DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII

AN APPROACH TOWARDS RURBANISATION

MOTI BANUGAR Village

JAMNAGAR District

PREPARED BY

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
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COLLEGE NAME
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COLLEGE LOGO

YEAR: 2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmedabad – 382424 Gujarat

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ON

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Chandkheda, Ahmedabad – 382424 Gujarat.

CERTIFICATE

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

Detail Project Report for,

VILLAGE MOTI - BANUGAR

DISTRICT JAMNAGAR

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 them under our supervision and guidance.

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ABSTRACT

Yojana is one of the initiatives towards Ruralization 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.

Moti Banugar is a medium size village located in Jamnagar Taluka of Jamnagar district, Gujarat. The Moti Banugar village has population of 3836 of which 1996 are males while 1840 are females as per Population Census 2011.

The Moti-Banugar village having proper housing system. The underground drainage system is exists in it. The govt. structure such as overhead water tank, post office, common toilet, gram panchayat office is in good condition. There is also proper system for waste collection. Approach road condition is good but street road condition is not good and requires new construct.

Ruralization, Sustainable Infrastructure, Social facilities, Smart Infrastructure

ACKNOWLEDGEMENT

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Chapter 1: Ideal village visit

1.1 Background & Study Area Location

We have visited Khijadiya village. which is situated in Jamnagar district of Gujarat. Khijadiya is well developing village so we consider as an ideal village.

Khijadiya village, with population of 2246 is Jamnagar sub district's the 6th most populous village, located in Jamnagar sub district of Jamnagar district in the state Gujarat in India.

Nearest town of the village is Jamnagar and distance from Khijadiya village to Jamnagar is 9 km. The village has its own post office and the pin code of Khijadiya village is 361120. The village comes under Khijadiya Panchayat. Jamnagar is the sub district head quarter and the distance from the village is 9 km. District head quarter of the village is Jamnagar which is 9 km away.

Khijadiya have all facilities such as proper drinking water, electricity, road network, provision store, and hospital & etc. more. As it is near to Jamnagar town, so village people can easily approach to use facilities of Jamnagar city like hospitals, theater, recreational center & etc.

Figure 1 khijadiya village map

1.2 Concept of Ideal Village

1.2.1 Objectives

Prevent distress migration from rural to urban areas, which is a common phenomenon in Indian villages due to lack of opportunities and facilities that guarantee a decent standard of living

Make the model village a hub that could attract resources for the development of other villages in its vicinity.

Provide easier, faster and cheaper access to urban markets for agricultural produce or other marketable commodities produced in such villages

Contribute towards social empowerment by engaging all sections of the community in the task of village development. Create and sustain a culture of cooperative living for inclusive and rapid development.

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

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.

1.2.3 The Idea of a model/Smart Village

Over 68 percent of India's population lives in rural areas. There has been a gradual increase in migration from villages to cities primarily for livelihood opportunities, better education, and healthcare facilities, among others. The rising burden on urban cities due to migration
emphasizes the need to transform villages so that they can meet the critical as well as aspiration needs of the villagers. This can be done using innovative technologies and transforming the service delivery models for villages.

Figure 2 punsari village

Transformed villages are called Smart Villages or ideal village. For building an ideal and smart village central government of India launch PMAGY

Pradhan Mantri Adarsh Gram Yojana (PMAGY) is a rural development programme launched by the Central government in India in the financial year 2009–10 for the development of villages having a higher ratio (over 50%) of people belonging to the scheduled castes through convergence of central and state schemes and allocating financial funding on a per village basis.

The aim of the scheme is to integrated development of the selected villages so that they have all required physical and social infrastructure for an all-round socio-economic development. Another objective of the plan is elimination of disparity between SCs and other communities in terms of common socio- economic indicators such as literacy rate, completion rate of elementary education, infant mortality rate/maternal mortality rate and ownership of productive assets.

1.2.4 Ancient History of Civil engineering concept about Indian Village and its Development

The foremost element of our ancient history of civil engineering that characterizes our traditional Indian architecture and planning is the use of Vernacular material and construction techniques and planning strategies.

Vernacular architecture is the style of architecture which takes into account all the needs and requirements of the residents, nature, construction materials and also mirrors the traditions and culture. It develops over time to resonate the culture, traditions, history, environment, resident‘s desires and needs and economy of the locality.

Though diverse from the popular outlook towards the built environment, use of indigenous materials, designing and construction
techniques plays a pivotal role in design and architecture of the society.

Indian vernacular planning involves planning and designing a built environment with the informal, functional design of structures found in rural areas of India, with structures built using local materials and designed and planned to meet up with all the needs and requirements of the local residents. The structures built are not just made by using vernacular materials but even the planning is done keeping in mind the necessities of native society and culture. The builders and planners of these structures are untrained in formal architectural design. This is reflected in their work which reflects the rich diversity of India's climate, the local building materials, and the elaborate variations in the social customs and craftsmanship.

1.3 Detailed study of ideal village

1. Population of Khijadiya village

According to Census 2011, Khijadiya's population is 2246. Out of this, 1205 are males while the females count 1041 here.

2. Literacy rate of Khijadiya village

Literacy rate in Khijadiya village is 79%. 1355 out of total 2246 population is literate here. In males the literacy rate is 81% as 1469 males out of total 1806 are literate while female literacy rate is 77% as 1318 out of total 1702 females are educated in this Village. The Negative portion is that illiteracy rate of Khijadiya village is 20%. Here 721 out of total 3508 individuals are illiterate. Male illiteracy rate here is 18% as 337 males out of total 1806 are uneducated. Among the females the illiteracy rate is 22% and 384 out of total 1702 females are illiterate in this village.

3. Geographical detail

The geographical coordinates i.e. latitude and longitude of Khijadiya is 21.802213 and 70.184138 respectively

4. Infrastructure detail

- Khijadiya have all the infrastructure facilities which are there in ideal village.
- Water facilities It has good water facilities.
- The Khijadiya River is source of water supplying in Khijadiya village.
- There are two overhead tanks for supplying water in village.
- The water has been supply in village for 20 minutes per day.
- The quality of water has been maintained by using chemical filtration method. tape water is an major source of water supply for domestic purpose.
- Facilities of local hand pump are available in Khijadiya village.
- Peoples are satisfied by water facilities in village.

1.4 SWOT analysis of Ideal village / Smart Village

Strength	Weakness	Opportunities	Threats
Proper waste collection system	Improper of layout of village	Improving literacy rates	Lack of awareness of villagers about education
Transportation facilities	No facilities for higher Education	Women Empowerment	Lack of funds and technical knowledge in agricultural fields
Sanitation facilities available	Health center is to be renovated	Educational Awareness	Lack of cleanliness

1.5 Future prospects of village:

For future prospect, the khijadia village can use more advanced technologies for agricultural prospect and other requirements also. They can make the village Wi-Fi zone and can improve the computer labs in the schools. They can provide biogas plant in the village

1.6 Benefits of visit of ideal village:

We visited Khijadia village, Jamnagar. By visit of this village khijadia, we got an idea about an ideal village. We had seen much kind of new technologies which can be used in village that are being used in the urban area. By this visit of this village, it has improved our communication skills and we know how to interact with the people.

1.7 Electrical concept of ideal village:

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

Chapter 2. Village Literature Review

2.1 Introduction: Urban and Rural

Urban:

An urban area is a human settlement with high population and infrastructure facilities of built environment. Urban areas are created through urbanization and are categorized as cities, towns, or sub urban settlements are proper, planned settlements built up according to a process called urbanization. According to census 2011, there are 7,935 towns, 4,041 statutory town and 3,894 census towns.

Rural:

A rural area is a land that has few homes or other buildings, and not very many people. A rural areas population density is very low. Rural areas may develop randomly on the basis of natural vegetation and fauna available in a region. According to census 2011, there are 6, 40,867 villages in India. The area where more than 75% of male population is associated with agricultural activity is known as rural area

2.2 Importance of the Rural Development

The term 'rural development' is of major concern, particularly when one is focused upon promoting effective growth and development of the country. In India, rural areas are still in a backward state and number of programs and schemes need to be formulated to bring about improvements. The term 'rural development' can be used in a divergent state. As a concept, it can promote overall development of rural areas. It has been acknowledged on a comprehensive basis that improvements in the overall quality of life of the rural individuals can lead to augmentation of rural communities. Apart from enhancing the overall quality of lives of the individuals, the other areas that need to be taken into consideration are, agriculture, farming practices, industries, factories, craftsmanship, skills and abilities of the artisans, health care facilities, medical centers, socio-economic infrastructure, and financial and human resources. Development primarily takes place, when there is interaction between various physical, technological, economic, socio-cultural and institutional factors. It is necessary for rural individuals to generate awareness and put into practice the measures that would promote effective growth and development.

2.4 Ancient villages/ Different definitions of Rural Urban villages.

The "rural village" means any place as par the latest census which meets the following criteria, A population of less than 5000

- Density of population less than 400 per sq. km
- More than "25% of male working population" is engaged in agricultural pursuits.
- The rural-urban fringe, also known as the outskirts, Rural, Peri-urban or the urban hinterland, can be described as the "landscape interface between town and country", or also as the transition zone where urban and rural uses mix and often clash

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

Indian Rural Scenario

The natural and human resources can play an important role in the growth of the national economy. It is needless to say that India is a rich country in both of them. The availability of such resources have the ability to generate more production and employment opportunities. Hut due to lack of their proper utilization and exploitation, the country remains as backward as it was. 'India lives in villages'. The total population of the country is 844 million of which nearly 625 million (74 percent) live in rural areas. It deserves mentioning that 2 percentage of rural population in comparison to total population has been gradually declining but it is very insignificant.

Gujarat as per Census 2011 As per details from Census 2011

Gujarat has population of 6.04 Corers, an increase from figure of 5.07 Cores in 2001 census. Total population of Gujarat as per 2011 census is 60,439,692 of which male and female are 31,491,260 and 28,948,432 respectively. In 2001, total population was 50,671,017 in which males were 26,385,577 while females were 24,285,440. The total population growth in this decade was 19.28 percent while in previous decade it was 22.48 percent. The population of Gujarat forms 4.99 percent of India in 2011. In 2001, the figure was 4.93 percent. Recently as per Gujarat census data, 83.92% houses are owned while 13.54% were rented. In all, 65.95% couples in Gujarat lived in single family. In few months we will also get details of election data for Gujarat

2.6 Rural Development Issues – Concerns - Measures

Education

Education is an empowering right and one of the most powerful tools by which economically and socially marginalized children and adults can lift themselves out of poverty.

Empowering Girls

When a girl has the opportunity to be educated and healthy, not only does she benefit, society as a whole benefit.

Environment

Environmental is the major issue in rural area as well as urban area. Now a day’s peoples and governments are very well aware and taking the necessary steps toward sustainable cities.

Gender Discrimination

Despite the fact that women in developing countries provide nearly 70 percent of the agricultural labor.

Health

In 2016, there were almost 36.7 million people living with HIV/AIDS. Worldwide, 1.8 million people became newly infected with HIV. This is the scenario of current society.

Hunger

About 795 million people suffering from chronic hunger, 98 percent live in the developing world. Unlike famines that receive emergency-aid, chronic hunger is a silent, invisible, day after-day condition

Poverty

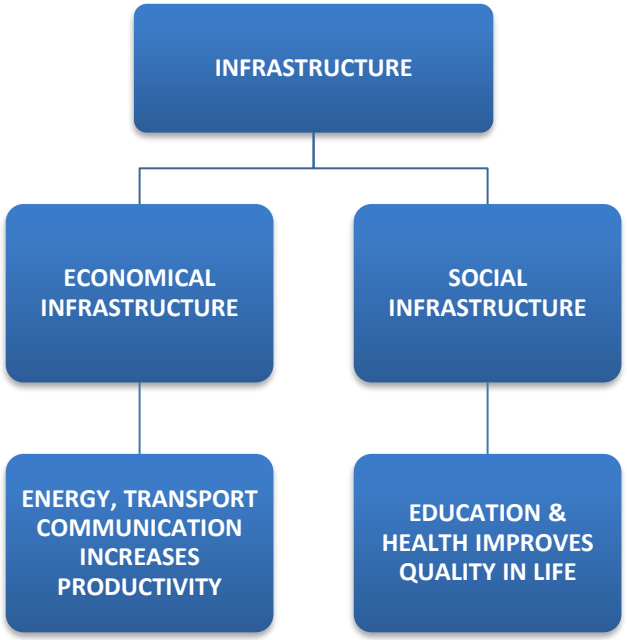
Poverty, food prices and hunger are inextricably linked. Poverty causes hunger. Not every poor person is hungry, but almost all hungry people are poor.

Measures

- Rural development can be defined as "an integrated development of the area and the people through optimum development and utilization of local resources-physical, biological and human and by bringing about necessary institutional, structural, and attitudinal changes of rural public."
- Many Programs / Plans such as IRDP, DDP, DPAP, ITDP, NREP, SFDA, MFAL and TRYSEM etc. have been developed and implemented for raising socio-economic status of the rural people

- Policy for developing uplifting the lifestyle of the farmers.
- Policy of rural industrial development - integration of farming and industries, farmer's industrial co-operatives and industrial enterprises
- Modernization of rural society and cultural policies and planning for transfer of loyalty and values from traditional technology to modem technology.
- Cost and benefit analysis of rural development and planning at micro-level

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

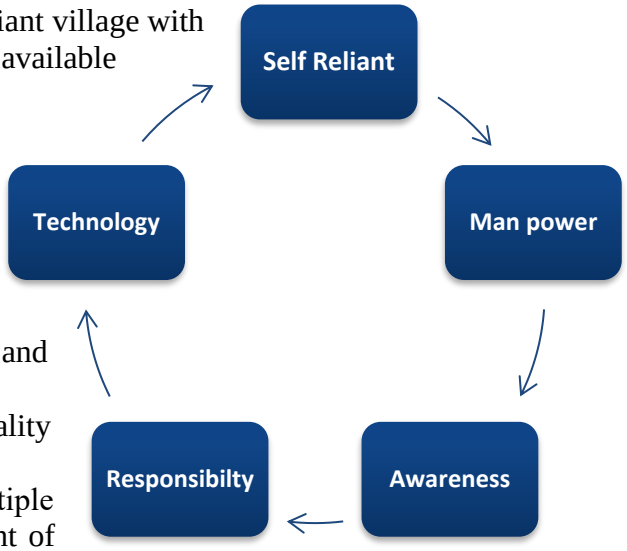


Chapter 3: Smart (Village) Concept as per your Idea and its Visit (Civil Concept)

3.1 Concepts, Definitions and Practices Concepts

A village that provides for development and proper planning to keep the village clean, healthy, green, pollution free, offense free and disease-free with coordination of different government community development and welfare schemes

As shown above a smart village is. Self-sufficient and Self-Reliant village with empowerment of Manpower (rural youth) through locally available natural resources and Appropriate Rural Technologies.



Smart villages will serve as complementary engines of economic growth to smart cities producing goods and services for local rural markets as well as high-value-added agricultural and rural industry products for both national and international markets.

Smart village concept may play crucial role in maintaining the balance between the development of rural and urban areas and help to reduce migration of rural population in urban areas.

This needs to be reversed and suitably managed to improve quality of life in Indian cities.

The concept of “Smart Village” will also address the multiple challenges such as unplanned urbanization, under-development of villages, migration for economic pursuits, better standard of living etc

Definitions

Smart village means village have all the necessaries facilities and fulfill the basic need of people like good education, sufficient water, health care facility, good sanitation facility, resources of energy, land availability, etc.

Practices

Provide basic infrastructure and quality of basic life style Transportation facility

- Water management
- Health center facility
- Library facility
- Waste management
- Rain water harvesting system
- Recreation facility
- Provide Good quality of life.
- Clean and sustainable environment.
- Apply Smart Solutions.
- E-governance and citizen services.
- Energy management, etc.

3.2 Vision-Goals, Standards and Performance Measurement Indicators

Parameter	Benchmark
Sewerage and sanitation	100% household should have access to toilets. 100% schools should have separate toilets for girls.
Storm water drainage.	100% coverage of road network with storm water drainage network. Aggregate number of incidents of water logging reported
Electricity	100% household have electricity connection. 27X7 supply of electricity. 100% metering of electricity supply. 100% cost recovery. Tariff slabs that work towards minimizing waste.
Telephone connection	100% household have a telephone connection including mobile.
Transport	Maximum travel time 30 minutes in small and medium size cities and 45 minutes in metropolitan area. Access to para-transit within 300m walking distance
Spatial planning	175 persons per Hours along transit corridors

3.3 Technological Options Smart Cities Standards

Effective governance and efficient delivery of services.

- International and Local targets, benchmarking and planning.
- Informed decision making and policy formulation.
- Leverage for funding and recognition in international entities.
- Transparency and open data for investment attractiveness.

- A reliable foundation for use of big data and the information explosion to assist cities in building core knowledge for city decision-making, and enable comparative insight.

Evaluate the impact of infrastructure projects on the overall performance of a city.

Smart Cities Performance Measurement Indicators Electricity infrastructure.

- Uses of renewable sources like bio gas, solar etc.
- Smart primary health care 27 X 7.
- Metaled road and streets.
- Smart primary and secondary education.
- Solar energy plant to preserve electricity at the village level itself.
- Proper sanitation, disposal of rain water.
- Hygienic drinking water and R.O. system.
- Connectivity through internet, Wi-Fi mobile tower.
- Availability of Banks, ATMs, post offices etc.
- Area for solid waste disposal and liquid waste disposal.
- Provision of Rain water harvesting system.
- Rural market with access to all basic facilities.
- Common places like community hall, marriage hall, theater etc.

3.4 Road Map and Safe Guards

The first step in establishing a road map for a smart city is to know why there is a need for a smart city initiative.

This can be done by studying the city's demographics, including the residents who are the principal stakeholders in the city.

GIS is an essential economic development tool that many cities use for planning, analyses, and building lively communities that attract businesses and residents.

The second step in establishing a smart city roadmap is by developing a policy that drives the whole initiatives.

The policy needs to define the roles, responsibilities, strategies, and objectives of the smart cities.

3.5 Issues & Challenges.

1. Financing:

Smart cities project is not smartly privileged, unfortunately, when it comes tofunding. Financing is said to be one of the biggest challenges when it comes to the smart city challenge. The total investment approved under the smart city plans of 90 cities has gone up to Rs.1,91,155 cr. With the presence of state sponsored companies also the project seems to have no good start. Banks financing these projects as of now is the major reason of a considerable increase in the number of non-performing assets. The government is recently taking steps to finance these projects by making changes in the budget and we hope the problem is addressed to soon.

2. Lack of Center-State Co-ordination:

Fruitful implementation of a project can be done only if there is a co-ordination between various government bodies. There is a need of proper regulation when it comes to planning for the development of smart cities. Both horizontal and vertical coordination is the requisite right now.

3. Availability of Master Plan:

Most cities in India do not have their master plans and development plans in place. This is a tragic situation if we talk about developing them into smart cities. The presence of both the requisites is the key to the implementation and encapsulation of the smart city project as that is where the changes would be monitored and there is no other way to Study the Community Find out why there is a need to build a smart city. know the business needs, the demographics, people desire and needs, etc.

4. No time figure attached to the plan:

The entire smart city plan is a one big plan which should get all the clearances if not before time then on time. Everything should be online and timely which unfortunately is not happening in this case. Doing this will address two major issues one of coordination and one would be the timely execution. Also, the body should be solely responsible to cater to the financial requirements.

5. Availability of facilities:

We are very much aware of the unfortunate fact that India as of now is not that equipped when it comes to skilled manpower and advanced technology requirements for developing 100 smart cities. That is a huge number and requires lot of skilled efforts. If we talk about creating skilled labor and capacity building, not much funds have been allocated by the center and state in such initiatives. Such projects involve training, research and a hefty database for execution. This is a huge problem in our country as it is an area which has not been focused upon as of now. These programs help in many ways like time bound completion.

6. Corruption:

This point probably was meant to be from the first as this is the root cause for all above challenges. But

if we talk about it solely this is also a major challenge. Both at center and state level corruption is responsible for all the co-ordination mismatch and time lag happening. The financial constraint also somehow creeps in because of this issue. Corruption in India is a challenge which has always been a reason for non-execution or ineffective execution of most big projects in the country.

3.6 Smart Infrastructure

- Smart Infrastructure and Construction covers the essence of smart. Infrastructure. In a world where infrastructure is truly smart, sensing technologies. Are embedded in infrastructure and the equipment it interacts with. These sensors are connected to a communication backbone which allows.
- Smart Information and Communications Technology (smart ICT) has the potential to transform the way we plan and manage infrastructure. New developments in computer hardware, new applications and software are changing the face of the infrastructure sector, and society more generally; driving greater efficiency, increasing productivity, and greatly simplifying construction processes and life-of-asset maintenance.
- While Australia has generally been proactive in adopting these new technologies for the planning, design and ongoing maintenance of infrastructure, the fast pace of new developments means that there is much more that needs to be done.
- This chapter will focus on defining and contextualizing the new technologies and applications that are transforming the infrastructure sector. It will also look at the opportunities this transformation raises in urban and regional areas, as well as in the water, energy and transport sectors, before examining the productivity benefits of using smart ICT.

3.7 Cyber Security or any other concept as per the (ANNEXURE 1)

Cyber security refers to the body of technologies, processes, and practices designed to protect networks, devices, programs, and data from attack, damage, or unauthorized access. Cyber security may also be referred to as information technology security.

3.8 District Cooling and Heating / Green Building

District Cooling and Heating

Thermal energy delivered to a building from an outside source is known as district heating and cooling, which can range in size from small systems serving two or three buildings to networks serving entire cities. District heating and cooling is widely used in developed countries throughout the world and offers numerous advantages over individual building apparatus, including greater safety and reliability, reduced emissions, and greater fuel flexibility, particularly in using alternative fuels such as biomass or waste.

Green Building

A green building is a structure that is environmentally responsible and resource-efficient throughout its life-cycle. These objectives expand and complement the classical building design concerns of economy, utility. Although new technologies are constantly being developed to complement current practices in creating greener structures, the common objective of green building reduce the overall impact of the built environment on human health and the natural environment by: Efficiently using energy, water, and other resources, protecting occupant health and improving employee productivity, Reducing waste, pollution and environmental degradation.

3.9 Strategic Options for Fast Development

Strategic development

Strategy development, also known as strategic planning, is fundamental to creating and running business. Simply put, it's a game plan that sets specific goals and objectives but like a game plan, it is capable of being changed in response to shifting market dynamics.

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

India's Urban Water and Sanitation Challenges

The seriousness of the challenges associated with urban water supply and sanitation in India have been recognized in recent times.

As cities grow and incomes rise, a new challenge has arisen: that of supplying water reliably to rapidly growing, increasingly wealthy populations and businesses, while ensuring that the poor are not left unserved.

Faced with uncertain rainfall, limited reservoir storage, aging piped infrastructure, and rapidly growing demand, no Indian city today has 24/7 water supply; instead, piped supply is typically intermittent, available for only a few hours each day.

Traditionally, scholars have tended to view the problem of urban water supply as consisting of two distinct components: a resource problem and a delivery problem. Options including desalination, water markets, inter basin transfers and wastewater recycling and reuse have been suggested to address the resource problem.

Advantages

- Developing such technology provides a learning environment. It uses awareness and knowledge to meet the needs of society.
- This leads to greater encouragement for focused research.
- There is a learning experience that becomes the starting point for newer innovations, in future.
- It helps in the technological progress of developing countries. This brings about economic growth in such nations. Indigenous technology is much cheaper than imported technology.
- The not so economically well off can enjoy the comfort of modern amenities.
- The community resources are used and this reduces the necessity of importing goods and technical It creates new employment opportunities.

Disadvantages

1. Data Security

Digital technology means that vast amounts of data can be collected and stored. This can be private information concerning individuals or organizations. It can be very difficult to keep this data safe. Just a single breach can mean vast amounts of private information going into the hands of criminals, terrorists, foreign enemies, or other malign entities.

2. Crime and Terrorism

The internet is fertile territory for malevolent forces to operate, thanks to its international nature, large scale, and the relative anonymity that users can enjoy. Examples of this include: terrorists using social media to promote themselves and encourage others; drug dealers using the dark web to trade; pedophiles using chat rooms and other places to exchange photos, videos and other information; and authoritarian regimes attempting to sway or distort elections in democratic countries

3. Complexity

We no longer understand the devices and machines that we interact with on a daily basis. Fixing a modern car now means interacting with a computer, it is no longer just mechanical. Using a phone can involve tackling all sorts of complicated settings. Minor glitches in a laptop can cost time and expense.

4. Plagiarism and Copyright

Digital media is remarkably easy to copy and reproduce. Copyright laws are increasingly hard to enforce, as the music and movie industries have discovered to their cost. School kids can copy and paste their homework projects without really learning anything.

5. Longevity

Digital gadgets typically have a short lifespan and become archaic quickly. As the technology advances at a pace, devices and machines quickly become unusable because they are too slow, incompatible, or are simply superseded.

3.11 Initiatives in village development by local self-government

Local self-government

- It is the government of the local people of their own at grassroots level of democracy. The person who lives with the people of village becomes the Sarpanch of the village and take part in development.
- Since 1993, local government in India takes place in two very distinct forms. Urban localities, covered in the 74th amendment to the Constitution.
- Have Nagar Palika but derive their powers from the individual state governments, while the powers of rural localities have been formalized under the Panchayati raj system, under the 73rd amendment to the Constitution. For the history of traditional local government in India and South Asia, see Panchayati raj. As of 2017, there are a total of 267,428 local government bodies of which 262,771 are rural and 4,657 urbans. Of the rural local governments, 632 are zila parishads at the district level, 6,672 are panchayat samitis at the block level, and 255,466 are gram panchayats at the village level.

3.12 Smart Initiatives by District Municipal Corporation

Smart city initiatives have measurable positive impacts on the quality of life of its citizens and visitors. Learning: Since mobility is a key area of Smart city development, building a capable workforce through education initiatives is necessary.

- Publicize and propagate the scheme in the district.
- Encourage Gram Panchayat for taking part in the competition.
- Give in principle/administrative approval to works under Smart Village.
- Review the physical and financial achievements of the works every month.
- Co-ordinate with schemes of other Departments in the village.
- Guide the Gram Panchayat and help it achieve the goals of Smart Village.
- Submit progress report periodically to state level.
- Prepare smart village wise annual report and submit at the state level.

3.14 How to implement other Countries smart villages Projects in Indian village context

Seen in the worldwide context, there are several initiatives promoting or using the concept of the Smart Villages. Smart Village initiative: new thinking for off-grid communities worldwide and IEEE Smart Village: Empowering off-grid communities are both worldwide active and striving to meet the SDG 2030, especially goal 7, Affordable and Clean Energy. The first one promotes access to sustainable

energy as a main catalyst for the development of good education and healthcare systems, access to clean water, sanitation, economic growth, enhanced security, gender equality, etc. The most important vision of the Initiative is to apply more holistic and integrated approaches to enable the access to the energy in the rural contexts, while connecting/involving governments, developmental and private sector in the process. The component most emphasized is how to connect renewable sources of energy with ICT.

Chapter 4: Allocated village visit

4.1 Introduction

Moti Banugar Village, with population of 3836 is Jamnagar sub district's the 14th most populous village, located in Jamnagar sub district of Jamnagar district in the state Gujarat in India. Total geographical area of Moti Banugar village is 24 km2 and it is the 4th biggest village by area in the sub district. Population density of the village is 158 persons per km2.

Nearest town of the village is Jamnagar and distance from Moti Banugar village to Jamnagar is 18 km. The village has its own post office and the pin code of Moti Banugar village is 361120. The village comes under Moti Banugar panchayat. Jamnagar is the sub district head quarter and the distance from the village is 18 km. District head quarter of the village is Jamnagar which is 18 km away.

4.1.2 Study justification:

To development of village compare to the city area in the basic facility to needed for people and their amenities and to study whole village. For development the basic needed and their requirement. It should development gram-Panchayat, anganwadi, road, drainage, school, hospital, etc...

- To reduce migration from rural to urban areas.
- To provide basic and sustainable facilities to rural area to reduce the pressure on urban areas.
- Giving urban touch to the rural soul
- To uplift the living standard of rural people by providing facilities and better infrastructure.
- For making the village source of income for other nearby villages

4.1.3 Study area:

Gtu allocated one village to us of Gujarat for surveying which is the Moti banugar village of Jamnagar district. This is our study area & we have to find problem related to structure and general amenities in village. Moti banugar is 20 km away from Jamnagar.

4.1.4 Objective of the study:

- To analyze the existing conditions of village
- To find out the problems of people living in Moti Banugar village Gujarat
- To analyses existing social and physical amenities, public buildings as well as infrastructure.
- To collect socio-economic data through techno-economic survey.
- To find public requirement in village.

4.1.5 Objective of the study:

1. Sustainability:

- Clean drinking water
- Sanitation
- primary& secondary education
- Drainage
- Electricity
- Solid waste management
- Utilizing renewable source

- Housing& livelihood
- PHC

2. Technology:

- Irrigation facilities
- Delivery of government services
- Telecommunication & internet facilities
- ATM Machines
- Cyber café
- Advance technology for agriculture

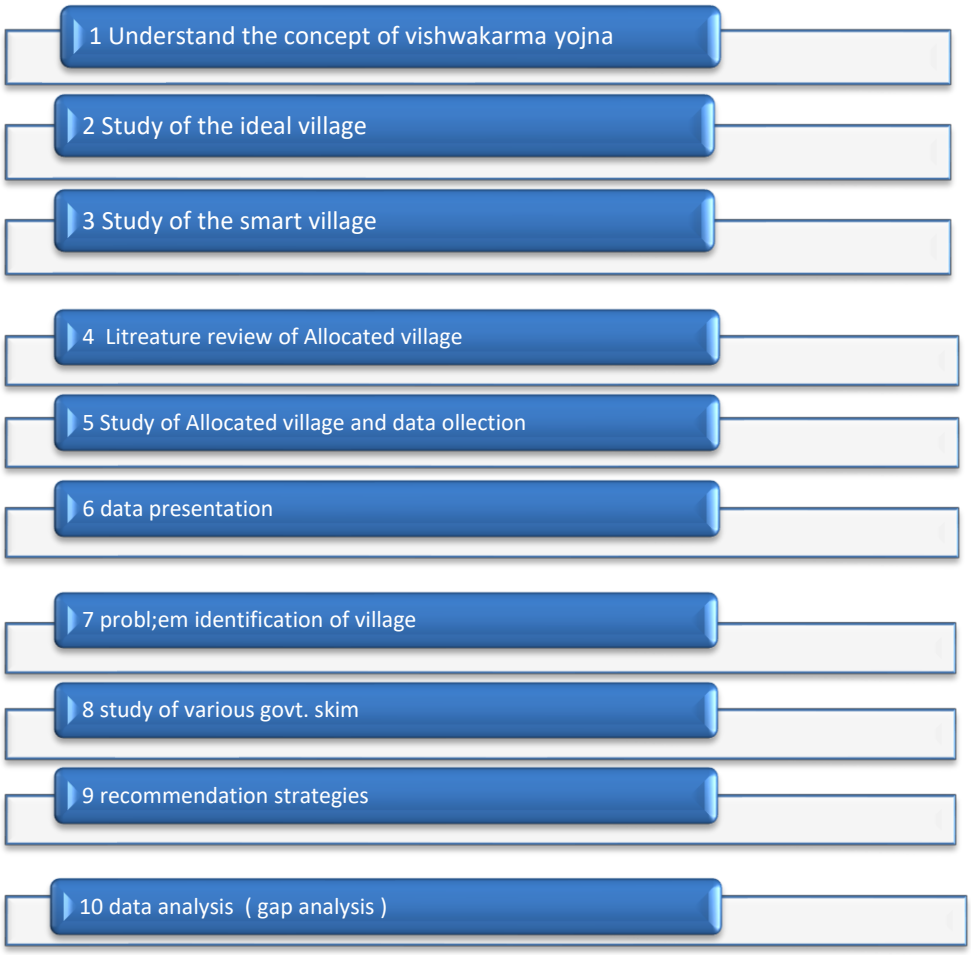
3. Connectivity:

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

4. Community Involvement:

- Planning for village development
- Stable Panchayati raj
- Influencing personal and community behavior

4.1.6 Methodology Frame Work for development of your village:



4.2 Study area profile

4.2.1 Study area location

Gtu allocated one village to us of Gujarat for surveying which is the Moti banugar village of Jamnagar district. This is our study area & we have to find problem related to structure and general amenities in village. Moti banugar is 20 km away from Jamnagar.

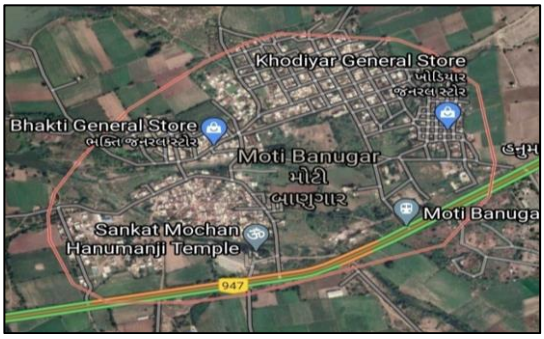


Figure 3 Map of Moti banugar

4.2.2 Base location map, land Map, Gram Tal Map

Country	**India**
State	**Gujarat**
District	**Jamnagar**
Sub-district	**Jamnagar**
Area	**24 km^2**
Area forest	**6 km^2**
Panchayat	**Moti Banugar**
Sub district HQ	**Moti Banugar**
District HQ	**Jamnagar**
Railway station	**Aliya Bada (10.6 km)**
Nearest town	**Jamnagar**
Pin code	**361120**

4.2.2 OVERVIEW OF MOTI BANUGAR VILLAGE

4.2.3 Physical & Demographical Growth

The village is home to 3836 people, among them 1996 are male and 1840 are female. 100% of the whole population are from general caste. Child (aged under 6 years) population of Moti Banugar village There are 1600 households in the village and an average 3 - 4 persons live in every family.

4.2.4 Economic profile

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

4.2.5 Actual Problem faced by Villagers and smart solution

Following are the problem faced by villagers:

- Improper street road
- Facilities such as hospital, computer lab, community hallare not available in Moti banugar village There is no scope of an entertainment in village
- There are no storage facilities for excess rain water
- Lack of skill development centers.

- One type of occupational work i.e., Agriculturing

Following are solutions which are suggested by us to solve the problems of villagers.

- By constructing proper road connection.
- By opening skill training centers
- By use of renewable energy resources such as solar energy
- By taking financial help from various government yojanas
- By diverting people towards different occupation other than agriculture

4.2.6 Social scenario

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

4.2.7 Migration reasons

- Employment opportunities in cities are one of the main factors for the migration.
- Many industries are located in cities and offer opportunities of high urban wages.
- There are also more educational institutions providing courses and training in a wide range of subjects and skills. People are attracted to an urban lifestyle and the 'bright light' of city life
- People are moving away from rural areas because of poor health care and limited educational and economic opportunities as well as environmental changes, droughts, floods, lack of availability of sufficiently productive land, and other pressures on rural livelihoods

4.3 Data collection

4.3.1 Describe methods of data collection:

- House hold for population
- Occupational survey
- Transportation survey
- Educational survey
- Techno economic survey
- House interviewing method
- Interviewing with Sarpanch and TDO

4.3.2 Primary details of survey:

In the primary survey we collected the details about population of Moti Banugar village, sex ratio, literacy rate of village & various general problems of the villagers by interacting with them and enquiring about the problems faced by them in daily life. They were asked to suggest the possible and desirable solutions for these problems as well as other infrastructural facilities they would like to have in their village.

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

- Do you have enough water supplies?
- Which type of irrigation facility you are using? Is it enough?
- Are you comfortable with your Road network facility?
- What are your Sources of economy?
- Which type of medical facility is available?
- What is your primary need?

4.3.3 Average size of the house:

According to our survey & on the basis of information given by the Sarpanch the average size of house is around 150 to 200 var.

4.3.4 Average size of the house:

As per the information given by Sarpanch and our survey there are average 5 to 6 persons per household in village

4.3.5 Material available locally in the village and Material out sourced by the villagers:

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

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

4.3.6 Geographic detail:

- Village area – 2425.72 Ha
- Residential area = 1225 acre
- Water resource area = 100 acre
- Farming & barren area = 1100 acre

4.3.7 Cast Wise Population Details / Which ID proof using by villagers.

Total population is 3836 is present in Moti banugar as per census 2011 there are 1996 male and 1840 female are there and mostly general caste is occupied

The AADHAR CARD is widely used for ID PROOF by villagers

4.3.8 Occupational details:

As per the survey detail about 67% of population of village is engaged with Agriculturing activities & remaining 33% is engaged with labor work, small cottage industries and small business such as provisional stores.

Moti banugar has 33% (336) population engaged in either main or marginal works. 57% male and 8% female population are working population. 57% of total male populations are main (full time) workers and 0% is marginal (part time) workers. For women 3% of total female populations are main and 5% are marginal workers.

4.3.9 Agricultural details

Agriculturing are the main source of income for villagers. The soil of Moti banugar village is suitable for the production of groundnut, cotton and til.

The irrigation facilities for farming are provided by means of deep wells and river water.

There is still lack of latest technology and method in crop production.

The farmers of Moti banugar village sell their crops in the marketing yard of Jamnagar district

Figure 4 Overhead Water tank

4.3.10 Physical Infrastructure facilities

Groundnut, cotton, til and milk are the main manufacturing product of this village.

Infrastructure Detail of Moti Banugar village

4.4.1 Drinking Water/Water Management

The drinking water facility in Moti banugar village is good. Main source for drinking water is pond water, wells and underground bore well system. The water from the Narmada pipeline is stored in overhead tank and then supply to houses. During the scarcity of water, government supply water through mobilized water tankers.

4.4.2 Drainage Network / Sanitation Facilities

Underground drainage facilities are available in all areas of the Moti banugar village. Waste water is disposed without any treatment and Drainage Strom water facility is not available in village; due to that clogging of rain water on road is problem in monsoon.

4.4.3 Transportation & Road Network

Main road of village are in good condition and all main roads are of R.C.C. road. The width of main road is 3m. Road maintenance is required in some areas of village. The internal street roads are Paver block road and require reconstruction. All village roads are provided with LED Street light. The more usage of personal vehicle such as bike, motor cycle and cars by villagers instead of usage of bus.

Figure 5 Moti banugar Bus Station

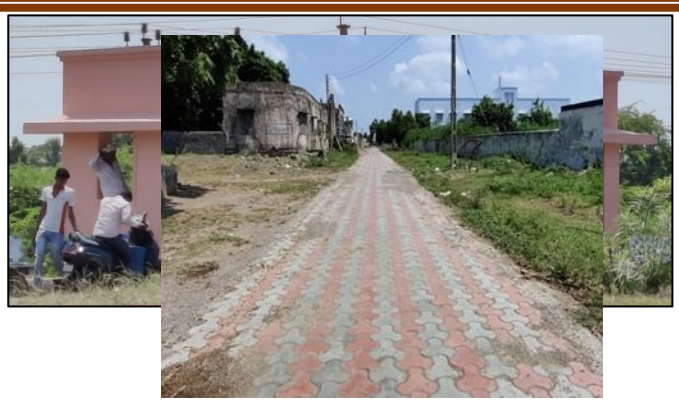


Figure 6 Internal street road

Figure 7 Paver block road

4.4.4 Housing condition

There is total 1600 houses in the village. 30% houses are kaccha and 70% are pucca. There are 24 hours facilities of electricity in houses. The water facilities in house are providing by bore wells system and ponds water supply. The People having kaccha house are not much financially sound so it is our advice to provide aavas yojana in Moti banugar village.

Figure 8 Kaccha House

Figure 9 Pucca House

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

There are facilities of anganvadi for small children, the primary school facility from 1 to 8 standards is also there village. The anganvadi is working properly and primary school is works properly and there building is also newly constructed.

Figure 10 Anganwadi

4.4.6 Existing condition of public building &maintenance of existing public infrastructure:

The Gram panchayat building needs restoration, the construction of building is good but needs new colour.

4.4.7 Technology Mobile/ WIFI / Internet Usage

The people of Moti banugar are well versed with mobile and internet. In each house there are one or more android phones or non-android phone. People mostly use the mobile networks of jio, Vodafone, airtel and idea. There is no Wi-Fi service is provided by government.

4.4.8 Sports Activity as Gram Panchayat

There is no sport activity is promoting in village and gram panchayat also does not take any step for development of sport activity.

4.4.9 Socio cultural Facilities, Public garden/pond Recreation facilities

The Moti banugar village govt. has started construction of public garden. The pond is well developed but the bridge of the pond height is small so when heavy rainfall starts at that time no one can cross the bridge due to water on the bridge, so the bridge should be recreate with more height

4.4.10 Other Facilities (e.g., like foot path development-Smart Toilets-Coin operated entry, self-cleansing, waterless, public building)

4.5 Electrical Concept

Electrical energy 24 hours in this village and electrical power is provide by substation.

4.5.1 Renewable energy source planning particularly for villages

Which Renewable Energy Technology Holds the Most Promises

- Solar Power:

Solar energy has an unlimited power source from the sun.

- Hydropower:

As the name implies, hydropower generates electricity from the movement of water.
Geothermal

- Bio-power
- Wind Power

Decentralized renewable energy systems are promising options to cope with the challenge of Balancing local production and energy consumption. At the system level, they can range from single buildings, such as multi-family homes, to groups of buildings within Neighborhoods, communities or city quarters

4.5.2 Irrigation Facilities

Bore well is main source of water. One river is passing across village; it is also useful in irrigation. Irrigation point of view, to increase water table of bore well and tube wall 4 to 5 check Dam is constructed.

4.5.3 Electricity Facilities with Area

Electrical energy 24 hours in our village and electrical power is provided by 66kv substation. Electricity proide through the 11kv feeder in the feeder step-down the voltage 11kvto 220v it is provide to village directly through hpole.

4.6.2 Dudh Mandali

Dairy is a source of income for millions of rural milk producers, which contributes towards strengthening the livelihoods of small holder milk producers who form majority of India‘s milk production system. In a market driven economy, it is all the more important to have producer centric institutional structures that strictly conform to cooperative principles and provide rural milk producers a greater access to the organized market. In moti banugar village there is small dudh mandali is available.

4.6.3 Plantation for the Air Pollution

Trees are able to clean the air and absorb harmful airborne particles and gaseous pollutants. Through the process of photosynthesis, trees are able to absorb carbon dioxide from our atmosphere and reduce the 'greenhouse effect', creating a less polluted, more sustainable world for our future generations.

4.6.5 Rain Water Harvesting

Rain water harvesting is a technique of collection and storage of rainwater into natural reservoirs or tanks, or the infiltration of surface water into subsurface aquifers (before it is lost as surface runoff). One method of rainwater harvesting is rooftop harvesting but in moti banugar village no rain water harvesting technique are there.

4.6.6 Agricultural Development

Agricultural development is the ability to develop some “better” system of agricultural production. The implements needed for plowing, weeding, and transportation are often a larger constraint for many farmers than the acquisition, training, and employment of animals. In moti banugar there is small khet vishayak sahakari mandali for villagers.

4.6.7Any Other

There is no any other Existing Institutions in moti banugar village

5. Technical Options with Case Study

- First, the evolution of technology is beneficial to humans for several reasons. At the medical level, technology can help treat more sick people and consequently save many lives and combat very harmful viruses and bacteria.

- The invention of the computer was a very important point. Communication is thus enhanced, and companies can communicate more easily with foreign countries. Research is also simplified.
- For companies, progress is saving in time and therefore in money. Exchanges are faster especially with the internet. Sales and purchases are now facilitated and possible worldwide. This allows businesses to buy raw materials with discounts or at reduced prices. Similarly, global tourism has grown.
- Technology has also increased the productivity of almost every industry in the world. Thanks to technology, we can even pay with bitcoins instead of using banks. The digital coin has been such a game changing factor, that many realized that this is the right time to open a bitcoin demo account.
- When observed more closely, new things are discovered every day. Let's take for instance when radio waves were discovered, radio broadcasts followed suit almost immediately. The same applies to the television and electricity. If no one had discovered that electricity could be generated, then the entertainment industry wouldn't be at its current stage of development.
- Technology improves daily lives; allowing to move physical units to virtual storage banks and more. Scientists of the time are also able to send astronauts to the moon thanks to technology.

CHAPTER 5: Technical Options with Case Studies Concept (Civil)

5.1.1 Advance Sustainable construction techniques / Practice and

Quantity

Surveying

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

The goal is to reduce the industry impact on the environment by utilizing sustainable development practices employing energy efficiency. And taking advantage of green technology.

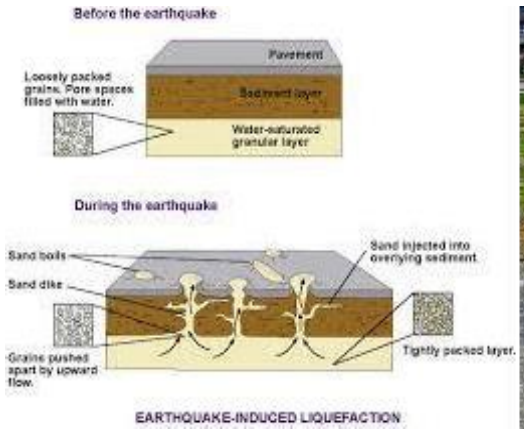
- Solar Power
- Biodegradable Materials
- Green Insulation
- The Use of Smart Appliances
- Cool Roofs
- Sustainable Resource Sourcing
- Low-Energy House and Zero-Energy Building Design
- Low-Emitting Materials

5.1.2 Soil Liquefaction

Liquefaction is a phenomenon in which the strength and stiffness of a soil is reduced by earthquake shaking or other rapid loading. This water exerts a pressure on the soil particles that influences how tightly the particles themselves are pressed together. Prior to an earthquake, the water pressure is relatively low.

Soil liquefaction occurs when the effective stress (shear strength) of soil is reduced to essentially zero. This may be initiated by either monotonic loading (i.e. a single, sudden occurrence of a change in stress examples include an increase in load on an embankment or sudden loss of toe support) or cyclic loading (i.e. repeated changes in stress condition examples include wave loading or earthquake shaking). In both cases a soil in a saturated loose state, and one which may generate significant pore water pressure on a change in load are the most likely to liquefy. This is because loose soil has the tendency to compress when sheared, generating large excess pore water pressure as a water pressure rises progressive loss of strength of the soil occurs as effective stress is reduced. Liquefaction is more likely to occur in sandy or non-plastic silty soils, but may in rare cases occur in gravels and clays

A 'flow failure' may initiate if the strength of the soil is reduced below the stresses required to maintain the equilibrium of a slope or footing of a structure. This can occur due to monotonic loading or cyclic loading, and can be sudden and catastrophic. A historical example is the Aberfan disaster. Casagrande referred to this type of phenomena as 'flow liquefaction' although a state of zero effective stress is not required for this to occur.



5.1.3 Sustainable Sanitation

To summaries, sustainable sanitation is a simple approach: the most basic principle is that it considers wastewater and excreta not as a waste, but as a resource, that sanitation has to be socially acceptable and should be as economically viable as possible.

Technologies that would challenge the conventional toilet systems around the world which is actually responsible for many waterborne diseases. Understanding that excreta are not a waste, but actually valuable resource is the first step in understanding sustainable sanitation. Significant of amount of energy, and plant nutrients can be obtained if this waste is processed right. In fact, the water can be recycled and reused too, which would help in sustaining natural resources.

The purpose of sustainable sanitation is the same as sanitation in general: to protect human health. However, "sustainable sanitation" attends to all processes of the system: This includes methods of collecting, transporting, treating and the disposal (or reuse) of waste.

Example of sanitation should be improved

- Pit latrines could be modified to be soil-composting latrines, thus requiring some wall reinforcement, made shallow (max 1-1.5 m) and maintained using daily soil additions: the pits would be periodically closed and covered with soil in order to allow for sanitization and composting prior to emptying and reuse in agriculture.
- Simple urinals with separate collector systems could be installed instead of using toilets and pit latrines for urination
- Flush toilets could be modified to use less water or reuse greywater.
- Greywater could be source-separated from the blackwater from toilets thus simplifying its treatment and providing opportunities for reuse.
- Blackwater from toilets could be held in conservancy tanks instead of open septic tanks and cess pits and then emptied and transported to biogas reactors; alternatively the toilets could be connected to biogas reactors.
- Above ground dry toilets with urine diversion could be installed in dry areas lacking water, rocky areas where pits are expensive to dig and areas with high water tables and flooding.

5.1.4 Transport Infrastructure / system

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

They are often built on challenging and sensitive environments and over unexpected geotechnical conditions. Whether it's rural or urban roads, freight or passenger rail, commercial ports and airports or small regional or private operations we have worked on transport infrastructure projects around the globe.

The human transport system is a system of tubes with a pump and valves to ensure one way blood flow. We need a transport system to deliver oxygen, nutrients and other substances to all our body cells, and take away waste products from them.

5.1.5 Vertical Farming

Vertical farming is the practice of growing crops in vertically stacked layers. It often incorporates controlled-environment agriculture, which aims to optimize plant growth, and soilless farming techniques such as hydroponics, aquaponics, and aeroponics.
In vertical farming, crops are grown indoors, under artificial conditions of light and temperature.

Vertical farming works:
There are four critical areas in understanding how vertical farming works:
Physical layout, Lighting, Growing medium, and Sustainability features.

Firstly, the primary goal of vertical farming is producing more foods per square meter. To accomplish this goal, crops are cultivated in stacked layers in a tower life structure.

Secondly, a perfect combination of natural and artificial lights is used to maintain the perfect light level in the room. Technologies such as rotating beds are used to improve lighting efficiency.

Thirdly, instead of soil, aeroponic, aquaponic or hydroponic growing mediums are used. Peat moss or coconut husks and similar non-soil mediums are very common in vertical farming. Finally, the vertical farming method uses various sustainability features to offset the energy cost of farming. In fact, vertical farming uses 95% less water.

Advantages of vertical farming:

- It offers a plan to handle future food demands
- It allows crops to grow year-round
- It uses significantly less water
- Weather doesn't affect the crops
- More organic crops can be grown
- There is less exposure to chemicals and disease

5.1.6 Corrosion Mechanism, Prevention & Repair Measures of RCC Structure

Corrosion mechanism

Now consider when an iron is immersed in water or sea water which is exposed to the atmosphere. Now corrosion will occur due to the anodic reaction is

$$Fe \rightarrow Fe2^{+} + 2e-$$

And also, the medium is exposed to the atmosphere, it contains dissolved oxygen. Both water and sea water are nearly neutral, thus the cathode reaction takes place as follows

$$O_2 + 4H+ + 4e^{-} \rightarrow 2H2O$$

Now, remember that the sodium and chloride in the sea water do not participate in the Reaction. The reaction is only between the iron and water. The reaction can be written as follows

$$2Fe + O2 + 4H+ \rightarrow 2Fe2+ + 2H2O$$

- **Corrosion prevention**
  Barrier coating:
  Hot-Dip Galvanization
  Alloyed steel (Stainless)
  Cathode protection

5.1.7 Sewage treatment plan

Sewage treatment is the process of removing contaminants from wastewater and household sewage water.

It includes physical, biological and sometimes chemical processes to remove pollutants. Its aim is to produce environmentally safe sewage water, called effluent, and a solid waste, called sludge or bio solids, suitable for disposal or reuse. Reuse is often for agricultural purposes, but more recently, sludge is being used as a fuel source.
Water from the mains, used by manufacturing, farming, houses (toilets, baths, showers, kitchens, sinks), hospitals, commercial and industrial sites, is reduced in quality as a result of the introduction of contaminating constituents. Organic wastes, suspended solids, bacteria, nitrates, and phosphates are pollutants that must be removed.
The features of wastewater treatment systems are determined by:

The nature of the municipal and industrial wastes that are conveyed to them by the sewers.
The amount of treatment required to keep the quality of the receiving streams and rivers.

5.2 Concept (Electrical)

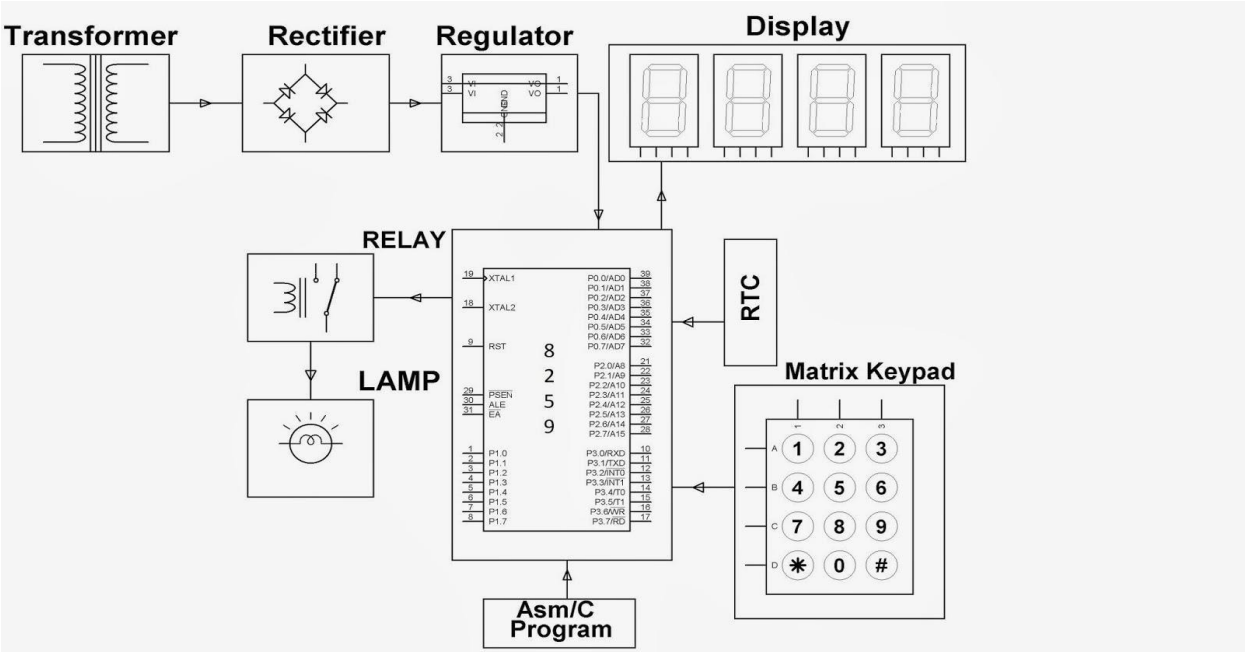
5.2.1 Programmable Load Shedding

In today‘s world, there is a continuous need for automatic appliances with the increase in standard of living there is a sense of urgency for developing circuits that would ease the complexity of life.

The project is designed to operate an electrical load multiple number of times as per the program. It overcomes the difficulties of switching the load ON/OFF manually. This proposed has an inbuilt real time clock (RTC) to keep tracking the time and thus to switch ON/OFF the load accordingly.

Load shedding is what electric utilities do when there is a huge demand for electricity that exceeds the supply .Thus in a distribution system it needs to be precisely controlled for specific period of time.

Programmable load shedding time management system is a reliable circuit that takes over the manual task of switch ON/OFF the electrical devices with respect to time. It uses real time clock (RTC) interfaced to a microcontroller of 8051 family. While the set time equals to the real time, then microcontroller gives command to the corresponding relay to turn ON the load and then another command to switch OFF as per the program.

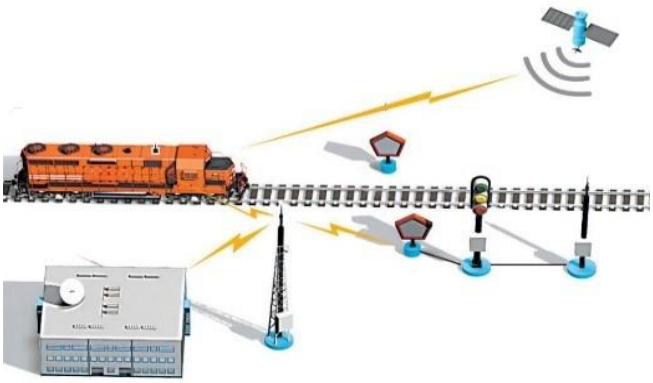


PROPOSED SYSTEM FEATURES:

- Automatic Load shedding is possible.
- Differs from current system we can program the Load shedding process.
- RTC provides the real time.
- LCD provides the real time and Load shedding timings.
- KEYPAD to set the time.
- Easy to setup.
- Economical and reliable
- Manpower dependency is less.

5.2.2 Railway Security System using IoT

The increasing use of the Internet of Things (IoT) has profound implications across industries including the railways. Sensors, devices, systems, and applications are integrated on smart networks and work in a collaborative and cohesive railway ecosystem to enhance passenger safety, improve asset reliability and efficiency, and lower capital and operating expenses. The shift from legacy infrastructure to building holistic, cloud-based train management systems is the way forward for railway companies if they are to use assets tracks, equipment, and stations resourcefully and significantly bring down safety threats.



For the railway industry, this is not a new concept; elements of IoT are integrated into every modern train with multiple control units managing technical systems while communicating with each other. Examples include the mechanical and electrodynamics brake system, and the train control unit as a master of the information infrastructure in a train. This is true for both train-based and way side systems.

5.2.5 Home Automation using IoT / Any other methodology

Home automation is an appealing context for the Internet of Things (IoT), by connecting the IP gateway directly to the Internet or through a home/residential gateway; this system can be managed remotely using a PC, Smart phone, Tablet or other devices.

IoT home automation – Smart homes and Internet of Things
The data is then used for monitoring, controlling and transferring information to other devices via the internet. This allows specific actions to be automatically activated whenever certain situations arise That is a smart home powered by IoT.

Home automation or domestics is building automation for a home, called a smart home or smart house. A home automation system will monitor and/or control home attributes such as lighting, climate,

entertainment systems, and appliances. It may also include home security such as access control and alarm systems. When connected with the Internet, home devices are an important constituent of the Internet of Things("IoT").

A home automation system typically connects controlled devices to a central hub or "gateway". The user interface for control of the system uses either wall-mounted terminals, tablet or desktop computers, a mobile phone application.

5.2.6 PC Based Electrical Load Control

Automation system is mostly depending upon the power system in industrial residential or commercial, which need remote controlling and monitoring. By employing wireless technology. it is more component to execute a suitable technology depending upon the requirement of the proposed system like speed, cost, and distance.

An electrical load is an electrical component or portion of a circuit that consumes (active) electric power. This is opposed to a power source, such as a battery or generator, which produces power. In electric power circuits examples of loads are appliances and lights. The term may also refer to the power consumed by a Circuit.

The term is used more broadly in electronics for a device connected to a signal source, whether or not it consumes power. If an electric circuit has an output port, a pair of terminals that produces an electrical signal, the circuit connected to this terminal (or its input impedance) is the load. For example, if a CD player is connected to an amplifier, the CD player is the source and the amplifier is the load

Load affects the performance of circuits with respect to output voltages or currents, such as in sensors, voltage sources, and amplifiers. Mains power outlets provide an easy example: they supply power at constant voltage, with electrical appliances connected to the power circuit collectively making up the load. When a high-power appliance switches on, it dramatically reduces the load impedance.

If the load impedance is not very much higher than the power supply impedance, the voltages will drop. In a domestic environment, switching on a heating appliance may cause incandescent lights to dim noticeably.

Chapter 6. Swachh Bharat Abhiyan (Clean India)

6.1 Swachh needed in allocated village -Existing Situation with photograph

In sense of cleanliness the Moti banugar village require sounder strategic plan for making village Swachh. At present there is no plan or strategy for waste management. Due to this reasons the present outlook of Moti banugar village is not very good according to Swachh, on the roads of Moti banugar village you can see the scattered waste, this scattered waste invite mosquitoes, fly and many other small insect and due to this disease like malaria and dengue spread it.so in Moti banugar village there is an need to implement daily cleanliness program and which includes cleaning of road, collecting of waste from every house, disposal of waste regularly, cutting of unnecessary grass.

Figure 11 plastic waste

6.2 Guidelines Implementation in allocated village with Photograph

Interact with villagers and explain the importance of cleanliness in the life.

Cleanliness is most important for physical well-being and a healthy environment. It has bearing on public and personal hygiene. It is essential for everyone to learn about cleanliness, hygiene, sanitation and the various diseases that are caused due to poor hygienic conditions. The habits learnt at a young age get embedded into one's personality. Even if we inculcate certain habits like washing hands before meals, regular brushing of teeth, and bathing from a young age, we are not bothered about cleanliness of public places. Mahatma Gandhi said, “I will not let anyone walk through my mind with their dirty feet.”

Figure 12 Interact with people

2. Provide dustbins in village at important junction

Figure 13 Dustbin

3. Appoint one team for collecting daily waste from every house of village.

Figure 14 Collecting waste from home daily

Waste can be solid, liquid, or gaseous and each type has different methods of disposal and management. Waste management deals with all types of waste, including industrial, biological and household. In some cases, waste can pose a threat to human health. Health issues are associated throughout the entire process of waste management. Health issues can also arise indirectly or directly. Directly, through the handling of said waste, and indirectly through the consumption of water, soil and food. Waste is produced by [3] human activity, for example, the extraction and processing of raw materials.[4] Waste management is intended to reduce adverse effects of waste on human health, the environment, planetary resources and aesthetics.

4. Cleaning of village roads on routine basis.

Figure 15 Cleaning roads

A street sweeper or street cleaner may refer to a person's occupation, or a machine that cleans streets. A street sweeper cleans the streets, usually in an urban area.

Street sweepers have been employed in cities as "sanitation workers" since sanitation and waste removal became a priority. A street-sweeping person would use a broom and shovel to clean off litter, animal waste and filth that accumulated on streets. Later, water hoses were used to wash the streets.

6.3 Activities Done by Students for allocated village with Photograph

Figure 16 cleaning by students

When your child's school is clean, you can focus on the good things about their education. Parents and teachers won't have to spend their time and energy fighting for a clean school, and instead, they can focus on the educational process.

A neat, clean school promotes a good attitude in everyone. When things are orderly and clean, everyone benefits in some way.

Attitude plays a crucial role in child development and learning. If the school is clean and people are happier in general, this positivity spreads.

Chapter 7. Village condition due to Covid-19

7.1 Taken steps in allocated village related to existing situation with photograph

- Common symptoms include fever, cough, fatigue, breathing difficulties, and loss of smell and taste. Symptoms begin one to fourteen days after exposure to the virus. While most people have mild symptoms, some people develop acute respiratory distress syndrome (ARDS), which can be precipitated by cytokine storms, multi-organ failure, septic shock, and blood clots. Longer-term damage to organs (in particular, the lungs and heart) has been observed, and there is concern about a significant number of patients who have recovered from the acute phase of the disease but continue to experience a range of effects—known as long COVID—for months afterwards, including severe fatigue, memory loss and other cognitive issues, low grade fever, muscle weakness, and breathlessness.

Figure 17 sanitizing the village

- Preventive measures include social distancing, quarantining, and ventilation of indoor spaces, covering coughs and sneezes, hand, and keeping unwashed hands away from the face. The use of face masks or coverings has been recommended in public settings to minimize the risk of transmissions.

- Prevention

Preventive measures to reduce the chances of infection include staying at home, wearing a mask in public, avoiding crowded places, keeping distance from others, ventilating indoor spaces, washing hands with soap and water often and for at least 20 seconds, practicing good respiratory hygiene, and avoiding touching the eyes, nose, or mouth with unwashed hands. Those diagnosed with COVID-19 or who believe they may be infected are advised by the CDC to stay home except to get medical care, call ahead before visiting a healthcare provider, wear a face mask before entering the healthcare provider's office and when in any room or vehicle with another person, cover coughs and sneezes with a tissue, regularly wash hands with soap and water and avoid sharing personal house hold items.

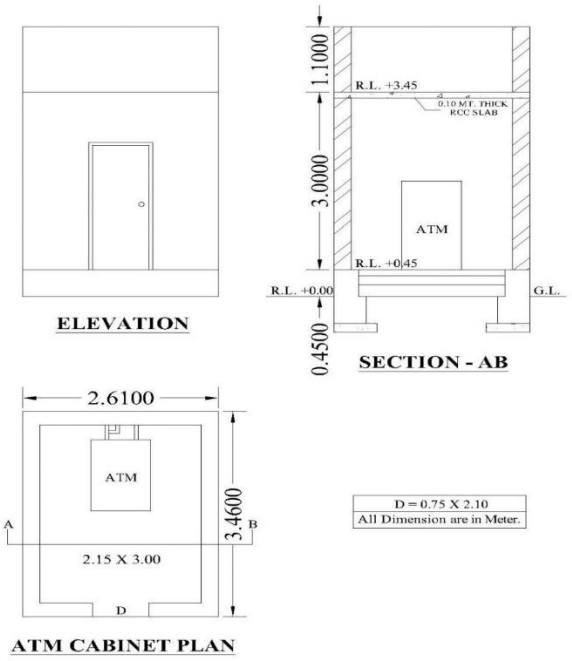
Taken steps in Moti banugar village

- Moti banugar village in all people are wear a mask
- All people hand often with soap and water for at least 20seconds.
- Clean and disinfect surfaces around they home and work frequently.
- Keep at least 6feet between yourself and other if you must be in public.
- Wear a cloth face covering over your mouth and nose when around others.
- "Sometimes people take it too lightly, as if nothing will happen to them just because they're breathing fresh air and eating fresh vegetables

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

(Scenario / Existing Situation / Proposed Design in Auto cad / Recapitulation Sheet /Measurement Sheet / Abstract Sheet / Sustainability of Proposal / Any other software)

8.1.1 Sustainable design



MEASURMENT SHEET

Sr. No	Item Description	No	L	B	H	Q	TQ
1	Excavation to foundation lead 30 m lift 1.5 m etc. complete	1	10.47	0.9	1.5	14.13	14.13
2	Providing and laying BBCC (1:5:10) etc. complete	1	10.47	0.9	0.3	02.83	02.83
3	Brick masonry up to plinth in cement mortar (1:6) etc. comp.						
	First footing	1	11.97	0.6	0.2	1.44	
	Second footing	1	11.97	0.5	0.2	1.20	
	Third footing	1	11.97	0.4	0.2	0.96	
	Up to G.L.	1	12.47	0.3	0.6	2.24	
	G.L. to Plinth	1	12.47	0.3	0.6	2.24	
							16.70
4	Providing and laying brick masonry above plinth to super structure in cement mortar (1:6) etc. complete	1	32.54	0.23	2.90	21.70	21.70

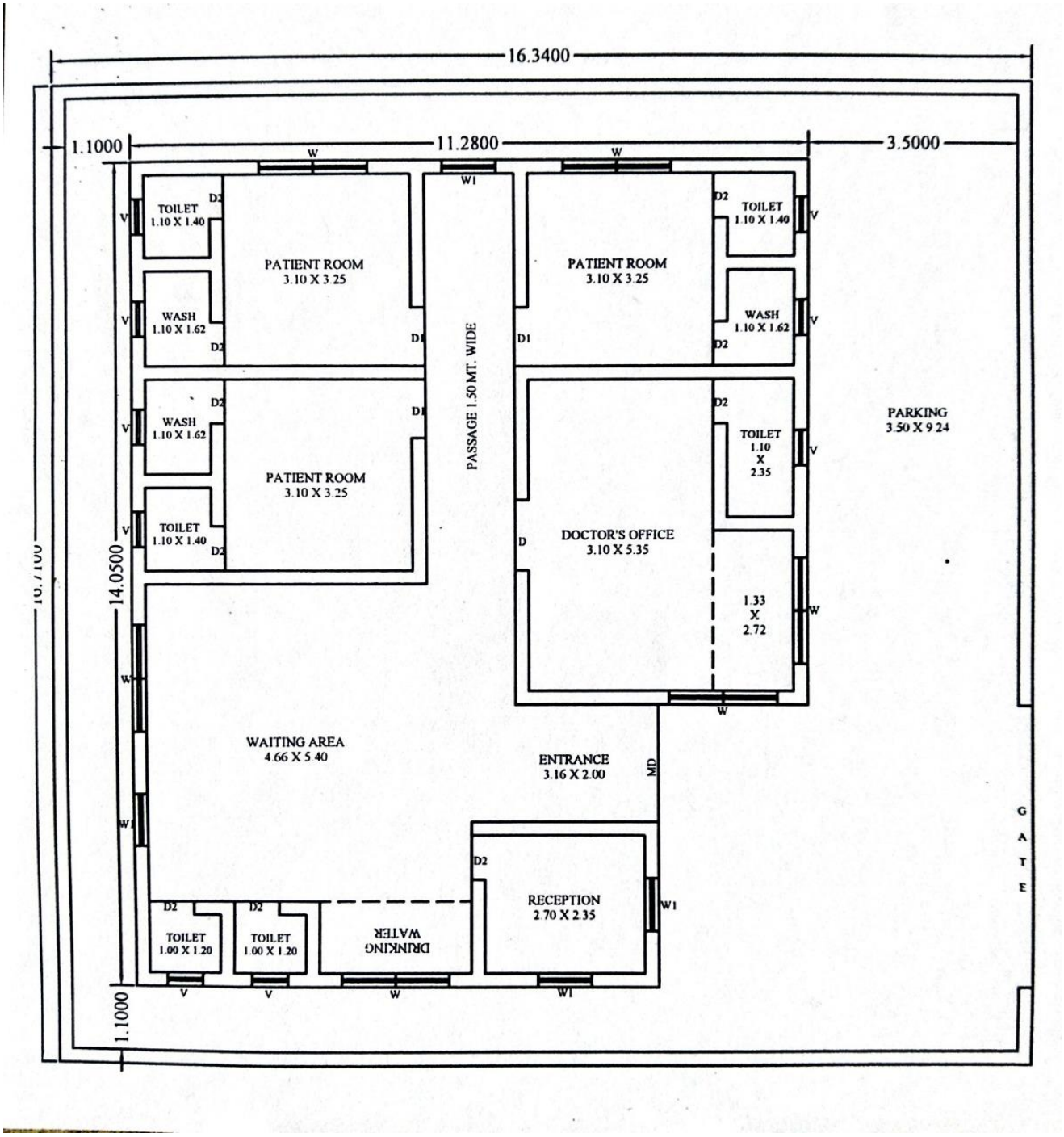
	Deduction for Brickwork of opening						
	D	1	0.75	0.23	2.1	0.36	
	Deduction for Brickwork in lintel						
	D	1	0.75	0.23	0.15	0.03	
						Total brickwork in super structure	21.31
5	Smooth Plaster Inside						
	Wall	1	29.87		2.90	86.62	
	Celling	1	2.15	3.00		6.45	93.07
	Deduction for plaster						
	D	1	0.75		2.1	1.58	
						Total plaster inside the structure	91.49
	Plaster out side wall	1	34.84		3.00	104.52	104.52
						Total plasterwork for whole structure	196.01
6	Soil filling in room						
	ATM Cabinet	1	2.61	3	0.45	3.52	3.52
7	Earth filling in foundation			14.13-2.83-2.64		8.66	8.66
8	R.C.C. Slab	1	2.61	3.46	0.15	1.35	1.35

ABSTRACT SHEET

Item	Particular of item	Quantity	Per	Rate	Amount
1	Excavation in ordinary soil	14.13	Cu.m	85	1201.05
2	B.B.C.C. for foundation	02.83	Cu.m	2700	7641.00
3	Brick masonry up to plinth	16.70	Cu.m	3200	53440
4	Brick masonry above plinth	21.70	Cu.m	3500	75950
5	Smooth inside plaster	91.49	Sq.m	150	13723.50
6	Outside plaster	104.52	Sq.m	150	15678.00
7	Earth filing in plinth	08.66	Cu.m	50	433.00
8	Soil Filling in Room	03.52	Cu.m	950	3344.00
10	RCC slab	01.35	Cu.m	8800	11880.00
				Total	183290.0
			Add 3% contingencies		5500
			Add 2% work charged establishment		3666
			Total cost for the structure		192456

8.1.2 Public design

PHC



8.1.3 Social Design

Public toilets

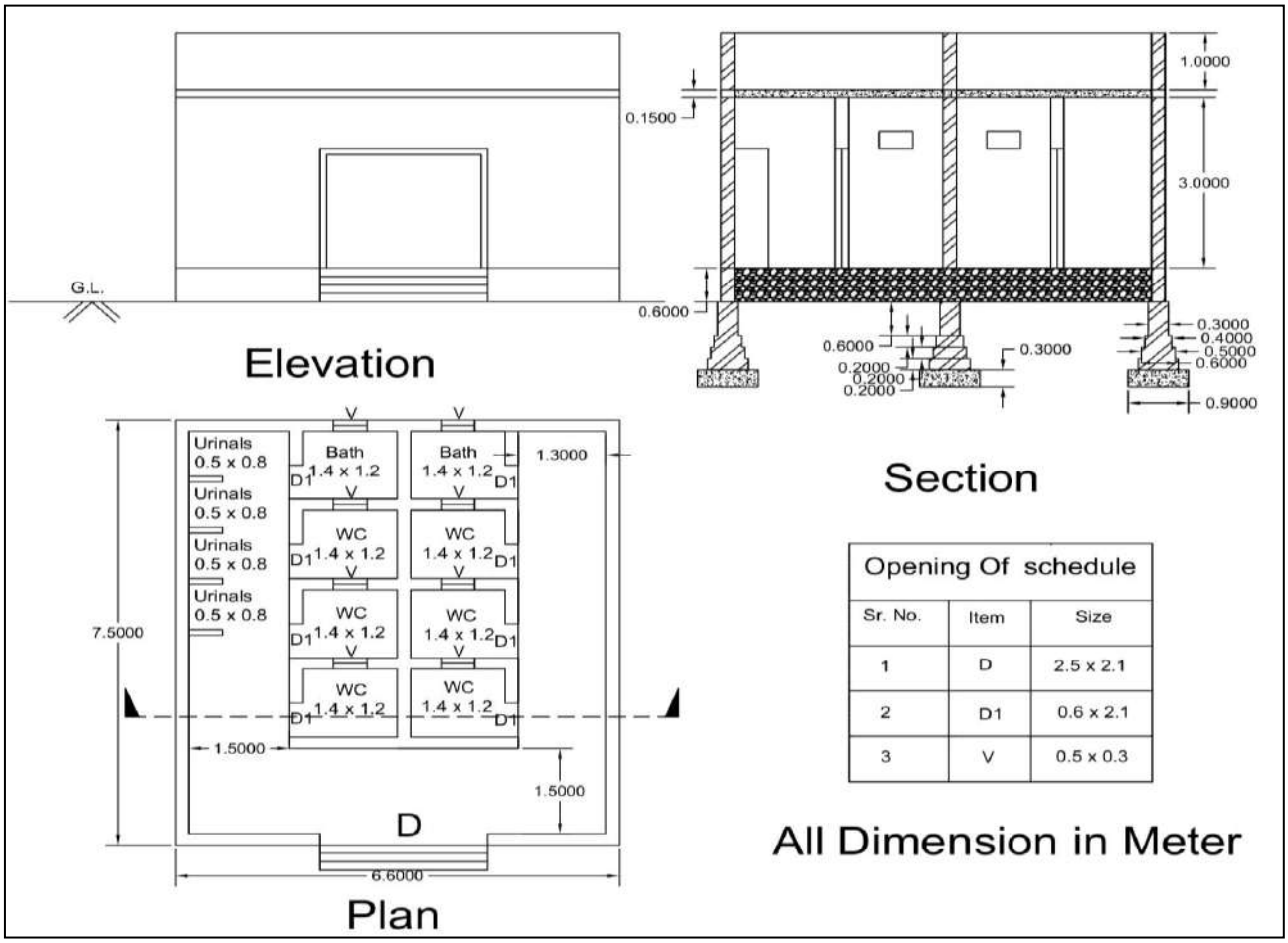


Fig. 10.6Design proposal of Public Toilet

MEASURMENT SHEET

Sr. No	Item Description	No	L (M)	B (M)	H (M)	Q	TQ
1	Excavation to foundation lead 30 m lift 1.5 m etc. complete	1	49.8	0.9	1.5	67.23	67.23
2	Providing and laying BBCC (1:5:10) etc. complete	1	49.8	0.9	0.3	13.446	13.446
3	Brick masonry up to plinth in cement mortar (1:6) etc. comp.						
	First footing	1	52.2	0.6	0.2	6.264	
	Second footing	1	53	0.5	0.2	5.3	
	Third footing	1	53.8	0.4	0.2	4.304	
	Up to G.L.	1	54.6	0.3	0.6	9.828	
	G.L. to Plinth	1	54.6	0.3	0.6	9.828	
	Steps	1	2.5	0.3	0.2	0.15	
		1	2.5	0.6	0.2	0.3	
		1	2.5	0.3	0.2	0.15	35.824
4	Providing and laying brick masonry above plinth to super structure in cement mortar (1:6) etc. complete	1	54.6	0.3	4.75	77.805	77.805
	Deduction for Brickwork of opening						
	D	1	2.5	0.3	2.1	1.575	
	D1	8	0.6	0.3	2.1	3.024	
	V	2	0.5	0.3	0.3	0.09	4.689
	Deduction for Brickwork in lintel						
	D	1	2.5	0.3	0.15	0.1125	
	D1	8	0.6	0.3	0.15	0.216	
	V	8	0.5	0.3	0.15	0.18	0.5085
	total brickwork in super structure						72.6075

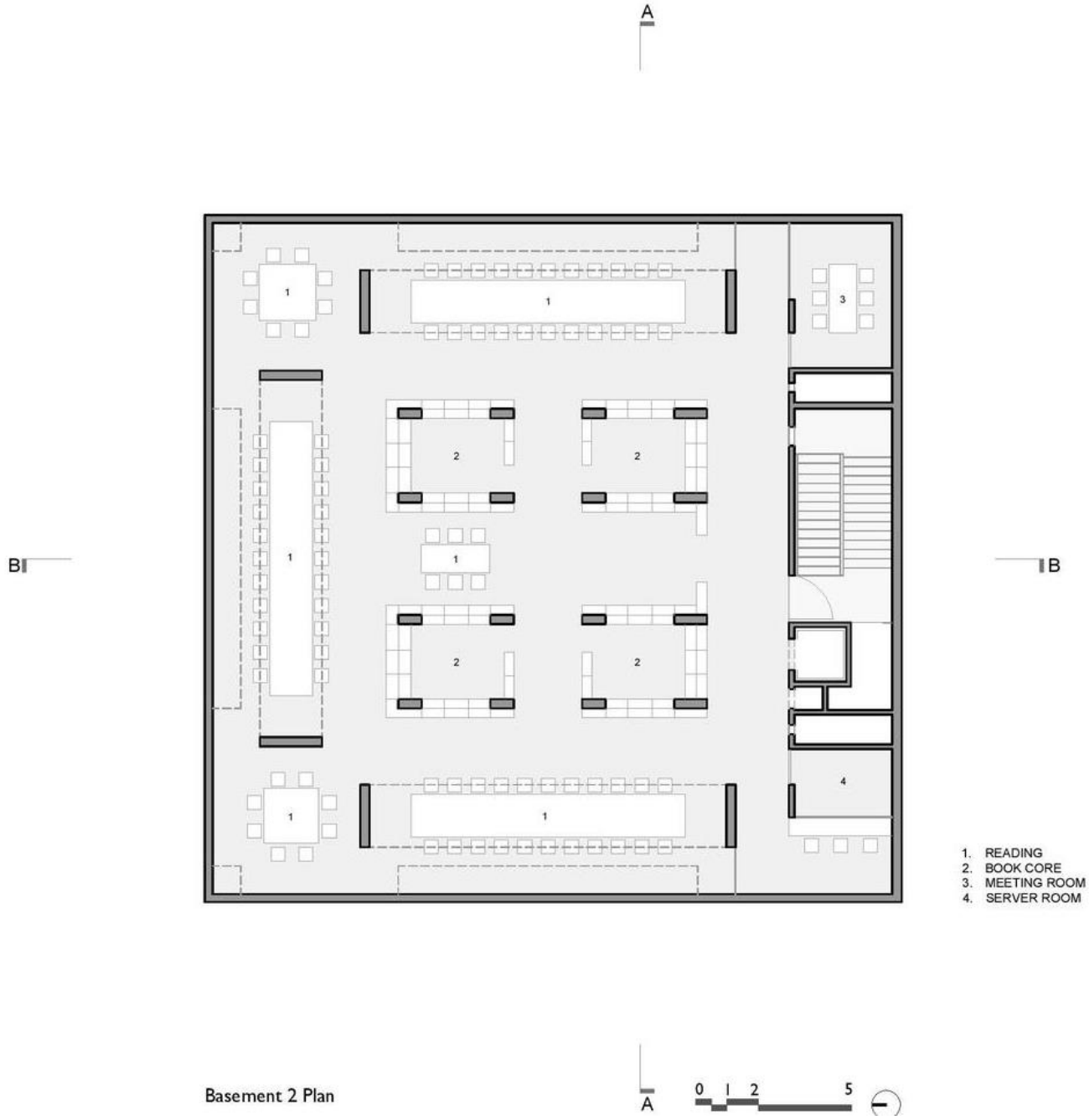
5	Smooth Plaster Inside						
	Wall	1	81.9		3	245.7	
	Celling	1	7.5	6.6		49.5	295.2
	Deduction for plaster						
	D	1	2.5		2.1	5.25	
	D1	8	0.6		2.1	10.08	
	V	2	0.5		0.3	0.6	15.93
						Total plaster inside the structure	279.27
	Plaster out side wall	1	28.2		4.75	133.95	134.55
						Total plasterwork for whole structure	413.82
6	Soil filling in room						
	in wc	8	1.6	1.4	0.6	10.752	
	in open passage 1	1	5.4	1.3	0.6	4.212	
	2	1	5.4	1.5	0.6	4.86	
	3	1	1.5	6	0.6	5.4	25.224
7	Earth filling in foundation	67.23-13.446-6.264-5.3-4.303-9.828				28.009	28.009
8	R.C.C. Slab	1	7.5	6.6	0.15	7.425	7.425

ABSTRACT SHEET

Item	Particular of item	Quantity	Per	Rate	Amount
1	Excavation in ordinary soil	67.23	Cu.m	85	5714.55
2	B.B.C.C. for foundation	13.446	Cu.m	2700	36304.2
3	Brick masonry up to plinth	35.824	Cu.m	3200	114636.8
4	Brick masonry above plinth	72.6075	Cu.m	3500	254126.25
5	Smooth inside plaster	279.27	Sq.m	150	41890.5
6	Outside plaster	134.55	Sq.m	150	20182.5
7	Earth filing in plinth	28.009	Cu.m	50	1400.45
8	Soil Filling in Room	25.224	Cu.m	950	23962.8
10	RCC slab	7.425	Cu.m	8880	65934
				Total	279225
			Add 3% contingencies		287602.57
				Add 2% work charged establishment	293354.62

8.1.4 Socio-cultural design

library hall



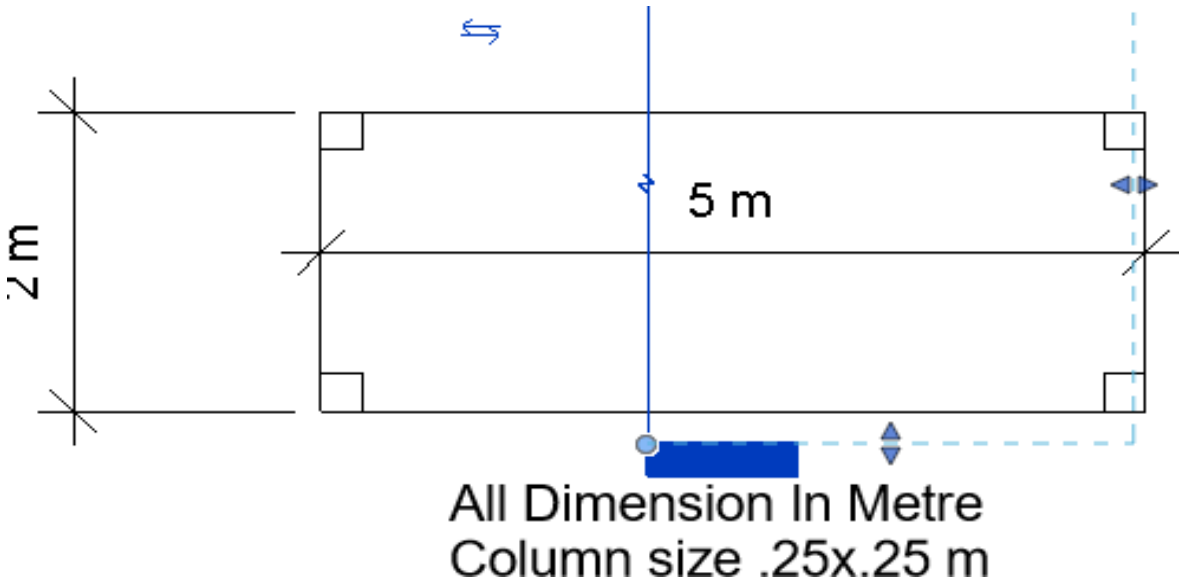
Sr No.	Description	No	L	W	H	Quani.	Total quan.	Unit	Rate	Amount
1	Excavation									
	25M Wall	2	25	0.9	1.2	54				
		3	9.54	0.9	1.2	30.9				
		2	4.3	0.9	1.2	9.3				
		4	3	0.9	1.2	13				
	4 M Wall	1	4	0.9	1.2	4.3				
	3.5 M Wall	2	3.5		9.54 M Wall	7.56				
					4.30 M Wall		92	m^3	125	11500
2	P.C.C.				3 M Wall					
	25M Wall	2	25	0.9	0.3	13.5				
	9.54 M Wall	3	9.54	0.9	0.3	7.7				
	4.30 M Wall	2	4.3	0.9	0.3	2.3				
	3 M Wall	4	3	0.9	0.3	3.25				
	4 M Wall	1	4	0.9	0.3	1.1				
	3.5 M Wall	2	3.5	0.9	0.3	1.89				
							29.4	m^3	2208	64915
3	Footing Masonry									
	25M Wall	2	25	0.6	0.3	9				
	9.54 M Wall	3	9.5	0.6	0.3	5.15				
	4.30 M Wall	2	4.3	0.6	0.3	1.55				
	3 M Wall	4	3	0.6	0.3	2.16				
	4 M Wall	1	4	0.6	0.3	0.72				
	3.5 M Wall	2	3.5	0.6	0.3	1.26				

							19.84			
	25M Wall Deduction	2	25	0.5	0.3	7.5				
	9.54 M Wall	3	9.54	0.5	0.3	4.3				
	4.30 M Wall	2	4.3	0.5	0.3	1.29				
	3 M Wall	4	3	0.5	0.3	1.8				
	4 M Wall	1	4	0.5	0.3	0.6				
	3.5 M Wall	2	3.5	0.5	0.3	1.05				
							16.55			
	25M Wall	2	25	0.4	0.3	6				
	9.54 M Wall	3	9.54	0.4	0.3	3.4				
	4.30 M Wall	2	4.3	0.4	0.3	1.32				
	3 M Wall	4	3	0.4	0.3	1.44				
	4 M Wall	1	4	0.4	0.3	0.48				
	3.5 M Wall	2	3.5	0.4	0.3	0.84				
							13.48			
4	Masonry Work									
	25M Wall	2	25	0.23	3	345				
	9.54 M Wall	3	9.54	0.23	3	19.75				
	4.30 M Wall	2	4.3	0.23	3	5.93				
	3 M Wall	8	3	0.23	3	16.56				
	4 M Wall	1	4	0.23	3	2.76				
	3.5 M Wall	2	3.5	0.23	3	4.83				
							84.33			
	2GF + FF						84.3			
	Patition Wall									

	FF Wall									
	Window	13		2	1.2	27.36				
	W1	7		1	1.2	31.2				
	Door	13		1	2.1	8.4				
	Gate	1		3	2.1	27.3				
						6.3				
							100.56	m^3	2925	293962.5
	Deduction TOTAL MASONARY - DEDUCTIO 168.66- 100.56 = 68.10 M3									
5	Formwork	2	10	25		500	500	M^2	45	22500
6	Slab	2	25	10	0.15	75	75	m^3	350	26250
7	Parapet Wall									
	9.54M Wall	2	9.54	0.23	0.9	3.95				
	25M Wall	2	25	0.23	0.9	10.35				
							14.3	2925	m^3	40950
Total Cost										260885
Add 10% Contactor profit										20500
Water charge 1.5 %										10000
Total Cost										291355

Smart Village Design:

- **Village gate with solar LED light**



Abstract Sheet

Sr no.	Description	Quantity	Rate	Per	Cost
1	Excavation in foundation	47.5 2	48	M3	2280
2	R.C.C. work for foundation	42.5 4			
	Cement	58 bags	280	bag	16240
	Sand	5.76 m3	800	M3	4608
	Aggregate	11.52 m3	1000	M3	11520
	Steel				
	12ϕ – 180mm c/c	272.2 kg	46	kg	12521
	22ϕ – 200 mm c/c	358.68 kg	46	kg	16507
				Total	**61396**
	Labour				
	Mistry	2	400	day	800
	Mason	4	300	day	1200
	Male Coolie	10	200	day	2000
	Female Coolie	14	180	day	2520
	Bhistie	8	200	day	1600
				Total	**8120**
3	R.C.C. column	1.25m3			
	Cement	10 bags	280	bag	2800
	Sand	0.34 0	800	M3	272
	Aggregate	0.68	1000	M3	680
	Steel				
	12ϕ –main bar	160 kg	46	kg	7360
	Stirrups 6mm ϕ	340 kg	45	kg	15300
	Binding wire				150
				Total	**26562**
	Labour				
	Mistry	1	400	day	400
	Mason	2	300	day	600
	Male Coolie	2	200	day	400
	Female Coolie	2	180	day	360
	Bhistie	1	200	day	200
				Total	**1420**
5	Painting	3.69 m2	700	M2	2850
				Total Cost	**137460 /-**

8.1.7 Electric design
LDR (Light dependent resistor)

Light dependent resistors, LDRs or photoresistors are often used in electronic circuit designs where it is necessary to detect the presence or the level of light.
These electronic components can be described by a variety of names from light dependent resistor, LDR, photoresistor, or even photo cell, photocell or photoconductor.
Although other electronic components such as photodiodes or photo-transistor can also be used, LDRs or photo-resistors are a particularly convenient to use in many electronic circuit designs. They provide large change in resistance for changes in light level.
In view of their low cost, ease of manufacture, and their ease of use, LDRs have been used in a variety of different applications. At one time LDRs were used in photographic light meters, and even now they are still used in a variety of applications where it is necessary to detect light levels.

- How an LDR works

It is relatively easy to understand the basics of how an LDR works without delving into complicated explanations. It is first necessary to understand that an electrical current consists of the movement of electrons within a material.
Good conductors have a large number of free electrons that can drift in a given direction under the action of a potential difference. Insulators with a high resistance have very few free electrons, and therefore it is hard to make the them move and hence a current to flow.

- Application

These devices are used where there is a need to sense the presence and absence of light is necessary. These resistors are used as light sensors and the applications of LDR mainly include alarm clocks, street lights, light intensity meters, burglar alarm circuits.

- Advantages

These devices are used where there is a need to sense the presence and absence of light is necessary. These resistors are used as light sensors and the **applications of LDR** mainly include alarm clocks, street lights, light intensity meters, burglar alarm circuits.

- Disadvantage

Narrow spectral response. Hysteresis effect. Low temperature stability for the fastest materials.

8.1.8 Over Voltage/Under Voltage Load Protection with GSM Alert

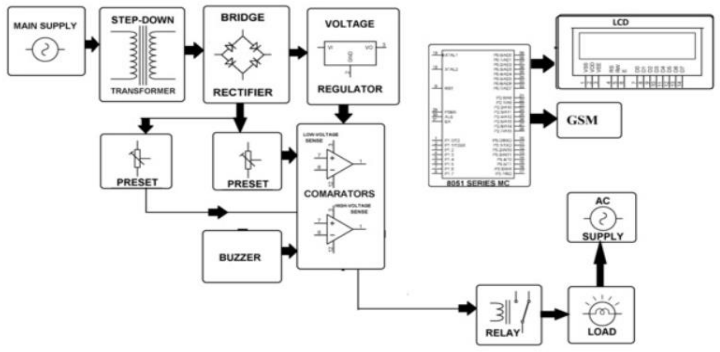
This project aims to build a system that monitors voltage and provides a breakpoint based low and high voltage tripping mechanism that avoids any damage to the load. Various industrial and domestic systems consist of fluctuation in the AC mains supply. There is a chance of damaging electronic devices that are quite sensitive to these fluctuations. So there needs to be a tripping system that avoids any damage to these loads. This system also includes 8051 microcontroller which finds out the voltage level which is displayed on the LCD screen. This microcontroller not only finds out the voltage level but also send SMS via GSM modem which alerts the user whenever the voltage level is crosses the limits.

Our system consists of a tripping mechanism that monitors the input voltage and trips according to limits provides. Here we use a quad comparator IC with two more comparators to be used as window comparators to it. well the system delivers an error as soon as the input voltage falls out of the window range. This trigger then operates a relay that cuts off the load to avoid any damage to it. We here use a lamp to demonstrate as a load. well the system is also configured with an alarm that goes on as soon as tripping takes place

GSM Modem

The SIM900 is a complete Quad-band GSM/GPRS solution in a SMT module which can be embedded in the customer applications. Featuring an industry-standard interface, the SIM900 delivers GSM/GPRS 850/900/1800/1900MHz performance for voice, SMS, Data, and Fax in a small form factor and with low power consumption. With a tiny configuration of 24mm x 24mm x 3 mm, SIM900 can fit almost all the space requirements in your M2M application, especially for slim and compact demand of design.

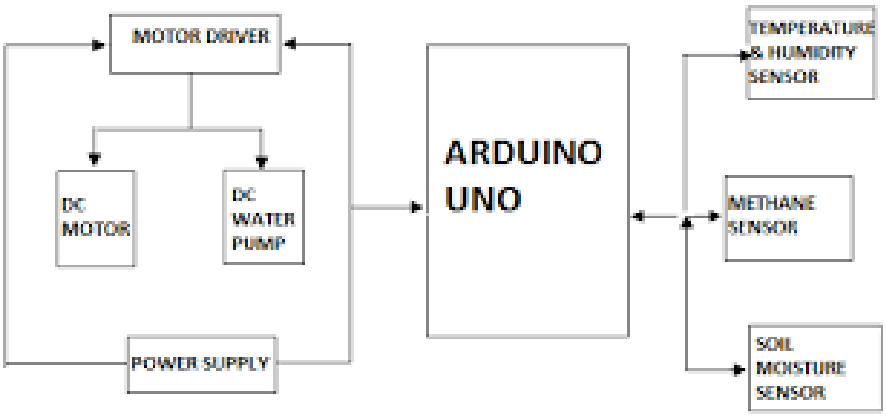
Block Diagram



8.1.9 Plant Moisture Monitoring System

Planting a tree in an environment where the seed or the plant would not get water adequately through natural sources like rain or ground water in its initial phases has been always a matter of concern for tree planters. This is where an autonomous moisture monitor for plants system can help.
The system timely monitors the moisture level of the soil. If at the time of monitoring it comes to know that the moisture level of the soil is lower than recommended then it will raise an audiovisual alert. This alert is then received by the care taker of the plant. When the care taker waters the plant the alarm goes off and the monitoring cycle continues.

In this system we use a timer IC to time the monitoring process. A moisture level sensor is used to detect the moisture level of the soil. An LED is used to give visual alarm and a Buzzer is used to give audio alarm to the care taker of the plant. Thus in this project with the help of a simple combinational circuit and a sensor we can help save a plant by maintaining the moisture level of the soil of the plant, thus keeping the plant healthy



Hardware Specifications:

- ICCD4060
- Water level Sensor
- Resistors
- Capacitors
- Transistor
- LED
- Buzzer

- Arduino UNO the board has 14 digital I/O pins (six capable of PWM output), 6 analog I/O pins, and is programmable with the Arduino IDE (Integrated Development Environment), via a type B USB cable and may be interfaced to various expansion boards (shields) and other circuits. It can be powered by the USB cable or by an external 9-volt battery. Power banks are also used these days. The boards feature serial communications interfaces, including Universal Serial Bus (USB) on some models, which are also used for loading programs from personal computers.

- Temperature and Humidity Sensor

DHT-11 The DHT11 is a commonly used Temperature and humidity sensor. The sensor comes with a dedicated NTC to measure temperature and an 8-bit microcontroller to output the values of temperature and humidity as serial data. The sensor is also factory calibrated and hence easy to interface with other microcontrollers.

- Soil Moisture Sensor YL-69
  The soil moisture sensor or the hygrometer is usually used to detect the humidity of the soil. So, it is perfect to build an automatic watering system or to monitor the soil moisture of your plants. The sensor is set up by two pieces: the electronic board, and the probe with two pads, that detects the water content. The output can be a digital signal i. e. LOW or HIGH, depending on the water content.

8.1 Reason for Students Recommending this Design

With help 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 moti banugar village, we observed condition of existing infrastructure facilities in village such as Primary school, Water tank, Road network, Drainage network, etc. Smart Village can solve their problem itself can become a smart village example to another village too. According to UDPFI norms, lacking in basic amenities and Smart Amenities can be provided as-

- Public library
- Children's Play Ground
- Septic Tank
- Community Toilet

Maintenance of Aaganwadi 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.

8.2 Recommendations of the design

As by gap analysis done by as we found the requirement of propose designs. - In village no any provision for sustainable facilities. So we design the bio-gas plant. Asa sustainable infrastructure facility. - There is not public garden is available for recreation purpose. So we design the public garden for recreation. As a socio-cultural infrastructure design. - There is no provision of solid waste collection method. All villagers are disposing the solid waste on free space available on road. So we design solid waste collection method. As a physical infrastructure design.

8.3 Suggestions / Benefit of the villages

There are two visions for providing Biogas plant, one is to provide as sustainable source to Villagers and second is to reduce the pollution and disease occurred due to cow dung, and fertilizer waste. - In village no any provision for recreation purpose so we design the public garden as a recreation purpose. - By providing solar street light it also benefit in save energy. - By providing community toilet it reduces diseases occurred due to mud.

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

According to techno economic survey and gap analysis of part 1, almost required design of the village is do. First, basic requirement of the village should be full fill, therefore the design in part one is do according to that. Now in the second part, we will try a design that covers all the required maintenance in the village first.

As the design of approach road, internal roads, library, coconut leaf dustbin and Primary Health Centre is do, the next step is to do maintenance of the required structure. In addition, will provide some different design to the villagers.

The village needs some of unique or different design in order to make the village attractive and smart. Most of the focus of us is towards the maintenance of government properties such as anganvadi panchayat, etc. because all these structures are damage. Until now, the bus stand was not available because there was no any bus away from this village route for government bus. However, after the approach road is making, there is hope of continuous route for the bus.

Next, there is no any market for vegetable so that we will give design of the market. Therefore, the planning for part 2 is based on the maintenance of the village, providing some different and economic design

Chapter 10: Inclusion of the Entire Village Activities of the Project

Rural development has received a priority attention in our country. Since India got independence, nationwide rural development programmers were started by government of India with the objective of socio-economic development of rural people.

Rural development is a process of qualitative and quantitative changes to improve conditions in rural regions. Such a process needs to be an integrated programme where all aspects of rural life should be taken into account.

It can be help to develop the other village as increase basic services and after that smart facilities on any country with the help smart village visit and it‘s also help to boost GDP Of state And Also increase country image in front of world as superior infrastructure, economic profile as well as an Employment Solution.

At the end of semester we finalize some of the facility which is not provided in allocated village and design them with approximate cost and easily available material.

After analyzing all the data, we found that village needs some new facilities and some facilities need maintenance. We provided six new designs for our village, A Public Library, Bus Stand, community hall, solar street light, Public Toilet, panchayat building and general market to fulfill the requirement of existing population. also village need initiative for the approach to various Govt. schemes by local bodies.

Comparison with smart village data and gap analysis we proposed detail design of certain amenities which may be use full for the growth of village and other advantage of moti banugar can be facilitated as like as other smart villages.

Rural development is a process of qualitative and quantitative changes to improve conditions in rural regions. Such a process needs to be an integrated programme where all aspects of rural life should be taken into account.

CHAPTER 11: References refereed for this project

www.vy.gtu.ac.in
www.censusindia.gov.in
www.rural.nic.in
www.giftgujarat.in
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www.indikosh.com
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Www.resarchgate.net
www.wikipidya.com
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www.soilinfo.com
http://www.indianmirror.com
www.gujratgoverment.in
www.giftcity.in

12 ANNEXURE ATTACHMENT

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

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

Name of Village:	Khijadiya
Name of Taluka:	Jamnagar
Name of District:	Jamnagar
Name of Institute:	Kalyan polytechnic
Nodal Officer Name & Contact Detail:	Mr. Divyesh Varnagar & Mr. Pradip Ghadhiya
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Bhagwanji bhai G Vasoya
Date of Survey:	

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	2350			
ii)	2011	2275	1365	910	450

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	50 hector
	Forest Area (In hect.)	602 hector
	Agricultural Land Area (In hect.)	5.02 hect
	Residential Area (In hect.)	3.00 hect
	Other Area (In hect.)	
	Water bodies	
	Nearest Town with Distance:	Jamnagar

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3. Occupational Details:

Name of Three Major Occupation groups in Village	1. farmers 2. labour 3.

4. Physical Infrastructure Facilities:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated) • RO Water • Well (Covered/ Uncovered) • Hand pumps • Tube well/ Borehole • River/ Canal/ Spring/ Lake/ Pond		✓		
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	100000l		
	Underground Sump	Capacity:	—		
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)		✓		
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open		Closed		
	If Open than Pucca / Kutchcha	Kutcha			
	Whether drain water is discharged directly in to Water bodies/ Sewer plants	No			
Suggestions if any:					

E.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	Yes			
	Main road	Yes			
	Internal streets	Yes			
	Nearest NH/SH/MDR/ODR Dist. in kms.	SH			
Suggestions if any:					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms) Hapa 10	No			
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes			
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	All			
Suggestions if any:					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt			
	Power supply for Domestic Use	24 Hours			
	Power supply for Agricultural Use	8hours			
	Power supply for Commercial Use	24 Hours			
	Road/ Street Lights	No			

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

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks

K.	**Health Facilities:**				
	Sub center/ PHC/ CHC /Government Hospital/ Child welfare & Maternity Homes (If Yes than specify No. of Beds) Condition:	No			
	Private Clinic/Private Hospital/ Nursing Home	No			
	If any of the above Facility is not available in village than approx. distance from village: .13....kms.				
Suggestions if any:					

L.	**Education Facilities:**				
	Aaganwadi/ Play group	2			
	Primary School	✓			
	Secondary school	NO			
	Higher sec. School	NO			
	ITI college/ vocational Training Center	NO			
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	No			
	If any of the above Facility is not available in village than approx. distance from village: 13.....kms.				
Suggestions if any:					

M.	**Socio- Culture Facilities**				
	Community Hall (With or without TV) Location:	No			

	Condition:				
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	No			
	Public Garden Location: Condition:	No			
	Village Pond Location: Condition:	Yes			
	Recreation Center Location: Condition:	No			
	Cinema/ Video Hall Location: Condition:	No			
	Assembly Polling Station Location: Condition:	Yes			
	Birth & Death Registration Office Location: Condition:	Yes			
If any of the above Facility is not available in village than approx. distance from village: ..13....kms.					
Suggestions if any:					
N.	**Other Facilities**				
	Post-office	Yes			
	Telecommunication Network/ STD booth	No			

	General Market	No			
	Shops (Public Distribution System)	Yes			
	Panchayat Building	Yes			
	Pharmacy/Medical Shop	NO			
	Bank & ATM Facility				
	Agriculture Co-operative Society	Yes			
	Milk Co-operative Soc.	Yes			
	Small Scale Industries	Yes			
	Internet Cafes/ Common Service Center/Wi Fi	Yes			
	Other Facility				
Suggestions if any:					

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

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

7. **Data Collection From Village**

Village Base Map Available: Hard Copy/Soft Copy	

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

8. **Additional Information/ Requirement:**

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	**Repair & Maintenance of Existing Public Infrastructure facilities(School Building, Health Center, Panchayat Building, Public Toilets & any other)**	Anganwadi Goverment Hospital	
2.	**Additional Information/ Requirement**	Community Hall	
		Street light	
		Hotel Jetavan	

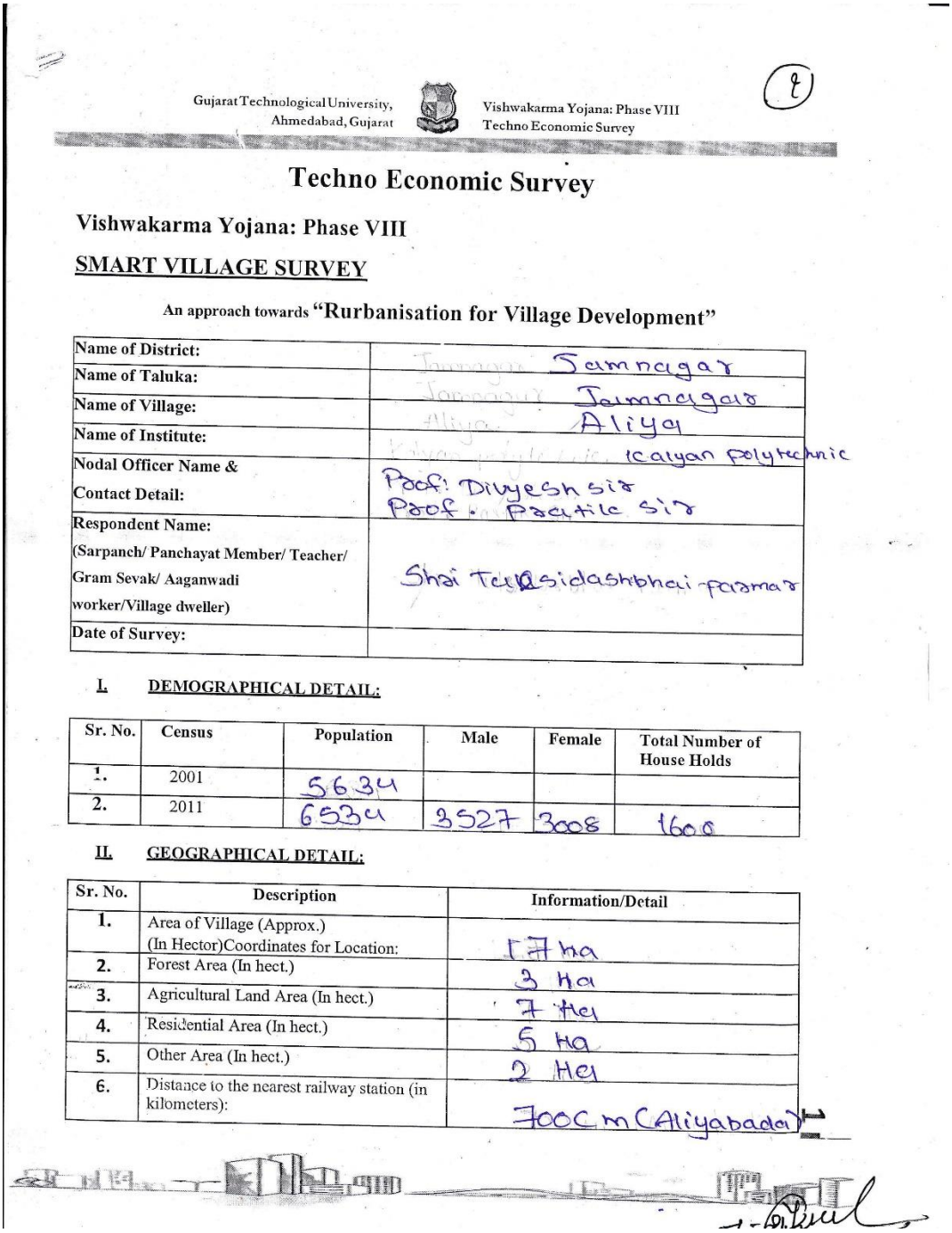
9. **Smart Village Proposal Design**

Sr. No.	Descriptions	Information/ Detail	Remarks
1.			

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

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

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



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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Techno Economic Survey

Vishwakarma Yojana: Phase VIII

SMART VILLAGE SURVEY

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

Name of District:	Jamnagar
Name of Taluka:	Jamnagar
Name of Village:	Aliya
Name of Institute:	Kalyan polytechnic
Nodal Officer Name & Contact Detail:	Prof: Divyesh sir Prof. Patil sir
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Shri Tulsidashbhai parmar
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	5634			
2.	2011	6534	3527	3008	1600

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	17 ha
2.	Forest Area (In hect.)	3 Ha
3.	Agricultural Land Area (In hect.)	7 Hel
4.	Residential Area (In hect.)	5 Ha
5.	Other Area (In hect.)	2 Hel
6.	Distance to the nearest railway station (in kilometers):	7000 m (Aliyabada)

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7.	Name of Nearest Town with Distance:	23km
8.	Distance to the nearest bus station (in kilometers):	250m
9.	Whether village is connected to all road for the any facility or town or City?	Jamnagar

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Farming
	2.	Basiness
	3.	Shepird

Major crops grown in the village:	1.	cotton
	2.	groundnut
	3.	Til seeds

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

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Suggestions if any:					
B.	Water Tank Facility				
	Overhead Tank	Capacity:	1 lakh litre		
	Underground Sump	Capacity:	2 lakh litre		
Suggestions if any:					
C.	The Type of Drainage Facility				
	A. UNDERGROUND DRAINAGE 1 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	underground with protect			
Suggestions if any:					
D.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	C.C road			
	Main road	C.C road			
	Internal streets	C.C road			
	Nearest NH/SH/MDR/ODR Dist. in kms.	S.H	7km		Rajkot. Jamnagar Highway
Suggestions if any:					
E.	Transport Facility				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Yes	700m		
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes	250m		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	available			
Suggestions if any:					
F.	Electricity Distribution				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	yes Pgvcl	Jgy		

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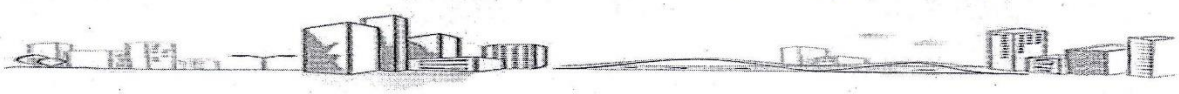
	Power supply for Domestic Use	24 hours			
	Power supply for Agricultural Use	8 hours			
	Power supply for Commercial Use	24 hours			
	Road/ Street Lights	Yes	LED		
	Electrification in Government Buildings/ Schools/ Hospitals	Yes			
	Renewable Energy Source Facilities (Y/ N)	NO			
	LED Facilities	Yes			
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	NO			
	Location Condition	—			
	Community Toilet (With bath/ without bath facilities)	No			
	Solid & liquid waste Disposal system available	Yes			
	Any facility for Waste collection from road	NO			
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Pond River Canal Well Tubewell			all available in good Condition.
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)		70% Pucca	30% Kacha	



(4)

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)		8		All available
	Sub-Centre				
	PHC		1		Working
	BLOCK PHC				
	CHC/RH				
	District/ Govt. Hospital				
	Govt. Dispensary				
	Private Clinic	Private Clinic			
	Private Hospital/				
	Nursing Home				
	AYUSH Health Facility				
	sonography /ultrasound facility				
	If any of the above Facility is not available in village than approx. distance from village: 23 ..kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Yes 8			
	Primary School	yes			
	Secondary school	yes			
	Higher sec. School	yes			
	ITI college/ vocational Training Center	NO			
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	Eng College B.Ed College			
	If any of the above Facility is not available in village than approx. distance from village: 23 ...kms.				

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Suggestions if any:

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

If any of the above Facility is not available in village than approx. distance from village: ..23...kms.

Suggestions if any:

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

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

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village?				No
	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)			Yes	
	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)			Yes	
	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)				

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy			✓	
2.	Recent Projects going on for Development of Village				
3.	Any NGO working for village development				
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)			NO NO NO	

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks

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1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building, Health Center, Panchayat Building, Public Toilets & any other	All are in Good Condition Road maintance	
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ……Yes…… FOGGING……Yes…… 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 ?	Public Pond Maintanance	

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

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ALLOCATED VILLAGE SURVEY

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

Name of District:	Jamnagar
Name of Taluka:	Jamnagar
Name of Village:	Moti Banugar
Name of Institute:	Kalyan polytechnic, Jamnagar.
Nodal Officer Name & Contact Detail:	Pradip sir Divyesh sir
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Kiranben Bhensdadiya
Date of Survey:	1st October 2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	3836	1996	1840	1600

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	300 hector (App)
2.	Forest Area (In hect.)	X
3.	Agricultural Land Area (In hect.)	180 hector
4.	Residential Area (In hect.)	120 hector
5.	Other Area (In hect.)	—
6.	Distance to the nearest railway station (in kilometers):	12 km Dhrangadhra

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7.	Name of Nearest Town with Distance:	Jambuda
8.	Distance to the nearest bus station (in kilometers):	500 mtr
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. Buisness
	3.

Major crops grown in the village:	1. Ground nut
	2. Cotton
	3. Cumin Seed

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

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	Other(Specify)**Lake/ Pond**			.	
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:			1 lakh ltr
	Underground Sump	Capacity:			X
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1 Pipe line drainge				Yes Available
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	✓			
	Main road	✓			
	Internal streets	✓			
	Nearest NH/SH/MDR/ODR Dist. in kms.	SH 500 mtr			
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Ahmedabad 12 km			
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes 500 mtr			
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Chakda Ecco.			
Suggestions if any:					
F.	**Electricity Distribution**				Kikuraj સરપંચ મોટી આણુંગાર ગ્રામ પંચાયત
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt	Yes		

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	Power supply for Domestic Use	24 hrs		.	
	Power supply for Agricultural Use	6 Hrs			
	Power supply for Commercial Use	24 Hrs			
	Road/ Street Lights	✓			
	Electrification in Government Buildings/ Schools/ Hospitals	✓			
	Renewable Energy Source Facilities (Y/ N)	X			
	LED Facilities	✓			
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	X			
	Location Condition	X			
	Community Toilet (With bath/ without bath facilities)	✓			Yes available Not in use
	Solid & liquid waste Disposal system available				
	Any facility for Waste collection from road				
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Tank pond			Both are available Tube well Narmada Pipeline
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	All in good Condition			સરપંચ મોટી બાણુંગાર ગ્રામ પંચાયત

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi) ✓	✓			Yes available
	Sub-Centre				
	PHC ✓				Yes available
	BLOCK PHC				
	CHC/RH				
	District/ Govt. Hospital				
	Govt. Dispensary				
	Private Clinic ✓				
	Private Hospital/ Nursing Home				
	AYUSH Health Facility				
	sonography /ultrasound facility				
	If any of the above Facility is not available in village than approx. distance from village: 21....kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group ✓				All available in good Condition
	Primary School ✓				
	Secondary school ✓			Commerce	
	Higher sec. School ✓				
	ITI college/ vocational Training Center				
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities				

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	If any of the above Facility is not available in village than approx. distance from village: 21.....kms.
Suggestions if any:	

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

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

Suggestions if any:

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

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

Suggestions if any:

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

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy				
2.	Recent Projects going on for Development of Village				
3.	Any NGO working for village development	Primary School			Life global
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	No			No

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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	Gram panchayat office should be Gloured	
2.	Additional Information/ Requirement	No	No
3.	During the last six months how many times CLEANING .....6..months..... FOGGING.....6...months..... Drive was undertaken in the village?		

IX. Smart Village / Heritage Details

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

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

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12.7 Summary of Good Photographs in Table Format (village visits, Ideal, Smart Village

12.8 Village Interaction with sarpanch Report with the photograph