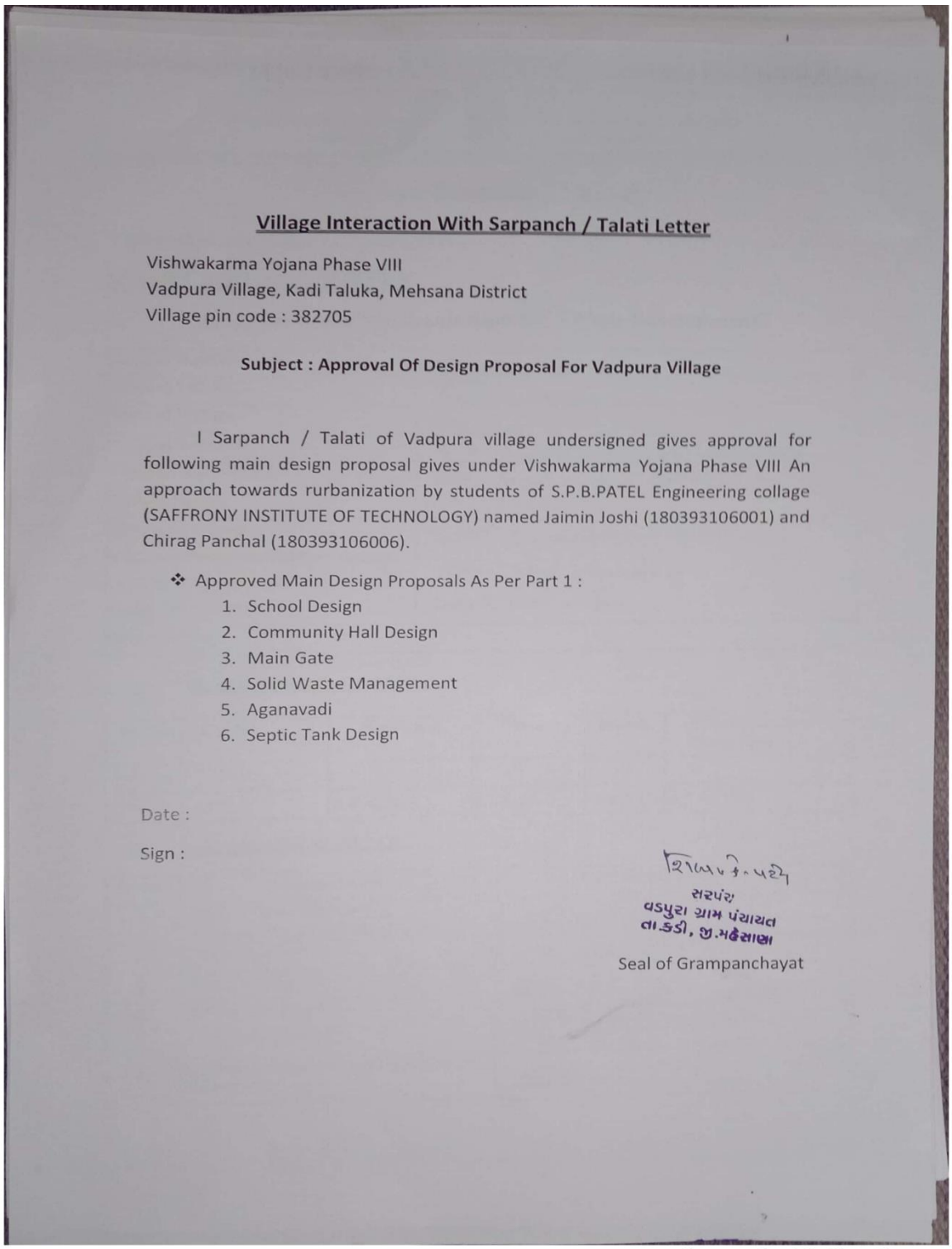
12.9 Sarpanch and Talati Letter giving information about the village development



Village Interaction With Sarpanch / Talati Letter

Vishwakarma Yojana Phase VIII
Vadpura Village, Kadi Taluka, Mehsana District
Village pin code : 382705

Subject : Approval Of Design Proposal For Vadpura Village

I Sarpanch / Talati of Vadpura village undersigned gives approval for following main design proposal gives under Vishwakarma Yojana Phase VIII An approach towards rurbanization by students of S.P.B.PATEL Engineering collage (SAFFRONY INSTITUTE OF TECHNOLOGY) named Jaimin Joshi (180393106001) and Chirag Panchal (180393106006).

- Approved Main Design Proposals As Per Part 1 :
  1. School Design
  2. Community Hall Design
  3. Main Gate
  4. Solid Waste Management
  5. Aganavadi
  6. Septic Tank Design

Date :

Sign :

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Seal of Grampanchayat

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12.10 Comprehensive report preparation as per format

Vishwakarma Yojana is provides special scheme for development of rural area by GTU and Government of Gujarat in which students work together and collect data and information regards Rural area development with the help of gram panchayat, Talati, villagers and stake holders. Our selected village Vadpura have some basic facilities likes drinking water, electricity, drainage system, Pucca road, are sufficient so that village can develop. So, we will give proposal regarding sustainable energy sources and solution related to infrastructure problems.

Efforts have been made in this project work to identify and plan some of the below facilities for sustainable development of village and to meet need of future population. Vishwakarma Yojana is one of the initiatives towards Rurbanization that is village development by the government of Gujarat, which was allotted as a real time situation type project provides to GTU.

It is one of the strategies 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. In this project the students meet the relevant citizens of village and survey the existing facilities. Then design of the sustainable infrastructure which is to be modified is carried out for the village. This includes implementation of engineering skills to prepare detailed project reports for village as a part of the final year project work.

By this project certain experiences recreates a real work and need of application of an individual technical knowledge on any existing problems. Based on survey we tried to give design of basic facilities to fulfill their needs. By providing basic facilities like Solid waste management system, School renovation, Community hall, Vermicompost method, Anganwadi, for reduce urban city pressure and decrease migration rate, which is ultimate aim of Vishwakarma Yojana.

CHEPTER: 13

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

13.1 Design Proposals

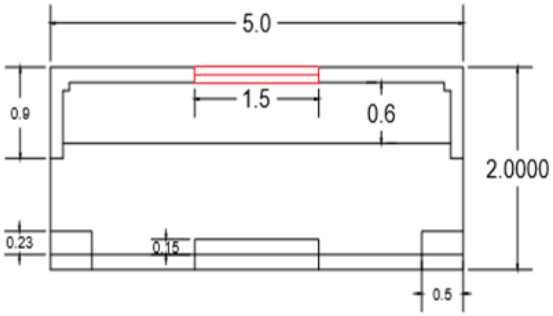
13.1.1 Civil Design 1 (Social Design)

Bus Stand

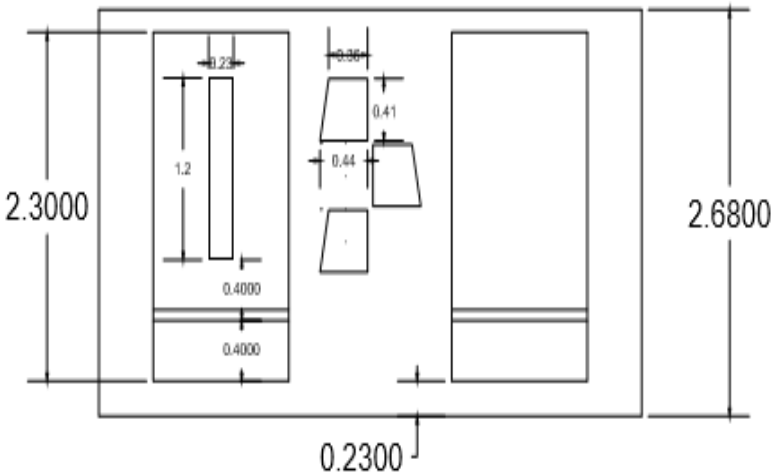
Government buses coming in Vadpura village and many people travel in bus for going other village and nearest town but there is no bus station. People take many problems in summer & monsoon, so village need bus station. So, this purpose we design bus station.

13.1.2 Location of bus stand

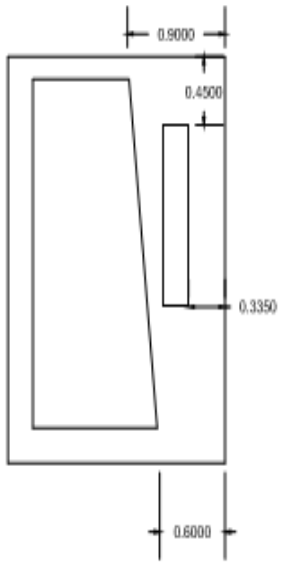
13.1.3 Final design



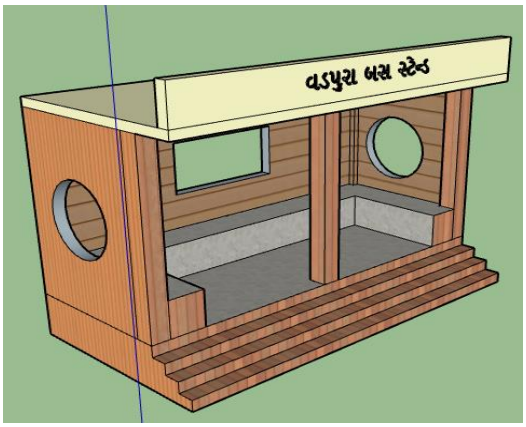
Plan

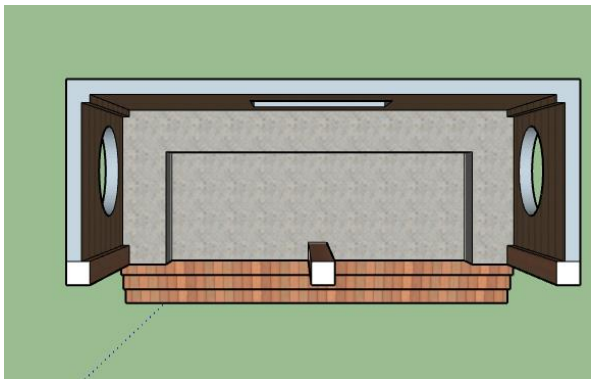


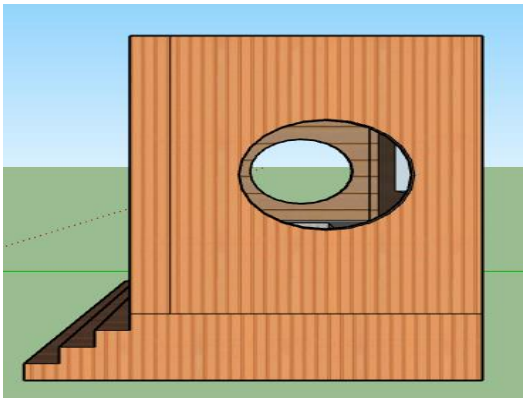
Elevation



side view







Measurement Sheet of bus stand

SR NO.	ITEM DESCRIPTION	NO	L	B	H	QUANTITY	TOTAL QUANTITY	UNIT
1	EXCAVATION FOR FOUNDATION							
	WALL	2	5	0.9	0.5	4.50		
		2	2	0.9	0.5	1.80		
	TOTAL QUANTITY OF EXCAVATION						6.30	M^3
2	P.C.C							
	WALL	2	5	0.9	0.3	2.70		
		2	2	0.9	0.3	1.08		
							3.78	M^3
3	1ST STEP UP TO GL							
	WALL	2	5	0.5	0.2	1.00		
		2	2	0.5	0.2	0.40		
							1.40	M^3
4	(A)PLINTH TO SUPER STRUCTURE							
	WALL	2	5	0.23	2.5	5.75		
		2	2	0.23	2.5	2.30		
							8.05	M^3
	(B)FROM SLAB TOP TO PERAPET TOP BRICK WORK							
	L1	1	5	0.24	0.5	0.60		
							0.60	M^3

	TOTAL BRICK WORK IN SUPER STRUCTURE						**8.65**	**M³**
5	**DEDUCTION IN SUPER STRUCTURE**							
	ROUND	2	1.57	0.5	0.5	0.79		
						0.00		
	WINDOW	1	1	0.24	0.5	0.12		
							0.91	**M³**
	TOTAL QUANTITY BRICK WORK IN SUPER STRUCTURE AFTER DEDUCTION						**7.75**	
6	**FLOORING**							
	FLOOR1	1	5	2		10.00		
						0.00	**10.00**	**M²**
	TOTAL QUANTITY OF FLOORING						**10.00**	
7	**SMOOTH PLASTER INSIDE**							
	(A)ONLY WLL							
	LONG WALL	2	5		2.5	25.00		
	SHORT WALL	2	2		2.5	10.00		
						0.00	**35.00**	**M²**
	(B) CEILING PLASTER							
		1	5	2		10.00		
						0.00	**10.00**	**M²**
8	**TOTAL QUANTITY OF PLASTER WORK**						**45.00**	**M²**
	RCC WORK							

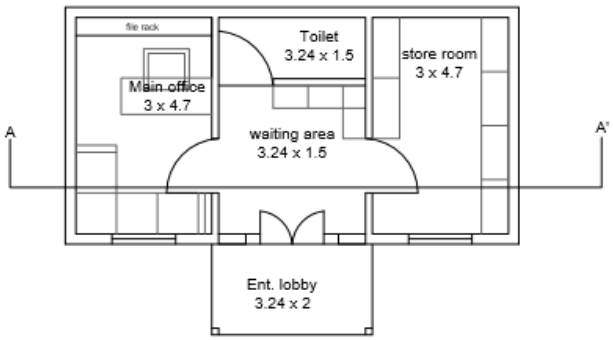
	SLAB	1	5	0.12	2	1.20		
	CLOUMN	5	0.23	0.23	2.5	0.66		
							1.86	**M³**

Abstract Sheet of bus stand

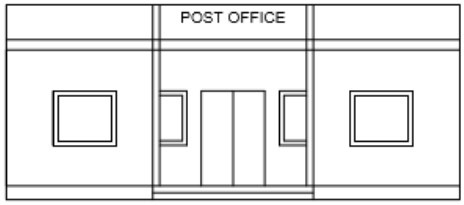
ABSTRACT OF QUANTITIES							
SR . NO.	**ITEM DESCRIPTION**	**TOTAL QUANTITY**	**PER**	**RATE**	**AMOUT RS.**		
1	EXCAVATION IN FOOTI.	6.30	CUMEC	90.00	567.00		
2	PCC	3.78	CUMEC	3500.00	13230.00		
3	EARTH FILLING	0	CUMEC	50.00	0.00		
4	BRICK WORK IN FOU.	6.30	CUMEC	3500.00	22050.00		
5	BRICK WORK IN S.S.	7.75	CUMEC	3500.00	27107.50		
6	RCC WORK	1.86	CUMEC	9000.00	16751.25		
7	TILES BOX (4 PEACE)	20	BOX	350.00	7000.00		
8	PLASTER	45.00	SQ.M	500.00	22500.00		
			TOTAL		**109205.75**		
	ADD 3% CONTINGENCIES RS.				9445.28		
	ADD2% WORK CHARGED ESTABLISHMENT				6296.85		
	GRAND TOTAL				**124947.88**		

13.1.4 Civil Design 2 Post office

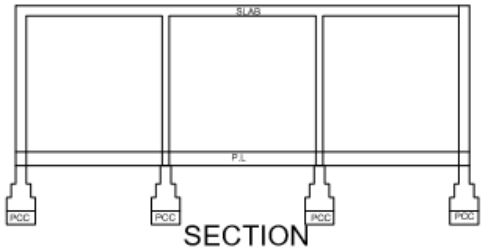
Plan, Elevation and Section



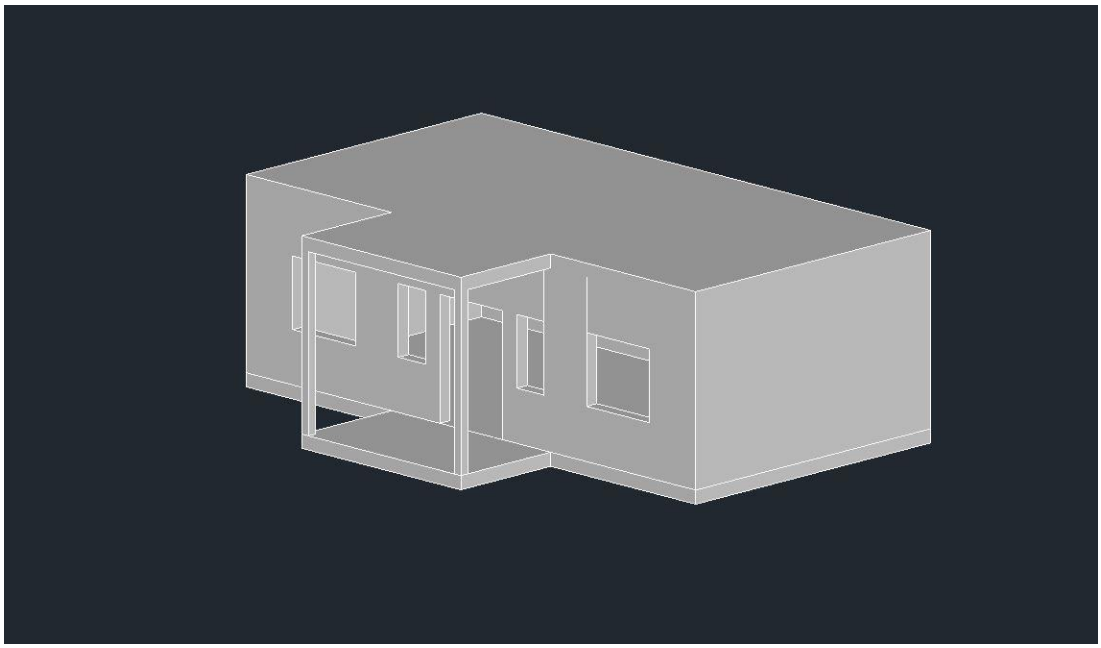
PLAN



ELEVATION



SECTION



Measurement Sheet of Post office:

SR NO	ITEM DESCRIPTION	NO	L	B	H	QUANTITY	
1	Excavation in foundation						
	Long wall=9.4+0.9m	3	10.3	0.9	1.2	33.372	
	Short wall=6.85-0.9m	5	5.95	0.9	1.2	32.13	
				Total quantity =		65.502	Cu.m
2	Plain cement concrete						
	in foundation(1:2:4)						
	Long wall=9.4m	3	10.3	0.9	0.3	8.343	
	Short wall=6.85m	5	5.95	0.9	0.3	8.0325	
				Total quantity =		16.3755	Cu.m
3	Brickwork in foundation						
	and plinth in C.M(1:6)						
	Long wall:						
STEP:1	9.4+0.6 =10m	3	10	0.6	0.2	3.6	
STEP:2	9.4+0.5 =9.9m	3	9.9	0.5	0.2	2.97	
STEP:3	9.4+0.4 =9.8m	3	9.8	0.4	0.2	2.352	
STEP:4	9.4+0.3 =9.7m	3	9.7	0.3	0.3	2.619	
						11.541	
	Shortwall						
STEP:1	6.85-0.6 =6.25m	5	6.25	0.6	0.2	3.75	
STEP:2	6.85-0.5 =6.35m	5	6.35	0.5	0.2	3.175	
STEP:3	6.85-0.4 =6.45m	5	6.45	0.4	0.2	2.58	
STEP:4	6.85-0.3 =6.55m	5	6.55	0.3	0.3	2.9475	
				Total quantity =		35.5345	Cu.m

4	**Brickwork in**						
	super structure						
	Long wall=9.4	3	9.4	0.3	3	25.38	
	Short wall=6.85	5	6.85	0.3	3	30.825	
				Total quantity =		**56.205**	**Cu.m**
	Deduction for door/window						
	DOOR	1	1.07	0.3	2.1	0.6741	
	DOOR1	2	0.91	0.3	2.1	1.1466	
	DOOR2	1	0.76	0.3	2.1	0.4788	
	WINDOW	1	1.83	0.3	1.2	0.6588	
	WINDOW1	3	1.22	0.3	1.2	1.3176	
						4.2759	Cu.m
	Deduction for lintel						
	DOOR	1	1.37	0.3	0.15	0.06165	
	DOOR1	2	1.21	0.3	0.15	0.1089	
	DOOR2	1	1.06	0.3	0.15	0.0477	
	WINDOW	1	2.13	0.3	0.15	0.09585	
	WINDOW1	3	1.52	0.3	0.15	0.2052	
						0.5193	Cu.m
				Total Deduction=		4.7952	Cu.m
				Total Quantity =		**51.4098**	**Cu.m**
5	**R.C.C slab,chajja,and lintel**						
	R.C.C slab:						
	Breadth=6.85m	1	9.4	6.85	0.12	**7.7268**	
	Length=9.4m						
	R.C.C chajja:						
	Window	1	2.13	0.6	0.1	0.1278	
	Window1	3	1.52	0.6	0.1	0.2736	
	R.C.C.lintel:					**0.5193**	
						8.6475	**Cu.m**
6	**2 Cm marble flooring**						
	Room1	1	3.05	2.93		**8.9365**	**m.sq**
	Room2	1	3.05	2.93		**8.9365**	**m.sq**
	Main Passage	1	8.53	3.05		**26.0165**	**m.sq**
7	**Earth filling in plinth room1**	1	3.05	2.93	0.48	**4.28952**	**Cu.m**
	ROOM2	1	3.05	2.93	0.48	**4.28952**	**Cu.m**
	Main Passage	1	8.53	3.05	0.48	**12.4879**	**Cu.m**

8	**Smooth plaster inside**						
	the room in c.m.(1:3)						
	ROOM1	2	3.05		3	18.3	
		2	2.93		3	17.58	
	ROOM2	2	3.05		3	18.3	
		2	2.93		3	17.58	
	Toilet	2	1.18		3	7.08	
		2	1.07		3	6.42	
						85.26 Sq.m	
	Deduction for door						
	and window						
	DOOR	0.5	1.07		2.1	1.1235	
	DOOR1	1	0.91		2.1	1.911	
	DOOR2	0.5	0.76		2.1	0.798	
	WINDOW	0.5	1.83		1.2	1.098	
	WINDOW2	1.5	1.22		1.2	2.196	
						7.1265 Sq.m	
				Total quantity =		**78.1335 Sq.m**	
9	**Smooth plaster outside**						
	the room in c.m (1:3)						
	ROOM	2	9.4		3	56.4	
		2	6.85		3	41.1	
						97.5 Sq.m	
	Deduction for door						
	and window						
	DOOR	0.5	1.07		2.1	1.1235	
	DOOR1	1	0.91		2.1	1.911	
	DOOR2	0.5	0.76		2.1	0.798	
	WINDOW	0.5	1.83		1.2	1.098	
	WINDOW1	1.5	1.22		1.2	2.196	
						7.1265 Sq.m	
				Total quantity =		**90.3735 Sq/m**	

10							
	Painting in inside						
	ROOM1	2	3.05		3	18.3	
		2	2.93		3	17.58	
	ROOM2	2	3.05		3	18.3	
		2	2.93		3	17.58	
	MAIN PASSAGE	2	8.53		3	51.18	
		2	3.05		3	18.3	
						141.24	Sq.m
	Deduction for door						
	and window						
	DOOR	0.5	1.07		2.1	1.1235	
	DOOR1	1	0.91		2.1	1.911	
	DOOR2	0.5	0.76		2.1	0.798	
	WINDOW	0.5	1.83		1.2	1.098	
	WINDOW1	1.5	1.22		1.2	2.196	
						7.1265	Sq.m
				Total quantity =		**134.114**	**Sq.m**
11							
	Painting in outside						
	ROOM	2	9.4		3	56.4	
		2	6.85		3	41.1	
						97.5	Sq.m
	Deduction for door						
	and window						
	DOOR	0.5	1.07		2.1	1.1235	
	DOOR1	1	0.91		2.1	1.911	
	DOOR2	0.5	0.76		2.1	0.798	
	WINDOW	0.5	1.83		1.2	1.098	
	WINDOW1	1.5	1.22		1.2	2.196	
						7.1265	Sq.m
				Total quantity =		**90.3735**	**Sq.m**

Abstract Sheet of Post office:

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation in foundation	65.502	Cu.m	180	11790.36
2	plain cement concrete in	16.3755	Cu.m	4300	70414.65
	foundation				
3	Brick work in foundation	35.5345	Cu.m	3500	124370.75
4	brick work in super structure	51.4098	Cu.m	3800	195357.24
5	R.C.C work in slab,chajja.and lintel	8.6475	Cu.m	6300	54479.25
6	2 cm marble flooring	43.9195	Sq.m	700	30743.65
7	earth filling	21.066	Cu.m	50	1053.3
8	Smooth plaster inside th room in	78.1335	Sq.m	260	20314.71
	c.m(1:3)				
9	Smmoth plaster outside the room	90.3735	Sq.m	350	31630.725
	in c.m(1:3)				
10	Painting in inside	134.114	Sq.m	230	30846.22
11	Painting in outside	90.3735	Sq.m	320	28919.52
12	Switchboard and Wiring of Electricity	5	nos.	450	2250
13	CCTV Camera	6	nos.	7999	47994
14	Door	1	nos.	3800	3800
				Rs.	653964.375
		ADD 5% contingencies		Rs.	32698
			Total Rs.		686662.375
			Total Rs. Say =		687000

Measurement Sheet of R.C.C Slab for Post Office:

SR No.	Item Description	No	Length	Breadth	Height	Quantity
1	**Cement Concrete for Slab**					
	(1: 1.5: 3)					
	L= 7.01 m					
	B=9.45m	1	7.01	9.45	0.12	**7.95 cu.m.**
2	**Centering and shuttering for slab**					
	Bottom	1	6.55	8.99		58.8845
	Sides	2	9.45		0.15	2.835
		2	7.01		0.15	2.103
					Total Quantity =	**63.82 sq.m.**
3	**12 mm dia main steel bars**					
	60 mm c/c alternate bent up					
	L = 9.53 m					
	Span = 6.91 m					
	No. of bars = 13 nos					
	Extra length of bent up bars					
	L = 9.55 m	13	9.55		0.9	**111.74 kg.**
4	**8 mm dia. Distribution steel.**					
	50 mm c/c					
	L = 7.06 m					
	Width of slab = 9.35 m					
	Total no. of bars = 25 nos	25	7.06		0.22	**38.83 kg.**
					Total Quantity =	**150.565 sq.m.**

Abstract Sheet of R.C.C Slab for Post Office:

No.	Item Description		Quantity	Per	Rates	Amount Rs.
1	**Cement Concrete for Slab**		**7.95**	**cu.m.**	**9600.00**	**76320.00**
	(1: 1.5: 3)					
2	**Centering and shuttering for slab**		**63.82**	**sq.m.**	**125.00**	**7977.50**
3	**12 mm dia main steel bars**		**117.74**	**kg.**	**60.00**	**7064.40**
	60 mm c/c alternate bent up					
4	**8 mm dia. Distribution steel.**		**38.83**	**kg.**	**60.00**	**2329.80**
	50 mm c/c					
5	**Labour for cutting, bending, and l**		**150.57**	**kg.**	**7.00**	**1053.96**
	placing steel					
					Total Rs.	**94745.655**
				Add 5% contingencies Rs.		**4737.00**
					Grand Total Rs.	**99482.655**
					Say	**100000.00**

13.1.5 Civil Design 3 PHC for Vadpura village

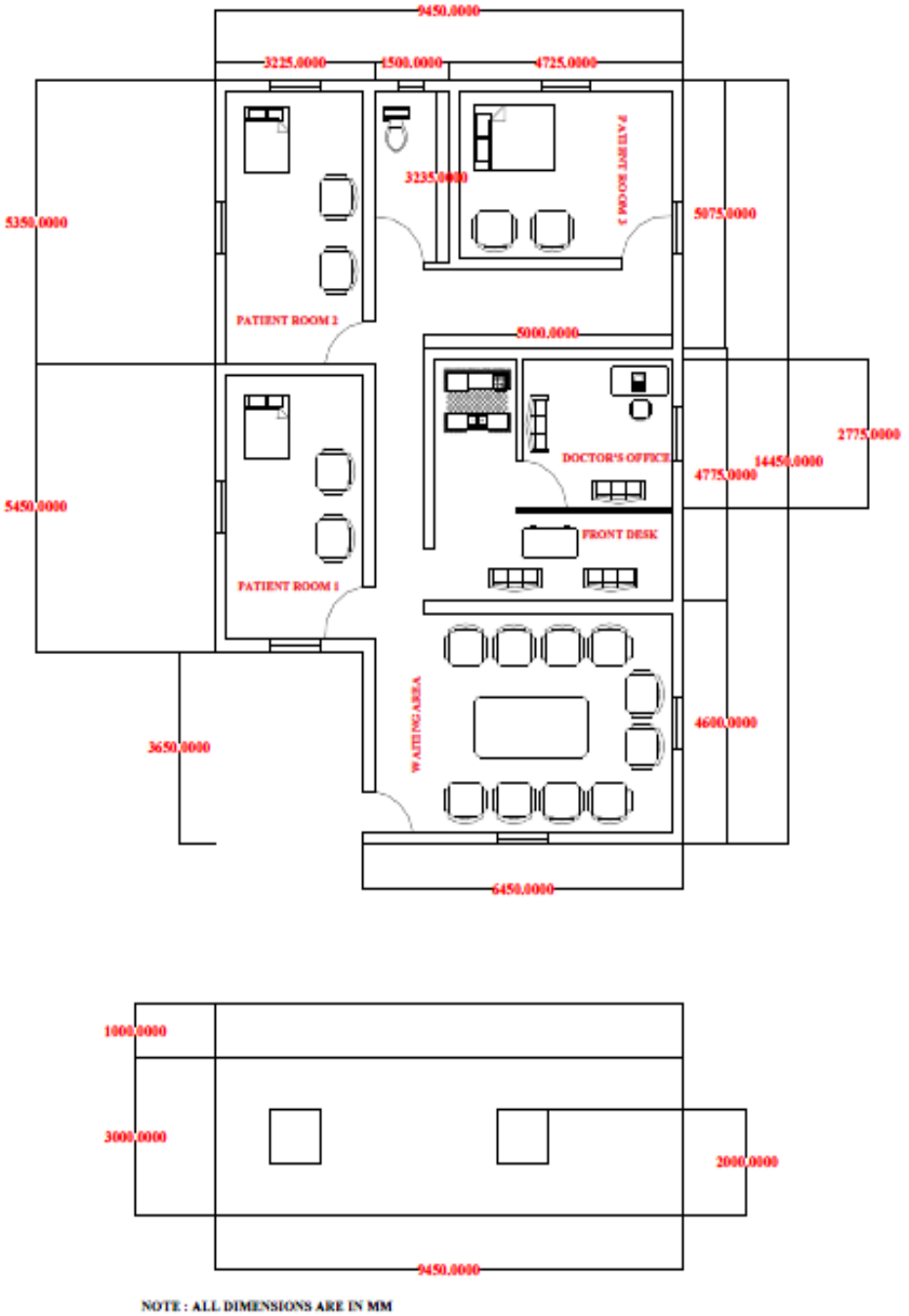


Figure 58 Plan and Elevation of PHC

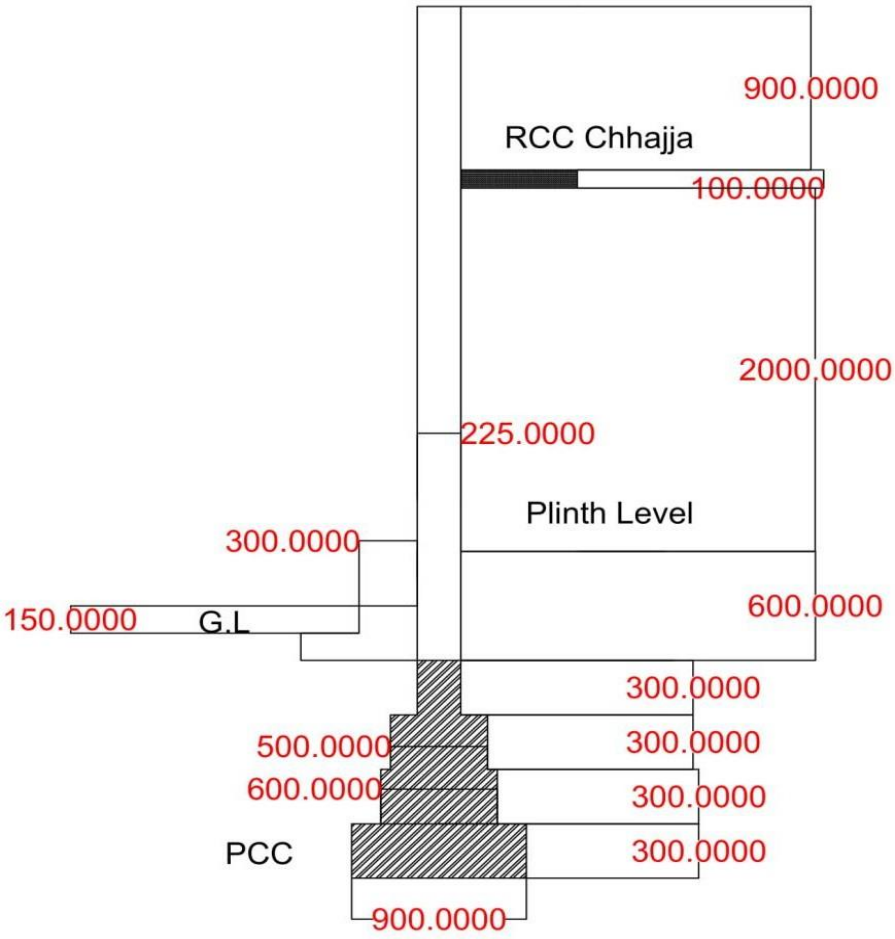


Figure 59 Section of PHC

Measurement Sheet of PHC

Item no.	Item description	No.	L	B	H	Qty.
1	EXCAVATION FOR FOUNDATION	1	38.27	0.9	1.1	37.88m^3
2	PCC (1:4:8)	1	38.27	0.9	0.2	6.88m^3
3	BRICK MASONARY UPTO PLINTH LEVEL					
	STEP OF 0.5M WIDTH	1	41.27	0.5	0.3	6.19
	STEP OF 0.4M WIDTH	1	42.02	0.4	0.3	5.04
	FIRST STEP	1	1.2	0.6	0.150	0.108
	SECOND STEP	1	1.2	0.3	0.150	0.054

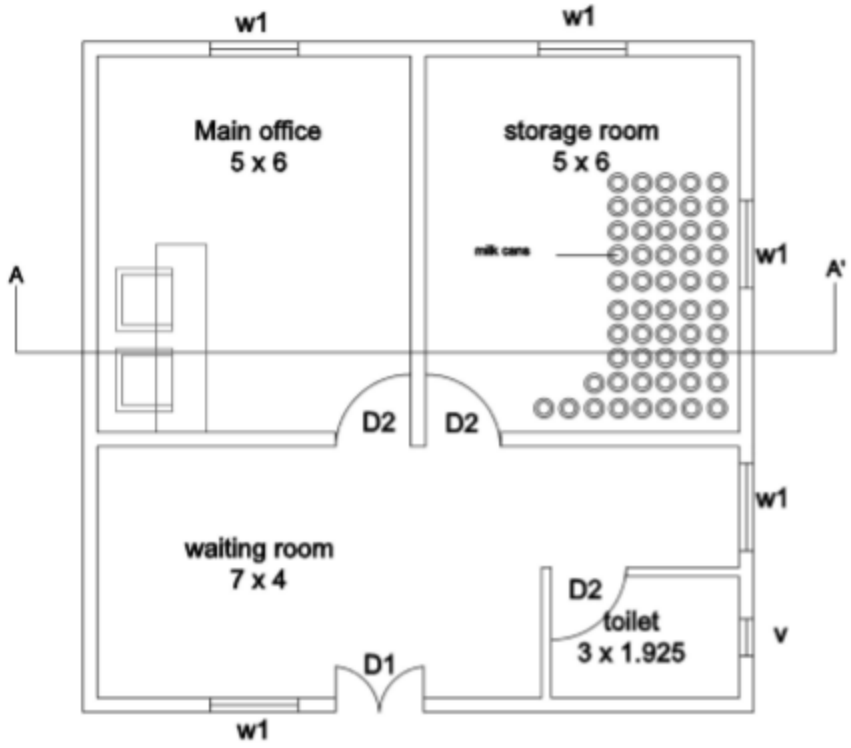
					Net brick work	11.392m^3
4	BRICK MASONARY ABOVE PLINTH LEVEL UPTO SLAB C.M (1:6)	1	43.33	0.225	3	29.24 m^3
	DEDUCTION FOR DOORS					
	D1	3	1	0.225	2	1.35
	D2	3	1	0.225	2	1.35
	WINDOWS	9	1	0.225	1	2.025
	LINTEL					
	DOORS	6	1.3	0.225	0.15	0.263
	WINDOWS	9	1.3	0.225	0.15	0.39
					Net brick work	23.86m^3
5	PARAPET WALL	1	43.33	0.225	1	9.74m^3
6	RCC WORK					
	SLAB	1	9.45	14.45	0.15	20.48
	LINTEL	1	19.5	0.225	0.15	0.658
					Tota l RC C work	21.13m3
7	FLOORING	1	8.5	13.3		113.05m2
8	INSIDE SMOOTH PLASTER OF WALL AND CELLING (10 MM THICK)					

	PATIONT ROOM 1	2	2.7		3	16.65m²
		2	5.00		3	30
	PATIONT ROOM 2	2	2.7		3	16.65
		2	5.1		3	30.6
	PATIONT ROOM 3	2	4.2		3	25.2
		2	4.8		3	28.2
	WAITING ROOM	2	6.2		3	37.2
		2	4.1		3	24.6
	DOCTOR OFFICE	2	4.7		3	28.2
		2	4.5		3	27
	WC	2	1.5		3	9
		2	3.2		3	19.2
	CELLING					
	PATIONT ROOM 1	1	2.7	5		13.5
	PATIONT ROOM 2	1	2.7	5.1		14.2
	PATIONT ROOM 3	1	4.2	4.8		20.1
	WAITING ROOM	1	6.2	4.1		25.4
	DOCTOR OFFICE	1	4.7	4.5		21.1
	WC	1	1.5	3.2		4.8
					TOTAL PLASTER	391.6m²
	DEDUCTION FOR DOORS AND WINDOWS					
	DOORS	3	1		2	6
	WINDOWS	5	1		1	5
					NET PLASTER	380.6m²

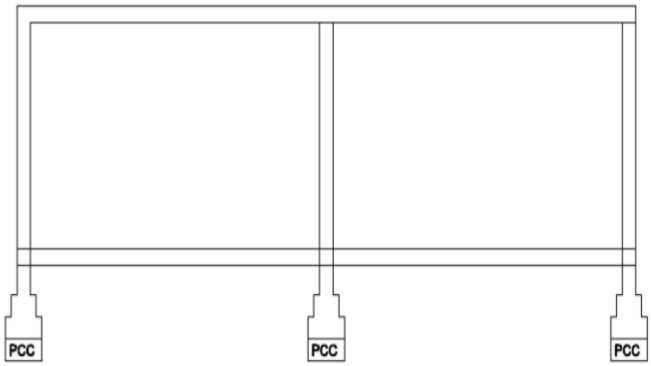
Abstract Sheet of PHC

ABSTRACT OF QUANTITIES							
SR . NO.	**ITEM DESCRIPTION**	**TOTAL QUANTITY**	**PER**	**RATE**	**AMOUT RS.**		
1	EXCAVATION IN FOOTI.	37.88	CUMEC	90.00	3409.20		
2	PCC	6.88	CUMEC	3500.00	24080.00		
3	EARTH FILLING	0	CUMEC	50.00	0.00		
4	BRICK WORK IN FOU.	11.40	CUMEC	3500.00	39900.00		
5	BRICK WORK IN S.S.	33.60	CUMEC	3500.00	117600.00		
6	RCC WORK	21.20	CUMEC	9000.00	190800.00		
7	TILES BOX (4 PEACE)	25	BOX	350.00	8750.00		
8	PLASTER	400.00	SQ.M	500.00	200000.00		
			TOTAL		**584539.20**		
	ADD 3% CONTINGENCIES RS.				9445.28		
	ADD2% WORK CHARGED ESTABLISHMENT				6296.85		
	GRAND TOTAL				**600281.33**		

13.1.6 Civil Design 4 Milk Dairy

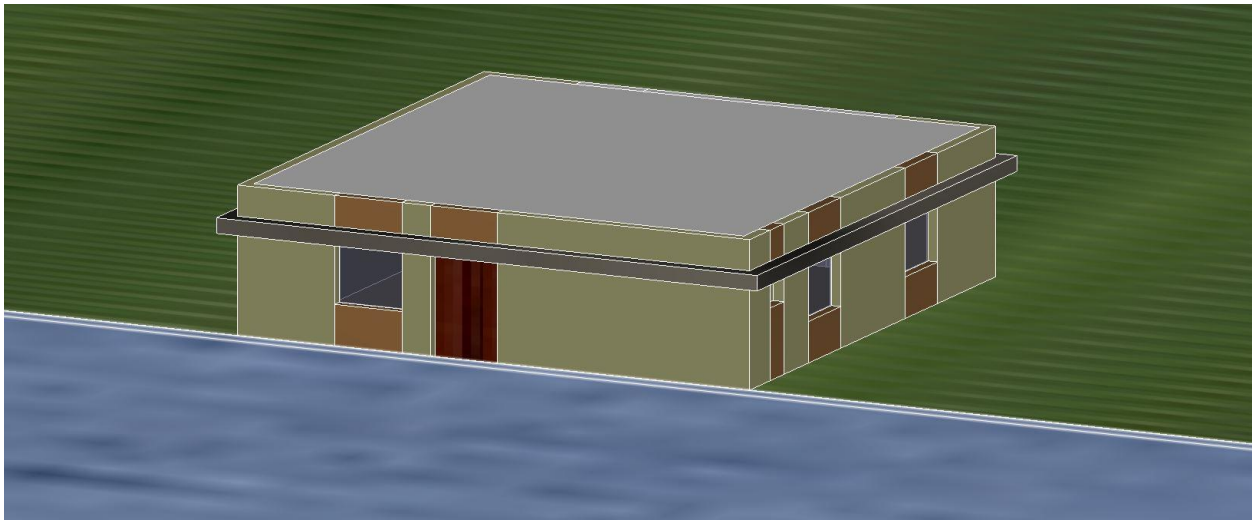


PLAN



SECTION

ELEVATION



Measurement sheet of Dairy

SR NO	ITEM DESCRIPTION	NO	LENGTH	BREADTH	HEIGHT	QUANTITY	
1	Excavation in foundation						
	Long wall=13.2+0.9m	3	14.1	0.9	1.2	45.684	
	Short wall=10.2-0.9m	3	9.3	0.9	1.2	30.132	
				Total quantity =		75.816 Cu.m	
2	Plain cement concrete						
	in foundation(1:2:4)						
	Long wall=13.2m	3	14.1	0.9	0.3	11.421	
	Short wall=10.2m	3	9.3	0.9	0.3	7.533	
				Total quantity =		18.954 Cu.m	
3	Brickwork in foundation						
	and plinth in C.M(1:6)						
	Long wall:						
STEP:1	13.2+0.6 =13.8m	3	13.8	0.6	0.2	4.968	
STEP:2	13.2+0.5 =13.7m	3	13.7	0.5	0.2	4.11	
STEP:3	13.2+0.4 =13.6m	3	13.6	0.4	0.2	3.264	
STEP:4	13.2+0.3 =13.5m	3	13.5	0.3	0.3	3.645	
						15.987	
	Shortwall						
STEP:1	10.2-0.6 =9.6m	3	9.6	0.6	0.2	3.456	
STEP:2	10.2-0.5 =9.7m	3	9.7	0.5	0.2	2.91	
STEP:3	10.2-0.4 =9.8m	3	9.8	0.4	0.2	2.352	

STEP:4	**10.2-0.3 =9.9m**	3	9.9	0.3	0.3	2.673	
				Total quantity =		**43.365 Cu.m**	
4	**Brickwork in**						
	super structure						
	Long wall=13.2	3	13.2	0.3	3	35.64	
	Short wall=10.2	3	10.2	0.3	3	27.54	
				Total quantity =		**63.18 Cu.m**	
	Deduction for door/window						
	DOOR	1	1.5	0.3	2.1	0.945	
	DOOR1	1	1.05	0.3	2.1	0.6615	
	DOOR2	1	1.05	0.3	2.1	0.6615	
	DOOR3	1	0.75	0.3	2.1	0.4725	
	WINDOR1	1	1.54	0.3	1.2	0.5544	
	WINDOW2	1	1.54	0.3	1.2	0.5544	
	WINDOW3	1	1.54	0.3	1.2	0.5544	
	WINDOW4	1	1.54	0.3	1.2	0.5544	
	V	1	0.6	0.3	0.6	0.108	
						5.0661	**Cu.m**
	Deduction for lintel						
	DOOR	1	1.8	0.3	0.15	0.081	
	DOOR1	1	1.35	0.3	0.15	0.06075	
	DOOR2	1	1.35	0.3	0.15	0.06075	
	DOOR3	1	1.05	0.3	0.15	0.04725	
	WINDOW1	1	1.84	0.3	0.15	0.0828	
	WINDOW2	1	1.84	0.3	0.15	0.0828	
	WINDOW3	1	1.84	0.3	0.15	0.0828	
	WINDOW4	1	1.84	0.3	0.15	0.0828	
	V	1	0.9	0.3	0.15	0.0405	
						0.62145	
				Total Deduction=		5.68755 Cu.m	
				Total Quantity =		**57.4925 Cu.m**	
5	**R.C.C slab,chajja,and lintel**						
	R.C.C slab:						
	Breadth=9.9m	1	13.2	10.2	0.12	**16.1568**	
	Length=12m						
	R.C.C chajja:						
	WINDOW1	1	1.52	0.6	0.1	0.0912	
	Window2	1	1.52	0.6	0.1	0.0912	
	WINDOW3	1	1.52	0.6	0.1	0.0912	
	WINDOW 4	1	1.52	0.6	0.1	0.0912	
	R.C.C.lintel:					**5.68755**	

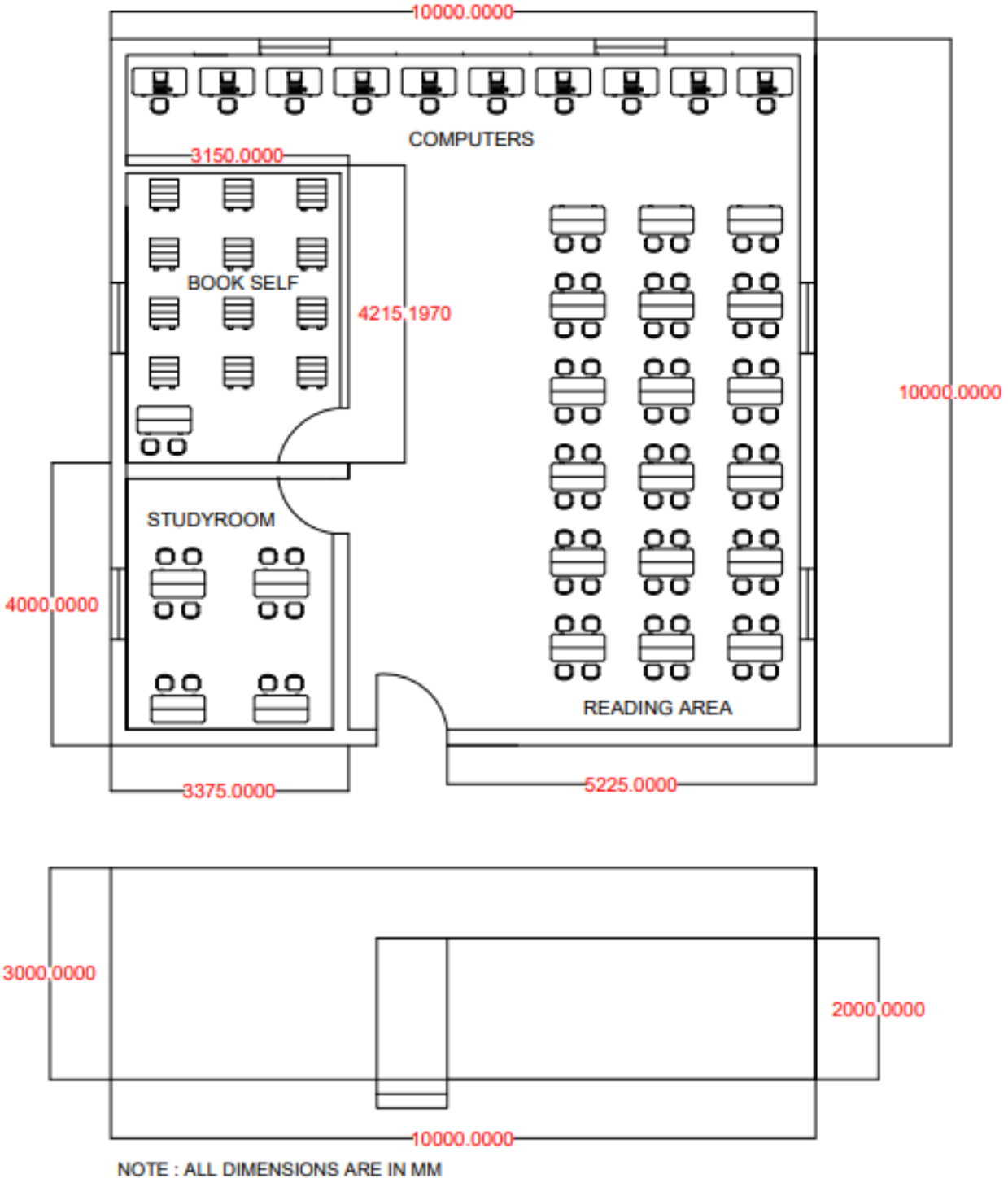
						22.2092 Cu.m	
6	**2 Cm marble flooring**						
	WAITING AREA	1	9.2	4		**36.8 m.sq**	
	CABIN ROOM	1	6	5		**30 m.sq**	
	STORE ROOM	1	6	5		**30 m.sq**	
	TOILTE	1	3	3	**9 m.sq**		
7	**Earth filling in WAITING AREA**	1	9.2	4	0.48	**17.664 Cu.m**	
	CABIN ROOM	1	6	5	0.48	**14.4 Cu.m**	
	STORE ROOM	1	6	5	0.48	**14.4 Cu.m**	
	TOILTE	1	3	3	0.48	**4.32 Cu.m**	
8	**Smooth plaster inside**						
	the room in c.m.(1:3)						
	WAITING AREA	2	9.2		3	55.2	
		2	4		3	24	
	CABIN ROOM	2	6		3	36	
		2	5		3	30	
	STORE ROOM	2	6		3	36	
		2	5		3	30	
	TOILET	2	3		3	18	
		2	3		3	18	
						247.2 Sq.m	
	Deduction for door						
	and window						
	DOOR	0.5	1.5		2.1	1.575	
	DOOR1	0.5	1.05		2.1	1.1025	
	DOOR2	0.5	1.05		2.1	1.1025	
	DOOR3	0.5	0.75		2.1	0.7875	
	WINDOW1	0.5	1.54		1.2	0.924	
	WINDOW2	0.5	1.54		1.2	0.924	
	WINDOW3	0.5	1.54		1.2	0.924	
	WINDOW4	0.5	1.54		1.2	0.924	
	V	0.5	0.6		0.6	0.18	
						8.4435 Sq.m	
				Total quantity =		**238.757 Sq.m**	
9	**Smooth plaster outside**						
	the room in c.m (1:3)						
	ROOM	2	13.2		3	79.2	
		2	10.2		3	61.2	
						140.4 Sq.m	
	Deduction for door						
	and window						
	DOOR	0.5	1.5		2.1	1.575	

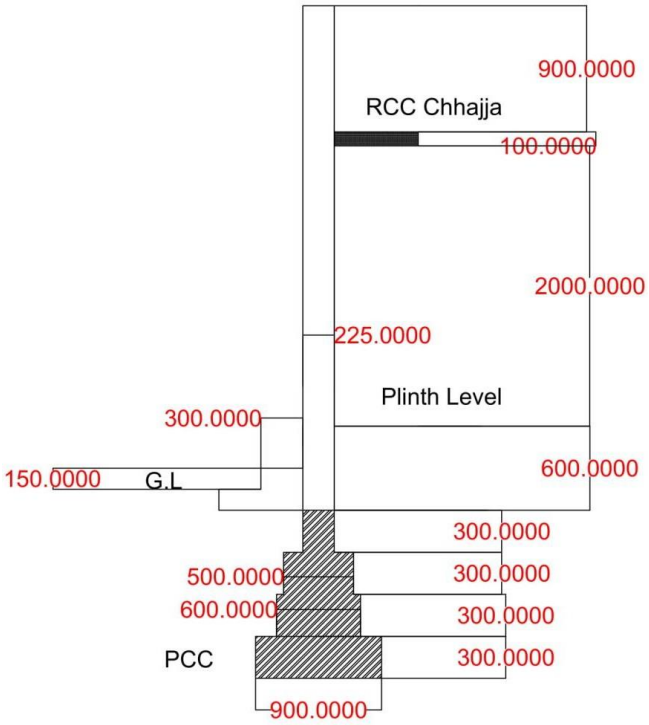
	DOOR1	0.5	1.05		2.1	1.1025	
	DOOR2	0.5	1.05		2.1	1.1025	
	DOOR3	0.5	0.75		2.1	0.7875	
	WINDOW1	0.5	1.54		1.2	0.924	
	WINDOW2	0.5	1.54		1.2	0.924	
	WINDOW3	0.5	1.54		1.2	0.924	
	WINDOW4	0.5	1.54		1.2	0.924	
	V	0.5	0.6		0.6	0.18	
						8.4435	Sq.m
				Total quantity =		**131.957**	**Sq/m**
10							
	Painting in inside						
	WAILTING AREA	2	9.2		3	55.2	
		2	4		3	24	
	CABIN ROOM	2	6		3	36	
		2	5		3	30	
	STORE ROOM	2	6		3	36	
		2	5		3	30	
	TOILET	2	3		3	18	
		2	3		3	18	
						247.2	Sq.m
	Deduction for door						
	and window						
	DOOR	0.5	1.5		2.1	1.575	
	DOOR1	0.5	1.05		2.1	1.1025	
	DOOR2	0.5	1.05		2.1	1.1025	
	DOOR3	0.5	0.75		2.1	0.7875	
	WINDOW1	0.5	1.54		1.2	0.924	
	WINDOW2	0.5	1.54		1.2	0.924	
	WINDOW3	0.5	1.54		1.2	0.924	
	WINDOW4	0.5	1.54		1.2	0.924	
	V	0.5	0.6		0.6	0.18	
						8.1285	Sq.m
				Total quantity =		**239.072**	**Sq.m**
11							
	Painting in outside						
	ROOM	2	13.2		3	79.2	
		2	10.2		3	61.2	
						140.4	Sq.m
	Deduction for door						
	and window						
	DOOR	0.5	1.5		2.1	1.575	
	DOOR1	0.5	1.05		2.1	1.1025	
	DOOR2	0.5	1.05		2.1	1.1025	
	DOOR3	0.5	0.75		2.1	0.7875	
	WINDOW1	0.5	1.54		1.2	0.924	
	WINDOW2	0.5	1.54		1.2	0.924	
	WINDOW3	0.5	1.54		1.2	0.924	
	WINDOW4	0.5	1.54		1.2	0.924	
	V	0.5	0.6		0.6	0.18	
						8.4435	Sq.m
				Total quantity =		**131.957**	**Sq.m**

Abstract sheet of Dairy

ABSTRACT OF QUANTITIES							
SR . NO.	**ITEM DESCRIPTION**	**TOTAL QUANTITY**	**PER**	**RATE**	**AMOUT RS.**		
1	EXCAVATION IN FOOTI.	75.82	CUMEC	90.00	6823.44		
2	PCC	18.95	CUMEC	3500.00	66339.00		
3	EARTH FILLING	50.78	CUMEC	50.00	2539.00		
4	BRICK WORK IN FOU.	43.37	CUMEC	3500.00	151777.50		
5	BRICK WORK IN S.S.	57.49	CUMEC	3500.00	201222.00		
6	RCC WORK	22.20	CUMEC	9000.00	199818.00		
7	TILES BOX (4 PEACE)	30	BOX	350.00	10500.00		
8	PLASTER	400.00	SQ.M	500.00	200000.00		
			TOTAL		**839018.94**		
	ADD 3% CONTINGENCIES RS.				9445.28		
	ADD2% WORK CHARGED ESTABLISHMENT				6296.85		
	GRAND TOTAL				**854761.07**		

13.1.7 Civil Design 5 Library – Socio-Cultural Design





Measurement sheet of Library

Item no.	Item description	No.	L	B	H	Qty.
1	Excavation for foundation	1	38.11	0.9	1.1	37.72m^3
2	PCC	1	38.11	0.9	0.2	6.85m^3
3	BRICK MASONARY UPTO PLINTH LEVEL					
	STEP OF 0.6M WIDTH	1	38.86	0.6	0.3	6.99
	STEP OF 0.5M WIDTH	1	39.11	0.5	0.3	5.86
	FIRST STEP	1	1.2	0.6	0.150	0.108
	SECOND STEP	1	1.2	0.3	0.150	0.054
					Net brick work	13.012m^3
4	BRICK MASONARY ABOVE PLINTH LEVEL UPTO SLAB C.M (1:6)	1	39.79	0.225	3	26.85 m^3

	DEDUCTION FOR DOORS					
	D1	2	1	0.225	2	0.90
	D2	1	1	0.225	2	0.45
	WINDOWS	6	1	0.225	1	1.35
	LINTEL					
	DOORS	3	1.3	0.225	0.15	0.131
	WINDOWS	6	1.3	0.225	0.15	0.263
					Net brick work	23.75m^3
5	RCC WORK					

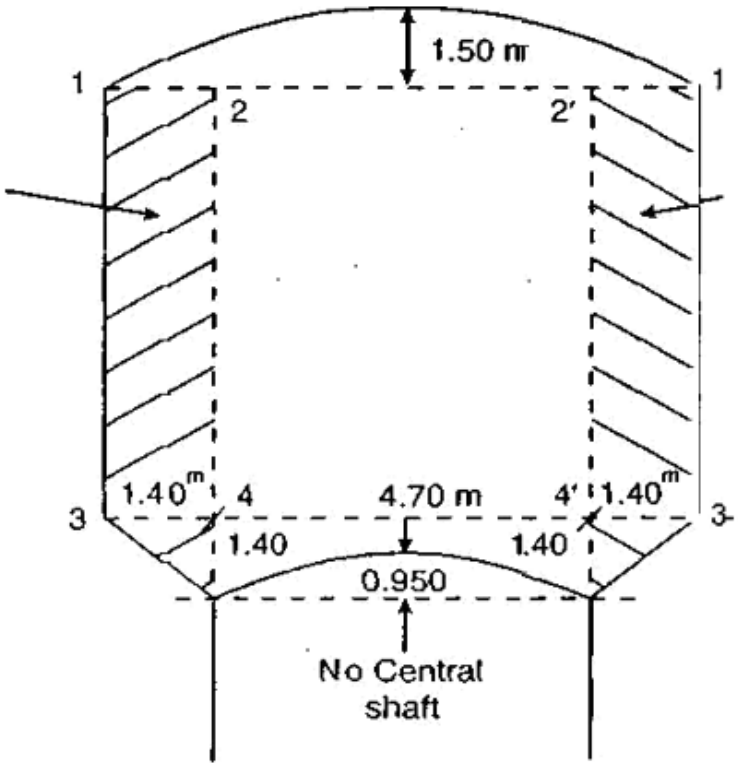
	Slab	1	10	10	0.15	15
	LINTEL	1	11.7	0.225	0.15	0.39
					Total RCC work	15.39m^3
6	FLOORING	1	9.325	9.325		86.95m^2
7	INSIDE SMOOTH PLASTER OF WALL AND CELLING (10 MM THICK)					
	BOOK SELF	2	3.2		3	19.2m^2
		2	4.1		3	24.6
	STUDY ROOM	2	3.2		3	19.2
		2	3.7		3	22.2
	READING AREA	2	5.1		3	30.6
		2	9.7		3	58.2
	CELLING					

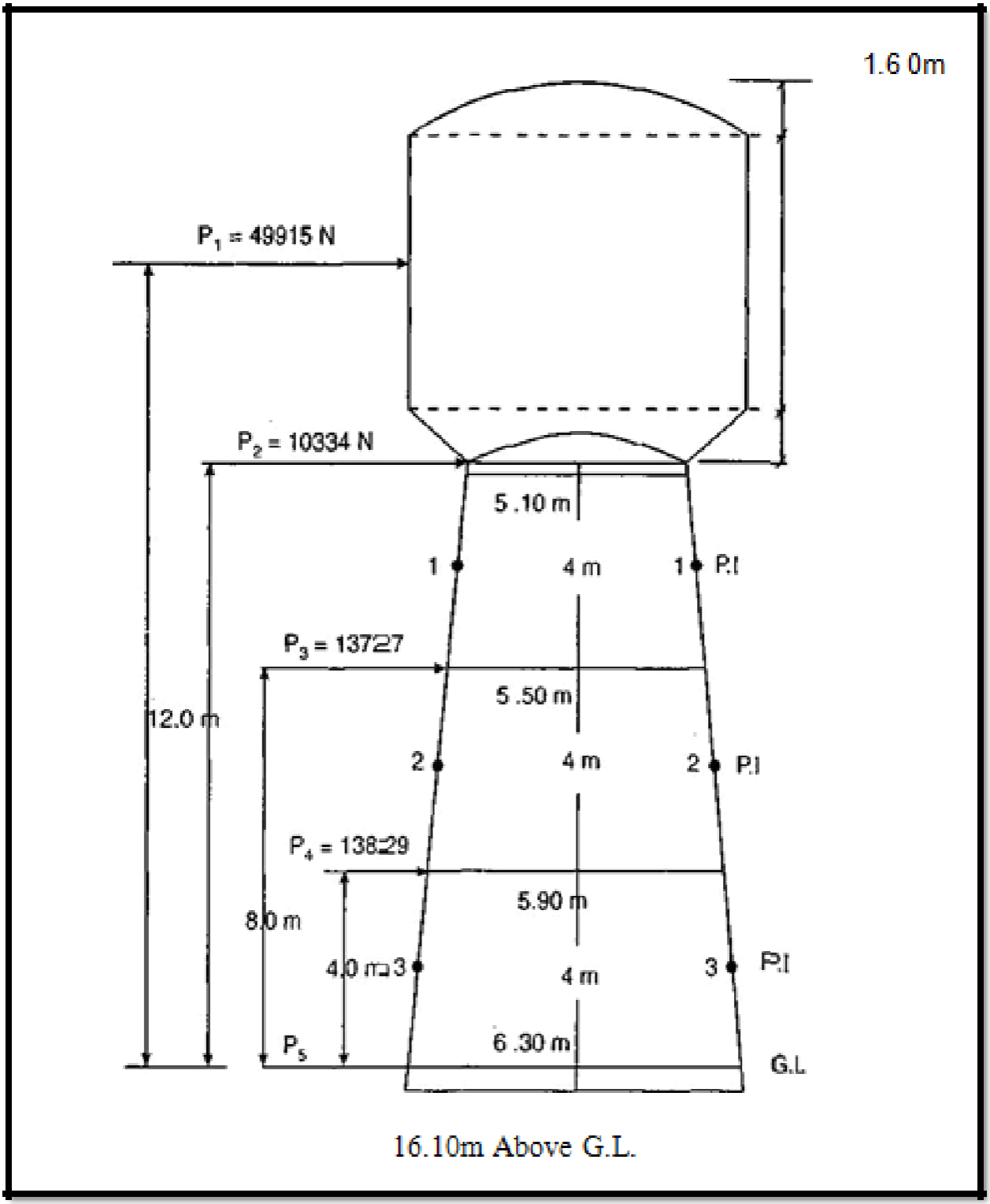
	BOOK SELF	1	3.2	4.1		13.1
	STUDY ROOM	1	3.2	3.7		11.8
	READING ROOM	1	5.1	9.7		49.47
					TOTAL PLASTER	248.37m²
	DEDUCTION FOR DOORS AND WINDOWS					
	DOORS	1.5	1		2	3
	WINDOWS	3	1		1	3
					NET PLASTER	242.37m²

Abstract sheet of Library

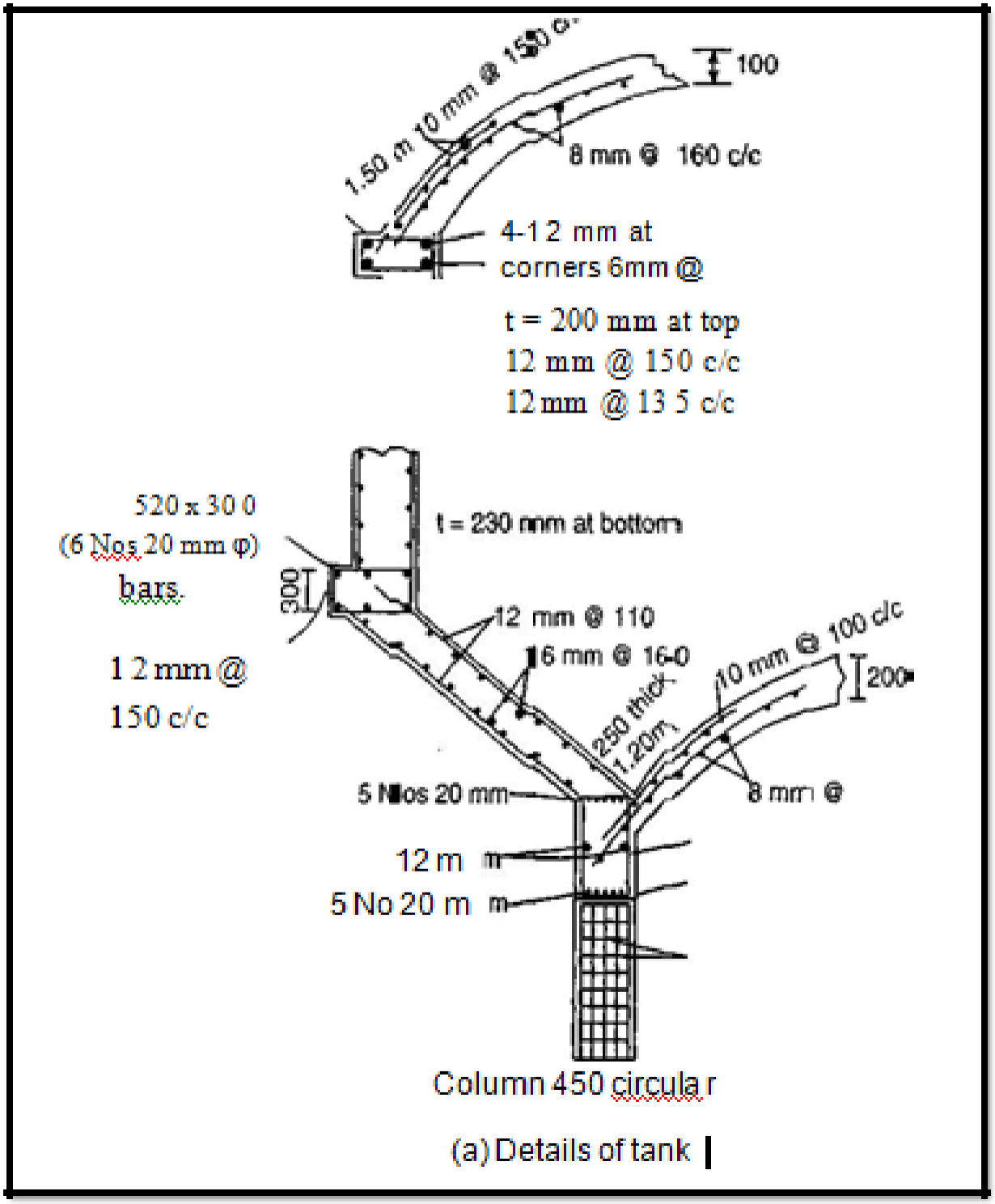
ABSTRACT OF QUANTITIES							
SR . NO.	**ITEM DESCRIPTION**	**TOTAL QUANTITY**	**PER**	**RATE**	**AMOUT RS.**		
1	EXCAVATION IN FOOTI.	37.72	CUMEC	90.00	3394.80		
2	PCC	6.85	CUMEC	3500.00	23975.00		
3	EARTH FILLING	50.78	CUMEC	50.00	2539.00		
4	BRICK WORK IN FOU.	13.01	CUMEC	3500.00	45542.00		
5	BRICK WORK IN S.S.	23.17	CUMEC	3500.00	81095.00		
6	RCC WORK	15.39	CUMEC	9000.00	138510.00		
7	TILES BOX (4 PEACE)	30	BOX	350.00	10500.00		
8	PLASTER	242.42	SQ.M	500.00	121210.00		
			TOTAL		**426765.80**		
	ADD 3% CONTINGENCIES RS.				9445.28		
	ADD2% WORK CHARGED ESTABLISHMENT				6296.85		
	GRAND TOTAL				**442507.93**		

13.1.8 Civil Design 6 Over head water tank





16.10m Above G.L.


1.50 m 10 mm @ 150 c/c
100
8 mm @ 160 c/c
4-12 mm at
corners 6mm @
t = 200 mm at top
12 mm @ 150 c/c
12 mm @ 13 5 c/c
520 x 30 0
(6 Nos 20 mm φ)
bars
1 2 mm @
150 c/c
t = 230 mm at bottom
300
12 mm @ 110
6 mm @ 16-0
250 thick
1.20m
10 mm @ 100 c/c
200
5 Nos 20 mm
8 mm @
12 m m
5 No 20 m m
Column 450 circula r
(a) Details of tank

Measurement sheet of water tank

DECRIPTION OF WORK	NOS.	Length (m)	Breadth (m)	Area (m^2)	Depth (m)	QTY.
EARTH WORK IN EXCUVATION	1			64.32	2	128.64m^3
EARTH WORK IN FILLING	1					100.198m^3
R.CC WORK IN FOUNDATION (1:1.5:3)	1			64.32	0.4	25.728m^3
RCC WORK IN COLOUMNS BELOW G.L (1:1.5:3)	6			0.282	1.6	2.714 m^3
RCC WORK IN COLOUMNS ABOVE G.L UPTO 4M HT (1:1.5:3)	6			0.282	4	6.785 m^3
RCC WORK IN COLOUMNS FROM 4M TO 8M HT(1:1.5:3)	6			0.282	4	6.785 m^3
RCC WORK IN COLOUMNS FROM 8M TO 12M HT (1:1.5:3)	6			0.282	4	6.785 m^3
TOTAL RCC WORK IN COLOUMNS (1:1.5:3)						23.069 m^3
RCC WORK IN BRACING AT 4m HT (1:1.5:3)	1	18.535	0.3		0.3	1.668 m^3
RCC WORK IN BRACING AT 8m HT(1:1.5:3)	1	17.278	0.3		0.3	1.555 m^3
RCC WORK IN	1	23.56	0.3		0.52	2.675 m^3

RING BEAM AT							
BOTTOM OF							
THE CL WALL							
(1:1.5:3)							
RCC WORK IN	**1**	23.56	0.16	99.95	0.225	0.848 m^3	
RING BEAM AT							
TOP							
OF THE CL							
WALL (1:1.5:3)							
RCC WORK IN	**1**				0.1	9.995 m^3	
DOMED	**1**			47.06	0.25	11.751 m^3	
ROOF(1:1.5:3)							
RCC WORK IN							
CONICAL SLAB							
(1:1.5:3)							
RCC WORK IN	**1**			38.76	0.2	7.752 m^3	
CONICAL							
DOME (1:1.5:3)							
RCC WORK IN	**1**		0.215	117.8	5	126.35 m^3	
CYLINDRICAL							
WALL (1:1.5:3)							
DEDUCTIONS	**2X6**	0.3	0.3		0.6		
IN							
RCC WORK IN							
BRACINGS IN							
COLOUMNS							
T0TAL RCC						22.901 m^3	
WORK							
IN COLOUMNS							
AFTER							
DEDUCTIONS							
TOTAL RCC						138.174 m^3	
WORK							
PLASTERING IN	**1**			47.06		47.006 m^2	
C M (1:2) FOR							
INNER							
SURFACE OF							
CONIVAL							
SLAB (12MM)							
PLASTERING IN				60.2		60.2 m^2	
C M (1:6) FOR							
OUTER							
SURFACE OF							

CONICAL							
SLAB (12MM)							
PLASTERING IN	**1**			38.76			38.76 m^2
C M (1:2) FOR							
INNER							
SURFACE OF							
CONICAL							
DOME (12MM)							
PLASTERING IN				43.135			43.135 m^2
C M (1:6) FOR							
OUTER							
SURFACE OF							
CONICALDOME							
(12MM)							
PLASTERING				117.8			117.8 m^2
IN							
C M (1:2) FOR							
INNER							
SURFACE OF							
CYLINDRICAL							
WALL (12MM)							
PLASTERING IN				125.03			125.03 m^2
C M (1:6) FOR							
OUTER							
SURFACE OF							
CYLINDRICAL							
WALL 12mm							
PLASTERING IN				96.5			96.556 m^2
C M (1:2) FOR							
INNER							
SURFACE OF							
DOMED 12mm							
PLASTERING IN				99.95			99.95 m^2
C M (1:6) FOR							
OUTER							
SURFACE OF							
DOMED ROOF							
PLASTERING IN	**6**			45.23			271.433 m^2
C M (1:6) FOR							
COLUMNS12mm							
PLASTERING IN	**1**	16.022				0.6	91.732 m^2
C M (1:6) FOR							
CIRCULAR							
GIRDER (12MM)							

PLASTERING IN		23.56	0.16				18.213 m^2
C M (1:2) FOR							
RING							
BEAM AT TOP							
(12MM)							
PLASTERING IN		23.56	0.3			0.225	38.95 m^2
C M (1:2) FOR							
RING							
BEAM AT							
BOTTOM							
(12MM)							
PLASTERING IN		18.535	0.3			0.52	22.422 m^2
C M (1:6) FOR							
BRACING AT							
4M HT 12mm							
PLASTERING IN		17.278	0.3			0.3	20.936 m^2
C M (1:6) FOR							
BRACING AT							
8M HT12mm							
TOTAL						0.3	357.289 m^2
PLASTERING IN							
CM (1:2) 12MM							
THICK							
TOTAL							652.838 m^2
PLASTERING IN							
CM(1:6) 12MM							
THICK WATER							647.174 m^2
PROOF							
CEMENT							
PAINTING							
FOR TANK							
PORTION							
WHITE	**6**			45.23			271.433 m^2
WASHING							
FOR COLUMNS							
TOTAL WHITE							918.607 m^2
WASHING							

Abstract sheet of water tank

DESCRIPTION	QUANTITY	RATE	PER	AMOUNT
R.C.C work in foundation (1:1.5:3)	25.728	5538/-	CUM	1,42,482/-
Total R.C.C work in column (1:1.5:3)	23.069	7383/-	CUM	1,70,322/-
R.C.C work in ring beam at top of the CL wall(1:1.5:3)	0.848	7450/-	CUM	6,318/-
R.C.C work in	9.995	61141/-	CUM	6,11,105/-
R.C.C. work in conical dome (1:1.5:3)	7.752	25035/-	CUM	1,94,072/-
R.C.C. work in cylindrical wall	126.635	7249/-	CUM	9,17,978/-
V.R.C.C (1:1 ½ :3)20 mm size HBG, machine crushed chips including cost, seignorage and conveyance of all materials and labour charges such as Machine mixing, vibrating, curing etc., -ring beam at bottom of cylindrical wall – SF	3.675	7854/-	CUM	28,866/-
V.R.C.C (1:1 ½ :3)20 mm size HBG, machine crushed chips including cost, seignorage and conveyance of all materials and labour charges such as Machine mixing, vibrating, curing etc., -circular girder – SF	3.845	6914/-	CUM	26,585/-
V.R.C.C (1:1 ½ :3)20	11.751	25035/-	CUM	2,94,187

mm size HBG, machine crushed chips including cost, seignorage and conveyance of all materials and labour charges such as Machine mixing, vibrating, curing etc., -inclind cone shaped slab – SF				
V.R.C.C (1:1 ½ :3)20 mm size HBG, machine crushed chips including cost, seignorage and conveyance of all materials and labour charges such as Machine mixing, vibrating, curing etc., - Bracing at 4m height- Sift	1.668	7498/-	CUM	12,507/-
V.R.C.C (1:1 ½ :3)20 mm size HBG, machine crushed chips including cost, seignorage and conveyance of all materials and labour charges such as Machine mixing, vibrating, curing etc., - Bracing ay 8mheigh – Sift	1.555	7617/-	CUM	11,845/-
Supplying, placing and fitting of HYSD bars reinforcement, complete as per drawings and technical specifications for bars below 36mm dia including over laps	41.45	55419/-	MT	22,97,240/-

13.2 Reason for Students Recommending this Design

In Vadpura Village, all types of basic facilities like physical and social infrastructures, as mentioned below, are already available. But some of the socio-cultural facilities are missing. So in our report we have suggested some of the designs of the building as follows :

PART: I

1. School Design
2. Community hall
3. Solid waste management
4. Main gate
5. Anganwadi
6. Septic tank

PART: II

7. Bus stand: In the village there is bus stand but it is in maintenance there is no buses are coming for that we have planning to design one of the most attractive bus stands for villagers to made easy travel experience in nearby cities.

8. Panchayat building: In the village there is panchayat building but it is in maintenance. For easiness of villager we design the panchayat building.

9. PHC: In village health center is required for Public by undertaking the requirement of the villagers we have design the Public health center.

10. Milk dairy: In the village there is Dairy but it is in maintenance. For better use of building and other facility of villager we provide the dairy.

11. Library: In Vadpura village has no library, so we planning, design and estimation and costing of Library.

12. Over head Water tank: In the village there is water tank but it is in maintenance. For better use of building and other facility of villager we provide in the village.

13.3 About designs Suggestions / Benefit of the villagers

- Sustainable Infrastructure Facilities should need such as: Green building, Solar system, Biogas plant, Rainwater Harvesting, etc.
- Physical Infrastructure Facilities should need such as: primary school, drainage system, bus stand, sanitation facilities, Child Welfare center etc.
- Social Infrastructure Facilities should need such as: Farmer help center, Anganwadi,Police station, hospitals, community Housing, General market, etc.
- Socio-Cultural Infrastructure Facilities should need such as: Skill development classes, Govt. grocery shop, Community hall, Library, Auditorium, Recreational activities, pickup stand etc.
- Smart Infrastructure Facilities should need such as: Cow milk farm, RO- water plant.
- If these structures available in the village, Villager can easily get the advantages of the system and they not need to depend on other town, good drainage system and sanitation facility in village ensure the good health and well-being of people.

CHEPTER: 14
14. Technical Options with Case Studies

14.1 Civil Engineering

14.1.1 Advanced Earthquake Resistant

Earthquake-resistant structures are structures designed to protect buildings from earthquakes. While no structure can be entirely immune to damage from earthquakes, the goal of earthquake-resistant construction is to erect structures that fare better during seismic activity than their conventional counterparts. According to building codes, earthquake-resistant structures are intended to withstand the largest earthquake of a certain probability that is likely to occur at their location. Currently, there are several design philosophies in earthquake engineering, making use of experimental results, computer simulations and observations from past earthquakes to offer the required performance for the seismic threat at the site of interest.

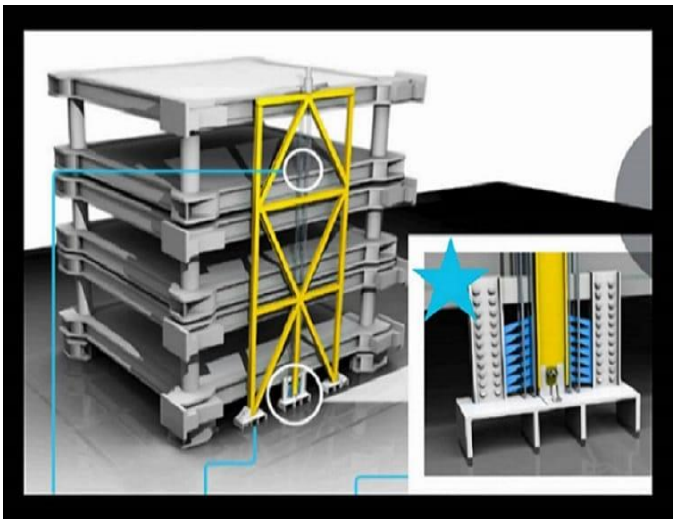


Figure 60 Advanced earthquake resistant

These range from appropriately sizing the structure to be strong and ductile enough to survive the shaking with an acceptable damage. The conventional approach to earthquake resistant design of buildings depends upon providing the building with strength, stiffness and inelastic deformation capacity which are great enough to withstand a given level of earthquake-generated force. This is generally accomplished through the selection of an appropriate structural configuration and the careful detailing of structural members, such as beams and columns, and the connections between them. But more advanced techniques for earthquake resistance is not to strengthen the building, but to reduce the earthquake-generated forces acting upon it.

Among the most important advanced techniques of earthquake resistant design and construction are:

1. Base Isolation
2. Energy Dissipation Devices

Figure 61 Base isolation

Base Isolation Method of Earthquake Resistant Design

A base isolated structure is supported by a series of bearing pads which are placed between the building and the building's foundation. A variety of different

types of base isolation bearing pads have now been developed. The bearing is very stiff and strong in the vertical direction, but flexible in the horizontal direction.

To get a basic idea of how base isolation works, examine Figure. This shows an earthquake acting on both a base isolated building and a conventional, fixed-base, and building. As a result of an earthquake, the ground beneath each building begins to move. In Figure, it is shown moving to the left. Each building responds with movement which tends toward the right. The building undergoes displacement towards the right. The building's displacement in the direction opposite the ground motion is actually due to inertia. The inertial forces acting on a building are the most important of all those generated during an earthquake. It is important to know that the inertial forces which the building undergoes are proportional to the building's acceleration during ground motion. It is also important to realize that buildings don't actually shift in only one direction. Because of the complex nature of earthquake ground motion, the building actually tends to vibrate back and forth in varying directions. By contrast, even though it too displacing, the base-isolated building retains its original, rectangular shape. It is the lead-rubber bearings supporting the building that are deformed.

The base-isolated building itself escapes the deformation and damage, which implies that the inertial forces acting on the base-isolated building have been reduced. Experiments and observations of base-isolated buildings in earthquakes have been shown to reduce building accelerations to as little as 1/4 of the acceleration of comparable fixed-base buildings, which each building undergoes as a percentage of gravity. As we noted above, inertial forces increase, and decrease, proportionally as acceleration increases or decreases. Acceleration is decreased because the base isolation system lengthens a building's period of vibration, the time it takes for the building to rock back and forth and then back again. And in general, structures with longer periods of vibration tend to reduce acceleration, while those with shorter periods tend to increase or amplify acceleration. Finally, since they are highly elastic, the rubber isolation bearings don't suffer any damage. But the lead plug in the middle of our example bearing experiences the same deformation as the rubber. However, it generates heat.

Energy Dissipation Devices

The second of the major new techniques for improving the earthquake resistance of buildings also relies upon damping and energy dissipation, but it greatly extends the damping and energy dissipation provided by lead-rubber bearings. As we've said, a certain amount of vibration energy is transferred to the building by earthquake ground motion. Buildings themselves do possess an inherent ability to dissipate, or damp, this energy. However, the capacity of buildings to dissipate energy before they begin to suffer deformation and damage is quite limited. The building will dissipate

Figure 62 Energy dissipation devices

energy either by undergoing large scale movement or sustaining increased internal strains in elements such as the building's columns and beams. Both of these eventually result in varying degrees of damage. So, by equipping a building with additional devices which have high damping capacity, we can greatly decrease the seismic energy entering the building, and thus decrease building damage. Accordingly, a wide range of energy dissipation devices have been developed and are now being installed in real buildings. Energy dissipation devices are also often called damping devices. The large number of damping devices that have been developed can be grouped into three broad categories: Friction Dampers: these utilize frictional forces to dissipate energy Metallic Dampers: utilize the deformation of metal elements within the damper Viscoelastic Dampers: utilize the controlled shearing of solids Viscous Dampers: utilized the forced movement (orificing) of fluids within the damp.

Construction Methods

1. Base-isolation is designed in buildings. It is a building designed to reduce amount of energy that reaches the building during earthquake.

2. Flexible joints and automatic shut off valves can be installed. Protecting Against Earthquake Damage Prepare a Seismic Risk Map for the globe which identifies rock types, liquefaction potential, land slide potential. Extensive geological surveying has to be done to identify all active faults, including hidden faults. Earthquake Resistant Design of Structures Enact building codes to design and build earthquake-resistant structures in high seismic risk areas. Wood steel and reinforced concrete are preferred as they tend to move with the shaking ground (unreinforced concrete and heavy masonry tend to move independently and in opposition to the shaking, battering one another until the structure collapses).

14.1.2 Seismic Retrofitting of Buildings

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

Performance objectives

In the past, seismic retrofit was primarily applied to achieve public safety, with engineering solutions limited by economic and political considerations. However, with the development of Performance-Based Earthquake Engineering (PBEE), several levels of performance objectives are gradually recognized:

- Public safety only. The goal is to protect human life, ensuring that the structure will not collapse upon its occupants or passersby, and that the structure can be safely exited. Under severe seismic conditions the structure may be a total economic write-off, requiring tear-down and replacement.
- Structure survivability. The goal is that the structure, while remaining safe for exit, may require extensive repair (but not replacement) before it is generally useful or considered safe for occupation. This is typically the lowest level of retrofit applied to bridges.
- Structure functionality. Primary structure undamaged and the structure are undiminished in utility for its primary application. A high level of retrofit, this ensures that any required

repairs are only "cosmetic" – for example, minor cracks in plaster, drywall and stucco. This is the minimum acceptable level of retrofit for hospitals.

- Structure unaffected. This level of retrofit is preferred for historic structures of high cultural significance.

Techniques

Common seismic retrofitting techniques fall into several categories:

A) External post-tensioning

The use of external post tensioning for new structural systems have been developed in the past decade. Under the PRESS (Precast Seismic Structural Systems), a large-scale U.S./Japan joint research program, unbounded post-tensioning high strength steel tendons have been used to achieve a moment-resisting system that has self-centering capacity. An extension of the same idea for seismic retrofitting has been experimentally tested for seismic retrofit of California bridges under a Caltrans research project and for seismic retrofit of non-ductile reinforced concrete frames. Pre-stressing can increase the capacity of structural elements such as beam, column and beam-column joints. External pre-stressing has been used for structural upgrade for gravity/live loading since the 1970s.

B) Supplementary dampers

Supplementary dampers absorb the energy of motion and convert it to heat, thus damping resonant effects in structures that are rigidly attached to the ground. In addition to adding energy dissipation capacity to the structure, supplementary damping can reduce the displacement and acceleration demand within the structures. In some cases, the threat of damage does not come from the initial shock itself, but rather from the periodic resonant motion of the structure that repeated ground motion induces. In the practical sense, supplementary dampers act similarly to Shock absorbers used in automotive suspensions.

C) Tuned mass dampers

Tuned mass dampers (TMD) employ movable weights on some sort of springs. These are typically employed to reduce wind sway in very tall, light buildings. Similar designs may be employed to impart earthquake resistance in eight to ten story buildings that are prone to destructive earthquake induced resonances.

Figure 63 Tuned mass dampers

D) Slosh tank

A slosh tank is a large container of low viscosity fluid (usually water) that may be placed at locations in a structure where lateral swaying motions are significant, such as the roof, and tuned to counter the local resonant dynamic motion. During a seismic (or wind) event the fluid in the tank will slosh back and forth with the fluid motion usually directed and controlled by internal baffles – partitions that prevent the tank itself becoming resonant with the structure, The net dynamic response of the overall structure is reduced due to both the counteracting movement of mass, as well as energy dissipation or vibration damping which occurs when the fluid's kinetic energy is

converted to heat by the baffles. Generally, the temperature rise in the system will be minimal and is passively cooled by the surrounding air. One Rincon Hill in San Francisco is a skyscraper with a rooftop slosh tank which was designed primarily to reduce the magnitude of lateral swaying motion from wind. A slosh tank is a passive tuned mass damper. In order to be effective, the mass of the liquid is usually on the order of 1% to 5% of the mass it is counteracting, and often this requires a significant volume of liquid. In some cases, these systems are designed to double as emergency water cisterns for fire suppression.

E) Infill shear trusses

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.

Figure 64 Infill shear trusses

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

Advancements in Concrete

A) High Performance Concrete

Lafarge has developed a whole new family of concretes called Ductile. These concretes have high compressive and flexural strength, and their special characteristics enable the achievement of outstanding architectural feats. Ductile concrete incorporates strengthening fibers and opens the horizon to ultra-high

Figure 65 High performance concrete

performance due to its special composition which provides it with outstanding strength, six to eight times greater than traditional concrete (under compression). “Fiber-reinforced” means that it contains metal fibers which make it a ductile material. Highly resistant to bending, its great flexural strength means it can withstand significant transformations without breaking. Ductile also comes with organic fibers for applications with less load and for advanced architectural applications.

B) Light Transmitting Concrete

The days of dull, grey concrete could be about to end. A Hungarian architect has combined the world’s most popular building material with optical fiber from Schott to create a new type of concrete that transmits light. A wall made of “LitraCon” allegedly has the strength of traditional concrete but thanks to an embedded array of glass fibers can display a view of the outside world, such as the silhouette of a tree, for example. “Thousands of optical glass fibers form a matrix and run parallel to each other between the two main surfaces of every block,” explained its inventor, Aron Losonczi. “Shadows on the lighter side will appear with sharp outlines on the darker one. Even the colors’ remain the same. This special effect creates the general impression that the thickness and weight of a concrete wall will disappear. “The hope is that the new material will transform the interior appearance of concrete buildings by making them feel light and airy rather than dark and heavy.

Figure 66Light transmitting concrete

C) Pervious Concrete

Pervious pavement is a cement-based concrete product that has a porous structure which allows rainwater to pass directly through the pavement and into the soil naturally. This porosity is achieved without compromising the strength, durability, or integrity of the concrete structure itself. The pavement is comprised of a special blend of Portland cement coarse aggregate rock, and water. Once dried, the pavement has a porous texture that allows water to drain through it at the rate of 8 to 12 gallons per minute per square foot. Tests conclude that a square foot of Bahia sod drains at the rate of 2 1/2 to 3 gallons per minute. According to the manufacturer, this rapid flow-through ratio inspired the phrase “the pavement that drinks water.”

Figure 67 Pervious concrete

D) Aerated Concrete

Figure 69 Aerated concrete

It was discovered in 1914 in Sweden that adding aluminum powder to cement, lime, water, and finely ground sand caused the mixture to expand dramatically. The Swedes allowed this "foamed" concrete to harden in a mold, and then they cured it in a pressurized steam chamber an autoclave. Autoclaved aerated concrete is produced by about 200 plants in 35 countries and is used extensively in residential, commercial, and industrial buildings. At a density of roughly one-fifth that of conventional concrete and a compressive strength of about one-tenth, AAC is used in load-bearing walls only in low-rise buildings. In high-rises, AAC is used in partition and curtain walls.

E) Floating Concrete

Figure 68 Floating concrete

By replacing sand and gravel with tiny polymeric spheres, University of Washington materials scientists have created a concrete stronger than traditional concrete but so light it floats in water. The team won the regional American Society of Civil Engineers Concrete Canoe Competition last year.

Foamed Aluminum

"Light-as-air, stronger-than-steel materials are just beginning to shape our world. Foamed aluminum first emerged from the lab in the frame of a 1998 Karman concept car. Ten times stronger than traditional aluminum at just one tenth the weight, the material allows a more fuel-efficient vehicle. Its isotropic cellular structure helps the frame absorb shock and serves as an insulating firewall between the engine and the rest of the car. The foaming process can also be applied to steel, lead, tin, and zinc." The product is a high strength, extremely light weight material that possesses high durability, excellent finish and lasting value. The foam comes in an assortment of densities and sizes up to five feet wide and up to fifty feet long. It has numerous applications including architectural, automotive, marine, military, aviation, transportation, electronics, appliances, and signage.

Woven Stainless Steel

K5 New York is now offering woven stainless steel in 18 different weaves, produced in Switzerland by G. Bopp. This product has been used in projects as diverse as railing systems and furniture components. Custom weaves and patterns are also possible.

Creative Weaves Metal Mesh

Metal meshes have been known as decorative and functional design elements in architecture for only a few years. During the continuous product development along with ordinary use such as a fence element it became clear that metal meshes also have

considerable technical advantages which are extremely relevant in the field of architecture. Today, the architect has a wide range of mesh samples at hand, with weaving widths up to eight meters, which allow for great design flexibility. Woven metallic meshes used as partition elements convey a new dimension to any space. They can be used as projection screens, and, taking into account their acoustic characteristics, are suitable for the use in public buildings, opera houses and concert halls.

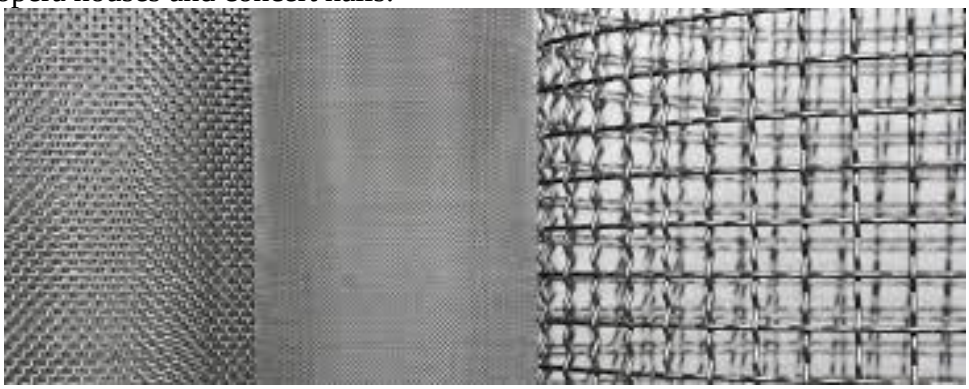


Figure 70 Creative weaves metal mess

Laminated Thermo Plastic Panels

Blizzard Composite GmbH manufactures high-tech plastic composites for the architectural field as well as the trucking industry. Their core expanding machinery heats up and vertically expands solid thermoplastic sheets, which are then processed into sandwich panels by lamination equipment. Due to the unique geometry of the Pep Core, the panels are of low weight and provide an excellent combination of high stiffness and compressive strength.

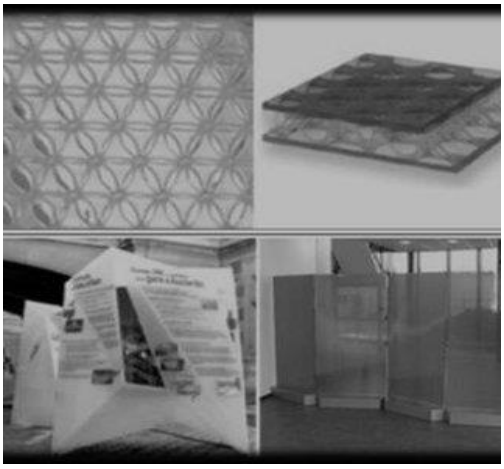


Figure 71 Laminated thermo plastic panel

Other Super Performing Multi Purposed Material

- **Geoweb:** Cellular confinement system for vertical vegetation for green walls.
- **Aero Foamed Aluminum:** Tightly corrugated aluminum sheets as in bamboo mats.
- **Flexible Framing Track:** For flexible outlining and fencing. A fence framed in metallic frame.
- **3D Molded Plywood:** Fast manufacturing furniture.
- **Corrugated Glass:** For inside esthetic and thermal insulation.
- **Braille Tiles:** Exclusively for people with weak eye sight or completely blind when it comes to universal design.

Some Repurposed Materials and techniques

- **Rubber Sidewalks:** Sidewalks or walkways made using used tires and hard boarding sheets. **Strawboard:** Made from agro waste mainly.

- **Biogases Boards:** Boards made of material left from sugarcane after extracting juice.
- **Natural Fiber Insulation:** Insulation panels made out of used cloths.
- **Frit:** Fine powdered glass from waste with ceramics remolded for reuse.
- **Acoustic-cell:** Boards made for acoustics from rubber shredding.
- **Plasphalt:** Plastic blended with asphalt on roads for waste management.
- **Fly-Ash Concrete:** Using Fly-ash residue as strengthening material with cement

Materials	Uses	Advantages
High Performance Concrete	Beam	On long span structures like bridges and halls
Light Transmitting Concrete	Interior Walls	Energy Saving
Pervious Concrete	Paving, Parking, Walkways	Will be permeable for water supporting water table recharge
Floating Concrete	Marine architecture	Will save construction cost
Weave Metal Mesh	Half walls, Fences, Acoustic walls	Cost and time effective
Aero gel	Skylight, Thermal panels	Heat resistive, transparent
Super Black	Paints, Varnishes and Finishes	Less Reflective, absorptive
Banner Work	Shading device, Landscape element	Time, Cost, Energy efficient
Geoweb	Vertical Gardening, Green walls	Energy conserving, Water conserving
Framing Track	Flexible boundaries and Fences	Quick and versatile
3D Molded Plywood	Furniture, Formworks	Time Saving, Repetitive design
Braille Tiles	On Floor or Walls	Signage for Blinds
Rubber Side Walks	Foot path, Walkways	Waste managing, Time saving, Eco-Friendly
Natural Fiber Insulation	Thermal Panels, Blocks	Re-Used Technique i,Re-purposed
Fly Ash Concrete	Beams, Columns, Slab	Repurposed, Provides strength to base material

14.1.4 Engineering Aspects of Soil mechanics - Environmental Impact Assessment

What is Environmental Impact Assessment?

- It is the process or study which identifies the effects of a proposed industrial/infrastructural project on the environment.
- It prevents a proposed activity/project from being approved without proper impact assessment and attempts to compare various alternatives proposed for a project, preferring the alternative that best represents both economic and environmental interests.
- EIA is statutorily backed by the Environment Protection Act, 1986 which contains the framework for EIA methodology and process.

History of EIA in India

- India is a signatory to Stockholm Declaration (1972) on environment, and subsequently enacted laws to control pollution in water (Water act of 1974) and air (Air act of 1981).
- Following the Bhopal gas tragedy in 1984, India legislated an umbrella act -The environment (protection) act of 1986
- In 1994, India set up a legal framework: The first EIA notification, under the Environment (Protection) act 1986 for regulating projects that access, utilize, and affect the environment.
- The second EIA notification was legislated in 2006 which mandated obtaining environmental clearance for multiple categories of Projects/Industries.

Process of EIA:

The assessment process is carried out by an Expert Appraisal Committee (EAC) which comprises of experts in environmental sciences and Project Management Experts.

Procedure:

- **Scoping:** The project's potential impact on the environment, impact on nearby population is listed along with mitigation possibilities.
- **Preparation of Initial EIA Draft:** After Scoping the initial report is prepared listing out the baseline data gathered along with various alternatives available.
- **Public Consultation:** The initial EIA draft is then legally required to be presented to the concerned public for gathering their inputs. Concerned public meaning anyone that falls under the impact zone of the project.
- **Preparation and Appraisal of final EIA Draft:** After gathering and assessing the public input, the final EIA draft is prepared and goes through appraisal.
- **Grant or rejection of Environmental Clearance:** The Final EIA draft is then forwarded to the regulatory authority which in this case is the Ministry of Environment, Forests and Climate Change (MOEFCC).Ordinarily the ministry accepts the report sent by the Expert appraisal committee.

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

Water supply system

The system is responsible for supplying water to the house 24/7. In order to achieve it, people install different equipment for pumping, storing, cleaning, limiting and supplying water to the house.

The first step is to choose **the source of drinking water** - it can be a borehole, a well, or a general city water supply. A well is easier and cheaper to implement, but a borehole can provide us with pure water (in other words, artesian). In addition, a borehole provides mostly unlimited supply of water, which cannot be said about a well. If to count in a very general numbers, we can say that a borehole in just one hour of time can provide you with such amount of water, which for a well will take a day to provide. Well, we are good with the sources of water, now it is a high time to take a look at the equipment for supplying water to the house - the pumps.

Pumps can be of two types: surface mounted or submersible. Even from the names themselves we can figure out their principles of work – surface mounted pumps supply water from the upper layers, submersible ones – from more significant depths.

Another absolutely necessary element of the water supply system is a water supply network, which includes wiring and final destination points.

Sewerage

Sewage system is responsible for the diversion of wastewater into special treatment facilities (septic tanks) and its purification there. When installing a sewage system, it is highly important to take into account the location of the equipment, as well as the distance between the water pipe and the sewage system itself. Since the sewage system affects the state of the environment, its misplacement can be prosecuted. Therefore, in order to protect you from any risks, it is better to leave this work to professionals who will take into account all the important moments and even minor details.

What is wastewater?

Wastewater is any water that has been contaminated by human use. It is "used water from any combination of domestic, industrial, commercial or agricultural activities, surface runoff or storm water, and any sewer inflow or sewer infiltration".

We consider wastewater treatment as a water use because it is so interconnected with the other uses of water. Much of the water used by homes, industries, and businesses must be treated before it is released back to the environment.
If the term "wastewater treatment" is confusing to you, you might think of it as "sewage treatment." Nature has an amazing ability to cope with small amounts of water wastes and pollution, but it would be overwhelmed if we didn't treat the billions of gallons of wastewater and sewage produced every day before releasing it back to the environment. Treatment plants reduce pollutants in wastewater to a level nature can handle.

Why Treat Wastewater?

It's a matter of caring for our environment and for our own health. There are a lot of good reasons why keeping our water clean are an important priority:

Fisheries: Clean water is critical to plants and animals that live in water. This is important to the fishing industry, sport fishing enthusiasts, and future generations.

Wildlife habitats: Our rivers and ocean waters teem with life that depends on shoreline, beaches and marshes. They are critical habitats for hundreds of species of fish and other aquatic life. Migratory water birds use the areas for resting and feeding.

Recreation and quality of life: Water is a great playground for us all. The scenic and recreational values of our waters are reasoning many people choose to live where they do. Visitors are drawn to water activities such as swimming, fishing, boating and picnicking.

Health concerns: If it is not properly cleaned, water can carry disease. Since we live, work and play so close to water, harmful bacteria have to be removed to make water safe.

Effects of wastewater pollutants

If wastewater is not properly treated, then the environment and human health can be negatively impacted. These impacts can include harm to fish and wildlife populations, oxygen depletion, beach closures and other restrictions on recreational water use, restrictions on fish and shellfish harvesting and contamination of drinking water. Environment Canada provides some examples of pollutants that can be found in wastewater and the potentially harmful effects these substances can have on ecosystems and human health:

- Decaying organic matter and debris can use up the dissolved oxygen in a lake so fish and another aquatic biota cannot survive;
- Excessive nutrients, such as phosphorus and nitrogen (including ammonia), can cause eutrophication, or over-fertilization of receiving waters, which can be toxic to aquatic organisms, promote excessive plant growth, reduce available oxygen, harm spawning grounds, alter habitat and lead to a decline in certain species;
- Chlorine compounds and inorganic chloramines can be toxic to aquatic invertebrates, algae and fish;
- Bacteria, viruses and disease-causing pathogens can pollute beaches and contaminate shellfish populations, leading to restrictions on human recreation, drinking water consumption and shellfish consumption;
- Metals, such as mercury, lead, cadmium, chromium and arsenic can have acute and chronic toxic effects on species.
- Other substances such as some pharmaceutical and personal care products, primarily entering the environment in wastewater effluents, may also pose threats to human health, aquatic life and wildlife.

Waste water treatment

The major aim of wastewater treatment is to remove as much of the suspended solids as possible before the remaining water, called effluent, is discharged back to the environment. As solid material decays, it uses up oxygen, which is needed by the plants and animals living in the water.

Figure 72 WTP

"Primary treatment" removes about 60 percent of suspended solids from wastewater. This treatment also involves aerating (stirring up) the wastewater, to put oxygen back in. Secondary treatment removes more than 90 percent of suspended solids.

Sustainable Development Techniques

It is the practice of using guidelines for environmentally responsible and energy savings to create new development projects and to maintain and retrofit older projects.

It can include using green materials in new construction, designing projects that can harvest their own energy to reduce the load on a power grid, or that incorporate green space in order to counterbalance the green space removed to build the onsite facilities. Sustainable development involves satisfying the needs of the present population without endangering the capability of the future population to satisfy its own needs. It's about improving the wellbeing of everyone wherever they are and achieving this milestone collectively. Sustainable development also digs deeper.

Techniques:

1. Eradication of poverty across the world

These organizations primarily focus on the least developed and low-income countries where poverty is rife.

They aim to eradicate poverty across the board by expanding social protection programs like school feeding, cash transfers, targeted food assistance, social insurance and labor market programs such as skill training, old-age pensions, wage subsidies, unemployment insurance, disability pensions and so on.

2. Promotion of good health and well being

This sustainable development goal seeks to ensure good health and well-being for all at each stage of life. The goal takes into account all the main health priorities such as maternal and child health, reproductive health, environmental, communicable and non-communicable diseases, universal health coverage, and access to quality, safe, effective, and affordable vaccines and medicines. It also advocates for enhanced health financing, increased research and development, strengthening the capacity of every country engaged in health risk prevention and management.

3. Provision of Quality Education for All

These bodies have realized that the level of child school dropout is at an all-time high. This gap must be closed to ensure sustainable future development even as international community's work to ensure quality and equity in the education sector. In a nutshell, this goal seeks to ensure equitable and inclusive quality education and promotion of long-life learning opportunities.

4. Provision of Clean Water and Sanitation

Water and sanitation are on top of the chart regarding sustainable development. They are critical to the survival of humans and the planet. This goal aims to address aspects relating to sanitation, hygiene, drinking water and the quality and sustainability of water resources across the globe.

5. Building up Strong Infrastructure, Supporting Inclusive and Sustainable Industrialization and Incubating Innovation

This goal takes into account three aspects of sustainable development: industrialization, infrastructure, and innovation. Infrastructure is vital because it offers the basic framework necessary to smooth the running of enterprise and society at large. Industrialization drives up economic development, yield job opportunities, hence, reducing levels of poverty. Innovation enhances the technological abilities of industrial sectors and triggers the development of innovative skills.

6. Enabling Access to Affordable and Clean Energy

Energy is the most critical resource to achieving most of the sustainable development goals. Energy plays a vital role in mitigating poverty through advancements in industrialization, education, water supply and health and fighting climate change. This sustainable development goal focuses on developing and expanding renewable energy resources such as sun, wind, hydropower, liquid and solid befouls, biogas and geothermal. These renewable sources of energy don't emit greenhouse gasses to the atmosphere and therefore are ideal for the environment and human health.

7. Achieving Gender Equality

In the past few decades, gender equality and women empowerment have been agendas for most governments for long-term sustainable development. Access to education for girls has since improved, the percentage of child marriage has plummeted, and huge leaps have been taken in the domain of sexual and reproductive health and rights such as the dramatic reduction in maternal health. Although there is still a long way to go to reach this milestone, organizations are using every ounce of their energy and throwing in resources to ensure the dream is realized.

There are other sustainable development goals set by these bodies including decent jobs and economic growth, sustainable cities and communities, conservation of sea, ocean and marine resources, combating climate change, sustainable consumption and production patterns and much more.

Figure 73 Achieving gender equality

CHEPTER: 15

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

SR NO:	Design name	Period	Amount Expenditure (Rs.)	Benefit
1	School renovate	Immediately	1837370.99	It improves safety of children's in learning.
2	Community hall	Within 1 year	230790.81	Promotes Exercise. Exercise is one of the most obvious benefits of a community center. Provides a Meeting Space.
3	Main gate	Immediately	288916.02	It provides Higher Property Values, Increased Security and good aesthetic view of village
4	Anganwadi renovation	Within 1 year	459161.5	It improves the attendance and interest of children's in learning.
5	Solid waste management	Immediately	272862	It cleans the landscape. It Promotes health and sanitation.
6	Septic tank	Immediately	324024.25	Easier on the environment. Regular sewer lines can sometimes leak raw sewage into the ground, contaminating our ground water.

7	Bus stand	Within 1 year	124947.88	It provides comfortable, safe, and well-lighted place to wait.
8	Panchayat building	Long Term (3-5 years)	100000	Maintenance and construction of water resources, roads, drainage, School buildings and CPR (common property resources).
9	PHC	Immediately	600281.33	Primary health care services can improve people's health and wellbeing by supporting them to manage their complex and chronic conditions
10	Milk dairy	Within 1 year	854761.07	Increased production of milk. Better utilization of labour.
11	Library	Immediately	442507.93	They foster literacy of all kinds. They create healthy communities.
12	Over head water tank	Within 1 year	54,50,000	Overhead water tank delivers water pressure to all the processes, moderately at a constant level.

CHEPTER: 16
16. Survey by Interviewing With Talati And / Or Sarpanch

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	Farming, privet
2	What are the chances of employment in village?	Yes	-
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?	No	-
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?	No	-
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	-
12	Is water scarcity in village? How many days per year?	No	-
13	Is village under any debt?	No	-
14	Is any serious issue due to debt from bank or any person happened in village?	No	-
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	No	-
16	Is any death of patient occurred due to unavailability of medical facility in village?	NO	-
17	How many disabled (physically challenged) is observed in village? Provide list with Male/female/girl/boy with age and type of disability and reason of disability.	No	-
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?	No	-
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

CHEPTER: 17

17. Irrigation / Agriculture Activities and Agro Industry, Alternate Techniques and Solution

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

17.1 Irrigation in Vadpura village

Irrigation is the practice of purposely providing land with water by artificial means for crop production. Head of the distributor refers to the last point in the distributor at which the flow of water to the village is controlled by irrigation authorities

17.2 Ground water based on irrigation in Vadpura village

Water table, also called groundwater table, upper level of an underground surface in which the soil or rocks are permanently saturated with water. The water table separates the groundwater zone that lies below it from the capillary fringe, or zone of aeration, that lies above it.

17.3 Agro industries in Vadpura village

Agro-based industry would mean any activity involved in cultivation, under controlled conditions of agricultural and horticultural crops, including floriculture and cultivation of vegetables and post-harvest operation on all fruits and vegetables.

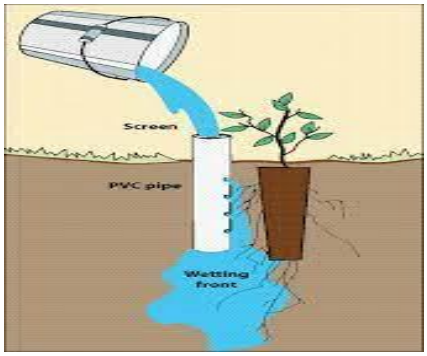
Alternate Techniques:

1. Buried Clay Pot Irrigation

- One of the most studied, and very effective systems uses a buried clay pot full of water to irrigate plants
- The capillary flow of water through the clay walls of the pot is regulated by demand - so little water is wasted
- Highly recommended! For restoration, gardens, landscaping, farming
- Clay pots worked well even in the lowest, hottest desert
- Excellent for seedlings or for starting seeds or cuttings
- Pot rim painted white to reduce evaporation

2. Deep Pipe Irrigation

- This method of irrigation was suggested by a traditional system from India - where water was placed in the hollow stem of a dead plant to water deeper in the soil
- Subsequent research found one study and one report from India
- This has been our best system for restoration work -- cheap, durable and very effective



3. Wick Irrigation

- Wick systems were also described in reports from India
- Wicks were traditionally combined with clay pots to water orchard trees
- After trying several types of wick systems, I think this may be the next great thing!

Irrigation Problems and Solution

1. Irrigation systems turning on during rainy weather

It's always best when nature is happy to water the garden for you, but what happens when it starts raining at the exact time the irrigation system is set to start watering the garden? It's not necessary or ideal to give the garden a double dose of water, especially when the aim of the game is to save water and money.

2. Water pressure issues

High, low and fluctuating water pressure can become an issue when your irrigation system is in use because it can prevent your garden from getting watered properly. Water pressure issues can result in misting, which is not effective hydration for your garden.
The solution is to install and adjust a valve pressure regulator at the valve and pressure regulation at the point of water distribution, both of which are features of the Rain Bird irrigation system.

3. Over-watering and under-watering

No two gardens are the same, so a one-size-fits-all irrigation system is not effective because it is likely to result in over-watering and under-watering. It is important to assess the areas in your garden that get a lot of sun versus a lot of shade. The parts of your garden that are exposed to more sun will need more water to compensate for the inevitable increased water loss, whereas the shady sections will require less watering. In addition, different areas of your garden will require more or less water depending on the plants in each area. Some plants demand more water, while others can survive on much less. But how can watering the garden be regulated in a way that considers all these factors?

4. Awkward garden designs

As we have said, each garden is unique and there is bound to be some interesting garden features that your irrigation system has to contend with. Your garden probably has one or more of the following characteristics: small or tight areas, odd shapes, long strips, crazy corners, various buildings, winding paths and weird obstacles.

5. Water run-off and pooling

The ultimate goal is to get the water to where it needs to go and to avoid as much water wastage as possible. The problem is that certain parts of the garden may have more compact soil, which means the water is not always absorbed and it begins to run-off onto areas that don't need the water. Similarly, water can begin pooling in areas below slopes or where run-off water settles, and these puddles can be damaging.

CHEPTER: 18
18. Social Activities – Any Activates Planned By Students

CHEPTER: 19

19. <<ALLOCATED VILLAGE>> SAGY Questionnaire

Survey form with the Sarpanch Signature

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Vadpura Gram Panchayat: Vadpura Ward No. –

Block: 1 District: Mehsana

State: Gujarat L S Constituency: Mehsana

1. Family Identity and Size

Name of Head of Household	Patel Manilal Prabhudas							Male/ Female	Male
SECC Survey ID:	–	Family Size	8	Over 18	5	6 to 18	3	Under 6	

2. Category & Entitlement Details (Tick as appropriate)

Social Category[1]	General	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	NO
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]
Patel Hardik Manikl	40	M	N	2	12th	Y	Y	N
Patel Chirag Manilal	35	M	N	2	10th	Y	Y	N
Patel silpa maniler	32	F	N	2	BCom	X	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
Patel Arohi Chiragbhi	7	F	N	1	Primary school	Y	2nd	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)

2

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~~	
Drainage linked to House: Covered / ~~Open~~ / ~~None~~	
Waste Collection System	~~Door Step~~ / ~~Common Point~~ / No Collection System
Homestead Land: ~~Yes~~ / No	Kitchen Garden : ~~Yes~~ / No
Compost Pit: ~~Individual~~/ ~~Group~~/ None	Biogas Plant: ~~Individual~~/ ~~Group~~/ None

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

Source of Water		Distance
Piped Water at Home	Yes / ~~No~~	0.2 km
Community Water Tap	Yes / ~~No~~	0.2 km
Hand Pump (Public / Private)	~~Yes~~ / No	
Open Well(Public / Private)	~~Yes~~ / No	
Other (mention):		

11. Source of Lighting and Power

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

12. Landholding (Acres)

1. Total	20	2. Cultivable Area	18
3. Irrigated Area	1	4. Uncultivable Area	1

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
Cotton	–	–
Vegetable	–	–
Wheat	–	–

17. Livestock Numbers

Cows: 2	Bullocks: –	Calves: –
Female Buffalo: 3	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): 2.5		

18. What games do Children Play
= Cricket and kho-kho

19. Do children play musical instrument (mention)
= NO

Schedule Filled By: Chirag panchal
Principal Respondent:
Date of Survey: 30/4/2021

3

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: Vadpura

b. Block: 1

c. District: Mehsana

d. State: Gujarat

e. Lok Sabha Constituency: Mehsana

f. Number of Wards in the Gram Panchayat: 1

g. Number of Villages in the Gram Panchayat: 1

h. Names of Villages: Vadpura.

Demographic Information

Number of Households 197 Total Population 967 Male 508 Female 459

SC HHs _____ ST HHs _____ OBC HHs _____ Other HHs _____

I. Access to Infrastructure / Facilities / Services

	Infrastructure Facilities / Services	Located within the GP Yes (Y)/No (N)	If located elsewhere (N), distance from the GP office
a.	ANM/ Health Sub Centre	N	N
b.	Nearest Primary Health Centre (PHC)	N	7 km
c.	Nearest Community Health Centre (CHC)	N	N
d.	Nearest Post Office	N	2 km
e.	Nearest Bank Branch (Any)	N	2 km
f.	Nearest Bank with CBS Facility	N	5 km
g.	Nearest ATM	N	2 km
h.	Nearest Primary School	Y	
i.	Nearest Middle School	N	2 km
j.	Nearest Secondary School	N	2 km
k.	Nearest Higher Secondary School / +2 College	N	2 km
l.	Nearest Graduate College	N	27 km
m	Nearest ITI / Polytechnic Centre	N	27 km
n	Kisan Seva Kendra	N	2 km

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	Y	—
p	Nearest Agro Service Centre	Y	—
p	MSP based Government Procurement Centre	N	—
q	Milk Cooperative /Collection Centre	Y	—
r	Veterinary Care Centre	N	NO
s	Ayurveda Centre	N	2 km
t	E – Seva Kendra	N	—
u	Bus Stop	Y	—
v	Railway Station	N	7 km
w	Library	N	7 km
x	Common Service Centre	N	2 km

IV. Sports Facilities in the Gram Panchayat

a. Number of Play Grounds in the GP: Total 1 Public 1 Private 0

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: — Primary Govt.: 1

Middle Private: — Middle Govt.: —

Secondary Private: — Secondary Govt.: —

Higher Secondary Private: — Higher Secondary Govt: —

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)	✓	—	—	—	—	Y	—
b.	Kerosene	—	—	—	—	—	N	2 km
c.	Other (mention)	—	—	—	—	—	—	—

5

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 1 / Not Covered	Vadpura	-
b.	Hand Pump Coverage in Villages:	Covered / Not Covered 1	-	-
c.	Coverage under Covered Drains:	Covered 1 / Not Covered	Vadpura	-
d.	Coverage under Open Drains:	Covered / Not Covered 1	-	-
e.	Villages with Household Electricity Connection (Numbers) 1	Connected 1 / Not Connected	Vadpura	-

VIII. Land and Irrigation

	Private Land	Area in Acres		Common Land	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	45-5	d.	Pasture / Grazing Land	-	g.	Check Dam	0
b.	Irrigated Land	25-0	e.	Forests/ Plantations	-	h.	~~Wells~~/Bore Wells	1
c.	Un-irrigated Land	34-5	f.	Other Common Land	-	i	Tanks /Ponds	0

[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)	30
b)	Number of Households receiving pension (old age, widow, disability)	20
c)	Number of eligible Households who are not receiving pension	10
d)	Number of Households eligible for Ration Card	180
e)	Number of eligible HHs having ration cards	100
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	40
l)	Number of landless households	10
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	7
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	2
w)	Number of Bharat Nirman Volunteers	–

Name and Signature of Surveyor and Respondent'

Jaimin joshi Chirag parekh Surveyor	સરપંચ વડપુરા ગ્રામ પંચાયત તા.કડી, જી.મહેસાણા PRI Respondent (Preferably Gram Panchayat Chairperson)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	30/4/2021 Date of Survey

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

4

Scanned with CamScanner

7

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: Vadpura.

b. Ward Number: 1

c. Gram Panchayat: Vadpura.

d. Block: 1

e. District: Mehsana

f. State: Gujarat

g. Lok Sabha Constituency: Mehsana.

h. Number of Habitations / Hamlets in the Gram Panchayat: 197

i. Names of Habitations / Hamlets: Vadpura

Demographic Information

Number of Households 197 Total Population 967 Male 508 Female 459

SC HHs — ST HHs — OBC HHs — Other HHs —

II. Access to Infrastructure/Amenities etc.

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
a.	Nearest Primary School	Y	-
b.	Nearest Middle School	N	2 km
c.	Nearest Secondary School	N	2 km
d.	Kisan Seva Kendra	N	2 km
e.	Milk Cooperative /Collection Centre	Y	—
g.	Health Sub Centre	N	—
h.	Bank	N	2km
i.	ATM	N	2 km
j.	Bus Stop	Y	—
k.	Railway Station	N	7 km

[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	7 km
m	Common Service Centre	N	2 km
n	Veterinary Care Centre	N	-

ii. Road Connectivity

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

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

iii. Drinking Water Facilities

a.Piped Water Supply Coverage to Habitations:__1__ *(1-All 2-None 3-Some)*

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

b.Hand Pump Coverage in Habitations: __2__ *(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: __2__ *(1-All 2-None 3-Some)*

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

b. Coverage under Open Drains: __2__ *(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)* 2

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

v. Coverage of Habitations under Electrification

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

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

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

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

vi. Sports Facilities in the Village

a.Number of Play Grounds in the Village (minimum size 200 square meters): __1__

b.Mini Stadium :__N__Yes(Y) /No (N)

vii. Education, ICDS

a. Number of Anganwadi Centres:__1__

c. Schools (Number)

Primary Private: __-__ Primary Govt.:__1__

Middle Private:__-__ Middle Govt.:__-__

Secondary Private:__-__ Secondary Govt.:__-__

Higher Secondary Private: _____ Higher Secondary Govt: _____

2

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	45-5	d.	Pasture / Grazing Land	—	g.	Check Dam	0
b.	Irrigated Land	25-0	e.	Forests/ Plnatations	—	h.	Wells/Bore Wells	7
c.	Un-irrigated Land	35-5	f.	Other Common Land	—	I	Tanks /Ponds	—

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	40
5	Number of landless households	10
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)	NO
12	Number of Youth Clubs	2
13	Number of Bharat Nirman Volunteers	—

Name and Signature of Surveyor and Respondent'

Jaimin Joshi Chirag Panchal	સરપંચ વડપુરા ગ્રામ પંચાયત તા.કડી, જી.મહેસાણા		30/4/2021
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

3

CHEPTER: 20

20. TDO-DDO-Collector email sending Soft copy attachment in the report

Gujarat Technological University

Vishwakarma Yojana <rurban@gtu.edu.in>

Development scenario of Vadpura village Mehsana district

11/5/2021 4:22PM

To: tdo-kadi@gujarat.gov.in & ddo-mehsana@gujarat.gov.in
Cc: Vishwakarma Yojana <rurban@gtu.edu.in>

Respected Sir/Madam

We are the students of S.P.B.PATEL ENGINEERING COLLAGE, LINCH affiliated to Gujarat Technological University-GTU. GTU has been assigned to Vishwakarma Yojana- VY in which students survey various villages and Design Various Amenities to deliver it to them making them ideal for living better life as per requirements & village problem statements.

As a part of Vishwakarma Yojana's guidelines, we have been asked to inform all the respected officers about the our project in which we will shortly notify about Vadpura Village profile of issues for development and our design work for them which is as below.

Village : Vadpura		**Population: 967(As of Census 2011)**
Key Issue	**Remark**	**Design Given**
Water Scarcity	Water storage capacity of ESR-UG is enough but supply at the household is not enough to commence daily needs, here water is supplied every other day for nearly half an hour. Canal is there for irrigation water. Water can't be bored due to salinity of ground water.	· Lake Modification · Rain Water Harvesting system · Root Zone Tech. to convert waste water into irrigation water · Road Network with side drains to save storm water
Internal Road Network	During rainy season it gets muddy as well as safety of integrated village is at risk due to no availability of street network.	· Road network with cc road
Solid Waste Managem ent	Open waste disposal can be seen everywhere in the village.	· Waste utilization through composting (due to farming is one the main occupation)
Toilet	Almost 90% have household toilet , under SBA toilet was needed.	· Public Toilet
Health Care	Habitats has to travel minimum 4 km for any health care aids(Mor village PHC), mobile van comes every week.	· PHC

Recreational Area	Currently only Village does not have any recreational place except for one temple near gamtal.	· Garden · Garden attached to kund
Community Place	Grampanchayat faces difficulties in conducting gramsabha, village does not have any place for gatherings or for celebration.	· Community hall
Identification	Village comes within the premises of other village but it was seen that village direction holdings were not proper which can cause difficulty in finding the village	· Entrance Gate

SR NO:	Design name	Period	Amount Expenditure (Rs.)	Benefit
1	School renovate	Immediately	1837370.99	It improves safety of children's in learning.
2	Community hall	Within 1 year	230790.81	Promotes Exercise. Exercise is one of the most obvious benefits of a community center. Provides a Meeting Space.
3	Main gate	Immediately	288916.02	It provides Higher Property Values, Increased Security and good aesthetic view of village
4	Anganwadi renovation	Within 1 year	459161.5	It improves the attendance and interest of children's in learning.
5	Solid waste management	Immediately	272862	It cleans the landscape. It Promotes health and sanitation.
6	Septic tank	Immediately	324024.25	Easier on the environment. Regular sewer lines can sometimes leak raw sewage into the ground, contaminating our ground water.
7	Bus stand	Within 1 year	124947.88	It provides comfortable, safe, and well-lighted place to wait.

8	Panchayat building	Long Term (3-5 years)	100000	Maintenance and construction of water resources, roads, drainage, School buildings and CPR (common property resources).
9	PHC	Immediately	600281.33	Primary health care services can improve people's health and wellbeing by supporting them to manage their complex and chronic conditions
10	Milk dairy	Within 1 year	854761.07	Increased production of milk. Better utilization of labour.
11	Library	Immediately	442507.93	They foster literacy of all kinds. They create healthy communities.
12	Over head water tank	Within 1 year	54,50,000	Overhead water tank delivers water pressure to all the processes, moderately at a constant level.

- ***Please find here with attached,***

1. Detailed Project Report Of Vadpura Village

Best REGARDS,
Chirag Panchal and
Jaimin joshi
7043508947/9099256158
S.P.B.PATEL ENGINEERING COLLAGE GTU
MAIL:180393106006@SAFFRONY.AC.IN
MAIL: 180393106001@SAFFRONY.AC.IN

CHEPTER: 21

21. Comprehensive report for the entire village

Vishwakarma Yojana is provides special scheme for development of rural area by GTU and Government of Gujarat in which students work together and collect data and information regards Rural area development with the help of gram panchayat, Talati, villagers and stake holders. Our selected village Vadpura have some basic facilities likes drinking water, electricity, drainage system, Pucca road, are sufficient so that village can develop. So, we will give proposal regarding sustainable energy sources and solution related to infrastructure problems.

Efforts have been made in this project work to identify and plan some of the below facilities for sustainable development of village and to meet need of future population. Vishwakarma Yojana is one of the initiatives towards Rurbanization that is village development by the government of Gujarat, which was allotted as a real time situation type project provides to GTU.

It is one of the strategies 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. In this project the students meet the relevant citizens of village and survey the existing facilities. Then design of the sustainable infrastructure which is to be modified is carried out for the village. This includes implementation of engineering skills to prepare detailed project reports for village as a part of the final year project work.

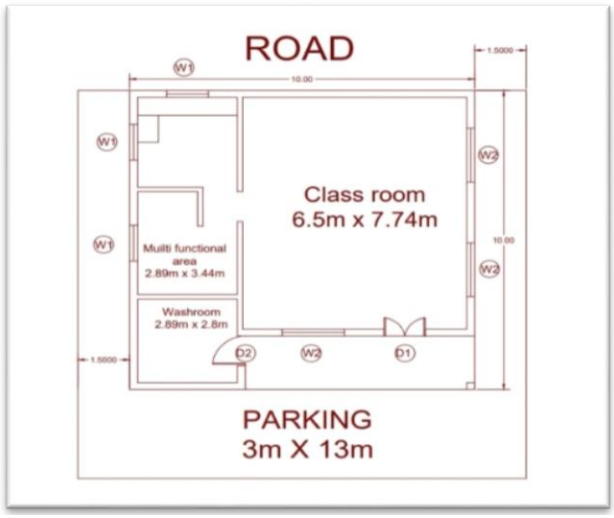
By this project certain experiences recreates a real work and need of application of an individual technical knowledge on any existing problems. Based on survey we tried to give design of basic facilities to fulfill their needs. By providing basic facilities like Solid waste management system, School renovation, Community hall, Vermicompost method, Anganwadi, for reduce urban city pressure and decrease migration rate, which is ultimate aim of Vishwakarma Yojana.

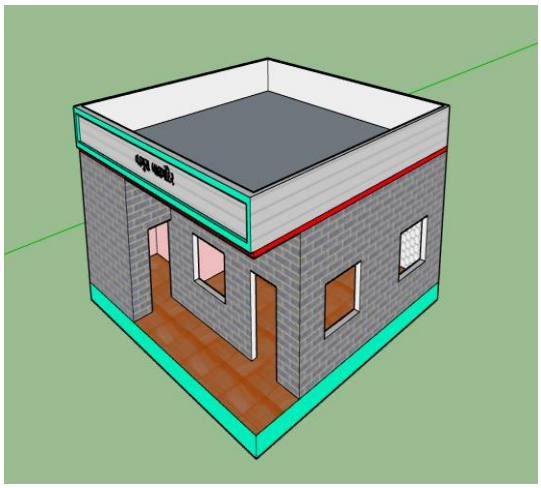
Vishwakarma Yojana would provide "Design to Delivery" solution for development of villages in 'Rurban' areas. The developmental work in villages that could undertaken as per the need of the village in particular includes Physical infrastructure facilities (Water, Drainage, Road, Electricity, Solid waste Management, Storm Water Network, Telecommunication & Other), Social infrastructure facilities (Education, Health, Community Hall, Library, Recreation Facilities & other) and renewable energy (Rain water harvesting, Biogas plant, Solar Street lights & Other) for Sustainable development.

Under this scheme, the villages of "Rurban" area will be adopted by the engineering colleges under the Gujarat Technological University. The Engineering colleges would study the identified villages and make the recommendations on the application of technology to achieve integrated and comprehensive development, through project preparation and management.

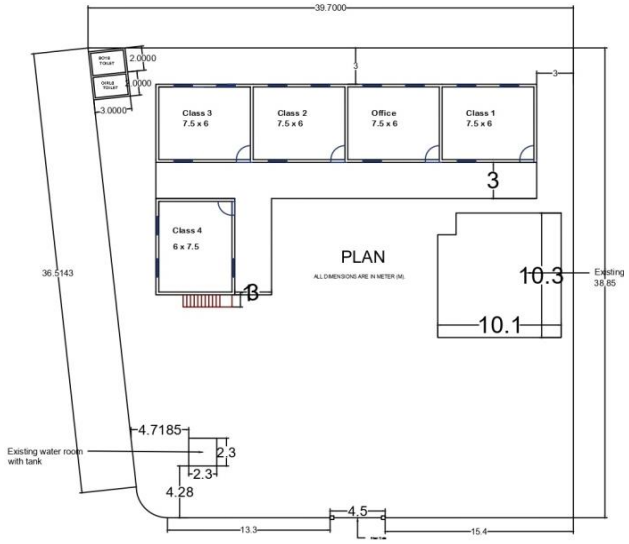
Vishwakarma Yojana is one of the approaches to reduce urban city Pressure and lower the migration rate by developing village with a 'rural soul' but with all urban amenities that a city may have. The developmental work in villages that could undertake as per the need of the village in particular includes Physical, Social and Renewable infrastructure Facilities. It is also proposed to frame "Vishwakarma Yojana" to provide the benefit of real work experience to engineering students of Gujarat Technological University and simultaneously apply their technical knowledge in the development of infrastructure in rural development.

A) Anganwadi Design

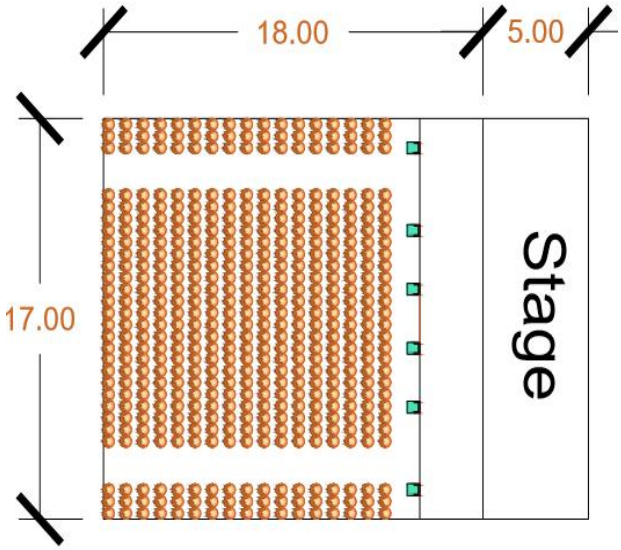


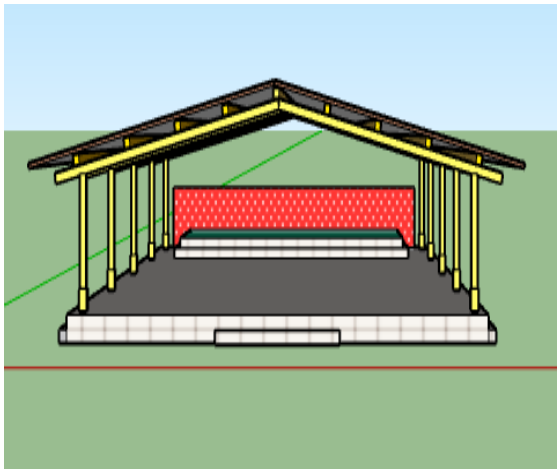


B)School Design



C) Main Gate





NODAL OFFICER STATEMENT:

By providing this required facility to village, development and growth of village can be possible. So ultimately migration rate and urban city pressure can be reduced and livelihood of village dweller will increase

All the design which is given as above are very helpful for future development of village and village people for their enhancement and prosperity. I admire these students to do work related to civil engineering people and hope these works is help to improve and understand their skills and make it even batter. I am sure they got deep knowledge about development of village and various infrastructure facility design of village. Lastly, we all enjoyed the informational as well as practical journey of civil engineering work.

Nodal Officer
Mr. Rajat C Mishra
S.P.B.PATEL.ENGINEERING COLLAGE
Saffrony institute of technology