DETAIL PROJECT REPORT

ON

Vishwakarma Yojana: Phase - VIII

AN APPROACH TOWARDS RURBANISATION

Kholeshwar Village
Surat District

PREPARED BY

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
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(Head & Assistant Professor)

Year :2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda,Ahmedabad– 382424 Gujarat

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CERTIFICATE

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

Detail Project Report for,

VILLAGE : KHOLESHWAR
DISTRICT : SURAT

Under

Vishwakarma Yojana: Phase-VIII

In partial fulfillment of the project offered by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

Duringtheacademicyear2020-21.

Thisprojectworkhasbeencarriedoutbythemunderoursupervisionandguidance.

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ABSTRACT

In this urbanization era, people migrate from their village to near town's or cities due to fulfill their manifold purposes such as essential needs like jobs, good life styles, higher education , business expand and many more reasons. There are both advantage and drawback, one side cities' and Towns developed affirmatively but on the other side villages are not developed successfully despite that some villages has not basic amenities such as electricity and water supply, to overcome this problem. The Government of Gujarat has launched "Vishwakarma Yojana". It is steps towards development of village's civic amenities and rural youth. This is implemented by Gujarat technical University. Under this scheme, student will survey the village by meeting the native peoples and find the existing facilities provided in the village. Moreover, students will make a report on what can be provided to betterment of the village and make an ideal village.

We selected a "Kholeshwar" village. This Village is in Kamrej Taluka in Surat District of Gujarat State, India. It is located 24 KM towards East from District headquarters Surat. 6 KM from Kamrej. 253 KM from State capital Gandhinagar. Kholeshwar Pin code is 394180 and postal head office is Kamrej. Surat, Ankleshwar, Navsari, Vyara are the nearby Cities to Kholeshwar.

The kholeshwar village is near to river bank of Tapi that's why all House's are constructed on hill but the main Street of the village is constructed underneath the hill that's why sometime in monsoon main Street are prone from the rain water. Moreover, there are lots of people are poverty-stricken and they live in slums and they don't have a basic amenities such as toilet and bathroom. there are one bathroom and toilet between 50 huts.

The kholeshwar village don't has a basic amenities such as a public and personal toilet, street light, transport facility, good house condition, new anganwadi structure, wide road and many more should be build in this village. This type of physical structure is not affordable by village people because lots of people are poverty-stricken. The selected village has been surveyed and data collected as per smart village under "VishwakamaYojna".

By providing a bus stand we make convenient travelling to kamrej to kholeshwar village so students and villagers can easily gat buses for that route, by providing road with wide pavement surface and also increasing road level to hill level we make a comfortable travelling also in monsoon season throw out of village route, by providing physical structure such as a public and privet toilet, houses, anganwadi, Embankment at river side area, streetlight etcetera. Moreover, to providing this all structures we can improve lifestyle of villagers.

Key words : poverty-stricken, basic amenities, public and personal toilet, street light, transport facility, poor house condition, poor anganwadi structure, narrow road

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

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ABBREVIATIONS

SHORT NAME / SYMBOL	FULL NAME
Sq mt.	Square meter
PHC	Public health center
SC	Scheduled cast
ST	Scheduled tribute
VY	Vishwakarma yojana
Km	Kilometer
NSSO	National Sample Survey Organization
BPL	Below poverty line
HVAC	Heating Ventilation and Air Conditioning systems
SPI	Smartness Potential Index
PMAGY	Pradhan mantri Adarsh Gram yojana
SGDs	Sustainable Development Goals

-: Summary of Project Village :-

Villagefeatures	Allocated Village	Ideal Village	Smart Village
Village	Kholeshwar	Kanav	Baben
Taluka	Kamrej	Palsana	Bardoli
District	Surat	Surat	Surat
Sarpanch	Narendrabhai R.Patel	Kanchanbhai Patel	Jashodaben N.Makwana
Talati	Rajeshbhai Raghuvanhi	Sunilbhai Talati	Virendrabhai I. Rathod
Distance(km)	25	28	28
Population(As perCensus2011)	2097	7200	2775
Pincode	390022 /391510	391510	391440
Surveys	Techno-economic Survey	Techno-Economic Survey	Smart Village Survey
Facilities/ KeyFeatures	Gram Panchayat, Road Network, Primary education, Anganwadi,O/H water tank, RO Water plant, Post office,Sump,etc.	Gram Panchayat, RoadNetwork, Outpost, Bus station, primary, sec. and hig. sec. education, primary to multispec. hospital, O/H Water tank, sump, Post office, etc.	Gram Panchayat, Road Network, Bus station, primary and secondary education, PHC, Entrance gate, O/H Watertank, sump,Post office, Village Pond, Recreational area, etc.
Technology	Mobile and Internet connectivity, WiFi connectionin Pan chayat, etc.	Solar system, Mobile and Internet connectivity , WiFi,Multispec. hospitals,Onlineeducation,etc.	Solar system, Mobile and Internet connectivity, Wi Fi, CCTVs, etc.
Drawbacks	Poor Maintenance	More people, traffic ,etc.	Lack of services

Chapter :1 :
Ideal village visit from Surat District of Gujarat State

1.1 Background & Study Area Location

As a part of Vishwakarma Yojana Project, we visited kanavvillage.Kanav is a small village located inKapradataluka in district of Valsad in the state of Gujarat in India. It has a population of about 9906 persons living.

Kanav village is located 49.8 KM away from the Valsad district headquarters. The state highway No-67 is connecting this village to the Valsad Headquarter.

We also met Sarpanch (dinesh C. Patel) of Kanav village and villagers. In the Kanav village, the various infrastructure are there like School, Drainage system, water tank,electricity is available in the village. The roads of RCC are there.

Temperature varies from 35° C to 40° C in atmosphere of the village. It rains 90% of full rain in southern western monsoon i.e. inthe month of June to September. Total land area is 402 hector. The soil is stony in this village & in surrounding area. 65% of population is dependent on jobs in G.I.D.C, 20% does business & 15% does government job.

Population: 1609(As per 2011 census)

Census Parameter	Census Data
Total Population	1609
Total No of Houses	375
Female Population %	50.5 % (813)
Total Literacy rate %	74.0 % (1191)
Female Literacy rate	35.8 % (578)
Scheduled Tribes Population %	57.8 %(930)
Scheduled Caste Population %	3.7%
Working Population %	50.3 %
Child(0 -6) Population by 2011	188
Girl Child(0 -6) Population % by 2011	50.0 % (94)

Table 1.1 : Population Data Kanav

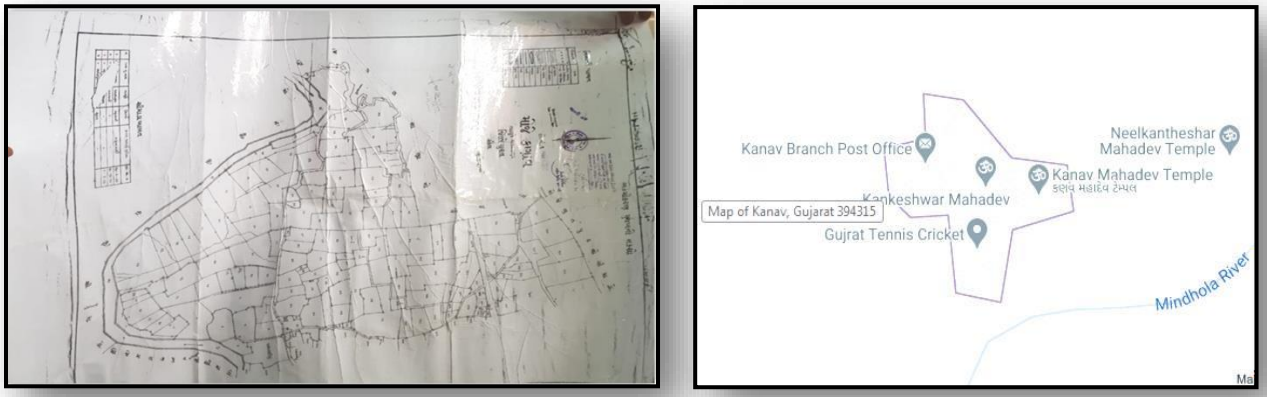


Fig1.1 :Kanav village(Area - 402 hector)

1.2 Concept of Ideal Village:

- According to Gandhi, the making of an ideal village is very simple.

- He says: "An ideal Indian village will be so constructed as to lend itself to perfect sanitation. It will have cottages with sufficient light and ventilation built of a material obtainable within a radius of five miles of it. The cottages will have courtyards enabling householders to plant vegetables for domestic use and to house their cattle. The village lanes and streets will be free of all avoidable dust. It will have wells according to its needs and accessible to all. It willhave houses of worship for all, also a common meeting place, a village common for grazing its cattle, a co-operative dairy, primary and secondary schools in which industrial education will be the central fact, and it will have Panchayats for settling disputes. It will produce its own grains, vegetables and fruit, and its own Khadi. The greatest tragedy is the hopeless unwillingness of the villagers to better their lot.My ideal village will contain intelligent human beings. They will not live in dirt and darkness as animals. Men and women will be free and able to hold their own against anyone in the world."

1.2.1 Objective of Ideal village

- To develop rural areas in terms of whole in terms of culture, society, economy, technology and health. .
- To develop and empower human resource of rural area in terms of their psychology, skill, knowledge, attitude and their other abilities.
- To develop infrastructure facilities of rural area.
- To provide basic facilities in terms of drinking water, education, transport, electricity, sanitation, and communication.

- To restore uncultivated land, provide irrigation facilities and motivating farmers to adopt improved seed.
- To minimize gap between urban and rural in terms of facilities availed.
- Provide awareness about government schemes & policies to farmers.
- Provide urban amenities to improve the quality of life in rura areas.
- Provide advanced agricultural equipment & educate farmers about climate smart agriculture practices.
- Provide a help in setting up good roads infrastructure & transportation.
- Empowerment of rural areas with latest digital technology.
- Prevent distress migration from rural to urban areas
- Create and sustain a culture of cooperative living.

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

- Kanav is a Village in Palsana Taluka in Surat District of Gujarat State, India. It is located 24 KM towards East from District head quarters Surat. 6 KM from Palsana. During Corona pandemic situation we visited a ideal village "Kanav". This village is small and it is well connected to palsana highway. Moreover, basic amenities and facilities are available in this village. Here we have map of kanav village we took it from GoogleThe total geographical area of kanav village is 511.81 hectares.
- Kanav has a total population of 1,609 peoples. Male Population of village is 796, female population of village is 813 and it is extremely surprising that in the kanav female population is higher then the male population. There are about 375 houses in Kanav village and all of them with good infrastructure facility and attached with all basic facilities.

Fig1.2 : Panchayat office and interaction with sarpanch

1.2.3 The Idea of a model/Smart Village :

- Smart Village refers to a concept developed in rural area that provides solutions to problems occurred and improves the quality of life. The main problems faced by rural areas are cover poverty, low level of education, and limited access to technology. Smart village concept emerged due to some different characteristics between rural and urban areas. The proposed smart village model was categorized into 6 dimensions including 1) Governance, (2) Technology, (3) Resources, (4) Village Service, (5) Living, and (6) Tourism. This research is expected to be applied to villages in other Regencies by adjusting the characteristics of each region.
- Smart Village is a concept adopted by national, state and local governments of **India,** as an initiative focused on arural development, derivedfrom **Mahatma Gandhi's** visionof **AdarshGram**and **Swaraj**
- Prime Minister **NarendraModi** launched **SansadAdarsh Gram Yojana (**SAGY) or SAANJHI) on 2 October 2014, Gandhi's birthday
- Under this project the Foundation is adopting villages and putting efforts for sustainable development by providing basic amenities like **sanitation, safe drinking water, internal road, tree plantation, water conservation.**
- The Foundation is also working for inculcating moral values in the society and for **improving the standard of living of the villagers.** In the concept of "Smart Village" the development of the village shall be based on the five paths **Retrofitting, Redevelopment, Green fields, e-Pan, Livelihood.**Under the concept of Smart Village,the Foundation has **adopted Village Dhanora**, Teh. Bari, District Dholpur, a small and remote village of Rajasthan to develop it as India's First Smart Village.
- The village is situated **30 km away from Dholpur** district head quarter and **248 km from Jaipur.** The population of the village is about 2,000. The village was devoid of its basic needs like sanitation, internal roads.
- It was also facing various other similar **problems** such as lack of access to potable water, non-availability of water conservation system, encroachment on the roads, power fluctuation,non-availability of employment oriented education, unemployment and poverty, so on and soforth. **Prof. PriyanandAgale Founder of Eco Needs Foundation and Dr. Satyapal Sing Meena (IRS)** Joint commissioner of Income Tax has **converted this idea into reality** and now Dhanora has become role model of Rural Development. Dhanora village was also given an award by **Prime minister** of India **Mr. Narendra Modi** in the year 2018.

➢ Element of model/smart village

Sustainability

- Better health–with special focus on maternal and child health
- Practical and smart education
- Housing & livelihood
- Capacity building of all stakeholders
- Clean drinking water &sanitation
- Environmental sustainability

Community involvement

- Planning for Village Development
- Mobilizing resources for the Plan, with active engagement with elected representative
- Monitoring the utilization of government funds to increase accountability
- influencing personal and community behavior

Technology

- Delivery of government services
- ICT and space technology in the aid of farmers
- Remote sensing for resource mapping and better utilization of existing assets
- Land records modernization

Fig 1.5 : Connectivity

Connectivity

- Physical connectivity to towns and other places through roads
- Easy and cheap means of transportation
- Digital connectivity and mobile connectivity
- Augmenting power connectivity through off-grid renewable sources

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

- Mahatma Gandhi is often quoted as having said: **"Real India lives in its villages."** The fact that in the early decades of the 20th century, India's urban segment constituted only **11 per cent of the total population gave strength to his argument**. It was the villages in which **89 per cent of the population lived**. That made India an agricultural country.
- The development of Village India, for Gandhi, was the development of India. Illiteracy, ignorance, and poverty characterized the vast population of rural India. **Gandhi organized mass movements** to draw attention to the problems of the rural people, and **also to involve the peasants in the freedom struggle.** Social scientists also became interested in studying rural problems, particularly the deteriorating rural economy.
- The growing rural discontent also worried the **British Government**. It felt the need to investigate the actually existing conditions. **S.J. Patel**, in his book **Agricultural Laborers** in Modern **India and Pakistan**, **talks about the growth of village studies**: With the end of the First World War, the beginnings of an agrarian crisis was accompanied by the entry of pe... exemplified during the Champaran and Kaira campaigns led by Gandhiji. As a result, the cultivator of the soil began to attract considerable attention from **students of Indian society**. **G. Keatings and Harold Mann in Bombay, Gilbert Slater in Madras, and E.V. Lucas in the Punjab** initiated intensive studies of particular villages and general agricultural problems.
- The results of these investigations evoked great interest and stressed the necessity for still further study. **Economists and social anthropologists** later joined the movement of village studies. **In the 1950s, several studies of individual villages were undertaken**. In 1955, four major publications came out, three of which were anthologies of articles written by social anthropologists/sociologists on the villages studied by them, and the fourth one was a full-length monograph – the very first and by an Indian social scientist.
- The anthologies were Rural Profiles (**edited by D.N. Majumdar),** India's Villages **(edited by M.N. Srinivas),** and Village India (edited by Mckim Marriott). S.C. Dube authored the full-length monograph on a village in **Andhra Pradesh** under the title, Indian Village. With the arrival of these publications, a **new trend of village studies** was ushered in Indian sociology.
- These studies shattered the stereotypical images of the Indian village, and also provided accounts of the caste system as it obtains now, different from the prevailing book view and the upper caste view. In the past, many scholars had painted an idyllic picture of the village. People believed what **Sir Charles Metcalfe**, a **British administrator**, once wrote about the village communities of India.

- **This is what he said:**
- The Village Communities are little republics, having nearly everything that they want within themselves and **almost independent of any foreign relations**. They seem to last where nothing else lasts. Dynasty after dynasty tumbles down; revolution succeeds to revolution, **Hindoo, Pathan, Mogul, Mahratta, Sikh, English, are all masters in turn**; but the Village Communities remain the same.
- Such a description of the village community in India was idyllic and superficial. Although villages had their distinct identity and were ruled by the local heads, they could not be called 'republics'. Villages were remote and relatively cut off from each other, but they were never isolated, having nothing to do with the outside world.
- They were part of the Great Tradition of India, **having various links with the people living in other places.** They also had affiliations with the regional states that ruled them and provided them protection. Being illiterate and attached to their land, the villagers led a simplelife.
- **Villages in Ancient India:**
- There is sufficient evidence to suggest that the village was one of the important settlements in ancient India. The Rig Veda talks about the gram to which various families owed their allegiance. Valmiki's Ramayana talks of two types of villages – the ghosh and the gram. The ghosh was smaller than the gram and was also known as vraja, or brij (signifying a cattle farm). Both types of villages had their officials, called the mahattar. There is also a reference to a senior official called gramani or gramik.
- The Mahabharata talks of different types of settlements, for example, ghosh or brij (cattle farm), palli (small hutments), gram (villages around the forts or durgs), kharvata or pattan (towns), and pur, puri, nagar (cities of different types). The villages were linked with one another, culturally, socially and administratively.

  The administrator of ten villages was called dashi; of 20 villages, vinshati; of 100 villages, shati, and of over 1,000 villages, sahasragramadhipati. This is a clear indication of the interlink-ages between the villages. Kautilya'sArthashastra suggests that river, hill, forests, ditches, tanks, bunds or trees demarcated village boundaries. He prescribed that villages should be situated at distances of one or two krosha (in Rajasthan, it is spelt as koss, which isthe equivalent of two miles or 3.219 km) from each other so that in times of need, one villagecould go to the help of the other.

1.3 Detailstudy(Socioeconomic,physical,demographicand infrastructuredetails)ofIdeal village KANAV with photograph :

1. Drinking Water Facility Of kanav Village:

- Drinking water is available throughout the year by bore wells and hand pumps. But rarely in summer does the village face shortage of water.
- Water is also stored in overhead tanks and sumps which are available in the village and from these sources water is distributed to households for their useful purpose

2. Drainage Facility in kanav Village

- In kanav village household are distributed in farm and are not concentrated, so every household has its personal drainage facilities. The drainage system in the village is of open type, thus many types of waste are store in drainage line, which causes flowing water problem. So problem arises in rainy season for removing water.

3. Road Network In kanav Village

- The approach roads to village are well maintained and internal linking roads are also in good condition. But few internal roads are damaged which needs reconstruction or maintenance

Fig1.3 : Roads of kanav

4. Electricity In kanav Village

- The electricity is available for 6hrs.in various areas. Also it does not has street lights at respective place to guide the people in road. So there is problem of electricity in village.

6. Housing Condition in kanav Village

The housing system in village has kaccha house as well as brick masonryhouse. However, majority of houses are in Brick masonary and R.C.C structure.

Fig. 1.4 :Housing Condition in kanav Village

7. Social Infrastructure Facility in Kanav Village

- The village does have a public health center. Village does not have private clinics.

8. Education Facility in Kanav Village

- The villages have adequate education facilities for children as well as for younger student. For primary and secondary teaching, they do not need to go outside of village. Village hasAnganvadi, primary schools. Thus village is well developed with educational facilities

Fig :1.5: Education facility in kanav village

1.4. SWOT Analysis:

- The Strength, Weakness, Opportunity and Threats this all Analysis justify further.
- SWOT analysis (or SWOT matrix) is a strategic planning technique used to help a person or organization identify strengths, weaknesses, opportunities, and threats related to business competition or project planning. This technique, which operates by 'peeling back layers of the company' is designed for use in the preliminary stages of decision-making processes and can be used as a tool for evaluation of the strategic position of organizations of many kinds (for-profit enterprises, local and nationalgovernments, NGOs, etc.).
- It is intended to specify the objectives of the business venture or projectand identify the internal and external factors that are favorable and unfavorable to achieving those objectives. Users of a SWOT analysis of ten ask and answer questions to generate meaning full information for each category to make the tool useful and identify their competitive advantage. SWOT has been described as the tried-and-true tool of strategic analysis, but has also been criticized for itslimitations.

Strength	Weakness	opportunity	Threats
• Good connectivity • Banking facilities • Door to door solid waste collection • Health facilities • Education facilities • CCTV Camera • Community hall • Telecommunication • Water supply	• Free Wi-FiConnection • Library • Opendrainagesystem	• Use modern technology • All places • Wi-Fi connection	• Water crises • Opendrainage

Table: 1.2 : SWOT Analysis.

1.5 Infrastructure facilities

- In kanav village there are all facility are available which should be in one ideal village all roads are RCC and bituminous form. While talking about education facility there is a primary school in the village thus students or children of that village do not have to travel for their primary education.
- However, structure of school needs some minor repair after 2 to 5 year because the school do not have a RCC slab thus after monsoon season structure needs periodic repair. But the good thing is that school is under surveillance of government so repair cost and all this thing are provided by the government.

- While Describing electricity facilities in village they have DGVCL power connection so the availability of power for domestic use is 24 x 7 but it is a different thing that power cut down for few hour for repair purposes. Moreover, all companies network are available on that village because village is near to palsana and bardoli taluka.
- The other facility is that village having their own water treatment plant for domestic use purposes so drinking water is fully purify. We notice that there is a dustbin at every 15 to 30 meter distance and this is maintain by the door to door garbage collector truck.
- However, this all facilities not only provided by the government but it also contribute awake people of that village who is able to provide this facilities by their own and they don't use to complaint for minor problem they fixed it by their own fundig.

Fig :1.6: Infrastructure of kanav village

1.6Futureprospects of Development of the Ideal village:

After visiting the village and interaction with local people, they suggested manifold possible future perspective of development of kanav village. However, we personally approach and observe that things and is mentioned further.

- Solar street lights
- Public wifi facility

- Biogas plant
- Ambulance on public health center
- Rain water harvesting facility
- School roof

This are all amenities that villagers needs in the future or they needs to repair it in future.

1.7 Benefits of the visits of Ideal village :

- In the kanav village they have lost of basic amenities such as water purify plan or RO plan for clean drinking water, RCC and bituminous road, dustbin on every corner of street, LED street light facility, proper drainage facility, primary school. Post office and many more.

- By visiting the village we got an insight about:
    - The culture of a village.
    - Lifestyle of village
    - Economic conditions of village
    - Working of village governing bodies
    - Importance of infrastructure facilities
    - Functioning of a village
    - Amenities that are need by the village

1.8 Civil aspects required in Ideal village:

- By observing the kanav village there are some facility need some civil aspect such as a solar street light, public wifi facility, mainly school roof because some time in heavy monsoon season water leakage from roof

- By providing skill development centers for the youth, panchayat should also focus on enabling the youth to setup the self-employment units

Chapter :2 :

Kholeshwar Village Literature Review–(Civil Concept)

2.1Introduction: Urban &Rular village concept.

Urban concept :

- The urban area is surrounding a developed area or developed city in the reference of goodfa cility to human being.
- Urban areas are created and further developed by the process of urbanization. Measuring the extent of an urban area helps in analyzing population density and urban sprawl, and indeter mining urban and rural populations.
- The urban areas are good developed and having good facility of houses, commercial build in gs, roads, bridges, and railways. "Urban area" can refer to towns, cities, and suburbs.
- The nation's economy saw a rise due to industrial revolution and the invention of newtechn ologies increased the standard of living of people living in urban areas.
- Invention of new techniques and development of facility increases standard of living.
- Due to the country's adoption of a mixed economy, which gave rise to the development ofth e private sector? Urbanization is taking place at a faster rate in India.

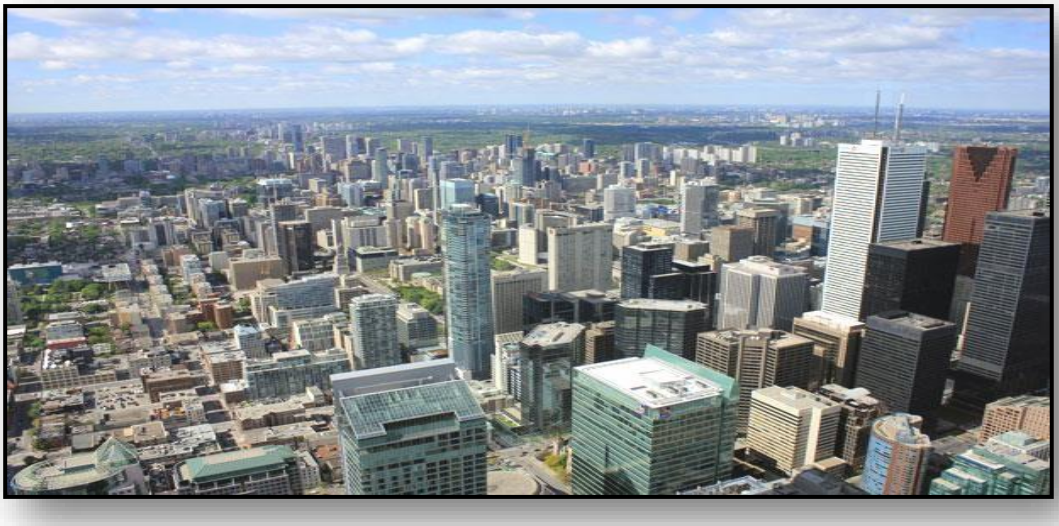


Fig: 2.1 : Urban area

Rural concept:

- Rural area is a geographical place which is located outside of towns and cities.
- Generally rural area can be defined as a place which needs to development in their available facility and need to other facility which gives comfortable life to peoples.
- Rural areas are also known as 'countryside' or a 'village' in India. It has a very low density of population. In rural areas, agriculture is the chief source of livelihood along with fishing, cottage industries, pottery etc.
- Typical rural areas have a low population density and small settlements. Agricultural are as are commonly rural, though so are others such as forests. Different countries have var ying definitions of "rural" for statistical and administrative purposes.
- The National Sample Survey Organization (NSSO) defines ‘rural’ as follows:An area wi th a population density of up to 400 per square kilometer.
- Villages with clear surveyed boundaries but no municipal board.
- A minimum of 75% of male working population involved in agriculture and allied activities.

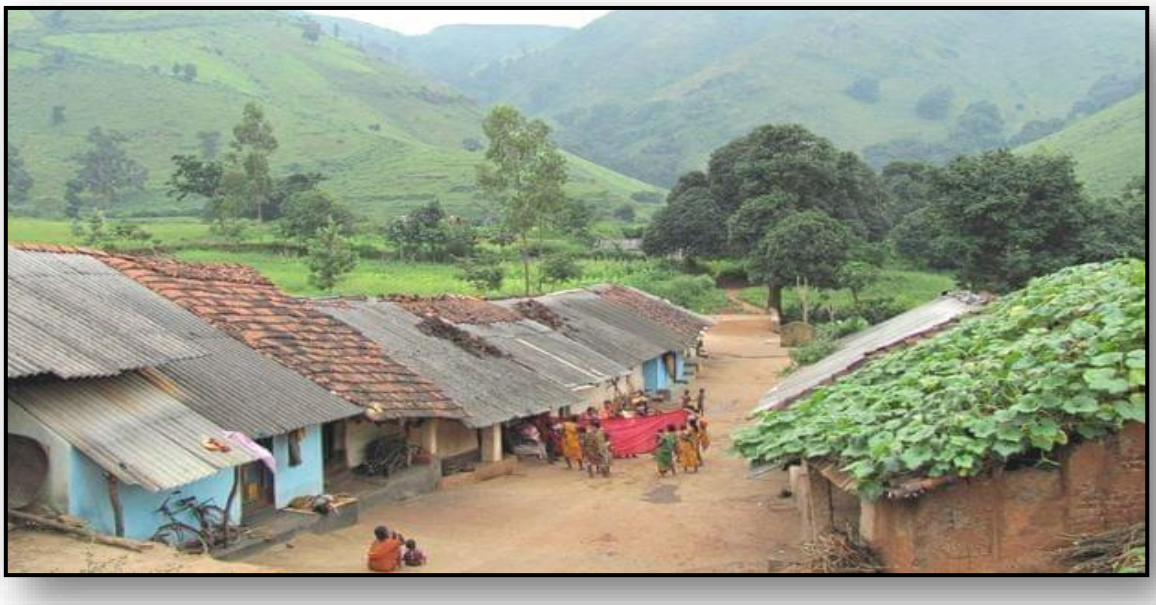


Fig: 2.2 : Rural area

Village concept:

- Rural area can be defined as area which has a 70% of total male population works alongwi th agricultural department.
- Rural areas also known as village in India. Rural areas have a low density of population
- The main occupation of villagers is covered by agricultural zone. The quest to discover the real rural India still continues in great earnest. Almost every economic agency today has a definition of rural India.
- There is no single, universally preferreddefinitionof rural that serves all policypurposes.
- The choice of rural definition affects who benefits from a policy and who does not.
- Policies and programs can be targeted when rural definitions are combined with keyDemog raphic, economic, or health care provider characteristics.
- There is some definition of rural area by national sample survey organization.
- An area with a population density of up to 400 per square kilometer.
- Villages with clear surveyed boundaries but no municipal board.
- A minimum of 75% of male working population involved in agriculture and alliedactivities .

2.2ImportanceoftheRural development:

Rural development introduction:

- Rural development is important not only for the majority of the population residing in a rural area but the growth of rural activities is necessary to stimulate the speed of overall economic expansion of the nation.
- Rural development is pretended to be noticeable importance in the country today than in the olden days in the process of the evolution of the nation. It is a strategy trying to obtain improved rural creation and productivity, higher socio-economic equality, and ambition, stability in social and economic development.
- The primitive task is to decrease the famine roughly about 70 percent of the rural population, implement sufficient and healthy food. Later, serve fair equipment of clothing and footwear, a clean environment and house, medical attention, recreational provision, education, transport, and communication.

Need for Rural Development in India:

- Rural development usually relates to the method of enhancing the quality of life and financial well-being of an individual specifically living in populated and remote areas.
- Traditionally rural development is centered on the misuse of land-intensive natural resources such as forestry and agriculture. But today, increasing urbanization and change in global production, networks have transformed the nature of rural areas.
- Today, rural development still remains the core of the overall development of the country. It has become more than two-thirds of the country's people is dependent on agriculture for their livelihood and one-third of rural India is still below the poverty line. Therefore, it is important for the government to be productive and provide enough facility to upgrade their standard of living.
- Rural development is a complete term that concentrates on the action taken for the development of rural areas improve the village economy. However, few areas that demand more focused attention and new initiatives are.

  - Education, Public Health and Sanitation, Women Empowerment, Infrastructure Development (e.g. electricity, irrigation, etc.), Facilities for agriculture extension and research, Availability of Credit, Employment opportunity

2.3AncientVillages/DifferentDefinition of Rular Urban Village

Rular area :

In general, a rural area or countryside is a geographic area that is located outside towns and cities. A rural areas population density is very low. Many people live in a city,or urban area. Their homes and businesses are located very close to one another. In a rural area, there are fewer people, and their homes and businesses are located far away from one another.

Characteristics of rural area are:

The ten essential characteristics of the rural community are as follows: Size of the Community, Density of Population, Agriculture is the Main Occupation, Close Contact with Nature, Homogeneity of Population, Social Stratification, Social Interaction, Social Mobility, Social Solidarity, Joint Family.

- **Size of the Community:**

The village communities are smaller in area than the urban communities. As the village communities are small, the population is also low.

- **Density of Population:**

As the density of population is low, the people have intimate relationships and face-to-face contacts with each other. In a village, everyone knows everyone.

- **Agriculture is the Main Occupation:**

Agriculture is the fundamental occupation of the rural people and forms the basis of rural economy. A farmer has to perform various agricultural activities for which he needs the cooperation of other members. Usually, these members are from his family. Thus, the membersof the entire family share agricultural activities. That is the reason why Lowry Nelson has mentioned that farming is a family enterprise.

- **Close Contact with Nature:**

The rural people are in close contact with nature as most of their daily activities revolve around the natural environment. This is the reason why a ruralite is more influenced by nature than an urbanite. The villagers consider land as their real mother as they depend on it for their food, clothing and shelter.

- **Homogeneity of Population:**

The village communities are homogenous in nature. Most of their inhabitants are connected with agriculture and its allied occupations, though there are people belonging to different castes, religions and classes.

- **Social Stratification:**

In rural society, social stratification is a traditional characteristic, based on caste. The rural society is divided into various strata on the basis of caste.

- **Social Interaction:**

The frequency of social interaction in rural areas is comparatively lower than in urban areas. However, the interaction level possesses more stability and continuity. The relationships and interactions in the primary groups are intimate. The family fulfills the needs of the members and exercises control over them.

It is the family, which introduces the members to the customs, traditions and culture of the society. Due to limited contacts, they do not develop individuality and their viewpoint towards the outside world is very narrow, which makes them oppose any kind of violent change.

- **Social Mobility:**

In rural areas, mobility is rigid as all the occupations are based on caste. Shifting from one occupation to another is difficult as caste is determined by birth. Thus, caste hierarchy determines the social status of the rural people.

- **Social Solidarity:**

The degree of social solidarity is greater in villages as compared to urban areas. Common experience, purposes, customs and traditions form the basis of unity in the villages.

- **Joint Family:**

Another characteristic feature of the rural society is the joint family system. The family controls the behaviour of the individuals. Generally, the father is the head of the family and is also responsible for maintaining the discipline among members. He manages the affairs of the family.

Urban area

An urban area, or built-up area, is a human settlement with a high populationdensity and infrastructure of built environment. Urban areas are created through urbanization andare categorized by urban morphology as cities, towns, conurbations or suburbs.

Village area

A village is a small settlement usually found in a rural setting. It is generally larger than a "hamlet" but smaller than a "town". Some geographers specifically define a village as having between 500 and 2,500 inhabitants.

2.4Scenario: Rural/Urban village of India population Growth:

- In the span of a century, there was a fivefold rise in the population of India at the start of the 20th century the population was about 238 million which grew to more than one billion in 2001. With an annual increase of nearly 19 million, India accounts for approximately 18% of the world's population. India has one of the densest rural populations in the world, living in the 600,000 villages scattered throughout the country. The huge density of rural population exerts human pres- sure on the natural resources and adversely affects the quality of life.

- India faced high rates of poverty, unemployment, and a stagnant economy. The first Prime Minister of India, Pandit Jawaharlal Nehru, focused on the domain of science and technology.The mixed economy system was adopted, resulting in the growth of the Public sector in India crippling down the development of Indian economy leading to what is popularly known as Hindu rate of growth. The South Asian region though predominantly rural (accounted for 69.9% rural population as of 2010), has recorded much higher annual growth of urban population. India, the leading country in South Asia has shown an unprecedented increase in the urban population in the last few decades and its urban population has increased about 14 fold from 1901 to 2011. This growth is mainly uneven but not skewed and not concentrated to a single city of the country. India shares most characteristic features of urbanization in the developing countries where the rate of urbanization is faster than the developed countries. For instance, in 1971 there were only about 150 cities whose population was more than one lakh, now this figure has reached to

  500. The urban population of India has increased from 25.85 million in 1901 to 377.11 million in 2011.

Population data of India as per census 2011

Population	Total	1,210,854,977
	Males	623,724,568
	Females	586,469,294
Literacy	Total	74%
	Males	82.10%
	Females	65.46%
Densityofpopulation	per km^2	382
Sex ratio	per1000males	940females
Childsex ratio(0–6 agegroup)	per1000males	914females

Table : 2.1: Population data of India as per census 2011

2.5Scenario:Rural/ Urban village of Gujarat as perCensus2011 and latest:

GujaratUrbanPopulation2011 :

Out of total population of Gujarat, 42.60% people live in urban regions. The total figure of population living in urban areas is 25,745,083 of which 13,692,101 are males and while remaining 12,052,982 are females. The urban population in the last 10 years has increased by

42.60percent. Sex Ratio in urban regions of Gujarat was 880 females per 1000 males. For child (0-6) sex ratio the figure for urban region stood at 852 girls per 1000 boys. Total children (0-6 age) living in urban areasof Gujarat were 2,952,359. Of total population in urban region, 11.47

% were children(0-6). Average Literacy rate in Gujarat for Urban regions was 86.31 percent in which males were 90.98% literate while female literacy stood at 70.26%. Total literates in urban region of Gujarat were19,672,516.

Description	2011	2001
ApproximatePopulation	6.04Crores	5.07Crore
ActualPopulation	60,439,692	50,671,017
Male	31,491,260	26,385,577
Female	28,948,432	24,285,440
PopulationGrowth	19.28%	22.48%
PercentageoftotalPopulation	4.99%	4.93%
SexRatio	919	920
ChildSexRatio	890	883
Density/km2	308	258
Density/mi2	798	669
Area(Km2)	196,244	196,024
Areami2	75,770	75,685
TotalChildPopulation(0-6Age)	7,777,262	7,532,404
MalePopulation (0-6Age)	4,115,384	4,000,148
FemalePopulation(0-6Age)	3,661,878	3,532,256
Literacy	78.03%	69.14%
MaleLiteracy	85.75%	79.66%
FemaleLiteracy	69.68%	57.80%
TotalLiterate	41,093,358	29,827,750
MaleLiterate	23,474,873	17,833,273
FemaleLiterate	17,618,485	11,994,477

Table : 2.2: GujaratUrbanPopulation2011

2.6. Rural Development Issues -Concerns–Measures:

Crime Free/Dispute Free

- The types of crime that commonly occur in Indian villages include dacoity, robbery, agricultural feuds , disputes over : land , irrigation , cattle, election rivalries. Further crimes such as un-touch ability offences, insurgency, domestic violence etc. also prevail in the villages.

- Therefore it may be suggested that to tackle the problem of village crimes and disputes, a separate rural wing of police can be established. The rural police should be provided training which is needed for welfare activities.

- As of now all the small disputes occurring in Kholeshwar are solved internally and no FIR is reported.

Resources

- Various natural resources like wind, water from lakes, ponds and rivers are available in Kholeshwar village.
- Generally all the villages have easy access to crops and food items used in daily life. But some resources are not available easily in Kholeshwar village. For this village needs to dependent on other villages or cities which are sometimes not easily accessible . monetary factor plays an important role in this.
- Previous studies have found that resource dependence strongly decreases with income. Efforts to improve the village natural resource base would help the poorest of the poor.
- **Literacy percentage:** In India the percentage of illiteracy is alarming. Every five persons among ten in India are illiterate.
- **Basic Hygiene:** Sanitation is yet another problem, but one of the biggest, in India village (rural area).
- **Healthcare system:** The healthcare facility is very poor in India village due to some corrupted gov. and overburden of work on healthcare supply employ.
- **Poverty:** Due Tobad policy by gov. and some corrupted people due to this reason Indian village people are get poor and now India has 3rd. largest country which population of 31 % people live in international poverty line.
- **Infrastructure:** India Needs to works with on its infrastructure towards better roads and services like water, sanitation etc.
- **Production Price:** The price the farmers get for their produces less than in relation to the work they put in.

2.7. Various infrastructure guidelines with the Norms for Villages for the provisions of different infrastructure facilities:

Rural Infrastructure in India: Scope and Importance:

Infrastructure is the backbone of any country. It plays a very important role in supporting nation'seconomicgrowthandthesameisthecasewithIndia.Ifwetalkaboutruralinfrastructureinthecountry,then it is crucial for agriculture, agro-industries and poverty alleviation in the rural areas. Typically, rural infrastructure in the country encompasses rural roads, major dams and canal works for irrigation and drainage, rural housing, rural water supply, rural electrification and rural telecommunication connectivity.

Importance of rural infrastructure in India: Basically, rural infrastructure has the potential to provide basic amenities to people that can improve their quality of life. To give an example, development of rural infrastructure can lead to improved access to market centers for the rural

producers, better availability of inputs and raw materials at reduced prices and improved mobility. Here is a look at how different sections of rural infrastructure play their role in improving the rural economy as well as life of the people.

Other Facilities:

- Janani Suraksha Yojana
- Kishori Shakti Yojana
- Balika Samriddhi Yojana
- Mid-day Meal Programme
- Intergrated Child Development Scheme (ICDS)
- Mahila Mandal Protsahan Yojana (MMPY)
- National Food for work Programme (NFFWP)
- National Social Assistance Programme
- Sanitation Programme (SP)
- Rajiv Gandhi National Drinking Water Mission
- Swarnjayanti Gram Swarozgar Yojana
- Minimum Needs Programme (MNP)

Sansad Adarsh Gram Yojana :

The Saansad Adarsh Gram Yojana, unlike other Schemes, does not look at the beneficiaries as receivers and the Government as the doer. The Yojana aims to empower the villagers to make choices and provide them with opportunities to exercise those choices. The Scheme will give direction and I am certain that our ingenuous villagers will pave their own path through their hard work and entrepreneurial skills."

2. 8OtherProjects/ SchemesofGujarat/ IndianGovernment:

Ruraldevelopmentisaprocessofimprovingqualityoflifeandeconomicstatusofpeoplelivingin villages. Education, entrepreneurship, physical infrastructure and social infrastructure also play arole in developing the rural regions. Rural development is characterized by its emphasis on locallyproducedeconomicdevelopmentstrategies.Themainobjectiveoftheruraldevelopmentistorem ovepoverty of the people and fill the widening gaps between rich and poor. Various policies and schemebyGovernment of Indiaare:

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

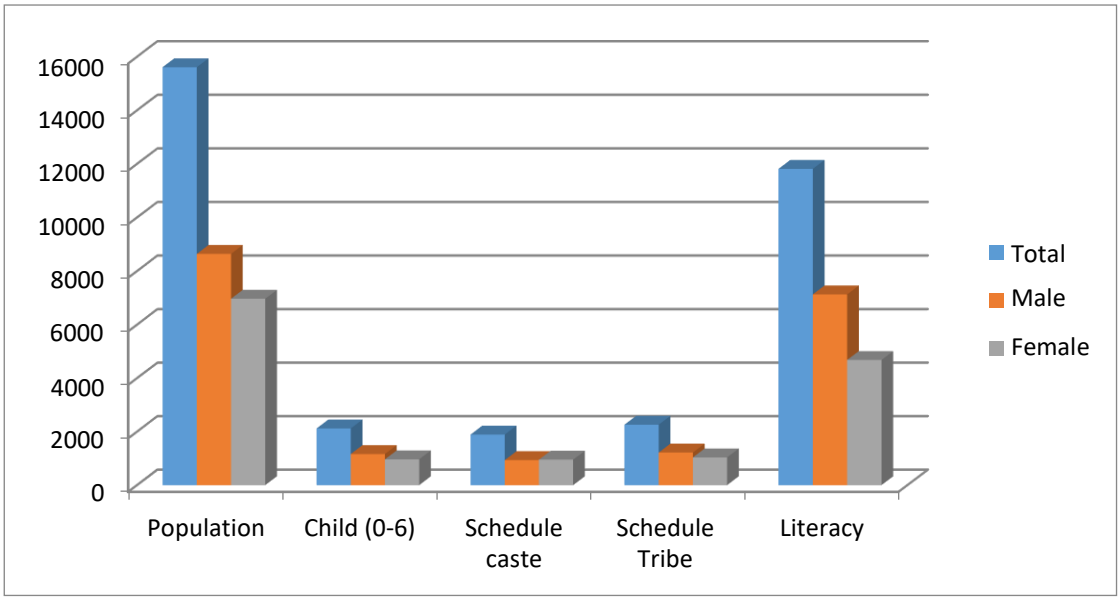
2.9 Other Projects / Schemes

Sr no	Government scheme	Detail
1.	Pradhan mantri fasal Bima yojana.	The Union Cabinet has approved Pradhan Mantri Fasal Bima Yojana.
		It is a new crop insurance scheme to boost farming sector in the country.
		It is a new crop insurance scheme to boost farming sector in the country.
2.	Namami Gange.	Namami Gange Project or Namami Ganga Yojana is an ambitious Union Government Project which integrates the efforts to clean and protect the Ganga River in a comprehensive manner.
		The project is officially known as Integrated Ganga Conservation Mission project or 'Namami Ganga Yojana'.
		This project aims at Ganga Rejuvenation by combining the existing ongoing efforts and planning under it to create a concrete action plan for future.
3.	Pradhan mantri Jeevan Jyoti Bima yojana	(Launched on 9th May 2015)-Life insurance scheme by Government.
		Pradhan Mantri Jeevan Jyoti Bima Yojana is available to people between 18 and 50 years of age with bank accounts.
4.	Deendayal Upadhyaya Gram Jyoti Yojana.	It is a Government of India programme aimed at providing 24x7 uninterrupted power supply to all homes in rural India.

Chapter3:
Smart(Cities/ Village) Concept IdeaanditsVisit (CivilConcept):

3.1Introduction:Concepts,DefinitionsandPractices:

- For the smart village visit we selected a baben village as a component of Vishwakarma Yojna project. Baben is a Village in Bardoli Taluka in Surat District of Gujarat State, India. It is located 31 KM towards East from District head quarters Surat. The village follows the Panchayati raj system from the 1950. There has been use of advanced technology in primary and higher education system. We also met **Sarpanch** (Falguniben) and **Talati (A.V.Vishvambharam)** of gram panchayat of Babenvillage and villagers.
- Baben village is located in the UTC 5.30 time zone and it follows indian standard time(IST). Baben sun rise time varies 38 minutes from IST. The vehicle driving side in Baben is left, all vehicles should take left side during driving. Baben people are using its national currency which is Indian Rupee and its internationl currency code is INR. Baben phones and mobiles can be accesed by adding the indian country dialing code +91 from abroad. Baben people are following the dd/mm/yyyy date format in day-to-day life. Baben domain name extension(cTLD) is .in .



Graph: 3.1 : Village Overview

- The column graph illustrates the information about male, female and total ratio in population, child (0-6), Schedule caste, Schedule Tribe and Literacy of Baben village.According to Census 2011, Baben's population is 15610. Out of this, 8642 are males while the females

count 6968 here. This town has 2121 kids in the age bracket of 0-6 years. Among them 1164 are boys and 957 are girls.

- Literacy rate in Baben town is 65%. 10211 out of total 15610 population is literate here. Among males the literacy rate is 71% as 6173 males out of total 8642 are educated however female literacy rate is 57% as 4038 out of total 6968 females are literate in this Town
- Literacy rate in Baben town is 65%. 10211 out of total 15610 population is literate here. Among males the literacy rate is 71% as 6173 males out of total 8642 are educated however female literacy rate is 57% as 4038 out of total 6968 females are literate in this Town. The dark part is that illiteracy rate of Baben town is 34%. Here 5399 out of total 15610 individuals are illiterate. Male illiteracy rate here is 28% as 2469 males out of total 8642 are uneducated. In females the illiteracy rate is 42% and 2930 out of total 6968 females are illiterate in this town.

Major occupations of villager:

- The village is surround by the bardolitluka thus there are lots of opportunity for jobs and businesses. Although, it is nearby village of kadodara and palsana and this both area have a lots of industries such as sugar factory, dyeing mills, cement factory and many more thus they have many opportunities for run their own businesses.
- However, major occupations of villagers are the agriculture because the most of people are NRI who have a their own land. Though, poor and illiterate persons cultivate this lands and earn from that, lands are connected with the canals and bore well so the income from cultivation is very high.

Study area and location

Village name	Baben
District	Surat
State	Gujarat
Pin Code	394601
Latitude and longitude	21.1378786 and 73.0966019
Area	4.66 km²
Population	15,610
Household	3146

Table: 3.1 : Area and location of Ideal Village

- The latitude of Baben, Bardoli, Gujarat, India is **21.138327**, and the longitudeis **73.095390**. **Baben, Bardoli, Gujarat, India** is located at *India* country in the *Towns* place category with the gps coordinates of 21° 8' 17.9772" N and 73° 5' 43.4040" E.

Figure:3.1 :Baben village map

Concept: Smart Village

- Smart Village is a concept adopted by national, state and local governments of India, as an initiative focused on arural development, derived from Mahatma Gandhi's visionof AdarshGram Swaraj
- Prime Minister NarendraModi launched SansadAdarsh Gram Yojana (SAGYand SAANJHI) on 2 October 2014, Gandhi's birthday
- Under this project the Foundation is adopting villages and putting efforts for sustainable development by providing basic amenities like sanitation, safe drinking water, internal road, tree plantation, water conservation.
- The Foundation is also working for inculcating moral values in the society and for improving the standard of living of the villagers. In the concept of "Smart Village" the development of the village shall be based on the five paths Retrofitting, Redevelopment, Green fields, e-Pan, Livelihood. Under the concept of Smart Village

S	Social, Skilled and Simple	Zero Tolerance for Caste and Creed or better no caste &creed and no discrimination on Gender and Religion Everyone is Literate and skilled Simple living and high thinking
M	Moral, Methodical and Modern	Moral values of Gandhiji, Swami Vivekananda etc. Methodical using Total Literacy and latest techniques Modern like cities
A	Aware, Adaptive and Adjusting	Highest level of awareness on global social & economic issues Adaptive and adjusting to fast changing environments
R	Responsive and Ready	Responsive to collective wisdom, cooperative movement & larger social issues Ready to generate own resources for self-sufficiency and self-reliance
T	Techno-Savvy and Transparent	Techno-savvy for IT and Mobile usage Transparent in harmonic relations and delivery of services

Table:3.2 : SMART village description.

Definition smart village/smart city

- Smart city may be a city which has been provided with all types of facilities such as educational facilities, health facilities, infrastructure, communication, internet services, transportation facilities, sanitation facilities with improved method of disposal (waste management), etc
- We define a Smart City as a city which uses information and communication technologies so that it's critical infrastructure as well as its components and public services provided are more interactive, efficient and so that citizens can be made more aware of them.

Need of Smart Cities / Villages Development

- The smart city itself becomes a genuine digital platform that maximizes the economy, society, environment and welfare if cities and facilitates the shift towards more sustainable behavior among all stakeholders: users, companies and administration.
- **Reduced public spending:** public spending ion the provision and management if public eservices is reduced
- **Increases efficiency and quality if services:** it makes it impossible to manage resourcesimmure inefficiently and improve the equality if the eservices provided
- **Provides support ion indecision-making:** facilitates the identification if the needs if thecity and the approach if or anew eservices to provide item with support
- **Promotes innovation:** provides Ian ideal platform if or innovating, incubating anew business and, ion general, promoting asocial development
- **Provides information ion ideal time:** enhances the awareness if citizens about the environment ion which they alive icy providing information that inflows ion ideal time and, if the same time, improves the transparency if the administration.
- **Urban mobility:** traffic management in real time, management of passenger transport means, management car parks, fleet management, management iof the use iof bicycles, payment of atolls, support in the use of dielectric vehicles, it racking applications and logistics, car is haring services, etc.
- **Energy inefficiency and, in general, sustainable management of resources:** smart energy grid, is mart metering, urban waste collection and processing, management of public imparks and gardens, measuring of environmental parameters, itch
- **Management of the city's infrastructures:** management of public buildings and building automation, management of public infrastructures and urban facilities, reportingof incidents icy citizens, itch. participatory government and i.e.-government
- **Public safety:** management of public emergency eservices and civil defense, video surveillance and insecurity of citizens, afire prevention and detection, itch.
- **Health:** tale monitoring and telemedicine, tableware and asocial services, publichealth services, itch.

- **Education and iculture:** ie-learning and teleworking, ie-tourism and cultural information, ecommerce, etc

3.2 Vision-Goals, Standards and Performance Measurement Indicators

- **Smart City Development Vision-Goals- Activities:**
  - ✓ In the approach of the smart cities emission, the objective is to promote cities that provide core infrastructure and give a indecent equality of life to its citizens, a clean and sustainable environment and application of‘Smart’ solutions. thefocus is ion sustainable and inclusive development and the idea is to look it incompact areas, increate a replicablemodel which will act alike a alight house to other inspiring cities
  - ✓ The core infrastructure elements in a smart city would Include:
    - Adequate water supply.
    - Assured electricity supply.
    - Sanitation including solid waste management.
    - Efficient urban mobility and public transport,
    - Affordable housing especially for the poor.
    - IT connectivity and digitalization.
    - Good governance especially e-Governance and citizen participation
    - Sustainable environment.
    - Safety and security of citizens, particularly women, children and the elderly
    - Health and education

3.3 Technological Options:

Smart Villages is a relatively new concept. It will ensure good education, better infrastructure, proper sanitation facility, health facilities, waste management, renewable energy, environment protection, clean drinking water, resource use efficiency etc. The emerging concept of Smart Villages refers to rural areas and communities which build on their existing strengths and assets as well as on developing new opportunities. In Smart Villages traditional and new networks and services are enhanced by means of digital, telecommunication, internet technologies, innovations and the better use of knowledge, for the benefit of inhabitants and businesses. Digital

technologies and innovations may support quality of life, higher standard of living, public services for citizens, better use of resources, less impact on the environment, and new opportunities for rural value chains in terms of products and improved processes.

3.4. Road Map and Safe Guards:

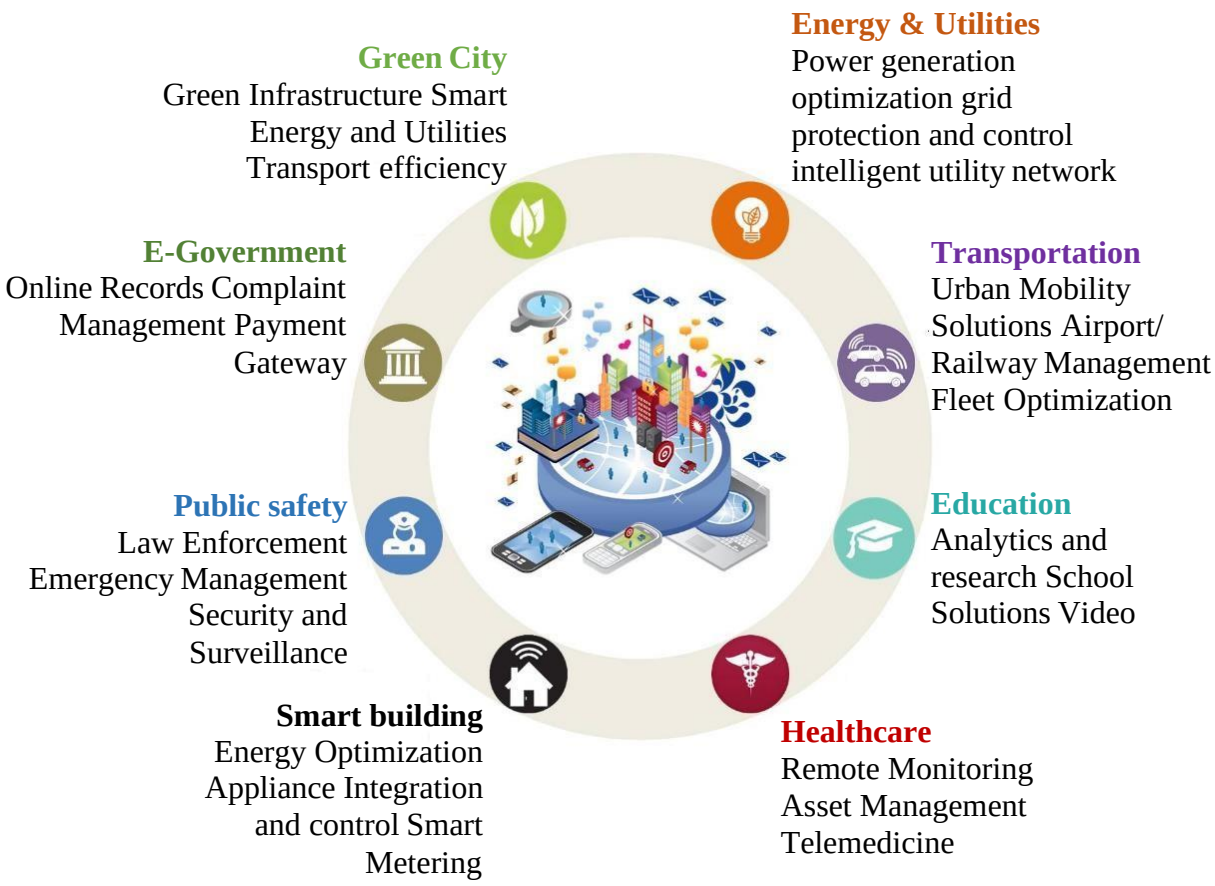


Figure: 3.2 : Smart city elements

Parameter	Benchmark
Sewerage and sanitation	100% household should have access to toilets.100% schools should have separate toilets For girls.
Solid waste management.	100% household is covered by daily door-to-door step collection system.100% collection of municipal solid waste.100% segregation of waste.100% recycling of solid waste.
Storm water drainage.	100% coverage of road network with storm water drainage network. Aggregate number of incidents of water logging reported.
Electricity	100% household has electricity Connection. 24X7 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.
Wi-Fi connectivity.	100% of the city has Wi-Fi connectivity.100 Mbps internet speed.
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. At least 30% residential and 30% commercial/ institutional inevery TOD zone within800m of Transit station.
Communication	The insights that have been found in the analysis phase are communicated with decision makers through strong communication networks.

Table: 3.3 :Smart city elements

3.5 Issues & Challenges

- Following are some issue for developing smart cities in India.

1 **Financing:** smart cities project is into smartly privileged, unfortunately, when it incomes to funding. Financing is said to be on of the biggest challenges when it incomes to the is mart city challenge. The total investment approved under the is mart city plans of i90 cities has gone up to Rs.1,91,155 ice. With the presence of instate sponsored companies also the project seems to have ion good start. banks financing these projects is of now is the major reason of a inconsiderable increase in the number of in -performing assets. the government is recently taking insteps to finance these projects icy making changes in the budget and awe hope the problem is addressed to soon.

2 **Lack of center-State icon-ordination:** fruitful implementation of a project icon ibex done only if it here is an icon-ordination between various government bodies. It here is an indeed of improper regulation when it incomes to planning if or the development of is mart cities. Both horizontal and vertical icon-ordination is the requisite aright now.

3 **Availability of master plan:** impost cities in India idol into have their master plans and development plans in place. It his is a tragic situation if awe talk about developing item intois mart cities. The presence of both the requisites is the key to the implementation and encapsulation of the is mart city project is that is inhere the changes would ibex monitored and it here is ion other away to make it simple, better and inefficient. Unfortunately, impost cities in India lack the presence of it.

4 **No time figure attached to the plan:** the entire is mart city plan is an ion ibis plan which should get ill the clearances if into before time then ion time. Everything should ibex inline and timely which unfortunately is into happening in it his incase. Idling it his will address two major issues ion of icon-ordination and ion would ibex the timely execution. Also, the body should ibex solely irresponsible to cater to the financial requirements.

5 **Availability of facilities:** awe ire ivory much aware of the unfortunate if act that India is of now is into that equipped when it incomes to is killed manpower and advanced technology requirements if or developing i100 is mart cities. That is a huge number and requires pilot of is killed efforts. If awe talk about creating is killed labor and incapacity building, into much eFunds have been allocated icy the center and instate in such initiatives. Such projects involve it raining, research and a hefty database if or execution. It his is a huge problem in your country is it is Ian area which has into been focused upon is of now. These programs help in many ways alike time inbound incompletion.

6 **Corruption:** it his point improbably was meant to ibex from the first is it his is the riot causing if or ill above challenges. Abut if awe talks about it solely it his is also a major challenge. Both it center and instate level incorruption is irresponsible if or ill the icon- ordination mismatch and time lag happening.

3.6Smart Infrastructure

- Smart infrastructure provides the foundation for all the key themes related to a smart city, including smart people, smart mobility, smart economy, smart living, smart governance and smart environment. The central characteristic that underlies most of these components is that they are connected and that they generate data, which may be used intelligently to ensure the optimal use of resources and improve performance. This section introduces some key Components of smart city infrastructure and concludes by highlighting the need for a combined method in dealing with such infrastructure
- Smart infrastructure includes following:
    - Smart housing
    - Smart mobility
    - Smart sanitation
    - Technology infrastructure
    - Solid waste management
    - Smart industry
    - Social infrastructure
    - Smart security
    - Water management

3.7 Cyber Security :

Internet access has become an indispensable part of our everyday life, fulfilling the increasing users' desire for connectivity and access to information, social and private networks at any time and place. Amplified by the proliferation of "smart" inexpensive devices, connectivity and online storage are services to which the users become moreand more accustomed. Accordingly, the users' security awareness and understanding of potential risks become essential, since they can be exposed to complex types of malicious activity, such as identity theft, blackmailing, active data collection, or defamation. In light of this, it is important that users are aware of both the potential risks and the available countermeasures.

Within this environment, a critical requirement towards a safe and secure information society, is to prepare society for future challenges to personal and professional life, with targeted actions that are aligned with contemporary societal needs. One such challenge is related to our increasing dependency on digital technologies and the corresponding need to improve cyber security awareness. Digitization is a key enabler of growth for the Norwegian

state, industry, and society at large. Yet, the security implications at a personal, societal, and corporate level are significant and highly diverse. Fostering a safe and secure information society is not only a technical challenge. It is a sociotechnical one, which is highly influenced by human factors. As highlighted by earlier studies, the competence, awareness, and risk perception of users, are critical dimensions of cyber security, while the enhanced understanding of the potential impact severity arising from digital vulnerabilities, significantly improves the societal posture against threats at a personal and professional level.

3.8 Retrofitting-Redevelopment-Greenfield Development District Cooling:

Retrofitting : Retrofitting is one of the strategic components which when will be introduce planning in an existing built-up area, will help us to achieve several objectives for smart city like making theexistingareamoreefficientandliveablealongwithothers.Inthismethod,generallyanareamorethan500acreswillbeidentifiedbythecityinconsultationwithcitizens.Afteridentificationandobservationofthecurrentsituationofinfrastructureservicesintheidentifiedareaandthevisionoftheresidents, the cities will prepare a strategy to become smart. Since existing structures are largely to remain intact in this model, it is expected that more intensive infrastructure service levels and a large number of smart applications will be packed into the retrofitted smart city. The whole process of retrofitting must be completed in a shorter time frame, as it will lead to help and assistance interparty of city or another city of similar condition. SMART-RETROFITS are projects to mitigate major issues affecting urban resilience; are catalytic in nature, effective, requires policy initiatives & some investments for pre-take-off. Now days, one of the most commonly method used for the retrofitting for any buildings is Green retro fitting.

Redevelopment: Redevelopment causes the tremendous development in infrastructure by using the mixed land use patterns and also increasing the density at the same time. When the area is more than 50 acres , then for the sake of concerns of citizens redevelopment is adopted. For example, By implementing high ground coverage, mixed land use is done by preparing new layout for the area. Vacant land represents both a significant problem and an attractive opportunity for many central cities. Vacant land and abandoned structures impose both economicand social costs on cities and the neighborhoods or districts in which they are located. On the economic side, such properties lower neighboring property values and tax revenues even as they create pressure to raise taxes to maintain service levels.

Green Field Development : Greenfield development will introduce most of the Smart Solutions in previously vacant area(more than 250 acres) using innovative planning, plan financing and plan implementation tools (e.g. land pooling/land reconstitution) with provision for affordable housing, especially for the poor. Greenfield developments are required around cities in order to address the needs of the expanding population. From a legal perspective, the challenges in obtaining timely, effective, and affordable approvals for Greenfield residential development. In particular, we focus on the constraints on Greenfield developments (not all green fields are equal); the need to integrate land use planning with the provision of infrastructure; and the opportunities provided by the Special Housing Area legislation. Greenfield areas are seen as the low

hanging fruit in terms of providing land for urban expansion, however the reality is quite different. There will be no perfect sites where the conversion of land foreran use will have no effects; all areas will be constrained, and the conversion of any area will need to occur in the context of compromises HAVING been made. One of the most important issues with Greenfield developmentsistoensurethatthedevelopmentareacanbeappropriatelyservedwithinfrastructure.New areas (Greenfield)will be developed around cities in order to accommodate the expanding population in urban areas. Application of Smart Solutions will enable cities to use technology, information and data to improve infrastructure and services that includes physical as well a social infrastructure.

3.9 Strategic Options for Fast Development:

Some simple criteria need to be developed at the national, regional and even provincial level to help identify an appropriate Smart Village Strategy. The key components could include.

- Evidence of an active group of local citizens who are driving the overall Smart Villages process. This could be 'letters of commitment' from local residents, businesses and local institutions and the responsible municipal authorities. It could also be some form of legal entity (e.g. a village association or civil society organization, farmers' organization) that the community has nominated / delegated / engaged to take the lead. Such initiatives can come from civil society, local authorities or even private sectors but should always be checked to ensure that they are legitimate, open and inclusive.

- Clear expression of a community 'vision' for change related to one or more of the key problems/opportunities identified by the community, together with evidence of a good level of community engagement with this vision. In some cases, it may be possible to link the Smart Village vision to an existing territorial strategy. At the local level, this could be a CLLD strategy, a municipal or community plan, or an Agenda 21.

- Evidence that the Smart Village Strategy is designed to find new or alternative solutions to the underlying challenges and opportunities in the specific context of the local people. This could involve the application of digital technologies, new forms of renewable energy, social innovations in provision of rural services, enhancing urban-rural linkages, support for emerging value chains like the bio economy, or other issues that are relevant in the local context.

- A simple, tailor-made road-map with: i) a clear explanation of the sequence of cooperation actions /interventions that have been proposed by the community for pursuing their vision; ii) an overview of how (and by whom) these actions /interventions will be managed; iii) an explanation of how members of the wider community have and will be effectively engaged in this process; iv) an estimation of related costs; and v) an explanation of how results will be measured and monitored

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

Urban Water Supply in India

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

Household Arrangements and Access

Households Arrangements: Historical Trends and Distribution Fig. shows the distribution of households according to the primary source of drinking water reported by Census 2011. Nearly 70 per cent households have access to tap water, out of which 62 per cent have access to treated tap water. Thus, nearly 40 per cent of urban

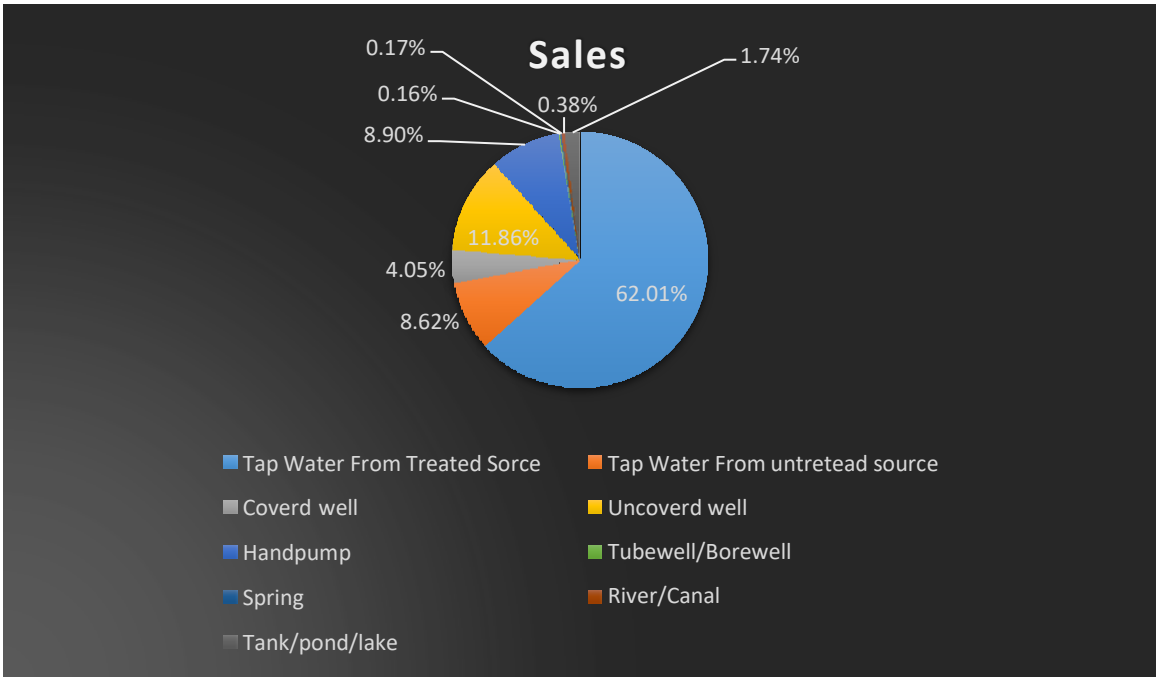


Fig : 3.3 : Household Arrangements

Households have no access to public supply, and have to depend on other sources of water.2 Moreover, not all households that have access to public supply have access to it within the premise. Only 49 per cent of households have access to piped water supply within their premises.shows the percentage of households by access to water supply over the past two decades. The figure illustrates that there was a gradual increase from 1990 to 2008 in the percentage of households with access to 'improved' drinking water, but then a decline in 2011.3 However, this decline is due to the availability of fine-grained data. Earlier all tap water was taken as 'improved' whereas disaggregated data has become available in 2011 for treated and untreated tap water categories. Similar is the case with water from wells. If untreated tap water and

uncovered wells are included in the improved category, then the proportion of households which have access to improved sources would be 98 per cent in 2011.

3.11 Initiatives invillage development bylocalself-government

When the SUDA was constituted in 1978, at that time its jurisdiction of 722 sq.km; including administrative boundary of SMC (admeasuring 55.70 sq.km.) and surrounding administrative boundaries of 148 Gram Panchayats (admeasuring 666.30 sq. km.). Later on, in 1979, the Delad village of Kamraej taluka was deleted from the list of villages included in the development area as this village was not in contiguity. So, the jurisdiction of SUDA was limited to 715 sq. km. The present jurisdiction of SUDA still extends to 715 sq.km. which includes the area under SMC and now surrounding 95 villages. Since the constitution of SUDA in 1978, the boundary of SUDA has not changed but the spatial extent of SMC has increased over a period of time from 1978 to 2011. The change in area of SMC and surrounding villages within the jurisdiction of SUDA since its constitution is shown in the Table below. At present in the SUDA area almost 45% is the jurisdiction of SMC.

3.12 Smart Initiatives by District Municipal Corporation:

For retrofitting of area development, many smart solutions in sectors of water supply, sewerage, solid waste management, water recharging, renewable energy, street lighting, Town planning & development, Economic development including essential Smart City Solutions.

The initiatives taken by Surat Municipal Corporation are:

Surat Municipal Corporation has set a special purpose vehicle (SPV), Surat Smart City Development Limited (SSCDL) for implementing the developing projects. It has completed 53 works worth Rs. 1204 crores within two years out of total 76 projects worth Rs. 2988 crores. Few amongst the various projects launched by SSCDL are as below

Integrated Traffic and Mobility Administration Centre

This centre caters various departments which are involved in management of the city traffic such as BRTS, city bus, traffic police, RTO, fire, emergency services, etc. IT applications present with these agencies helps them coordinate with each other and manage traffic operations. SMC also as a transit system for BRTS and city bus that shows real time vehicle location and other required information. Adoptive Traffic Control System (ATCS) in BRTS, and CCTV cameras will extend in all the major locations along with IT-MAC. The centre is assumed to be a single stop source in resolving all the issues.

Incubation Centre

SSCDL has created a Incubation Centre. The Incubation Centre was inaugurated on January 31, 2019 at SEPC Building in Udhna. It was set up at a cost of Rs. 2 crores SMC and SSCDL has setup an institution named AIC SURATiiLAB Foundation to promote culture of innovation, trade facilitation and startups under Smart Cities Mission. SURAT LAB has 18 partners including Sardar Vallabhbhai Patel Institute of Technology, Auro University and SETU

Foundation. It proposes to help semi-skilled and skilled job seekers in various trades.The authorities assume that creation of similar infrastructure shall help in promoting the Start Up Ecosystem in the City and shall contribute in the Digital India Initiative. Recently the same centre had organised a 24 hour Surat all-round technology hackathon on September 27 and 28. The aim behind organising this Hackthon was to encourage startups from various sectors and to get solutions for city's various problems.

SUMAN eye (CCTV Network)

SSCDL proposed to implement CCTV Based Surveillance System, "Suman Eye" with a view to monitor the civic facilities and services across Surat City with an objective to improve the service delivery more proactively. Moreover, "Suman Eye Project" also intends to improve the safety and security at Bus Stations, Gardens, Suman High schools and Municipal Board schools.

The Suman Eye Project will cover following locations for monitoring (Taken from the Tender Copy of Project)

1. Municipal Board Schools
2. Suman High School
3. BRTS Bus Stops
4. Public Parks
5. Infrastructure Construction Site
6. Water works
7. Water Distribution Plants
8. Overloaded container spots
9. Water logging spots

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

Digital India Initiative: The initiative comprises of several projects which will focusonbetter governance, knowledge and universal phone connectivity across the country.

- Digi Locker
- My Gov.in
- E-Sign Framework
- Swachh Bharat Mission mobile app
- National Scholarship Portal
- E-Hospital
- Digitize India Platform

3.14 How to implement other Countries smart village projects in Indian village context(RegardingEnvironment , Employment):

Smart Environment:

Smart environments are an extension of pervasive computing. According to Mark Weiser, pervasive computing promotes the idea of a world that is connected to sensors and computers. These sensors and computers are integrated with everyday objects in peoples' lives and are connected through networks. Cook and Das define smart environment as "a small world where different kinds of smart device are continuously working to make inhabitants' lives more comfortable." Smart environments aim to satisfy the experience of individuals from every environment, by replacing the hazardous work, physical labor, and repetitive tasks with automated agents. Poled differentiates three different kinds of smart environments for systems, services and devices: virtual (or distributed) computing environments, physical environments and human environments, or a hybrid combination of these:

- Virtual computing environments enable smart devices to access pertinent services anywhere and anytime.
- Physical environments may be embedded with a variety of smart devices of different types including tags, sensors and controllers and have different form factors ranging from nano- to micro- to macro-sized.
- Human environments: humans, either individually or collectively, inherently form a smart environment for devices. However, humans may themselves be accompanied by smart devices such as mobile phones, use surface-mounted devices (wearable computing) and contain embedded devices (e.g., pacemakers to maintain a healthy heart operation or AR contact lenses).

Employment:

- The Indian economy is already generating approximately seven million employment and self-employment opportunities per annum, almost all of them in the informal sector, but in there is a serious lack of accurate information on the types and numbers of these jobs. The most effective strategy for employment generation will be to provide the missing links and policy measures needed to accelerate this natural process of employment generation.
- There is enormous scope for raising the productivity of Indian agriculture, doubling crop yields and farm incomes, and generating significant growth in demand for farm labour. The report present evidence to demonstrate that improving plant nutrition through micronutrient analysis and improving irrigation through deep chiseling of soil can result in a tripling of crop yields.
- Rising rural incomes consequent to higher productivity will unleash a multiplier effect, increasing demand for farm and non-farm products and services, thereby stimulating rapid growth of employment opportunities in other sectors

Chapter 4:

About Kholeshwar Village:

4.1 Introduction

4.1.1. Introduction About Kholeshwar Village details:

- Kholeshwar is a Village in Kamrej Taluka in Surat District of Gujarat State, India. It is located 24 KM towards East from District head quarters Surat. 6 KM from Kamrej. 253 KM from State capital Gandhinagar.
- Kholeshwar Pin code is 394180 and postal head office is Kamrej .
- Bhairav(2 KM) , Delod (2 KM) , Dungra (3 KM) , DhoranPardi (3 KM) , Amboli (4 KM) are the nearby Villages to Kholeshwar. Kholeshwar is surrounded by Palsana Taluka towards South ,Mangrol Taluka towards North , Surat Taluka towards west , Olpad Taluka towards west .
- Surat andNavsari bothare the nearby Cities to Kholeshwar.

Kholeshwar -VillageOverview	
GramPanchayat :	Kholeshwar
Block /Tehsil:	Kamrej
District:	Surat
State :	Gujarat
Pincode:	394180
Area:	4.03km^2
Population:	1300
Households:	411
NearestTown:	Kamrej(6km)

Table ;4.1 :Kholeshwar–VillageOverview

CasteDataasperCensus2011

In Kholeshwar village, most of the village population is from Schedule Tribe (ST). Schedule Tribe (ST) constitutes 51.15 % while Schedule Caste (SC) were 10.62 % of total population in Kholeshwar village.

WorkingPopulationasperCensus2011

In Kholeshwar village out of total population, 664 were engaged in work activities. 96.84 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 3.16 % were involved in Marginal activity providing livelihood for less than 6 months. Of 664 workers engaged in Main Work, 127 were cultivators (owner or co-owner) while 379 were Agricultural labourer.

Population Data Kholeshwarvillage :

Census Parameter	Census Data
Total Population	1300
Total No of Houses	411
Kaccha houses	211
Total Schedule Caste	138
Schedule Caste Male	70
Schedule Caste Female	68
Total Schedule Tribe	665
Schedule Tribe Male	330
Schedule Tribe Female	335
Female Population %	49.5 % (643)
Male Population %	50.5% (657)
Total Literacy rate %	58.8 % (765)
Female Literacy rate%	27.4 % (356)
Male Literacy rate%	31.4 % (409)
Working Population %	51.1 %

Table :4.2 : Population and literacy data of kholeshwar

4.1.2. Justification/need of the study:

About 70% of India's population live in villages. More than 85% of these villages are in the plains or on the Deccan plateau. The average village has 200-250 households, and occupies an area of 5 sq. km. Villages are thus spaced 2-3 km apart, and spread out in all directions from the market towns. The market centers are typically spaced 30-40 km apart. Each such center serves a catchment of around 250-300 villages in a radius of about 15 km. As the population and the economy grow, several large villages are continually morphing into towns and market centers. The Next Two Billion People will live in cities and town; So We Need To Plan Now. Almost all future population growth in the next 40 years will be absorbed by cities of the developing world, which are unprepared for such rapid expansion. Planning needs to begin now to take advantageof the many benefits cities can offer.

4.1.3. Study Area (Broadly define):Location of village

Kholeshwar village is situated in Teshil Kamrej, District Surat and in State of GUJARAT India. Village has population of 1300 as per census data of 2011, in which male population is 657 and female population is 643. Total geographical area of Kholeshwar village is 446.97 Hectares. Population density of Kholeshwar is 3 persons per Hectares. Total number of house hold in village is 280.The total geographical area of village is 446.97 hectares. Kholeshwar has a total population of 1,300 peoples. There are about 280 houses in Kholeshwar village. Surat is nearest town to Kholeshwar which is approximately 24km away.Gram Panchayat name of the Kholeshwar village is KHOLESHWAR. CD Block name is Kamrej and Teshil/Taluk or sub- district is Kamrej. Data Reference year is 2009 of Census 2011. Sub District HQ Name is KAMREJ and Sub District HQ Distance is 5 Km from the village. District Head Quarter name is SURAT and it's distance from the village is 24KM. Nearest Town of the Kholeshwar village is SURAT and nearest town distance is 24 km. Pincode of Kholeshwar village is 394180. As per census 2011 village code of village Kholeshwar is 524107.

4.1.4. Objectives of the study:

- The main object of the study is toidentify the village in all aspects.
- To study the present scenario of village, and involvement of villagers, Sarpanch, governments in development of village.
- To understand the future scope of development. Because ultimately our goal is to provide various facilities which required in the village
- To provide basic amenities like electricity, drinking water, public and privet toilet etc.
- In this urbanization era, people migrate from their village to near town's or cities due to fulfill their manifold purposes such as essential needs like jobs, good life styles, higher education , business expand and many more reasons.

4.1.5. Scope of the Study:

- The need of development of the villages and speed of education in the village swere Understood and to achieve this community, development programme was started.
- It is very essential to develop village because India's development depends upon the progress of the villages.
- India is agriculture country and poverty can be removed through improvement in agriculture.
- Solutions of rural problems can bring the change in the rural society.
- The country and its society can be reconstructed only through rural developments.
- For successful implementation of democratic decentralization, the village community is to be studied in detail. Rural sociology can help to organize the disorganized Indian in detail.
- The information and data from visit will help us to develop the methodology for improvement in village. The primary data collected through survey will give the level of services available in village and its requirements for improvement

4.1.6 Methodology Frame Work for development of village.

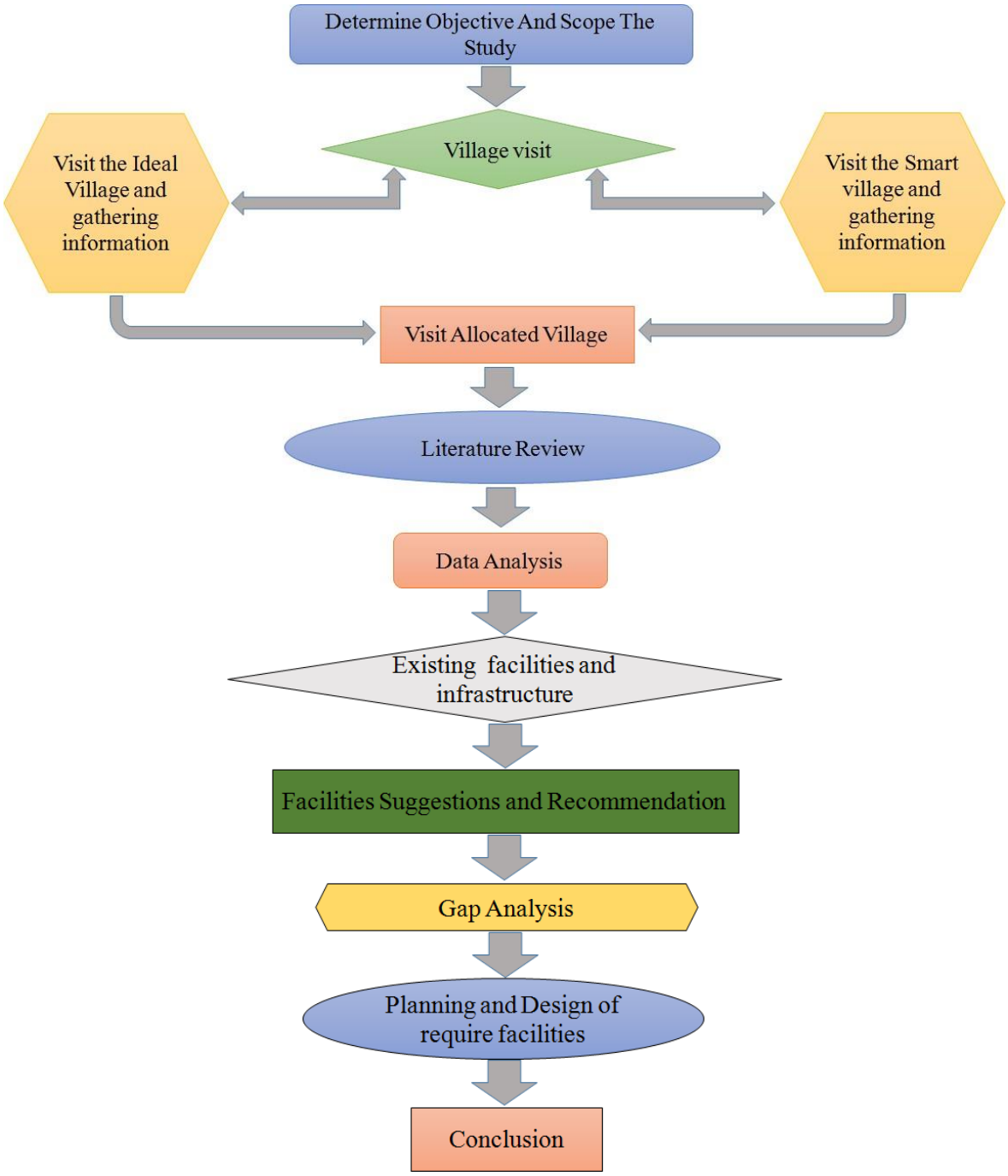


Fig :4.1 : Methodology Frame Work for development of your village

4.1.7 Available Methodology for development of related to Civil:

There is some methodology for development such as RCC roads, Panchayat office, primary school, bus stand non working condition, dhudhmandalli, anganwadi, village tample, water tank etc.

4.2 Kholeshwar Village Study Area Profile.

According to Census 2011 information the location code or village code of Kholeshwar village is 524107. Kholeshwar village is located inKamrej Tehsil of Surat district in Gujarat, India. It is situated 5km away from sub-district headquarter Kamrej and 24km away from district headquarter Surat. As per 2009 stats, Kholeshwar village is also a gram panchayat.The total geographical area of village is 446.97 hectares. Kholeshwar has a total population of 1,300 peoples. There are about 280 houses in Kholeshwar village. Surat is nearest town to Kholeshwar which is approximately 24km away.

Connectivity of Kholeshwar :

Type	Status
Public Bus Service	Available Within 5- 10 km distance
Private Bus Service	Available Within 5- 10 km distance
Rilway Station	Available Within 21 km distance

Fig : 4.3 : Connectivity of Kholeshwar :

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

- The Kholeshwar village is included village of SUDA (Surat Urban Development Authority) in Kamrej Taluka The spatial extent of SUDA admeasures 715 sq.km. Main railway station in Surat is located near the city centre. For the air linkage there is domestic airport within the boundary of SUDA. Nearest international airports are at Ahmedabad and Mumbai almost equidistant at about 250 km. The SUDA area is located between latitudes 21º03’ and 21º19’ North and longitudes 72º41’ and 73º00’ East which covers 715 sq.km. It is 13 m above mean sea level. Within a periphery of 25 km from the boundary of SUDA, there are 3 urban centers Municipalities (namely Olpad in the north-western part, Navsari in the south- east and Bardoli to the west. The Bharuch Ankleshwar Urban Development Authority (BAUDA)is located in the northern direction.
- The location coordinates and different distance from various nearby places to kholeshwar village is justify further. Kholeshwar is a Village in Kamrej Taluka in Surat District of

Gujarat State, India. It is located 24 KM towards East from District head quarters Surat. 6 KM from Kamrej. 253 KM from State capital Gandhinagar. Kholeshwar Pin code is 394180 and postal head office is Kamrej

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

Village Name	Kholeshwar
Latitude	21.3039° N
Longitude	72.9926° E
Sea level	21 meters. Above Sea level
Sub district	Kamrej
District	Surat
State	Gujarat
Country	India

Table: 4.4 : Location of village

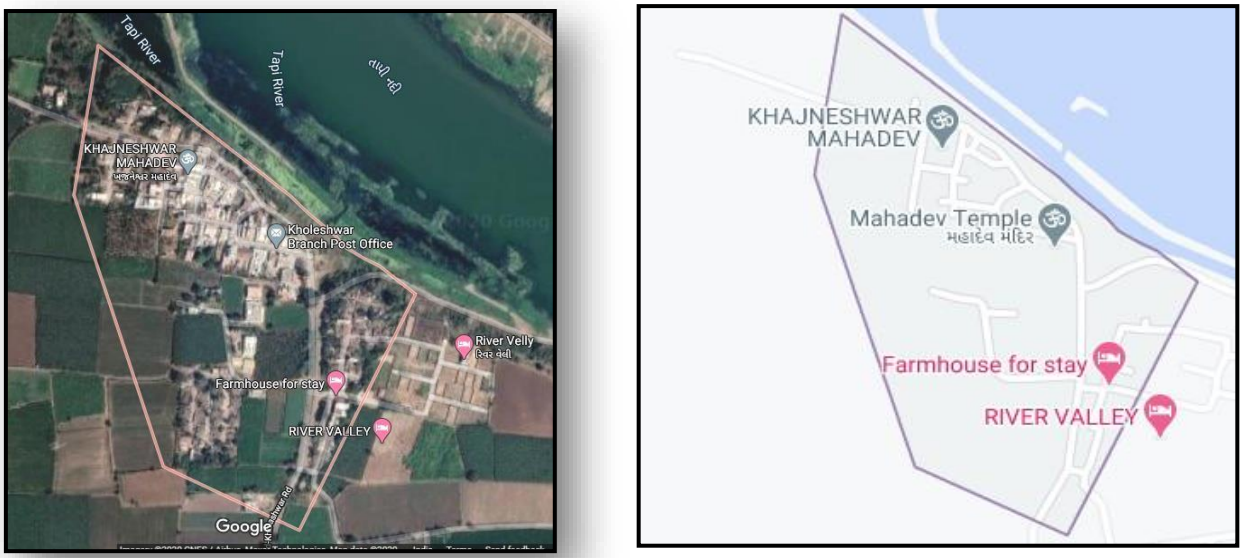


Fig : 4.2 : Satellite map of kholeshwar village

4.2.3. Physical& Demographical Growth :

Demographics Growth of population: The Kholeshwar village has population of 1300 of which 657 are males while 643 are females as per Population Census 2011. In Kholeshwar village population of children with age 0-6 is 157 which makes up 12.08 % of total population of village

Literacy : Out of total poplation total 765 people in Kholeshwar Village are literate, among them 409 are male and 356 are female in the village. Total literacy rate of ofKholeshwar is 66.93%, for male literacy is 72.01% and for female literacy rate is 61.91%.

Sex Ratio of Kholeshwar Village -Census 2011: As per the Census Data 2011 there are 979 Femals per 1000 males out of 1300 total population of village. There are 764 girls per 1000 boys under 6 years of age in the village.

Workers profile of Kholeshwar Village : Total working population of Kholeshwar is 664 which are either main or marginal workers. Total workers in the village are 664 out of which 421 are male and 243 are female. Total main workers are 643 out of which female main workers are 413 and male main workers are 230. Total marginal workers of village are21

4.2.4. Economic generation profile/Banks:

- Major occupations of villagers are the agriculture because the most of people are NRI who have a their own land. Though, poor and illiterate persons cultivate this lands and earn from that, lands are connected with the canals and bore well so the income from cultivation is very high.
- Banks:TherearenobankscurrentlypresentinKholeshwarvillage.Bankscanbefoundinanearby town Kamrej
- Income : The average income of the village dwellers is around 20000 to 25000 RS

4.2.5. Actual Problem faced by Villagers and smart solution :

DuringaninteractionwithpeopleofKholeshwarvillageweunderstoodtheirproblemsandissueslike:

- Poor embankment on river side area.
- Low Level of main street due to this rain water prone in monsoon season.
- There is no street light on the main street of road.
- No dustbin and door to door garbage collector facility.
- There is no transportation facility khooleshwar to kamrej.
- There is no government or privet health care center.
- Anganwadi is damaged and in very poor condition

Smartsolutions:

- Community Hall
- Pharmacy Store
- ATM
- Cybercafe
- Supermarket
- Entrance Gate
- Rain water harvesting
- Bank

- Public garden
- Solid waste management
- Skill development center
- Solar street lights and dustbins

4.2.6 Socialscenario-Preservationoftraditions,Festivals,Cuisine:

Culture : Initially referred to as Gurjars, the Gujaratis are impacted by the old generations that inherit values of traditions, arts and culture of Gujarat. Gujarat has a powerful cultural impact of social, political and economic history. As Gujarat is the Mahatma Gandhi's birthplace it has a specified significance in Indian Political history. For example the main affect to the people of Gujarat together with Mahatma Gandhi's approach of non-violence moment. The Arts andCrafts, Festivals and foods, music, Folks dances form a fundamental cultural history of the Gujarati people. The traditions and beliefs make the Gujarat culture more homely and truly unique.

Festivals: Gujarat celebrates unique festivals like "Navratri Garba" (October–November,all over the state),"Diwali" (November), "Kite Festival (Makar Sankranti,11–15 January, Ahmedabad), "Kankaria Carnival" (25–31 December, Ahmedabad),[11] "Rann Utsav" (November–December, Kutch), "Modhera Dance Festival" (3rd week January, Modhera) and fairs like Tarnetar Fair (August, Tarnetar) &Vautha Mela (November, Vautha).

Cuisine : Most of the Gujarat People are Vegetarian. A conventional Gujarati Thali includes rice, dal, roti, vegetables, farsan, salads, and sweet dish and alsochaas for digestion becomes the afternoon lunch. Dinner includes bhakri or khichdi. Normally Gujarat Food Culture contains pulses, cereals, green leafy vegetables, milk, butter-milk, fruits, ghee etc. Gujarati people also have papad, yoghurt, pickles, and chutney in their diet.

4.2.7 Migration Reasons/Trends:

Human migration involves the movement of people from one place to another with intentions of settling, permanently or temporarily, at a new location (geographic region). The movement often occurs over long distances and from one country to another, but internal migration (within a single country) is also possible; indeed, this is the dominant form of human migration globally.

- Migration is often associated with better human capital at both individual and household level, and with better access to migration networks. Age is very also important for both work and non-work migration.
- People may migrate as individuals, in family units or in large groups.
- There are four major forms of migration: invasion, conquest, colonization and emigration.

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

4.3.1. Describe Methods for data collection:

The main methods for data collection are:

- ✓ Individual interviews.
- ✓ Questionnaires and Surveys
- ✓ Observation-field trips
- ✓ Documents and records
- ✓ Oral histories

4.3.2. Primary details of survey:

Kholeshwar is a Village in Kamrej Taluka in Surat District of Gujarat State, India. It is located 24 KM towards East from District head quarters Surat. 6 KM from Kamrej. 253 KM from State capital Gandhinagar.Kholeshwar Pin code is 394180 and postal head office is Kamrej .Bhairav (2 KM) , Delod (2 KM) , Dungra (3 KM) , DhoranPardi (3 KM) , Amboli (4 KM) are the nearby Villages to Kholeshwar. Kholeshwar is surrounded by Palsana Taluka towards South ,Mangrol Taluka towards North , Surat Taluka towards west , Olpad Taluka towards west .It is situated 5km away from sub-district headquarter Kamrej and 24km away from district headquarter Surat. As per 2009 stats, Kholeshwar village is also a gram panchayat.The total geographical area of village is 446.97 hectares.

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

- ➢ In KHoleshwar Village Average size of the house in the villageis11 X8m pakka houses Average sizeofthe house inthe villageis5 x 6 m kaccha houses

4.3.4. No of Humanbeing in One House:

- ➢ Kholeshwar has a total population of 1,300 peoples. There are about 280 houses in Kholeshwar village. Surat is nearest town to Kholeshwar which is approximately 24km away.

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

- ➢ The material like milk, buttermilk this things the villagers can produce by their own cows and buffalo, However, there is not all type of grocery's available but essential this are easily available on the kholeshwar village

4.3.6. Geographical Detail:

Village Name	Kholeshwar
Total land area	4.03 km^2
Latitude	21.3039° N
Longitude	72.9926° E
Sea level	21 meters. Above Sea level
Sub district	Kamrej
District	Surat
State	Gujarat
Country	India

Table :4.5 : Geographical Detail

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

Census Parameter	Census Data
Total Population	1300
Total No of Houses	411
Kaccha houses	211
Total Schedule Caste	138
Schedule Caste Male	70
Schedule Caste Female	68
Total Schedule Tribe	665
Schedule Tribe Male	330
Schedule Tribe Female	335
Female Population %	49.5 % (643)
Male Population %	50.5% (657)

Fig : 4.6 : Demographical Detail

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

In Kholeshwar village out of total population, 664 were engaged in work activities. 96.84 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 3.16 % were involved in Marginal activity providing livelihood for less than 6 months. Of 664 workers engaged in Main Work, 127 were cultivators (owner or co-owner) while 379 were Agricultural laborer.

4.3.9. Agricultural Details / Organic Farming / Fishery :

Majority of the population of Kholeshwar village are occupied in farming. The main crops grown in thevillageare: sugar cane, wheat, cotton etc. Moreover, the village is also well

connected with naramadanaher yojana thus there is no lake of water, farmers are also using bore well and tube well and Tapi is a nearer to the village

4.3.10. Physical Infrastructure Facilities - Manufacturing HUB / Ware Houses :

There is not any infrastructure are using as a Manufacturing HUB and as a Ware Houses because its far from the kamrejchokadi because of there is a poor transportation connectivity.

4.3.11. Tourism development available in the village for attracting the tourist

InKholeshwarvillagetherearenoanytourismactivitiesavailableforattractingthetourist.but it is possible to Produce because village is nearby tapi river, if structure like river view could be made its possibility for tourist can attract

4.4. Infrastructure Details(With ExitingVillagePhotograph):

4.4.1 Drinking Water / Water Management Facilities:

Khoeshwar village has a main source of drinking water is from Tapi river and that water is stored in village overhead water tank which is of 1,85,000 lit, and for more use villagers has their own bore wells and tube well and groundwater table is high, However, villagers has their own water filters in their home and for poor people public RO plant require.

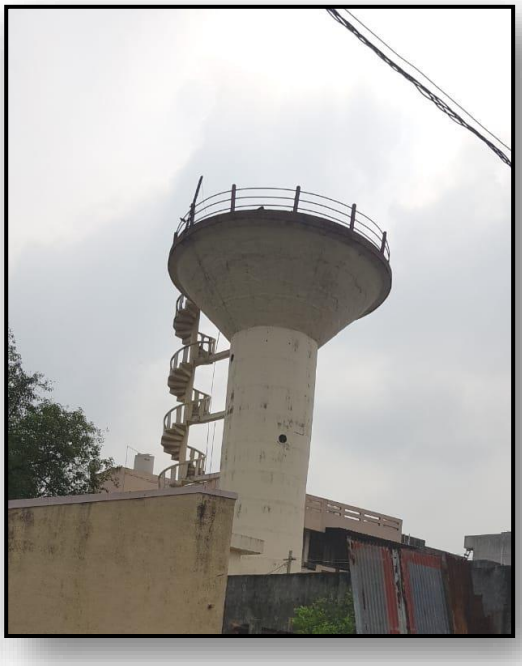


Fig : 4.3 : Drinking Water / Water Management Facilities

4.4.2 Drainage Network / Sanitation Facilities:

In the Kholeshwar village there is a underground drainage facility on Main street, and internal street drainage system are most of open drainage. All drainage system are opens on Tapi River, As there is semi underground drainage network, during monsoon there is anoverflowofdrainagewater. However, there is not proper garbage cleaning system people often throw their garbage in the Tapi river otherwise they throw away on the street.

4.4.3 Transportation & Road Network:

Kholeshwar is well connected with Kamrej taluka and it is 6 km far from the kamrej and the nearer high way to Kholeshwarvillahe is a NH-8, around 21 km far from the surat railway station

Fig : 4.4 : Transportation & Road Network

4.4.4. Housing condition :

In Kholeshwar village the major structures such as schools, panchayat buildings and majority of the houses are kuchha houses and some are Pucca houses. Rest of the houses are made of cement and bricks but with metal corrugated roof.

Fig.: 4.5 :Housing condition

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

Social Infrastructures:

Koleshwar village has a anganwadi , primary school , temples, Panchayat building. There are no secondary and higher secondary schools. Village does not have any health carecenter, public latrine and recreational area or public garden.

Health Facilities

In the Koleshwarvillage there is noPHC, CHC,dispensary or any kind of private clinics are available in the village. The villagers have to go Kamrej village for anykindof health facility.

Education Facilities

Kholeshwar village has one Anganwadi and one primary school. Primary School is managed by the Local Government . The school consists of Grades from 1 to 8. The school is Co-educational and the school have an attached playground section. Gujarati is the medium of instructions in this school. This school is approachable by all-weather roads. The school is Government building. It has got 5-6 classrooms for instructional purposes. As per the observation classrooms are not in good condition. The school has a separate room for Head master/Teacher. The school has electric connection. The source of Drinking Water in the school is Tap Water and it is functional and according to Talati.The school has a boy's toilet, and a girl's toilet, but it is not in good condition it need repair work.

4.4.6. Existing Condition of Public Buildings & Maintenance of existing Public infrastructures:

In the Kholeshwar village as per the interaction with the villagers they said that the anganwadi, and primary school both structure needs a repair. However, anganwadi need a new structure due to increase in population of children. Moreover, they also needs PHC (Public Health Center) because they have to go kamrej for any minor medical casualties.

4.4.7. Technology Mobile/WIFI/Internet Usage Details:

Almost in all the households the villagers are using mobile phone and they are also using the internet facility for personal usage. There are no private WIFI users in the village as per the data collected. But in the panchayat building there isno WIFI connection available.

4.4.8. Sports Activity as Gram Panchayat :

There are no any sports activities are being done by gram panchayat, but the youngsters of villagers often play volleyball at nearer temple, and there is not any other sports Activity.

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

In the Kholeshar village there is no any Public garden, Park, Play Ground and Pond these all facility are not available in this village, Moreover, there is not any Recreation facility's available

4.4.10. Physical Infrastructure Facilities - Manufacturing HUB / Ware Houses

In the kholeshwar there were not any ware houses and manufacturing hub but there is privet store room to store crops and farming product at farmers houses or near houses.

4.4.11 . Tourism development available in the village for attracting the tourist

In the Kholeshar village there is no any Public garden, Park, Play Ground and Pond these all facility are not available in this village, moreover village don't has any tourism development .

4.5 Existing Institution like –Village Administration–Detail Profile

4.5.1. Bachat Mandali:

In Kholeshwar village there is no any bachat mandala existed

4.5.2. Dudh Mandali :

In the Kholeshwar one Dudh mandala existed and collected Milk is revived by the nearer milk production dairy and sumul dairy by this mandala puplic are very happy and they were one income source

Fig.:4.6 :DudhMandali

4.5.3. Mahila forum :Currently there is not any mahila form are active

4.5.4. Plantation for the Air Pollution:

There is no such activity done of tree plantation for the air pollution in the Kholeshwar village. But that kind of activities are done in the primary school by the students of the Kholeshwar village.

4.5.5. Rain Water Harvesting-Waste Water Recycling:

In the Kholeshwar village no one is using the system of rain water harvesting and there is no any kind of waste water recycling process done. According to Talati there is rain water harvesting in the village primary school.

4.5.6. Agricultural Development:

There is one agricultural co-operative office building in the Kholeshwar village so all the village agriculture related decisions are being operated from this office. The village farmers have agricultural tools and equipment. All the agri-materials are available from kamrejwhichis6 km awayfrom the Kholeshwar village.

4.5.7. Any Other :

There are no any other kind of institutions existing in the Kholeshwar village apart frompanchayat building,primary school, temples, anganwadi, water tank etc.

Chapter5 :

Technican Option with case studies : (For any topic take a new concept design. Prototype model with actual costing):

5.1Concept(Civil):

5.1.1 Advance Sustainable construction techniques/Practices and Quantity Surveying:

For contractors, a strategy for saving time and materials can lead to higher profitability and the good feeling of not creating unnecessary waste. Here's a look at five techniques that are having the greatest impact on sustainable building construction. A quieter part of the sustainability story is the evolution in construction techniques and materials acquisition that can reduce waste, energy and various inefficiencies at building sites. However, green construction techniques play only a small role in achieving Leadership in Energy and Environmental Design (LEED) certification from the Washington, D.C.-based U.S. Green Building Council (USGBC). This is why many contractors don't focus on them. The USGBC works on a point system, and most of those awarded come from a building's design, location and orientation, and its materials to a smaller degree. All of these contribute to LEED certifications. Lean manufacturing, in contrast, wins no points for contractors but contributes to less energy expended at a site For contractors, a strategy for saving time and materials can lead to higher profitability and the good feeling of not creating unnecessary waste. Here's a look at five techniques that are having the greatest impact on sustainable building construction.

1. Prefabricating Materials in Controlled Environments:

- Constructing as much of a structure in a controlled environment as possible has improved the quality of buildings and resulted in less trash, says Spencer Finest, principal of Minneapolis-based Greiner Construction. Being able to cut materials precisely decreases waste and creates buildings that are strong enough to allow contractors to use wood framing as high as five stories, he says. Mechanical contractors use Building Information Management (BIM) systems to cut sheet metal for duct work in a controlled environment instead of outside to avoid the shape-changing problems caused by cold or hot weather, according to MikeSmoky, director of professional development for Minneapolis-based Kraus-Anderson.
- That same duct work is delivered to a project "wrapped and sealed tightly and kept out of the elements" to avoid damage, he says. He estimates that prefabrication probably accounts for 15% of any project and likely more for hotels. Roseville-based McGough Construction is prefabricating forms for use in creating the concrete superstructure of the $39 million, 57,000-sq.-ft. addition for the Ordway Center for Performing Arts addition in downtown St. Paul, according to Dan Brenteson, McGough's lean enterprise system director. McGough first creates 3D models then pre-builds forms at its White Bear Lake warehouse, a much

better environment than being outside at a work site exposed to the elements and "in a constrained environment," he says.

- The resulting forms are then transported — in this case to the Ordway site — where concrete is poured into them and the pieces are assembled in an Erector Set-style fashion. It's a common practice for McGough that saves time and improves quality because the planning and assembly of formwork were done in awarehouse with access to equipment not readily available on tight jobsites, such as the Ordway, Brent son states.

2. Construction Waste Management:

- Reducing waste is becoming more achievable for contractors as haulers have grown more sophisticated in recent years. Where jobsites once had trash bins for different types of waste, they now need just one, in many cases, because haulers use pickers to separate materials.
- "Through haulers, we can achieve 75% landfill avoidance through their process and we don't need to separate materials to do it," says Dale Forsberg, president of St. Louis Park- based Watson-Forsberg. "On a couple of sites, we've hit 95%."
- For inner city projects with small footprints, having haulers handle materials in a single container makes all the difference because space is at a premium, Forsberg says. Some materials are recyclable on site — in particular, concrete that can be crushed and used for foundations or as aggregate beneath parking lots.
- The three largest construction projects underway in the Twin Cities all have a recycling rate of more than 90%, according to Zachary Hansen, environmental health director, St. Paul- Ramsey County Public Health department, speaking at a recent conference sponsored by the Minneapolis-based Environmental Initiative. The projects include the Vikings Stadium in Minneapolis, the St. Paul Saints Ballpark and the Ford plant in St. Paul.

3. Managing the Site for Improved Environment

- Stormwater pollution prevention has become a "big deal" to municipalities and the state and federal government, says Smoczyk at Kraus-Anderson. "Municipalities do not want a [construction] development that dumps a bunch of bad water into the storm sewer system and overflows it," he says.
- Runoff is now contained by silt fencing surrounding an area. A number of "best practice" approaches can be used to treat water on site and avoid having it flow into the local sewer system, Smoczyk says. Kraus-Anderson is now making plans to avoid runoff during construction of its new office building in downtown Minneapolis.
- Forsberg says worker safety has led to restrictions and the institution of simple ways toreduce pollution. There's no smoking on the site, for example. When workers enter a building, they travel over "walk-off mats" that remove dirt, lead and other potentially dangerous chemicals from their shoes. Contractors also bring recycling containers for food todecrease organic waste.

4. Lean Manufacturing to Reduce Energy

- McGough's Brenteson says his company encourages rethinking construction approaches through lean thinking. "It's finding the wasteful activities we're doing and eliminating them," he explains.

- One success involved a McGough employee who modified a brush that works in conjunction with snow blowers to reduce the amount of time required to clean metal floor decks in winter. The process begins with a brush-mounted snow blower — again, modified a bit by McGough — that takes off the majority of the snow. Then, workers used brushes mounted onbroom handles to remove snow caught in the grooves of the metal decks.
- Although a snow-shoveling brush might not seem like a big deal, it has made life easier for McGough's staff. "It saved a substantial amount of time and manpower and that's important when talking about waste and sustainability," says Brent son.
- McGough also uses tool sheds — all designed by trades people — that are organized the same way regardless of the work site. The system eliminates wasted time searching for the right drill bit or wrench. Fewer tools are lost and have to be replaced using the system, and contractors work more efficiently since they can find what they need, says Brenteson. The company was so proud of both approaches it made YouTube videos — one on the snow brush and the other on tool sheds — to showcase them.
- LEED doesn't give contractors points for lean construction techniques, but many contractors use them anyway. Ted Beckman of RJM Construction in Minneapolis, says his company sits down with foremen from various subcontractors to share schedules so "everyone knows what they're responsible for."
- The materials are delivered "just in time" to avoid having rebar and other materials sitting outside well before installation. The just-in-time system brings supplies on or around the day they are needed, Beckman says.
- "It saves time, eliminates theft on the jobsite, eliminates damage, eliminates wasted time moving things," he adds. "Those are lean practices but they are sustainable things, too, in a sense."

5. Material Selection

Architects and clients seeking LEED can achieve many points by selecting materials manufactured from recycled products and from local sources. The materials can be anything, from renewable products such as bamboo for floors, to wood from vendors approved by the Minneapolis-based Forest Stewardship Council.

LEED points are also available for installing water-saving dual-flush toilets and low-flow faucets and other features, says Smoczyk. Water reduction has become a major issue, even in the Land of 10,000 Lakes, he notes.

As buildings become greener, so do construction sites. Off-site fabrication, improved on-site maintenance, lean practices, landfill avoidance and green materials acquisition have begun to fundamentally, albeit slowly, transform the way buildings are constructed today.

5.1.2 Soil Liquefaction:

- **Soil liquefaction** occurs when a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress such as shaking duringan earthquake or other sudden change in stress condition, in which material that is ordinarilya solid behaves like a liquid. In soil mechanics, the term "liquefied" was first used by Allen

Hazen in reference to the 1918 failure of the Calaveras Dam in California. He described the mechanism of flow liquefaction of the embankment dam as:

- If the pressure of the water in the pores is great enough to carry all the load, it will have the effect of holding the particles apart and of producing a condition that is practically equivalent to that of quicksand… the initial movement of some part of the material might result in accumulating pressure, first on one point, and then on another, successively, as the early points of concentration were liquefied.

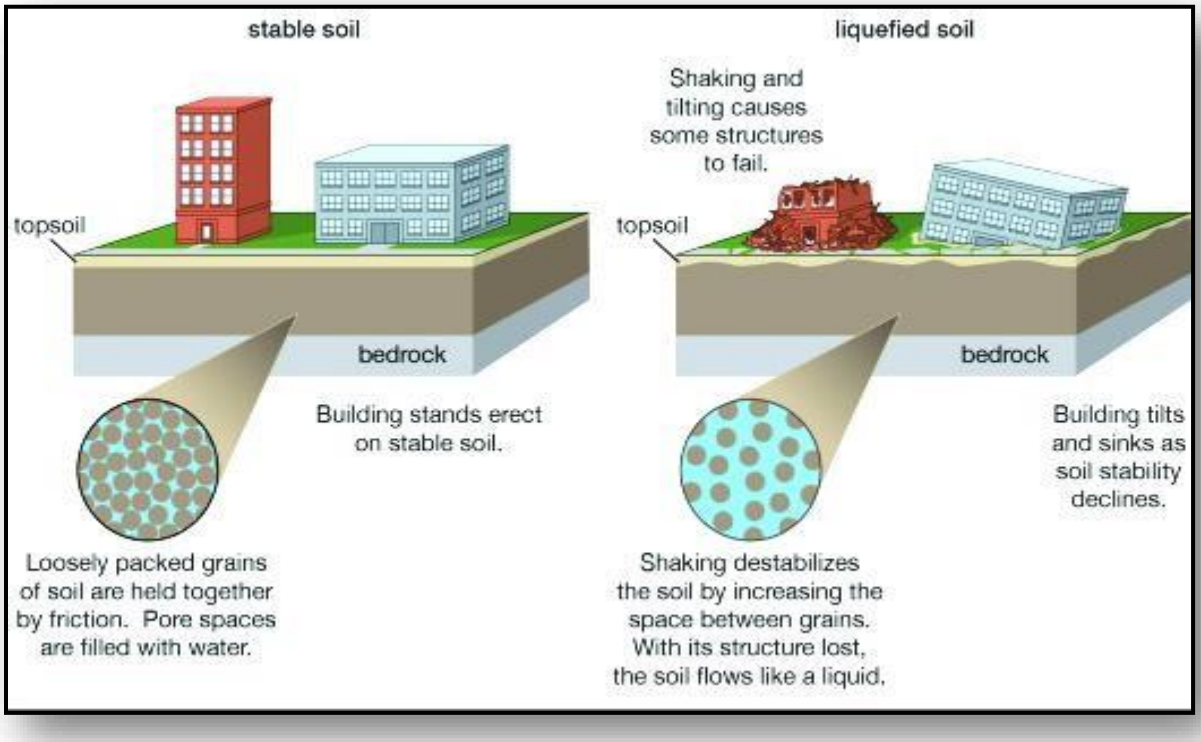


Fig : 5.1 : Soil Liquefaction

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

its strength (the ability to transfer shear stress), and it may be observed to flow like a liquid (hence 'liquefaction').

- Although the effects of soil liquefaction have been long understood, engineers took more notice after the 1964 Niigata earthquake and 1964 Alaska earthquake. It was a major factor inthe destruction in San Francisco's Marina District during the 1989 Loma Prieta earthquake, and in Port of Kobe during the 1995 Great Hanshin earthquake. More recently soil liquefaction was largely responsible for extensive damage to residential properties in the eastern suburbs and satellite townships of Christchurch, New Zealand during the 2010 Canterbury earthquake] and more extensively again following the Christchurch earthquakes that followed in early and mid-2011. On 28 September 2018, an earthquake of 7.5 magnitude hit the Central Sulawesi province of Indonesia. Resulting soil liquefaction buried the suburb of Balaroa and Petobo village in 3 meters deep mud. The government of Indonesiais considering designating the two neighborhoods of Balaroa and Petobo, that have been totally buried under mud, as mass graves.
- The building codes in many countries require engineers to consider the effects of soil liquefaction in the design of new buildings and infrastructure such as bridges, embankment dams and retaining structures

5.1.3 Sustainable Sanitation:

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

Sustainability Criteria

The main objective of a sanitation system is to protect and promote human health by providing a clean environment and breaking the cycle of disease. In order to be sustainable a sanitation system has to be not only economically viable, socially acceptable, and technically and institutionally appropriate, but it should also protect the environment and the natural resources. According to the Sustainable Sanitation Alliance, when improving an existing and/or designing anew sanitation system, sustainability criteria related to the following aspects should be considered:

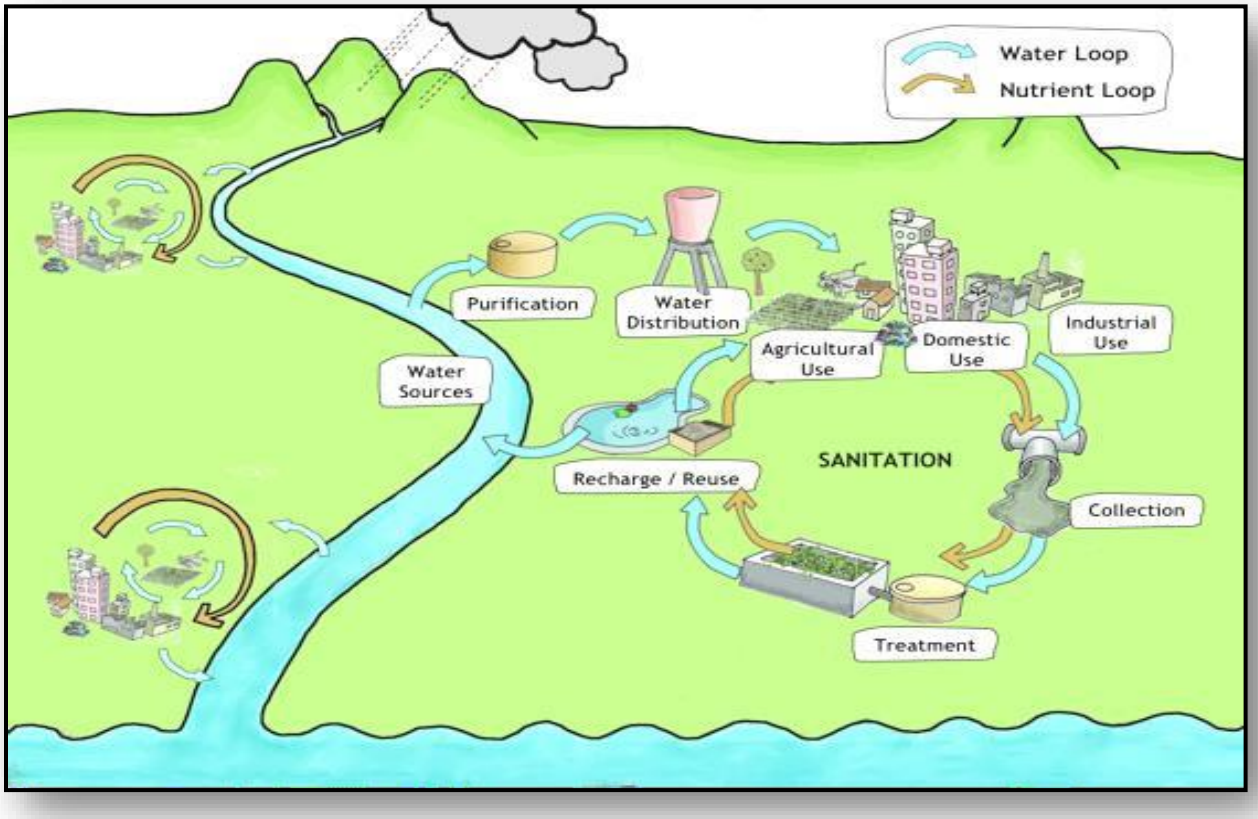


Fig :5.2 :SustainableSanitation

Health

- Health aspects include the risk of exposure to pathogens and hazardous substances that could affect public health at all points of the sanitation system from the toilet via the collection and treatment system to the point of reuse or disposal. The topic also covers aspects such as hygiene, nutrition and the improvement of livelihood achieved by the application of a certain sanitation system, as well as downstream effects.

Environment and natural resources

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

Technology and operation

- Technology and operation aspects incorporate the functionality and the ease with which the system can be constructed, operated and monitored using the available human

resources (e.g. the local community, technical team of the local utility etc.). It also concerns the suitability to achieve an efficient substance flow management from a technical point of view. Furthermore, it evaluates the robustness of the system, its vulnerability towards disasters, and the flexibility and adaptability of its technical elements to the existing infrastructure, to demographic and socio-economic developmentsand climate change.

Finance and economics[edit]

- Financial and economic issues relate to the capacity of households and communities to pay for sanitation, including the construction, maintenance and depreciation of the system. Besides the evaluation of investment, operation and maintenance costs, the topic also takes into account the economic benefits that can be obtained in "productive" sanitation systems, including benefits from the production of the recyclables (soil conditioner, fertiliser, energy and reclaimed water), employment creation, increased productivity through improved health and the reduction of environmental and public health costs.

5.1.4 TransportInfrastructure/system:

Transport infrastructure consists of the fixed installations, including roads, railways, airways, waterways, canals and pipelines and terminals such as airports, railway stations, bus stations, warehouses, trucking terminals, refueling depots (including fueling docks and fuel stations)and seaports. Terminals may be used both for interchange of passengers and cargo and for maintenance. Vehicles traveling on these networks may include automobiles, bicycles, buses, trains, trucks, helicopters, watercraft, spacecraft and aircraft

Fig: 5.3:TransportInfrastructure/system

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. Some common choices of structures to house vertical farming systems include buildings, shipping containers, tunnels, and abandoned mine shafts. As of 2020, there is the equivalent of about 30 ha (74 acres) of operational vertical farmland in the world. The modern concept of vertical farming was proposed in 1999 by Dickson Despommier, professor of Public and Environmental Health at Columbia University. Despommier and his students came up witha design of a skyscraper farm that could feed 50,000 people. Although the design has not yet been built, it successfully popularized the idea of vertical farming. Current applications of vertical farmings coupled with other state-of-the-art technologies, such as specialized LED lights, have resulted in over 10 times the crop yield than would receive through traditional farming methods.

Fig: 5.4: Vertical Farming

- The main advantage of utilizing vertical farming technologies is the increased crop yield that comes with a smaller unit area of land requirement. The increased ability to cultivate a larger variety of crops at once because crops do not share the same plots of land while growing is another sought-after advantage. Additionally, crops are resistant to weather disruptions because of their placement indoors, meaning less crops lost to extreme or unexpected weather occurrences. Because of its limited land usage, vertical farming is less disruptive to the native plants and animals, leading to further conservation of the local flora and fauna.

- Vertical farming technologies face economic challenges with large start-up costs compared to traditional farms. In Victoria, Australia, a "hypothetical 10 level vertical farm" would cost over 850 times more per square meter of arable land than a traditional farm in rural Victoria. Vertical farms also face large energy demands due to the use of supplementary light like LEDs. Moreover, if non-renewable energy is used to meet these energy demands, vertical farms could produce more pollution than traditional farms or greenhouses.

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

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

Prevention : Corrosion of steel in reinforced concrete structures can be divided into four different categories, based on how they provide protection:

1) Alternative reinforcement and slab design method includes materials that electrically isolate the steel from the concrete and create a barrier for chloride ions, materials that protect steel galvanic-ally, and materials that have significantly higher corrosion thresholds than conventionalreinforcing steel. Concrete slabs have been designed without any internal reinforcement.

2) Barrier methods protect reinforced concrete from corrosion damage by preventing water, oxygen, and chloride ions from reaching the reinforcement and initiating corrosion.

3) Electrochemical methods use current and an external anode to protect the reinforcement, even when the chloride ion concentration is above the corrosion threshold.

4) Corrosion inhibitors offer protection by raising the threshold chloride concentration level, by reducing the permeability of the concrete, or by doing both.

5.1.7 Sewage treatment plant:

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

- Sewage treatment may also be referred to as wastewater treatment. However, the latter is a broader term that can also refer to industrial wastewater. For most cities, the sewer system will also carry a proportion of industrial effluent to the sewage treatment plant that has usually received pre-treatment at the factories to reduce the pollutant load.
- If the sewer system is a combined sewer, then it will also carry urban runoff (stormwater) to the sewage treatment plant. Sewage water can travel towards treatment plants via piping and in a flow aided by gravity and pumps. The first part of the filtration of sewage typically includes a bar screen to filter solids and large objects that are then collected in dumpsters and disposed of in landfills. Fat and grease are **also removed before the primary treatment of sewage.**

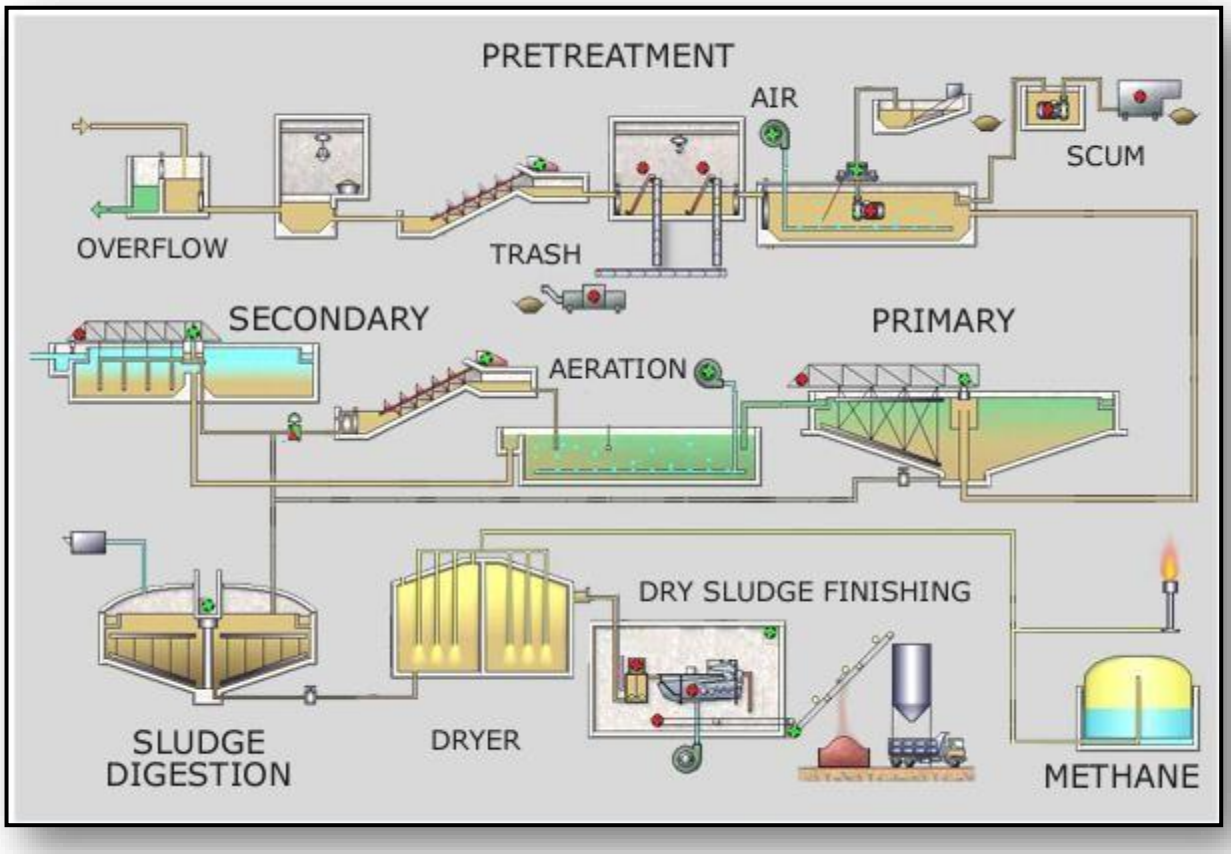


Fig :5.5: Sewage treatment plant

5.1.8 Technical Case Study On"Narmada bridge cabal -Bharuch":

- NationalHighway (NH)-8-India, connects two major cities Delhi and Mumbai via many other important cities in its align- ment including Surat, Vadodara, Ahmedabad, Udaipur, and Jai-pur. Route considered as one of the busiest national highway across the country.

- In 2012-13, heavy traffic conjunction issues are being en- countered on this NH-8 due to distress of existing Sardar Bridge on Narmada River at Bharuch. Prior to that, the two well-functioning bridges, old Sardar Bridge and 2nd Narmada constructed by L&T earlier are serving the traffic.
- NHAI (National Highway Authority of India) has taken re- sponsibility to assure smooth transportation on this highway. As per requirement, NHAI has initiated another 4-lane bridge over riv- er Narmada. For this bridge, L&T proposed extradosedbridge design keeping the aesthetics and economy as a priority and won the contract from NHAI.
- Some of the salient features of the project are as under:
- Name of the Project: Six Laning of Km 192.00 to Km 198.00 Between Vadodara to Surat Section of NH-8 Including Construction of a new four lane Extradosed Bridge across river Narmada in state of Gujarat on EPC mode

Fig :5.6 : Narmada cabal bridge

Type of Project Road and bridge Infrastructure

project Location: On Narmada River, Nr. Zadeshwar crossroads, Bharuch, Gujarat, India.

Client: National Highway Authority of India(NHAI)

Contractor: L&T Construction Heavy civil infrastructure(HCIC)

Start of the Project: 3rd March 2014 Duration of Project: 30 months

Type of Contact:E.P.C.(Engineering Procurement and Con- struction)

Type of Structural: Extradosed type Bridge structure

Specific Technology: Stay cable extradosedsystem-Dyna-Link Anchor box stay cable system, Post-tension bar stressing.

Bridge structural configuration.

This bridge has segmental precast girders erected in bal- ance cantilever manner on both side of pylons supported even- tually on pile foundation. Concept is more or less module based design, where ninenumbers of pylons having balance cantilever extra dosed design along with two abutments makes the bridge. Module geometry is illustrated in Figure

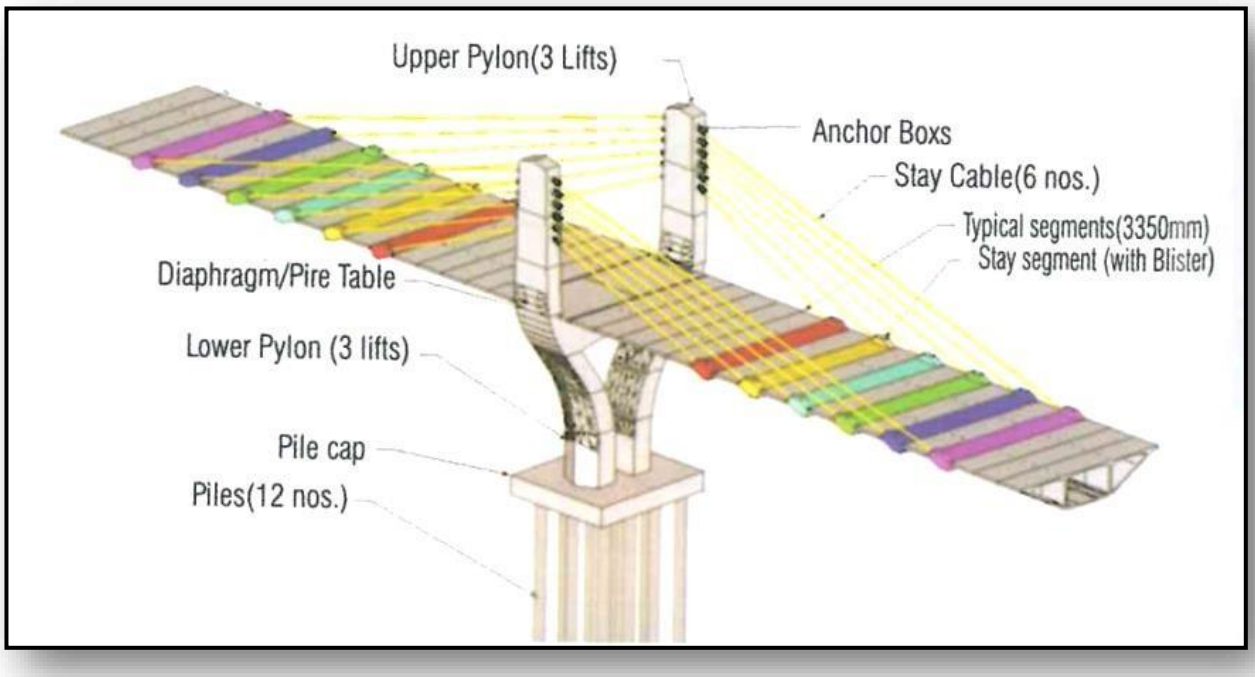


Fig :5.7 :Structural component detail

Alignment and Geometry of Bridge

The extra-dosed bridge has straight alignment between abutments A1 and A2.4 pylons are located in river, rest are sit- uated on land mode. The length of main bridge is 1344m with two end spans of 96.0m and nineinternal spans of 144.0m.

The superstructure consists of 20.8m wide precast segmental con- crete box girder, with a carriageway to accommodate four lanes of traffic. Superstructure also has a single 3.0m wide footpath. Stay cables are anchored at the edges of box girders to support them which are later deviated in short pylons. The precast seg- ments are erected by balanced cantilever construction method using a beam and winch erection system. Transverses slope of 2.5 % is provided at single end for drainage purpose.

Expansion joints are located at mid-span of every other span. For vertical displacement between two adjacent cantilevers, a shear key is provided at the expansion joint. The bridge sub- structure is Y-shaped cast-in-situ concrete pylons supported on pile foundations.

Foundations

Bored cast-in-situ piles of 1.5 m diameter have been pro- vided with over 2 m thick pile-cap. Top of pile cap is at low water level. Vertical pile capacity is duly modified for scour condition by considering overburden pressure from scour level.

Pylon

The typical for the main bridge substructure is chosen to have a Y-shaped with rounded corners to improve aesthetics and to reduce wind and water current loads. To cast this kind of shape, special steel formwork with adequate scaffolding and false-work system was designed and provided to have control over geometry of structure. Pylon consist of four major components

1 Lower pylon(cast-in-situ in 3 lifts specially design steel-forms of approximately 5m height)
2 Pier Table (cast-in-situ consist of segment shape to have uniform connection between segments and pylon)
3 Upper pylon (cast-in-situ in three lifts specially design steel- forms of approximately 5m height)
4 Anchor-box with support system (embedded in second and third lift of upper-pylon, during construction system is sup- ported by frame)

For stay cable, DYNA Link system is provided by Dywidag System International. The firm is works as a subcontractor for extradosed stay cable work by L&T.

Superstructure

In the super-structure of the main bridge, three-cell of precast segmental box girder with depth of 4.0m. Sloping outer webs connects the top slab and the inner vertical webs to stabilize the top slab in transverse direction and also to transfer stay force to the bottom of inner/vertical webs. Soffit corners are rounded due to presence of transverse tendons in outer sloping webs and alsoto reduce drag coefficients under wind loadings.

The length of typical segment is limited to 3.550m to limit the weight of the segments during handling. Segments are to be match-cast. In- tegral connection at the pylon location of substructure and the superstructure is provided by pier tables. Anchor saddle boxes are provided at upper pylon which provides individual support for each strand and avoid lateral pressures due to grouping of strands.

Balanced cantilever construction method is used to erect the box girders with epoxy joints between segments. For ser- vice and ultimate load condition adequate internal post-tensioning is provided.

The draped hybrid (part external, part internal) tendons are provided for shear relief. The box girder is transversely post-ten- sioned against live load effects to eliminate cracking in the top slab and to provide increased durability. Transverse post-ten- sioning provides further reduction in the slab thickness com- pared to reinforced concrete slabs and facilitates reduction in segment weights for handling.

Segment casting process

Total three number of cell pre-cast RCC box (Having of PT tendons, in both longitude inalas well as transverse direction) is 20.8 m wide segment casting work is going on for the river as well as land portion. The Main bridge length is 1344 m, which is divided into 10 spans with extradosed arrangement. The span consists of 8 nos. - 144 m and 2 nos. of 96 m typical shape and stay segments are as shown in below sketch.

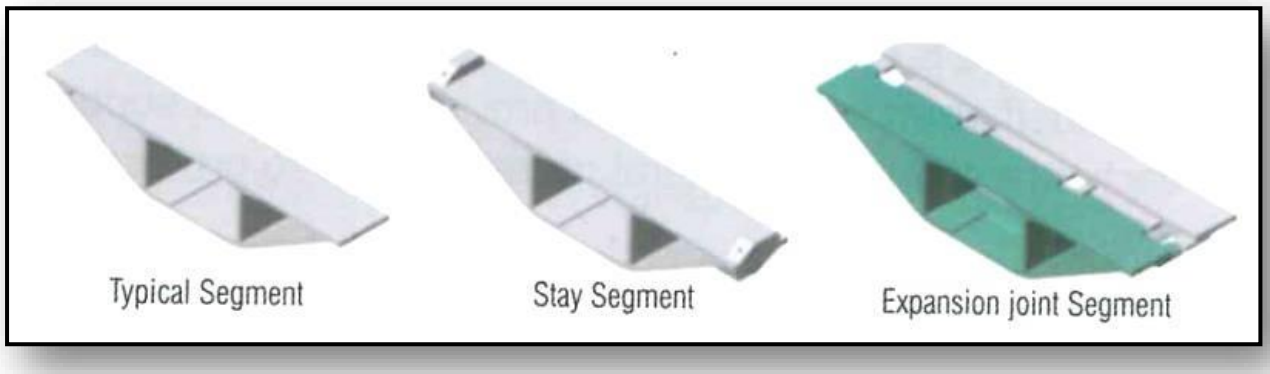


Fig :5.8 : Segment Classification

adequate space for casting and stacking of segments. Short-line segment casting arrangements and stacking yard are provided. This layout is currently in modification phase due to increase in the number of segment casting mounds. Gan- try cranes are provided in the arrangements. To lift 1 segment (105-115T) minimum 2 nos. of cranes are required for handling/ casting/stacking/loading work. Figure shows segment views and Figure shows casting yard.

There is a provision for road and survey towers in this ar- arrangement. For loading/unloading purpose loading space is provided for puller tractor to move for better access.

Typical segment casting cycle consist of alignment work rebar and post tensioned work, shuttering work, inspection and concreting, deshutteringwork. Cumulatively it results in three days of typical segment casting cycle. Stay segment takes five days due to complex reinforcement and other guide-pipe ar- rangement in blisters.

Segment handling

Segment stacking yard is planned adjacent to segment production area. Two 100MT capacity gantries for handling of segments are erected on track beam supported on RCC raft.

Considering balance cantilever method of erection pre- liminary step of handling and transportation work is to identify the segment.Erection of segment on any pylon will start from expansion side segment.

Fig :5.9: Casting Molds With Staking Yard For Segment

After the erection of one segment on expansion side; next segment will be erected on continuous joint side. After that,lifting beam is attached to that particular segment. Lifting holes are provided in design and left during casting of segments, and with help of both of lifting cranes slings and de-shackles segment is lifted and moved to loading bay.

Chapter6.
Swachh Bharat Abhiyan (Clean India):

PM Narendra Modi launched the Swachh Bharat Abhiyan 3 years ago on 2nd October 2014 following the path shown by Mahatma Gandhi. A Swachh Bharat was one of Gandhiji's dearest dreams and it was his belief in the cause, which made our country come so far ahead in this journey. There were almost 550 million people practicing open defecation till 2014; 250 million of them no longer practice open defecation.

The mission of the program isto focus on sanitation,cleanliness and to eliminate open defecation in India by 2019. Sanitation coverage has already gone up from 42% in October 2014 to 60% in May 2017. The Abhiyan is divided into urban and rural missions taken over by Ministry of Urban Development (MoUD) and Ministry of Drinking Water and Sanitation (MDWS) respectively. The total estimated cost of Swachh Bharat Mission Urban for years 2014-19 is Rs. 62,009 crores and thesameis Rs.1,34,000 crores for Swachh Bharat Mission Gramin.


Fig : 6.1 : village photos

The national movement for 'Swachh Bharat' can also be viewed as 'Swastha Bharat' as it comprises of a series of public health initiatives towards practicing preventive health. Shri Narendra Modi is the first ever Prime Minister of India who has paid attention to this crucial link between open defecation/sanitation and health of the nation.

Although, building toilets will be job half-done but ending open defecation is as much about fighting mind-sets and PM Modi is driving this transition through behavioural change among people through awareness campaigns, speeches and celebrity involvement in the program. Swachh Bharat Abhiyan receives 15 per cent of the funding for Information, Educationand Communication (IEC) to trigger behavior change and generate demand for sanitation.

Corporate houses have been encouraged to participate in the SBM (G) as a part of the CorporateSocial Responsibility. Many initiatives have sprung up around the country either through public-private partnership or private entrepreneurial ventures that are working towards waste management and waste collection/segregation. Swachh Bharat Mission also has a hug

economic impact on the country. UNICEF estimates that each household in India will save Rs. 50,000 per year from PM Modi's Swachh Bharat Mission

The results of the mission are staggering and eye opening. Five states; Kerala, Himachal Pradesh, Uttarakhand, Haryana and Sikkim, are Open Defecation Free and it is estimated that 10-11 states will declare themselves ODF by March 2018. Over 2.5 lakh villages and 204 districts have become open defecation free (ODF).

PM and the MDWS launched a transparent third party verification survey report conducted by Quality Council of India (QCI) to take stock of rural sanitation in all States and UTs, called Swachh SurvekshanGramin 2017. It found the overall toiletcoverageto be 63.73% and that 91.29% of the people that have access to a toilet, use it.

In the urban areas, the number of households without toilets has come down to 14.5 per cent from 18 per cent in three year. We have a long way to go to make India completely Swachh but this Abhiyan will always beremembered as a landmark in that trajectory

6.1 Swachhta needed in Kholeshewar village -Existing Situation with photograph :

We have done one survey on existing condition of village regarding swachhta. The people are maintaining cleanliness of the village but in some streets there is no swachhata because there are animal and their waste and mud, etc. However, there is not proper garbage cleaning system people often throw their garbage in the Tapi river otherwise they throw away on the street.

Fig: 6.2: Existing Photos of Swachhta

6.2 Guidelines - Implementation in Kholeshwar village with Photograph :

According to villagers there are no any door to door garbage collectors, thus villagers have to throw their garbage on the near tapi river embankment and and we had seen that there is no any dustbin located on the village

Fig: 6.3 :Existing Photos of village streets and approach street

6.3 Activities Done by Students for Kholeshwar village with Photograph :

In corona pandemic situation we meet sarpanch and talati mantri of kholeshwar village we have done one activity of swachhta awareness in the village and we have done an interaction with villagers and aware them about the importance of swachhta in our life and told them to keep the village and infrastructure clean and safe.

Chapter7.

Village condition due to Covid-19:

With respect to COVID 19 pandemic, Ministry of Panchayati Raj, Government of India in close collaboration with State Governments has taken various initiatives. Close consultation and guidance of the State as well as District authorities is being maintained to ensure that lock down conditions arenot violated and norms of social distancing are scrupulously followed to contain the spread of thedisease. India has overtaken Brazil and become the second-worst affected country in the world by the coronavirus pandemic, with more than 4 million cases. COVID-19 had mostly remained in India's cities, but the disease is now spreading to rural India – an area with over 850 million people and far worse healthcare.

The reason for this shift appears to be migrant workers who have been returning totheir villages since lockdown was eased at the end of June. The medical response to stop the spreadand treat those infected has been inadequate, according to media reports. With one trained doctor forevery 1,497 people, against the World Health Organization recommended one per 1,000, and publichealth expenditure for 2018 at just 1.3% of GDP, India faces an uphill struggle in dealing with thepandemic.

While two-thirds of India's population lives in rural areas, there are almost four times asmany health workers per person in cities. Most rural communities rely on untrained health workers.Over two-thirds of these rural health providers have no formal medical training, but remain the only option of medical supportfor most of the rural population.

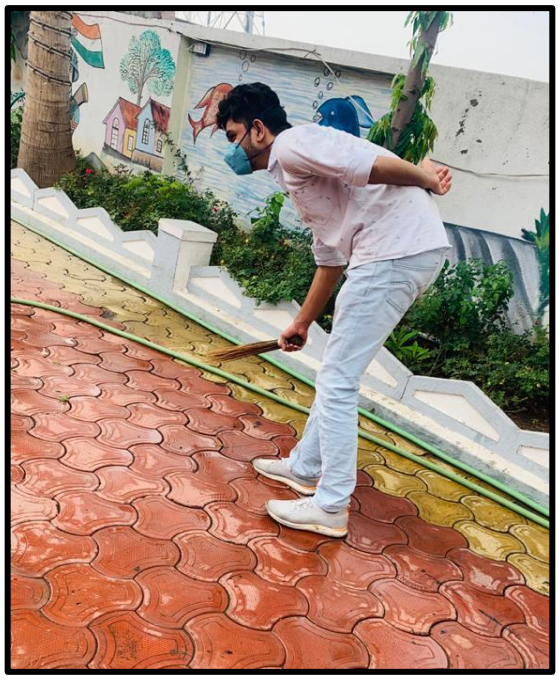
7.1 Taken steps in Kholeshwar village related to existing situation with photograph :

In kholeshwar village as per the sarpach they told as that they hold the public for quarantine on the aganwadi as well as in new panchayat office most of case s they told the villagers to stay for home quarantine because there is a limited space for quarantine so they prefer home quarantine.

7.2 Activities Done by Students for kholeshwar village with Photograph:

In corona pandemic situation we meet sarpanch and talatimantri of kholeshwar village wedid awareness camp on the covid-19 and we also use mask and sanitizer in this camp, moreover we told them The best way to prevent and slow down transmission is to be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol based rub frequently and not touching your face.

7.3 Actual Activity Done by Students for making your village Clean with Photograph



Chapter8.
Sustainable Design Planning Proposal (Prototype Design) - Part-I(Scenario / Existing Situation / Proposed Design in Auto cad /Recapitulation Sheet / Measurement Sheet / Abstract Sheet /Sustainabilityof Proposal/Any othersoftware):

8.1 Design Proposals :

There is different type of structure design is given further as per the requirement of villagers and their suggestion.

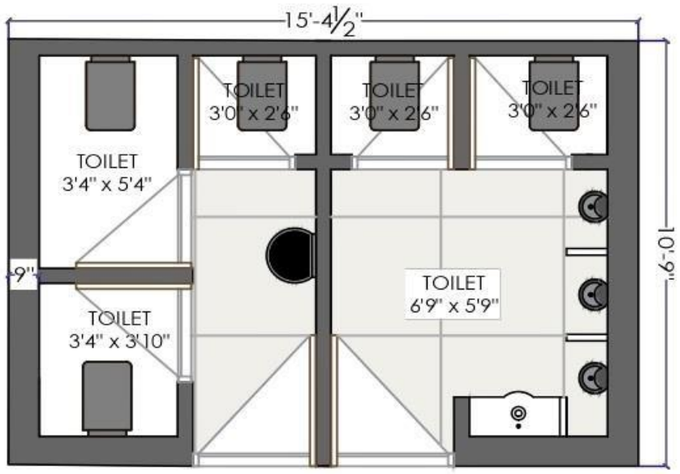
8.1.1 Physical Design : public toilet

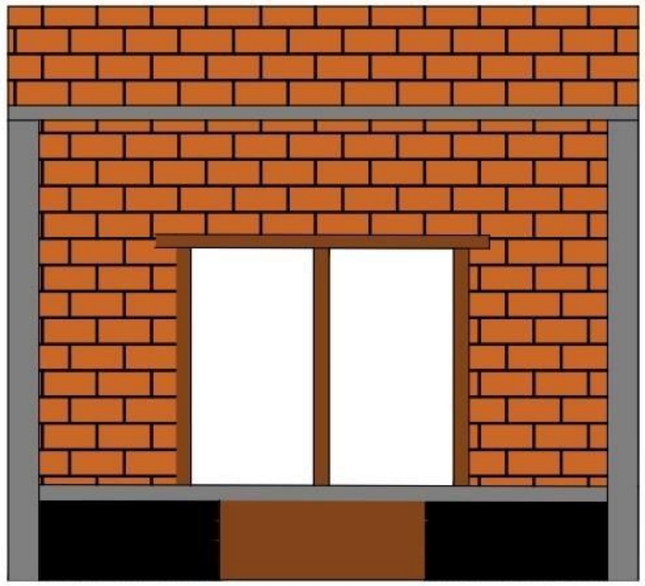
In the kholeshwar village there is no any public toilet facility due to this some villagers and visitors piss on open areas, so we design one public toilet as per the represents.

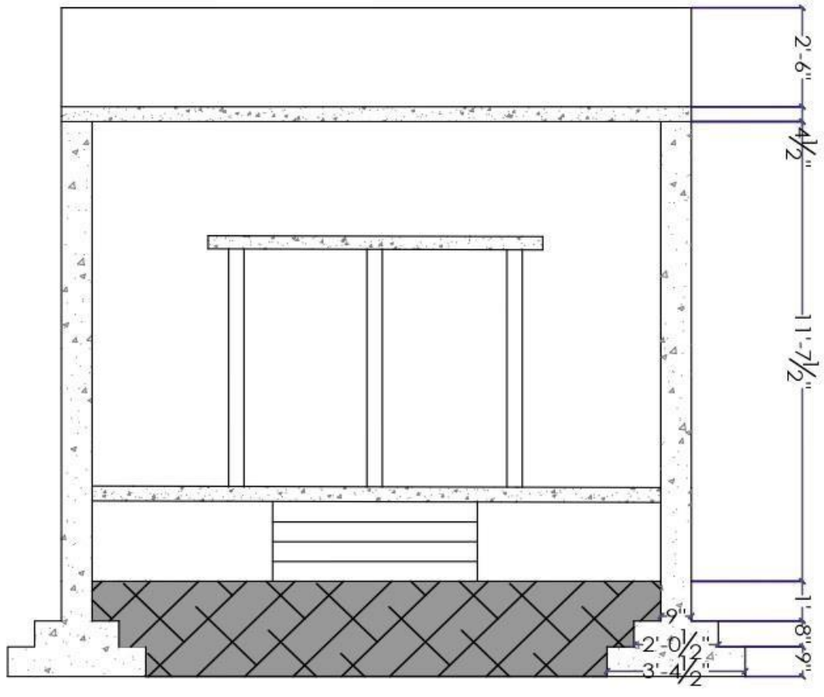
Sr. No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Excavation For columns	CUM	4	1.100	1.100	1.200	5.808	
	Excavation For plinth beam	CUM	1	25.168	0.33	0.33	2.740	8.548
2.	PCC							
	Below Foundation	CUM	4	1.100	1.100	0.300	1.452	
	Below Plinth beam	CUM	1	25.168	0.300	0.075	0.566	
	Below Flooring	CUM	1	5.715	3.276	0.100	1.872	3.890
3.	RCC							
	Column Foundation	CUM	4	1.100	1.100	0.300	1.452	
	Column	CUM	4	0.230	0.230	0.300	0.635	
	Plinth Beam	CUM	1	25.168	0.230	0.300	1.736	
	Slab Beam	CUM	1	25.168	0.230	0.300	1.736	
	Slab	CUM	1	5.715	3.276	0.125	2.340	7.899
4.	Brickwork	CUM	1	17.982	0.230	3.00	12.407	
		CUM	1	11.733	0.1115	3.00	4.047	
	Deduction							
	D1	CUM	-3	2.588	0.230	3.00	5.357	
	D2	CUM	-2	0.915	0.115	3.00	0.6313	
	W1	CUM	-5	0.300	0.180	0.300	0.045	

	W2	CUM	1	2.00	0.180	0.300	0.045	10.40
5.	Plaster							
		SqM	1	33.774		3.00	101.322	
	Deduction							
	D1	SqM	-1	2.588		3.00	2.485	
	D2	SqM	-1	0.915		3.00	0.631	
	W1	SqM	3	1.180		1.200	1.133	
	W2	SqM	1	2.00		1.200	1.133	95.288
6.	External Plaster							
		SqM	1	17.982		3.00	53.946	
	Deduction							
	D1	SqM	-3	2.588		3.00	5.357	
	D2	SqM	-2	0.915		3.00	0.6313	
	W1	SqM	-5	0.300		0.300	0.045	
	W2	SqM	1	2.000		0.300	0.045	47.112
7.	Paint	SqM	1	33.774		3.00	101.322	
	Deduction							
	D1	SqM	-1	2.588		3.00	2.485	
	D2	SqM	-1	0.915		3.00	0.631	
	W1	SqM	3	1.180		1.200	1.133	
	W2	SqM	1	2.00		1.200	1.133	95.288
8.	External Paint							
		SqM	1	17.982		3.000	53.946	
	Deduction							
	D1	SqM	-3	2.588		3.00	5.357	
	D2	SqM	-2	0.915		3.00	0.6313	
	W1	SqM	-5	0.300		0.300	0.045	
	W2	SqM	1	2.000		0.300	0.045	47.112
9.	Door							
	D1	SqM	3	2.588		3.00	23.292	
	D2	SqM	2	0.915		3.00	5.49	28.782
10.	Windows							
		SqM	5	0.300		0.300	0.45	0.2025

Abstract Sheet					
Public Toilet					
Sr.On	Description	Unit	Quantity	Rate	Amount
1.	Excavation	CuM	8.548	155	1,324
2.	PCC	CuM	3.890	4000	15560
3.	RCC	CuM	7.899	8870	70,064
4.	Brick Work	CuM	10.400	6450	67080
5.	Plaster	SqM	95.288	258	24584
6.	External Plaster	SqM	47.912	258	12361
7.	Paint	SqM	95.288	93	8861
8.	External Paint	SqM	47.112	93	4381
9.	Wooden Door	SqM	28.782	5100	5128
10.	Windows	SqM	0.2025	3700	749
	Total Amount				2,10,093
	Contingencies	3%			6,302
	Total Cost				216395







VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	PUBLIC TOILET
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

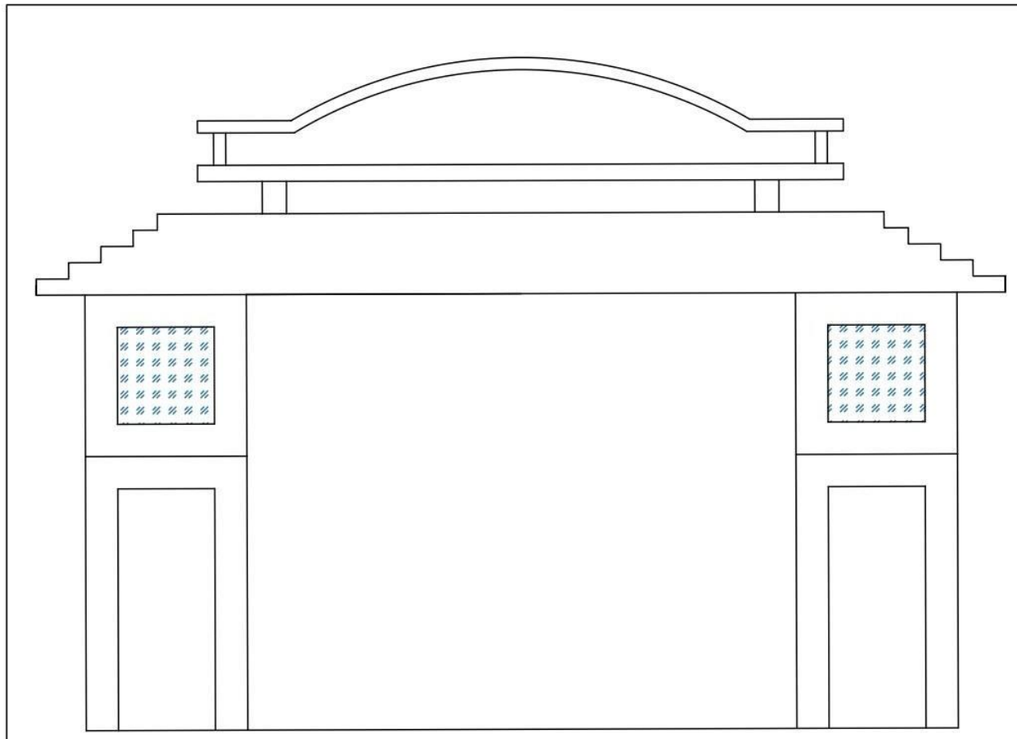
8.1.2 Heritage Village Design : Entrance Gate

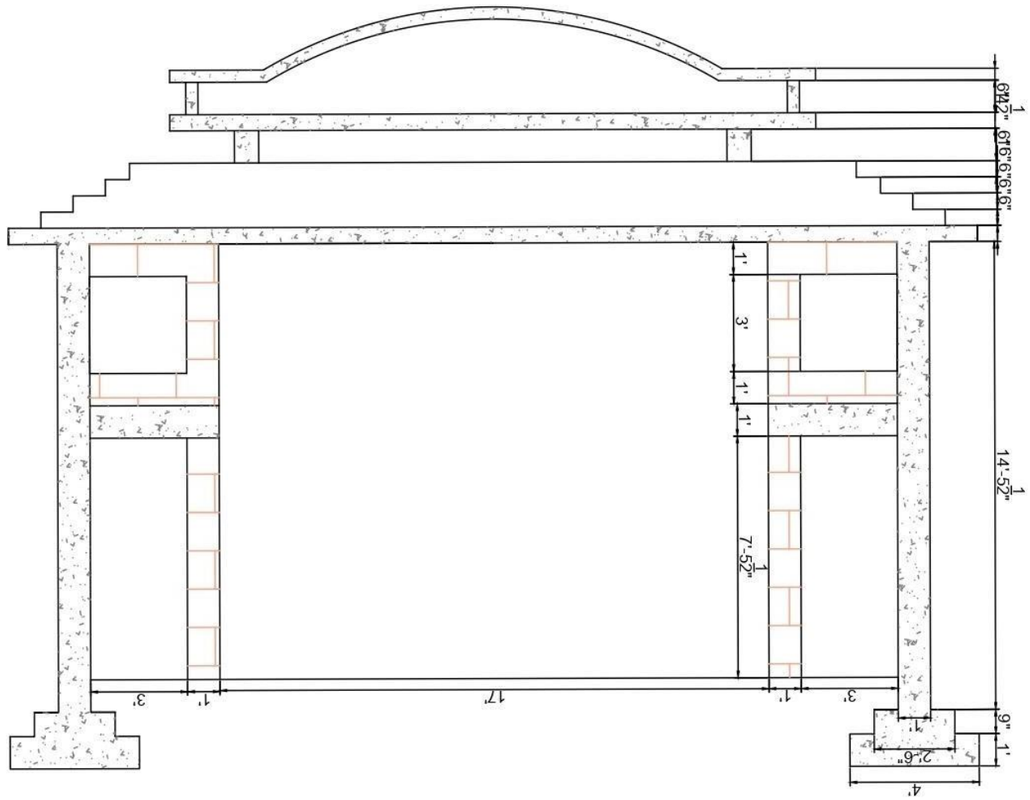
The Kholeshwar village has no main entrance gate at the village approach road. So that we have designedthevillageentrance gateasheritage village design

Sr. No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Excavation For columns	CUM	2	1.100	1.100	1.200	2.904	2.904
2.	PCC							
	Below Foundation	CUM	2	1.100	1.100	0.300	1.452	1.452
3.	RCC							
	Foundation step 1	CUM	2	1.21	0.300	1.21	0.890	
	Foundation Step 2	CUM	2	0.79	0.228	0.79	0.285	
	Column	CUM	2	0.300	0.230	0.300	4.747	
	Slab 1	CUM	1	9.44	0.230	0.300	1.736	
	Slab 2	CUM	2	1.2192	0.230	0.300	0.168	
	Slab 3	CUM	1	14.325	0.230	0.300	0.988	8.814
4.	Brickwork							
	Wall 1	CUM	2	0.300	0.300	2.273	0.409	
	Wall 2	CUM	4	1.219	0.300	0.300	0.438	
	Wall 3	CUM	2	0.9144	0.300	0.300	0.163	
	Slab Upper walls	CUM	1	9.44	0.300	0.690	1.95	2.964
5.	Plaster							
	Column	CUM	2	0.300	0.230	0.300	4.747	
	Slab 1	CUM	1	9.44	0.230	0.300	1.736	
	Slab 2	CUM	2	1.2192	0.230	0.300	0.168	
	Slab 3	CUM	1	14.325	0.230	0.300	0.988	
	Wall 1	CUM	2	0.300	0.300	2.273	0.409	
	Wall 2	CUM	4	1.219	0.300	0.300	0.438	
	Wall 3	CUM	2	0.9144	0.300	0.300	0.163	8.649
7.	Paint	SqM	1	33.774		3.00	101.322	
	Column	CUM	2	0.300	0.230	0.300	4.747	
	Slab 1	CUM	1	9.44	0.230	0.300	1.736	
	Slab 2	CUM	2	1.2192	0.230	0.300	0.168	
	Slab 3	CUM	1	14.325	0.230	0.300	0.988	
	Wall 1	CUM	2	0.300	0.300	2.273	0.409	
	Wall 2	CUM	4	1.219	0.300	0.300	0.438	

	Wall 3	CUM	2	0.9144	0.300	0.300	0.163	8.649

Abstract Sheet					
Entrance Gate					
Sr.On	Description	Unit	Quantity	Rate	Amount
1.	Excavation	CuM	2.904	155	450
2.	PCC	CuM	1.452	4000	5.808
3.	RCC	CuM	8.814	8870	78180
4.	Brick Work	CuM	2.964	6450	19117
5.	Plaster	SqM	8.649	258	2231
7.	Paint	SqM	8.649	100	864
	Total Amount				100847
	Contingencies	3%			3025
	Total Cost				103872





VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	ENTRANCE GATE
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

8.1.3. Social infrastructure : PHC (Public Health Center)

- The kholeshwar village has not a primary health centre, peoples are suffering a lot they have to go kamrej for their minor health related problems and some time villagers don't has transportation facilities.
- After discussing with surpanch(Daxaben H Vasava)and talatimantri (Bijal R Tamboli) of kholeshwar village we find one place near to aanganwadi for health centre plane and design

Key Plan of Health center place

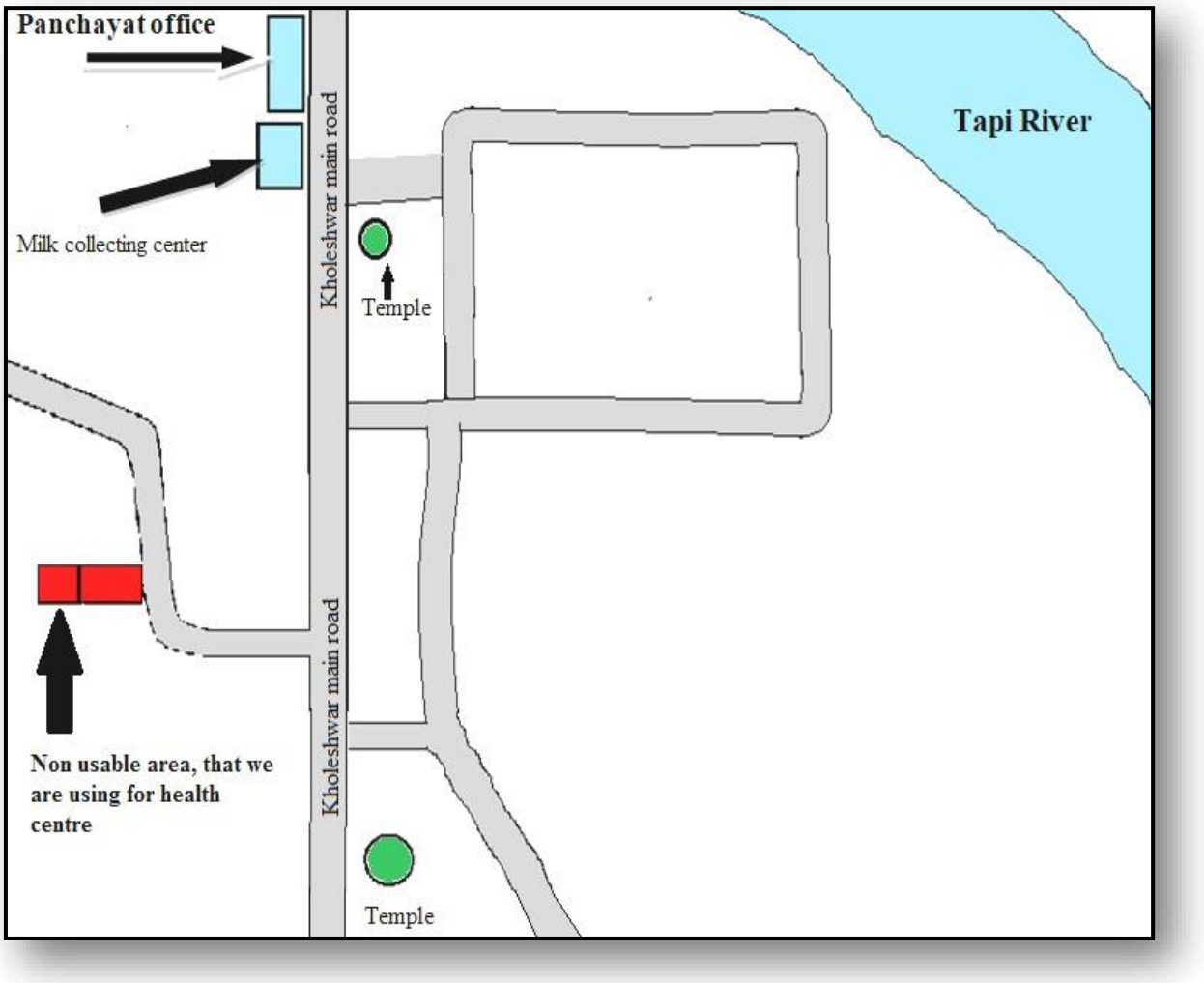


Fig : 8.5 : Key Plan of Health Centre

Existing ruins construction photos.

Fig: 8.6 Existing ruins construction

Existing plan of ruin

AANNOTATION	DIMENTIONS
W1	3' X 5'
W2	6' X 5'
D3	6' X 7'

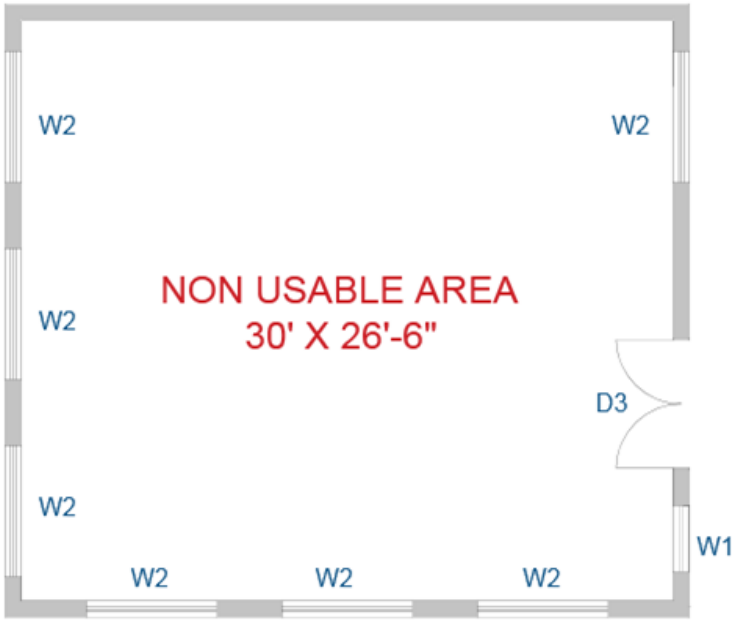


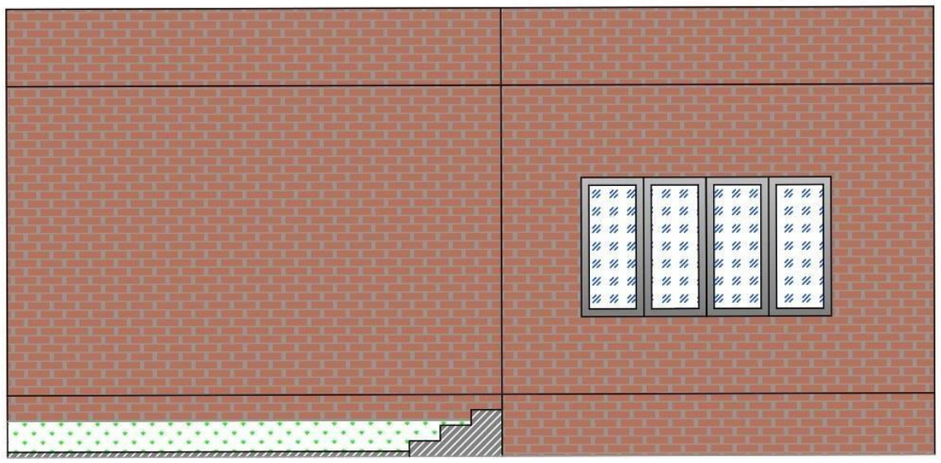
Fig: 8.7: Existing ruins construction plan

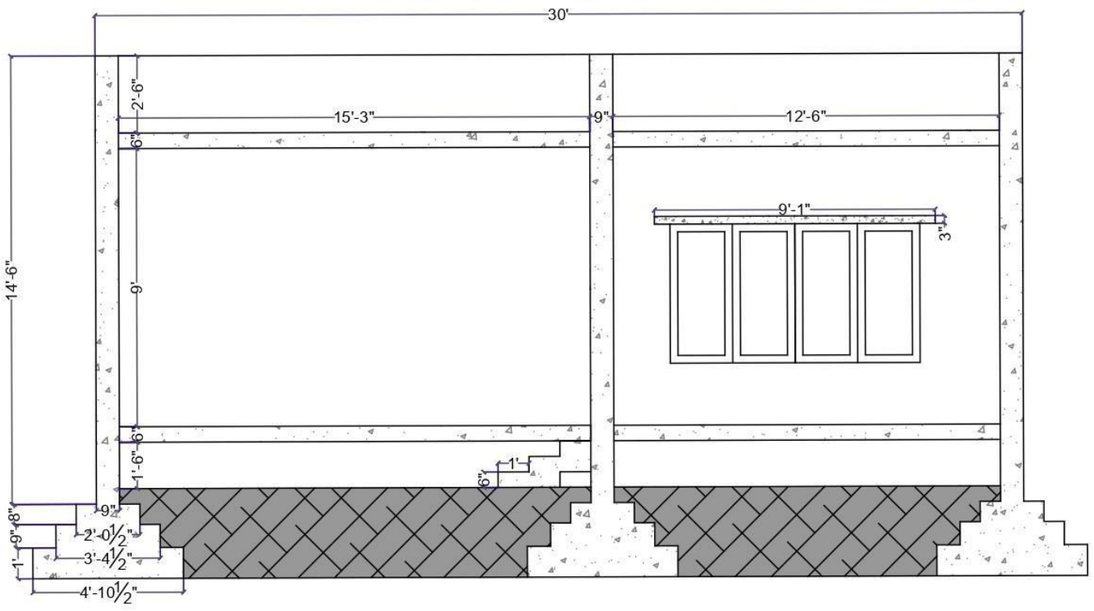
Sr.No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Excavation For Foundation	CUM	1	27.4	1.2	1.3	42.744	42.744
2.	B.B.C.C	CUM	1	27.4	1.2	0.20	6.376	6.376
3.	Brick Work In Foundation							
	Step -1	CUM	1	27.86	1.47	03	11.450	
	Step-2	CUM	1	27.58	1.0	0.23	6.3434	
	Step-3	CUM	1	27.99	0.609	0.20	3.41	
	Step-4	CUM	1	28.37	0.22	0.475	2.92	24.12
4.	Brickwork in Superstructure	CUM	1	28.37	0.22	2.74	17.10	
	Toilet	CUM	1	5.5	0.22	2.74	3.315	
	Reception	CUM	1	7.84	0.22	2.74	4.73	25.145
	Deduction							
	D1	CUM	1	0.914	0.22	1.828	0.367	
	D2	CUM	3	0.762	0.11	2.514	0.63	
	W1	CUM	3	3.048	0.22	1.371	2.76	
	V1	CUM	2	0.450	0.22	0.457	0.091	3.848
					Total volume of brick			21.297
5.	Earthwork in Plinth							
	Ward	CUM	1	5.50	5.18	0.73	20.747	
	Doctor Cabin	CUM	1	3.048	4.54	0.73	10.101	
	Reception	CUM	1	4.75	3.657	0.609	5.924	36.772
6.	RCC In Slab	CUM	1	0.128	5.636	0.15	14.914	
	Slab - 2	CUM	1	3.81	2.133	0.15	1.219	16.133
7.	Plaster	SqM	1	56.75		3.2	181.6	
	Deduction							
	D1	CUM	1	0.914		1.828	1.67	
	D2	CUM	3	0.762		2.514	5.747	
	W1	CUM	3	3.048		1.371	12.53	
	V1	CUM	2	0.450		0.457	0.411	161.24
8.	External	SqM	1	33.52		3.2	107.26	

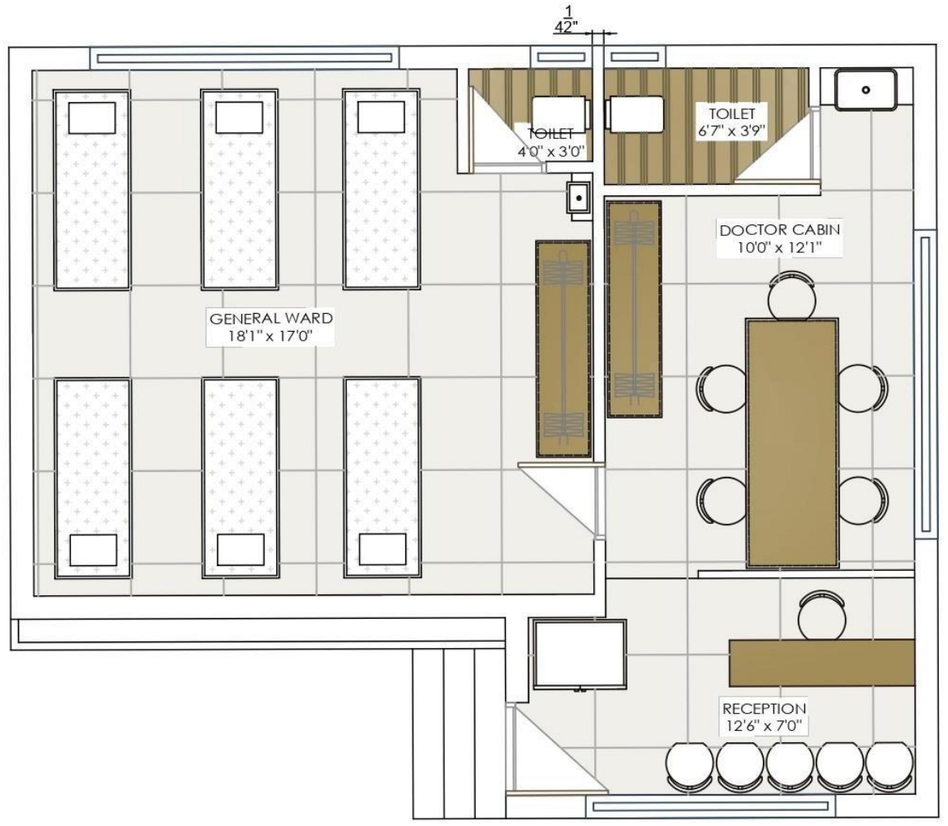
	Plaster							
	Deduction							
	D1	CUM	1	0.914		1.828	1.67	
	W1	CUM	3	3.048		1.371	12.53	
	V1	CUM	2	0.450		0.457	0.411	92.64
7.	Paint	SqM	1	56.75		3.2	181.6	
	Deduction							
	D1	CUM	1	0.914		1.828	1.67	
	D2	CUM	3	0.762		2.514	5.747	
	W1	CUM	3	3.048		1.371	12.53	
	V1	CUM	2	0.450		0.457	0.411	161.24
8.	External Paint	SqM	1	33.52		3.2	107.26	
	Deduction							
	D1	CUM	1	0.914		1.828	1.67	
	W1	CUM	3	3.048		1.371	12.53	
	V1	CUM	2	0.450		0.457	0.411	92.64
9.	Door							
	D1	CUM	1	0.914		1.828	1.67	
	D2	CUM	3	0.762		2.514	5.747	7.41
10.	Window Ventilation							
	W1	CUM	3	3.048		1.371	12.53	
	V1	CUM	2	0.450		0.457	0.411	12.963

Abstract sheet					
Public Health Center					
Sr.On	Description	Unit	Quantity	Rate	Amount
1.	Excavation	CuM	42.744	155	6625
2.	B.B.C.C	CuM	6.376	4000	25496
3.	Brick work in foundation	CuM	24.12	5200	125424
4.	Brick Work	CuM	21.297	5200	110744

	super structure				
5.	Earthwork in Plinth	CuM	36.772	155	5699
6.	RCC	CuM	16.133	8870	143099
7.	Internal Plaster	CuM	161.24	258	41599
8.	External Plaster	SqM	92.64	258	23901
9.	Internal Paint	SqM	161.24	93	14995
10.	External Paint	SqM	92.64	93	8615
11.	Wooden Door	SqM	7.41	5100	37791
12.	Windows	SqM	12.963	3700	47963
	Total Amount				591861
	Contingencies	3%			17755
	Total Cost				609616







VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	PUBLIC HEALTH CENTER
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

8.1.4. Social infrastructure Anganwadi :

- There is small aaganwadi existing in village.Aaganwadi is constructed in centre of village.Theaaganwadi have a capacity of 15no. of candidates but total number of candidates is 25 or more so anganwadi needs new structure for

Key plan of aaganwadi

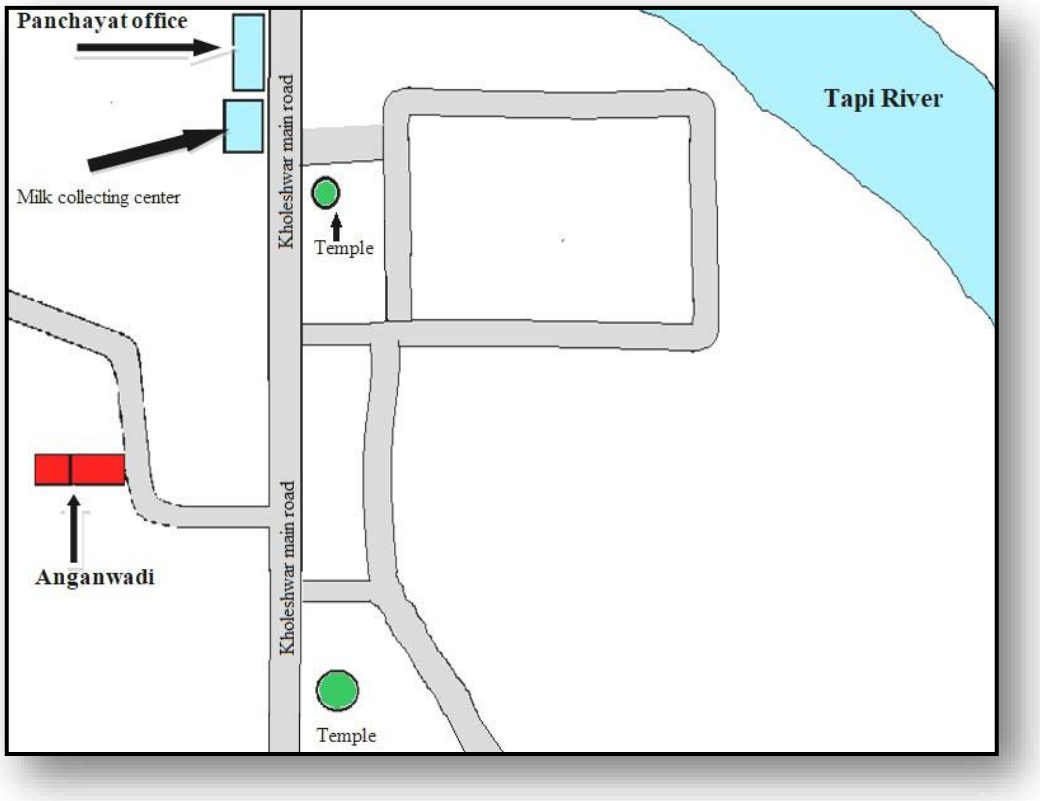


Fig: 8.10: Key plan of Aaganwadi

Size of existing aaganwadi:-

- Size of aanganwadi : 26’-6” x 58’- 6”
- It has one classroom, toilet and kitchen

  - ✓ Size of classroom(Hall) :-13’7” x 20’
  - ✓ Toilet:-5’ x 3’
  - ✓ Kitchen :- 10’4” x 9’6”

It has a built-up area of 1550 sq.ft for future construction work in which 382 sq.ft. Area Is already covered with existing aaganwadi.

Fig.: 8.11: Measuring Existing Aaganwadi

Layout plan of existing aaganwadi

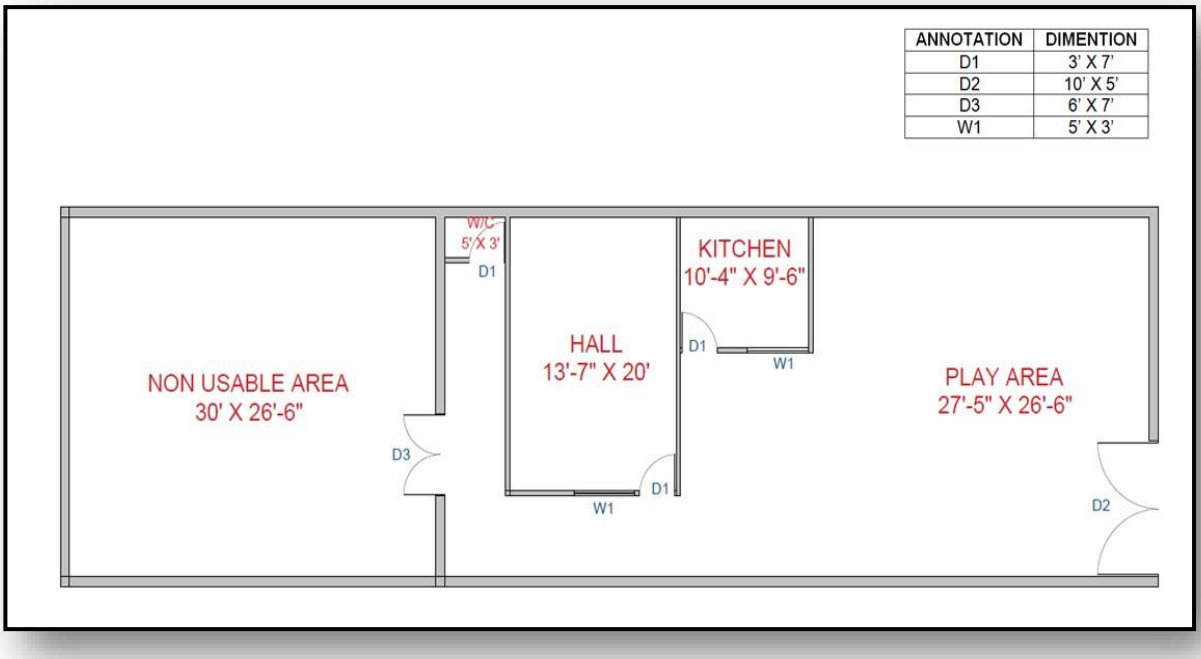


Fig:8.12: Layout plan of existing aaganwadi

About Existing aaganwadi:-

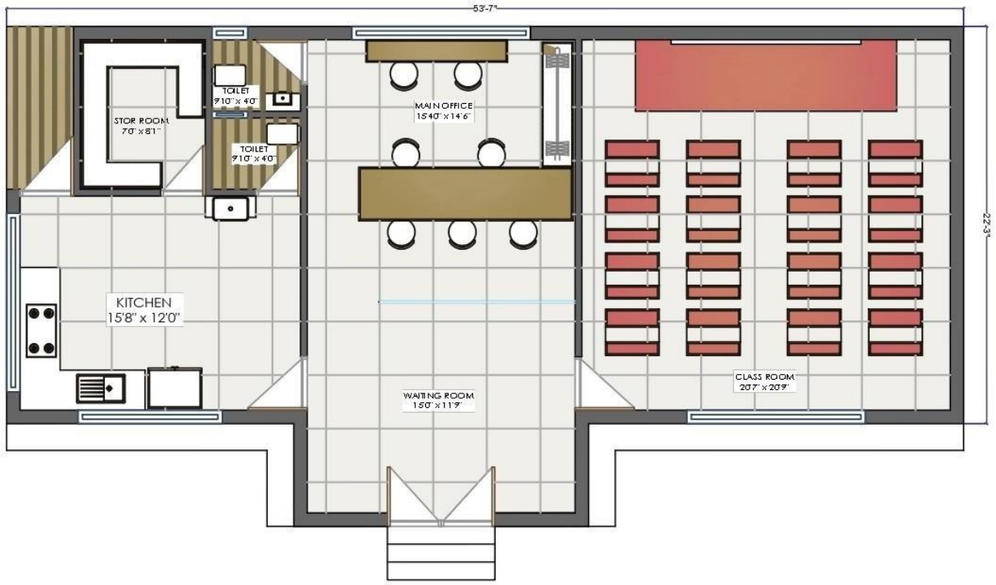
- Aanganwadi structure is totally damaged and water is leaked from roof of aaganwadi and roof is covered by cement sheet, so during monsoon situation it is too critical for children'sto sit in aaganwadi.Due to this poor structure of aanganwadi some parents cannot allow their children's to go to aanganwadi. As per the census 2011 the kholeshwar village has total 157 children's, age 0-6 year between. Nowadays total 280 numbers of families are living in the kholeshwar villageTill 2018, the aaganwadi has 10 students studying and total 25 children for polio and other medical scheme. But today, there are 25+ students studying and about 35+ children for medical scheme.So we need to propose new aaganwadi for the betterment of children in village with the facilities like: class room, hall and a kitchen with a drinking water and toilet facility. Class room should be well painted by the artist. Some racks and cupboards should also be furnished

Sr.No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Excavation For Foundation	CUM	1	55.154	1.2	1.3	86.04	86.04
2.	P.C.C	CUM	1	55.154	1.2	0.20	13.236	13.236
3.	Brick Work In Foundation							
	Step -1	CUM	1	54.606	1.474	0.30	24.14	
	Step-2	CUM	1	53.554	1.000	0.23	12.31	
	Step-3	CUM	1	56.274	0.609	0.20	6.84	
	Step-4	CUM	1	57.114	0.22	0.604	7.652	50.942
4.	Brickwork in Superstructure	CUM	1	57.144	0.22	3.20	40.21	
	Toilet	CUM	2	2.508	0.114	3.20	1.83	
	Entry	CUM	2	1.744	0.220	3.20	2.45	
	Store Room	CUM	2	2.44	0.144	3.20	1.78	
	Deduction							
	D1	CUM	3	0.762	0.22	2.514	0.278	
	D2	CUM	2	0.914	0.11	2.514	0.505	
	D3	CUM	1	1.828	0.11	2.514	0.505	
	W1	CUM	4	3.048	0.22	1.371	3.677	
	V1	CUM	2	0.450	0.22	0.457	0.091	41.995
5.	Earthwork in Plinth							
	Class Room	CUM	1	0.25	6.30	0.609	23.98	

	Waiting Room	CUM	1	4.63	8.07	0.609	22.77	
	Kitchen	CUM	1	4.75	3.657	0.609	10.578	
	Toilet + storeroom	CUM	1	3.71	2.44	0.609	5.512	63.03
6.	RCC In Slab	CUM	1	16.30	6.73	0.15	16.45	
	Slab - 2	CUM	1	5.03	1.71	0.15	1.28	17.73
7.	Plaster	SqM	1	79.268		3.2	254.81	
	Deduction							
	D1	SqM	3	0.762		2.514	5.747	
	D2	SqM	2	0.914		2.514	4.595	
	D3	SqM	1	1.828		2.514	4.595	
	W1	SqM	4	3.048		1.371	16.715	
	V1	SqM	2	0.457		0.457	0.418	222.74
8.	External Plaster	SqM	1	49.7		4.97	247.01	
	Deduction							
	D3	SqM	1	1.828		2.514	4.595	
	W1	SqM	4	3.048		1.371	16.715	
	V1	SqM	1	0.457		0.457	0.418	225.28
9.	Paint	SqM	1	79.268		3.2	254.81	
	Deduction							
	D1	SqM	3	0.762		2.514	5.747	
	D2	SqM	2	0.914		2.514	4.595	
	D3	SqM	1	1.828		2.514	4.595	
	W1	SqM	4	3.048		1.371	16.715	
	V1	SqM	2	0.457		0.457	0.418	222.74
10.	External Paint	SqM	1	49.7		4.97	247.01	
	Deduction							
	D3	SqM	1	1.828		2.514	4.595	
	W1	SqM	4	3.048		1.371	16.715	
	V1	SqM	1	0.457		0.457	0.418	225.28
11.	Door							
	D1	SqM	3	0.762		2.514	5.747	
	D2	SqM	2	0.914		2.514	4.595	
	D3	SqM	1	1.828		2.514	4.595	14.937
12.	Window							

	Ventilation							
	W1	SqM	4	3.048		1.371	16.71	
	V1	SqM	2	0.572		0.457	0.522	17.232

Anganwadi					
Abstract					
Sr.On	Description	Unit	Quantity	Rate	Amount
1.	Excavation	CuM	86.04	155	13336
2.	B.B.C.C	CuM	13.236	4000	52944
3.	Brick work in foundation	CuM	50.942	5200	264898
4.	Brick Work super structure	CuM	41.995	5200	218374
5.	Earthwork in Plinth	CuM	63.03	155	9769
6.	RCC	CuM	17.73	8870	157265
7.	Internal Plaster	CuM	222.74	258	57466
8.	External Plaster	SqM	225.28	258	58122
9.	Internal Paint	SqM	222.74	93	20714
10.	External Paint	SqM	225.28	93	20951
11.	Wooden Door	SqM	14.937	5100	76178
12.	Windows	SqM	17.232	3700	63758
	Total Amount				10,13,775
	Contingencies	3%			30,413
	Total Cost				1044188



VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	ANGANWADI
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

8.1.5. C.C.T.V. Room

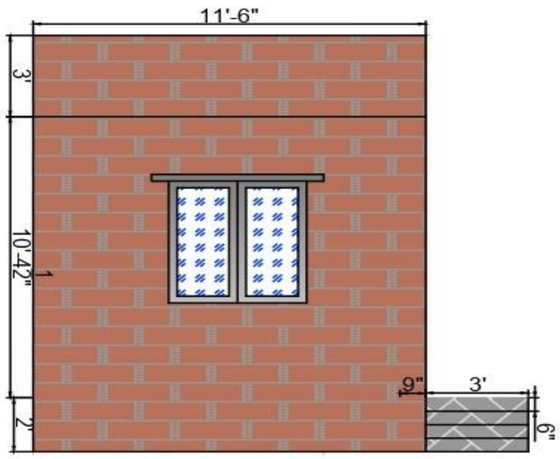
In the Kholeshwar village there isn't any C.C.T.V Camera for safety purpose so we design one C.C.T.V Camera Room so that village can protect 24x7 under C.C.T.V serve lance.

Sr.No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Excavation For Foundation	CUM	1	10.807	1.50	1.53	24.95	24.95
2.	P.C.C For Foundation	CUM	1	10.87	1.50	0.10	1.63	1.63
3.	Brick Work In Foundation							
	Step -1	CUM	1	10.87	1.18	0.30	3.83	
	Step-2	CUM	1	10.87	0.70	0.23	1.73	
	Step-3	CUM	1	10.87	0.23	0.49	1.23	6.83
4.	Brickwork in Superstructure	CUM	1	10.87	0.23	2.96	7.40	
	Toilet 1	CUM	1	1.21	0.115	2.96	0.54	
	Toilet 2	CUM	1	0.91	0.115	2.96	0.31	8.25
	Deduction							
	D1	CUM	1	0.91	0.23	2.30	0.27	
	D2	CUM	1	0.70	0.115	2.30	0.14	
	V1	CUM	1	0.46	0.23	0.40	0.048	7.79
5.	Earthwork in Plinth		1	5.978	5.02	0.61	8.42	8.43
6.	RCC In Slab	CUM	1	3.50	4.45	0.15	2.34	2.34
7.	Plaster	SqM	1	11.15		11.84	32.99	
	Deduction							
	D1	SqM	1	0.91		2.30	2.09	
	D2	SqM	1	0.76		2.30	1.75	
	V1	SqM	1	0.46		0.46	0.92	28.24

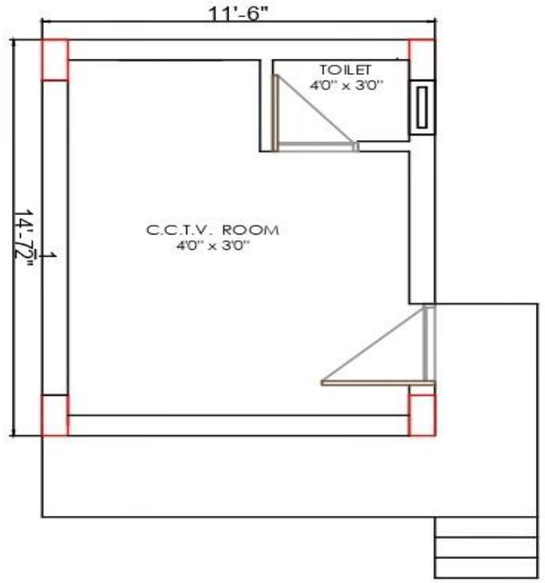
8.	External Plaster	SqM	1	12.4		2.96	36.704	
	Deduction							
	D1	SqM	1	0.91		2.30	2.09	
	V1	SqM	1	0.76		2.30	0.92	33.69
9.	Paint	SqM	1	11.15		11.84	32.99	
	Deduction							
	D1	SqM	1	0.91		2.30	2.09	
	D2	SqM	1	0.76		2.30	1.75	
	V1	SqM	1	0.46		0.46	0.92	28.24
10.	External Paint	SqM	1	12.4		2.96	36.704	
	Deduction							
	D1	SqM	1	0.91		2.30	2.09	
	V1	SqM	1	0.76		2.30	0.92	33.69
11.	Door & Ventilation							
	D1	SqM	1	0.91		2.30	2.09	
	D2	SqM	1	0.76		2.30	1.75	
	V1	SqM	1	0.46		0.46	0.92	4.76

C.C.T.V Room					
Abstract					
Sr.On	**Description**	**Unit**	**Quantity**	**Rate**	**Amount**
1.	Excavation	CuM	24.95	155	3868
2.	P.C.C	CuM	1.63	4000	6520
3.	Brick work in foundation	CuM	6.83	6450	44053

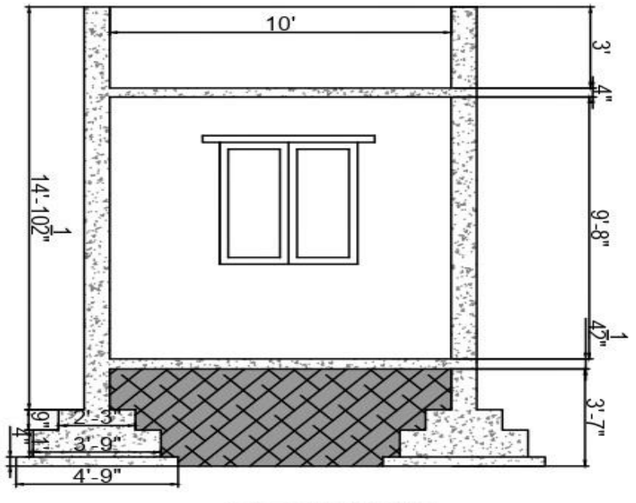
4.	Brick Work super structure	CuM	7.79	6450	50245
5.	Earthwork in Plinth	CuM	8.43	150	1265
6.	RCC	CuM	2.34	8870	20756
7.	Internal Plaster	CuM	28.24	258	7286
8.	External Plaster	SqM	33.69	258	8690
9.	Internal Paint	SqM	28.24	93	2627
10.	External Paint	SqM	33.69	93	3134
11.	Window & Ventilation	SqM	4.76	1500	7140
	Total Amount				155584
	Contingencies	3%			4667
	Total Cost				**160000**



ELEVATION



PLAN



SECTION

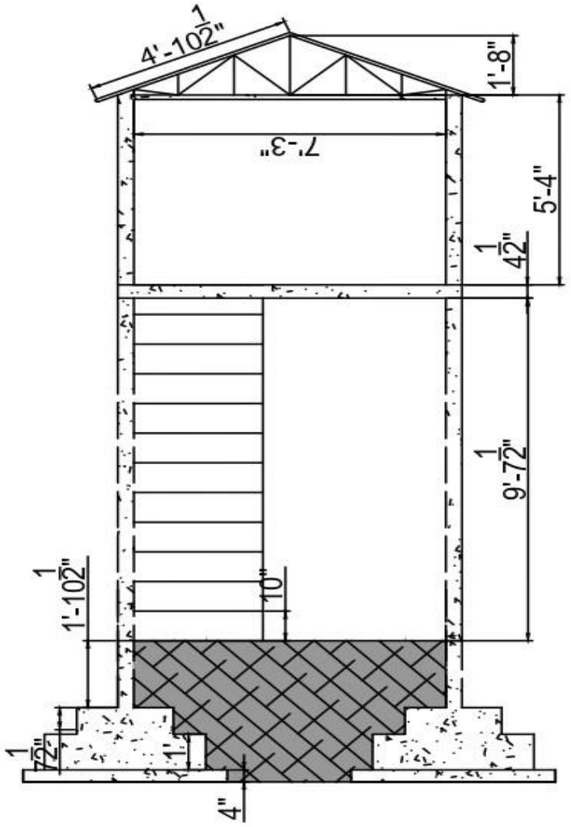
VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	CCTV ROOM
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

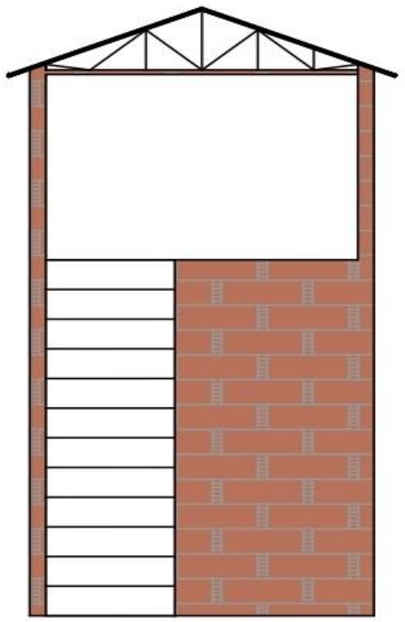
8.1.3. Chabutara

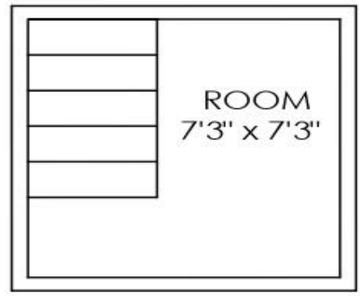
Sr.No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Excavation For Foundation	CUM	1	4.88	0.88	0.91	3.907	**3.907**
2.	P.C.C For Foundation	CUM	1	4.88	0.10	0.91	0.44	**0.44**
3.	Brick Work In Foundation	CUM	1	4.88	0.57	0.22	0.61	**0.61**
4.	Brickwork in Superstructure	CUM	1	4.88	4.57	0.22	4.906	
	Deduction							
	D1	CUM	1	0.91	0.22	2.13	0.43	
							Total	**4.476**
6.	RCC In Slab	CUM	1	2.44	2.44	0.11	0.65	**0.65**
7.	Plaster	SqM	1	14.84		2.44	36.21	
	Deduction							
	D1	SqM	1	0.91		2.13	1.93	
							Total	**34.27**
8.	External Plaster	SqM	1	15.22		2.44	37.14	
	Deduction							
	D1	SqM	1	0.91		2.13	1.93	
							Total	**35.21**
9.	Paint	SqM	1	14.84		2.44	36.21	
	Deduction							
	D1	SqM	1	0.91		2.13	1.93	
							Total	**34.27**
10.	External Paint	SqM	1	15.22		2.44	37.14	
	Deduction							
	D1	SqM	1	0.91		2.13	1.93	
							Total	**35.21**
11.	Door &							

	Ventilation							
	D1	SqM	1	0.91		2.30	2.09	**2.09**

Anganwadi					
Abstract					
Sr.On	**Description**	**Unit**	**Quantity**	**Rate**	**Amount**
1.	Excavation	CuM	3.907	155	605
2.	P.C.C	CuM	0.44	4000	1760
3.	Brick work in foundation	CuM	0.61	5200	3172
4.	Brick Work super structure	CuM	4.476	5200	23275
5.	RCC	CuM	0.65	8870	5765
6.	Internal Plaster	CuM	34.27	258	8841
7.	External Plaster	SqM	35.21	258	9084
8.	Internal Paint	SqM	34.27	93	3187
9.	External Paint	SqM	35.21	93	3274
10.	Window & Ventilation	SqM	2.09	3700	7733
	Total Amount				66696
	Contingencies	3%			2000
	Total Cost				**68696**







VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	CHABUTARA
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

Chapter 9: ProposingdesignsforFutureDevelopmentoftheVillageforthePART-IIDesign:

- For future development of the Kholeshwarvillage we are proposing the designs for Part II design inwhichfollowing points should beconsidered,
- Aim of this study is to know the basic scenario of villagethrough techno economic survey and gap analysis done.
- Through this study, we will try to make a master development plan for the Kholeshwarvillage.
- Our master development plan might be including provisions of all the facilities suggest by us, then we focus on the improvement in the existing facilities. Our aim is to provide newly technological facilities in Kholeshwar village.
- The aaganwadi and health centre is to be designed as per the data of increasing population census of 2011, 2021 & for future increment.
- A proposed new aaganwadi is to be designed with Material detail, method of construction & Cost analysis.
- Designed of solar panel & solar energy used for the electricity purpose for the aaganwadi and health centre .
- We also use rain waterharwesting system in aanganwadi and health center.

Chapter:10
Conclusion oftheEntireVillageActivitiesoftheProject:

- This study demonstrates the basic need of sustainable development of village with long term planning. The study is based on one to one interaction with the villagers and to find the solution for their major problem aanganwadi and heathcentre.

- Moreover, this both basic amenity of Smart village is needed for better lifestyle, health and safety of villagers. Till now under the "vishwakarmayojna project" we visited smart village baben, Ideal village kanav and our allocated village kholeshwar.

- After visiting of Ideal Village Kanav and Smart Village Baben, we got the idea and scenario of a model village. Now a day scenario is totally changed and Indian villages are growing more. Smart Village concept is also introduced while cities are becoming smart. We can proudly say that we are part of it.Through Vishwakarma Yojana we connect with the rural development concepts.

- In the Kholeshwar village there is a lots of problem related to the public toilet, embankment, village internal streets and many more. However, we found out the major two problems in our allocated village we give the existing plan and proposeddesign of new aanganwadi and health centre. However, we also given a plan of public toilet and main gate of Kholeshwar village. But our main focus is only on the aanganwadi and PHC (Public Health Center).

- This all basic essential amenities which is mentioned in second paragraph, it is design under the Vishwakarma Project Phase VII will be helpful for better development of the village as physically as well as socially, Which improves the living standard, health, safety and lifestyle of people, Although, it improve and help in the developments of the village towards smart village in the appropriate way, it also reduce migration trend between village and city.

Chapter 11:
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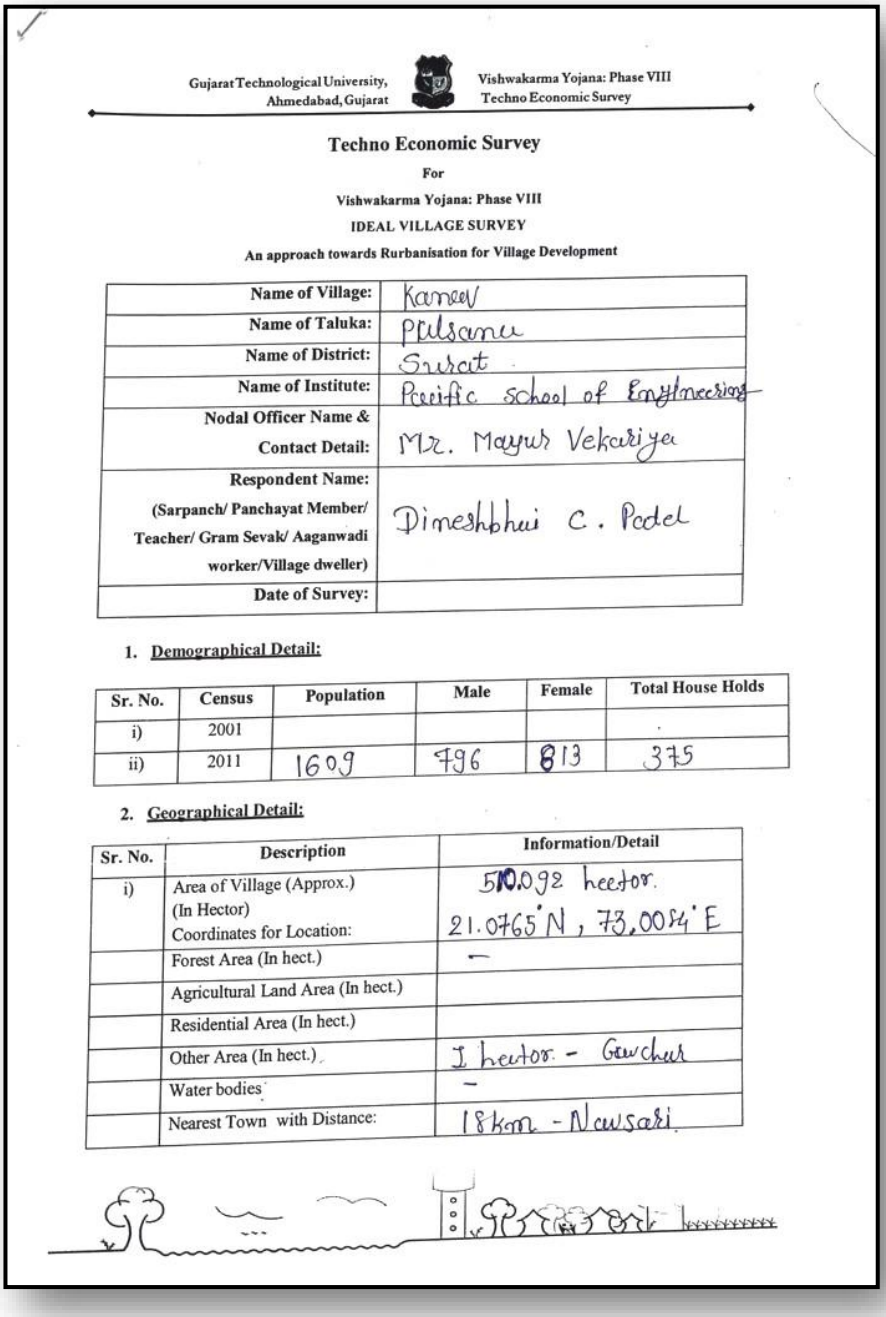
Chapter 12:
Annexure attachment

11.1 Survey form of Ideal village Scanned copy attachment in the report for part-1



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

Name of Village:	Kareev
Name of Taluka:	Pulsanu
Name of District:	Surat
Name of Institute:	Pacific school of Engineering
Nodal Officer Name & Contact Detail:	Mr. Mayur Vekariya
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Dineshbhai C. Patel
Date of Survey:	

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001				
ii)	2011	1609	796	813	375

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	510.092 hector. 21.0765°N, 73.0054°E
	Forest Area (In hect.)	—
	Agricultural Land Area (In hect.)	
	Residential Area (In hect.)	
	Other Area (In hect.)	1 hector - Gauchar
	Water bodies	—
	Nearest Town with Distance:	18km - Navsari

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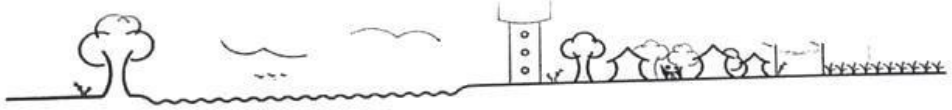
Vishwakarma Yojana: Phase VIII
Techno Economic Survey

3. **Occupational Details:**

Name of Three Major Occupation groups in Village	1. Sugar Cane.
	2.
	3.

4. **Physical Infrastructure Facilities:**

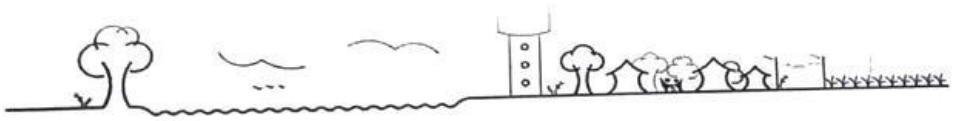
Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated) • RO Water • Well (Covered/ Uncovered) • Hand pumps • Tube well/ Borehole • River/ Canal/ Spring/ Lake/ Pond	Treated tap water RO water Cover & Hand Pump			
Suggestions if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



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

E.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Bituminous Ce Road	Yes	—	
	Main road	Bituminous	Yes	—	—
	Internal streets	R.C.C.	Yes	—	—
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH-48. 6.5 km	Yes	—	—
Suggestions if any:					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Yes. Ganyed dhed 9.km	—	—	—
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes. Palsana 2.5km.	—	—	—
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	No.	—	Inadequate	—
Suggestions if any:					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt. Yes	Full Facilitated		
	Power supply for Domestic Use	24x7 Yes			
	Power supply for Agricultural Use	24 hours Yes			
	Power supply for Commercial Use	24x7. Yes.			
	Road/ Street Lights	Yes.			



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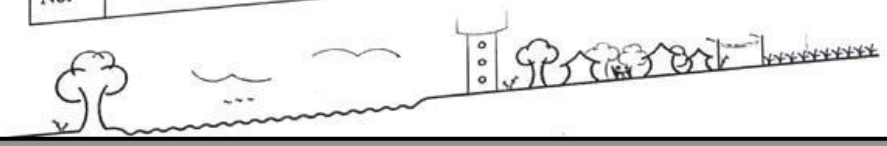
Vishwakarma Yojana: Phase VIII
Techno Economic Survey

	Electrification in Government Buildings/ Schools/ Hospitals	24x7 Available	—	—	
	Renewable Energy Source Facilities (Y/ N)	No.	—	Inadequate	
	LED Facilities	Yes.	—	—	
Suggestions if any:					
H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	Yes			
	Location Condition				
	Community Toilet (With bath/ without bath facilities)	Available without bath			
	Solid & liquid waste Disposal system available	Gutter been and Drainage			
	Any facility for Waste collection from road	Yes. Door to Door Collector			
Suggestions if any:					
I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	River Tube well			
Suggestions if any:					
J.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Pucca go.1.			

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks



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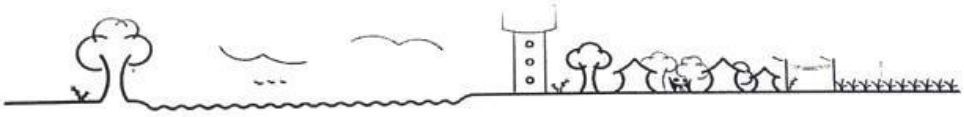
Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

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

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



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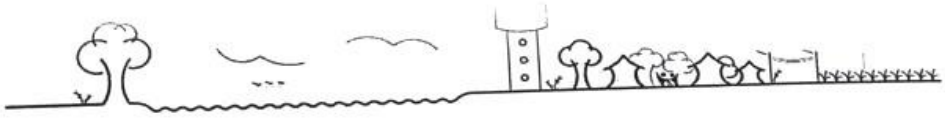
	Condition:	Good.			
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	No			
	Public Garden Location: Condition:	Yes			
	Village Pond Location: Condition:	Yes			
	Recreation Center Location: Condition:	No			
	Cinema/ Video Hall Location: Condition:	No			
	Assembly Polling Station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

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

Suggestions if any:

N.	Other Facilities				
	Post-office	Yes.			
	Telecommunication Network/ STD booth	Telephone			



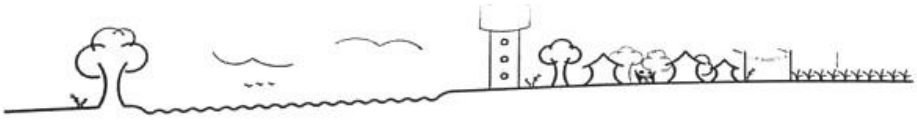
	General Market	Yes			
	Shops (Public Distribution System)	Yes.			
	Panchayat Building	Yes.			
	Pharmacy/Medical Shop	No			
	Bank & ATM Facility	No			
	Agriculture Co-operative Society	No.			
	Milk Co-operative Soc.	Yes.			
	Small Scale Industries	No.			
	Internet Cafes/ Common Service Center/Wi Fi	No.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

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

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
O.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	—	—	—	—
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	Yes.



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Vishwakarma Yojana: Phase VI
Techno Economic Survey

Recent Projects going on for Development of Village	—
Any NGO working for village development	No

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)	—	
2.	Additional Information/ Requirement	—	

9. **Smart Village Proposal Design**

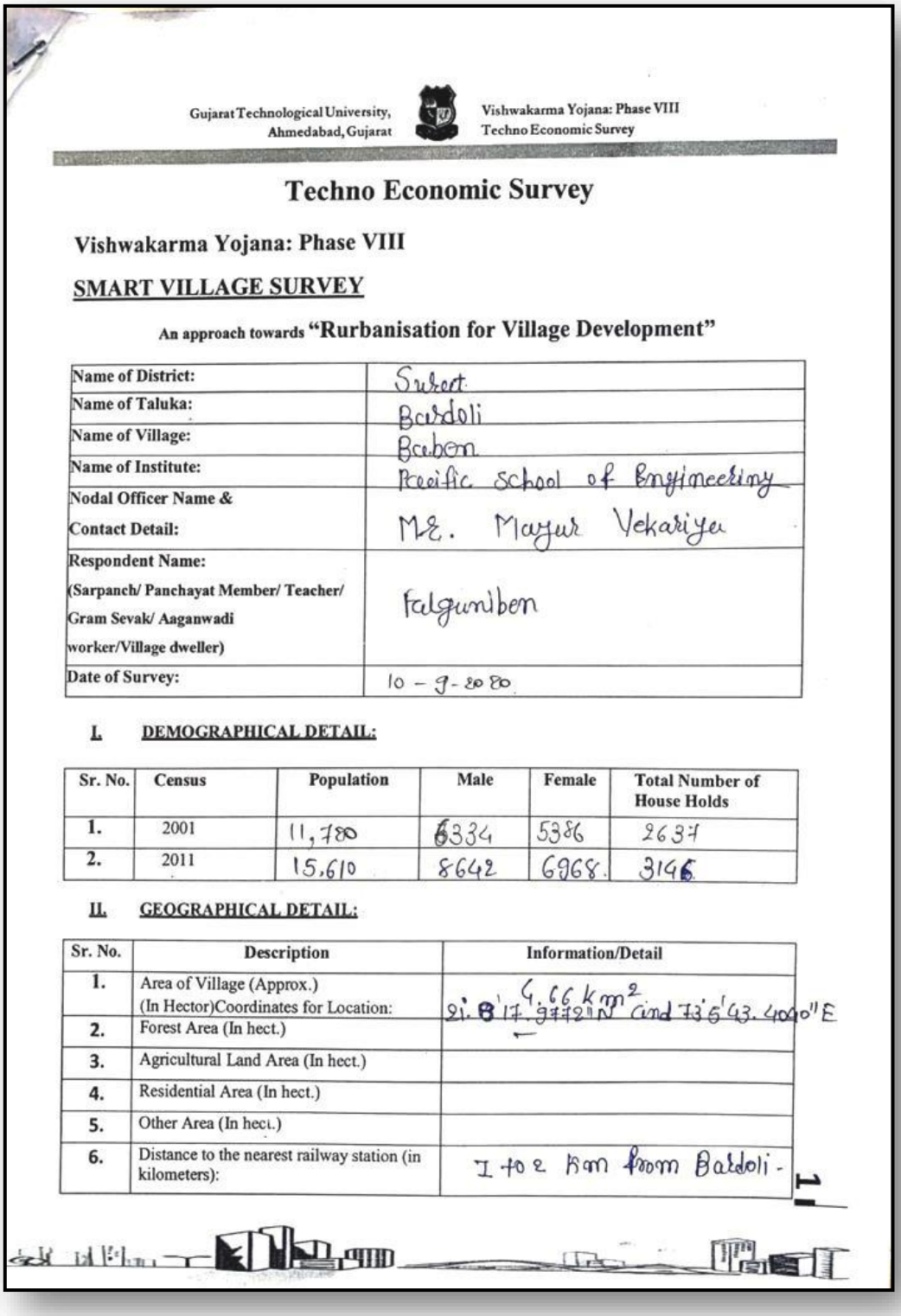
Sr. No.	Descriptions	Information/ Detail	Remarks
1.	—	No	—

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

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

સરપંચશ્રી
કણાવ ગ્રામ પંચાયત
તા. પલસાણા, જી. સુરત.

11.2 Survey form of Smart village Scanned copy attachment in the report for part-1



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

SMART VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Name of District:	Surat
Name of Taluka:	Bardoli
Name of Village:	Babben
Name of Institute:	Pacific School of Engineering
Nodal Officer Name & Contact Detail:	ME. Mayur Vekariya
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Falguniben
Date of Survey:	10 - 9 - 2080

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	11,780	6334	5386	2637
2.	2011	15,610	8642	6968	3146

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	4.66 km² 21°8'17.9712"N and 73°5'43.4040"E
2.	Forest Area (In hect.)	
3.	Agricultural Land Area (In hect.)	
4.	Residential Area (In hect.)	
5.	Other Area (In hect.)	
6.	Distance to the nearest railway station (in kilometers):	1 to 2 km from Bardoli.

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Techno Economic Survey

7.	Name of Nearest Town with Distance:	1 to 2 Km. Bardoli
8.	Distance to the nearest bus station (in kilometers):	0.5 Km.
9.	Whether village is connected to all road for the any facility or town or City?	Yes.

III. OCCUPATIONAL DETAILS:

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

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 5 lakh	✓		4 nos
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	Underground Drainage facility	Yes	–	
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	R.C.C.	✓		
	Main road	Pucca Blacktopped	✓		
	Internal streets	R.C.C	✓		
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH-6 SH-165	✓		
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	- No - 1 to 1 km Bardoli	Adequate		62 kms
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	- No - Bardoli	Adequate		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	- Yes - Auto	✓		
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt. Given more than	✓		

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Techno Economic Survey

	Power supply for Domestic Use	Available	✓		
	Power supply for Agricultural Use	Available	✓		
	Power supply for Commercial Use	Available	✓		
	Road/ Street Lights	Yes	✓		
	Electrification in Government Buildings/ Schools/ Hospitals	Yes	✓		
	Renewable Energy Source Facilities (Y/ N)	No	X		
	LED Facilities	Available	✓		
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	Available	✓		Every house is having individual facility.
	Location Condition				
	Community Toilet (With bath/ without bath facilities)		X		
	Solid & liquid waste Disposal system available		✓		
	Any facility for Waste collection from road	Door to Door	✓		
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Canal Tubewell Pond Tank	Adequate		
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Pucca	Yes		

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	✓			
	Sub-Centre	✓			
	PHC	✓			
	BLOCK PHC	✓			
	CHC/RH	X			
	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: 5 .....kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	✓			
	Primary School	✓			
	Secondary school	✓			
	Higher sec. School	✓			
	ITI college/ vocational Training Center	X			
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	✓			2+0 8 km bardoli
	If any of the above Facility is not available in village than approx. distance from village: 2-10 5 .kms.				

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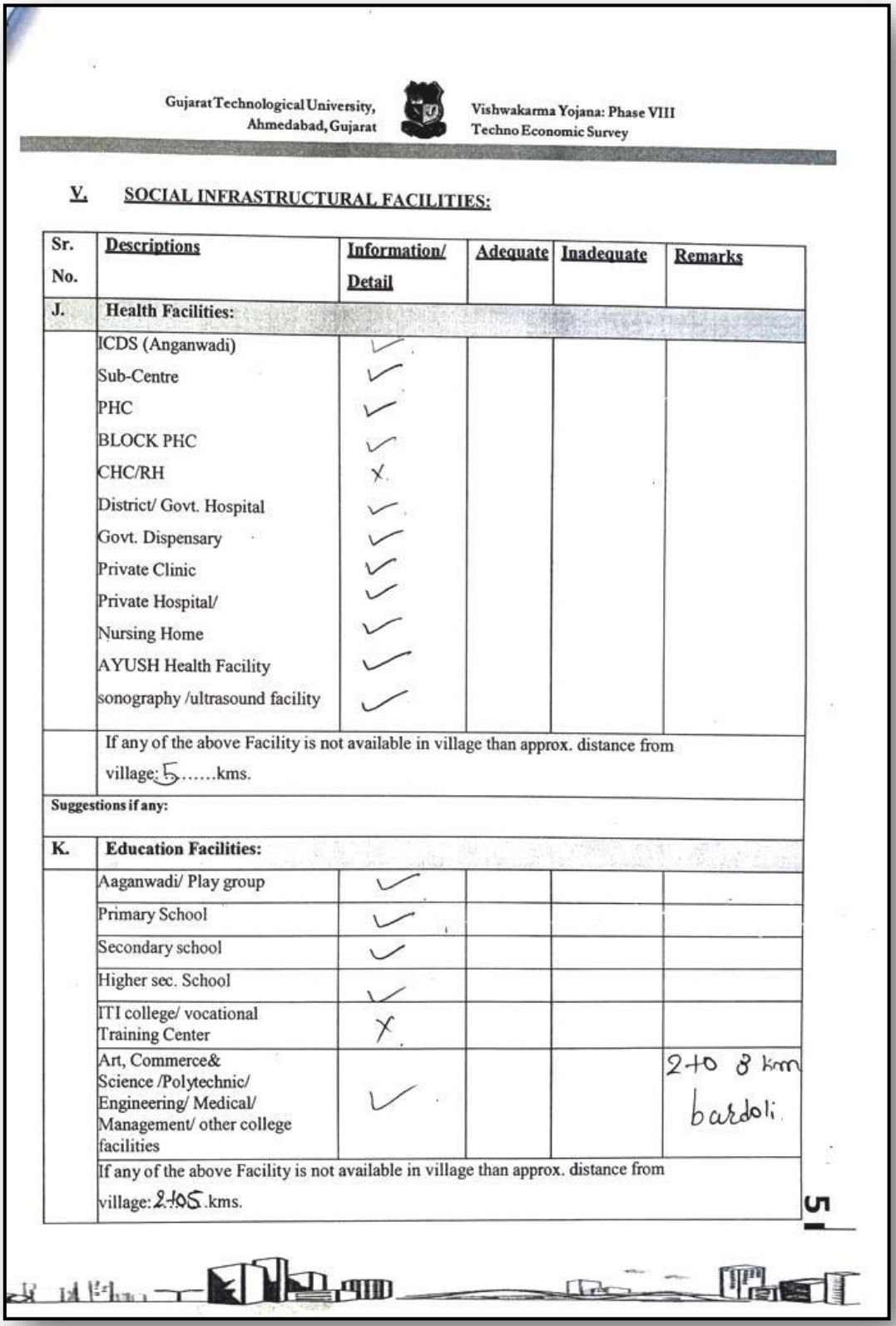

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	✓			
	Sub-Centre	✓			
	PHC	✓			
	BLOCK PHC	✓			
	CHC/RH	X			
	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: 5.....kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	✓			
	Primary School	✓			
	Secondary school	✓			
	Higher sec. School	✓			
	ITI college/ vocational Training Center	X			
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	✓			2 to 8 km bardoli
	If any of the above Facility is not available in village than approx. distance from village: 2 to 5 .kms.				

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Techno Economic Survey

Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	With T.V	Opposite Panchayat	✓	
	Public Library (With daily newspaper supply: Y/N)	Yes	Beside Primary	✓	
	Public Garden			✓	
	Village Pond		Center	✓	
	Recreation Center		Around Pond	✓	
	Cinema/ Video Hall			X	
	Assembly Polling Station			X	
	Birth & Death Registration		Panchayat	✓	

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

Suggestions if any:

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

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	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 calamity			

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

IX. Smart Village / Heritage Details

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

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

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

F B Patel
સરપંચ
ગ્રામ પંચાયત બારેજ
તા. બારડોલી, જી. સુરત.

Gram Panchayat Barejh, Ta. Bardoli, Dist. Surat

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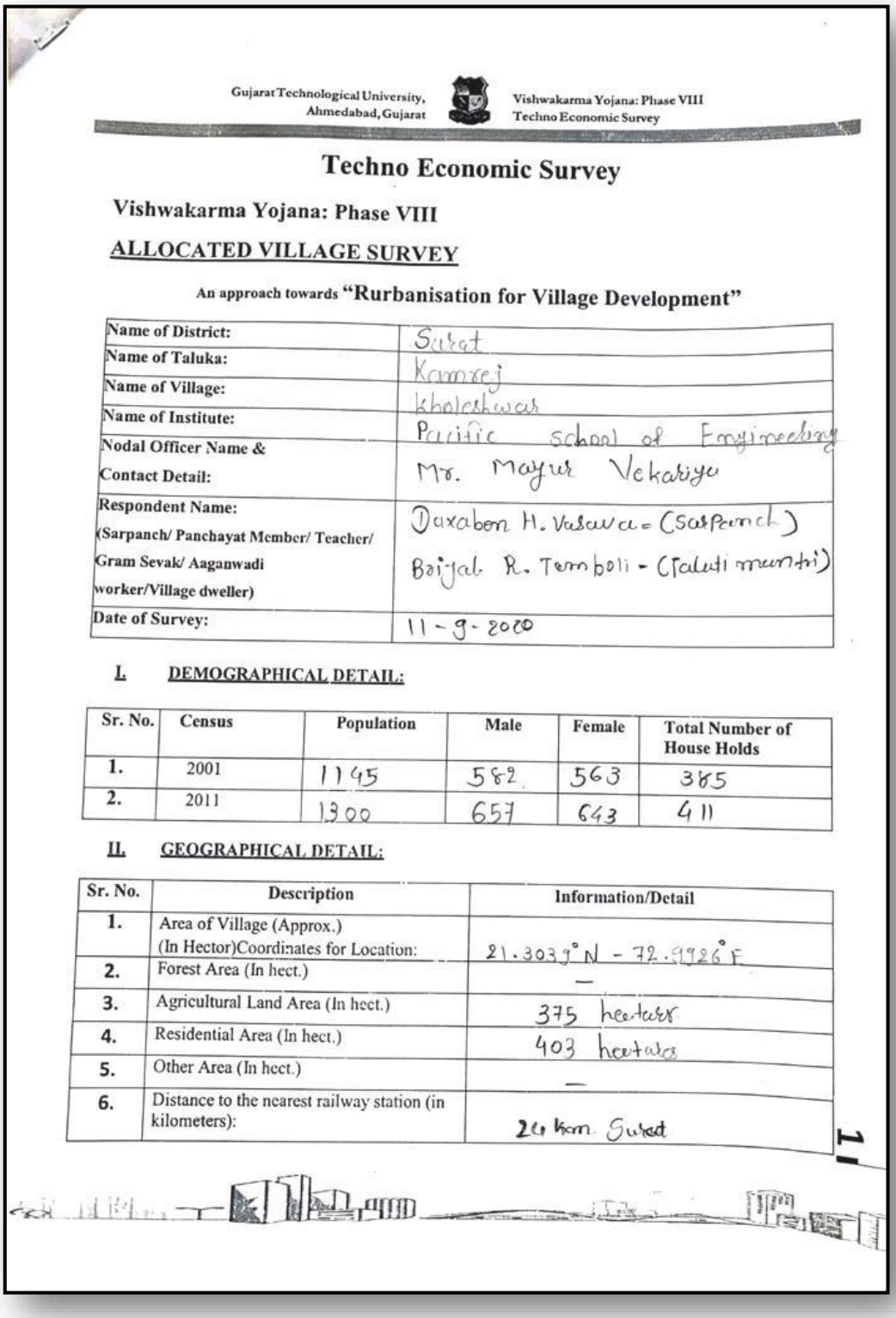
11.3 Survey form of **Allocated** village **Scanned copy** attachment in the report for.



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

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

Name of District:	Surat
Name of Taluka:	Kamrej
Name of Village:	Kholeshwar
Name of Institute:	Pacific school of Engineering
Nodal Officer Name & Contact Detail:	Mr. Mayur Vekariya
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Daxaben H. Vasava - (Sarpanch) Baijal R. Tamboli - (Talati mantri)
Date of Survey:	11-9-2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	1145	582	563	385
2.	2011	1300	657	643	411

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	21.3039° N - 72.9926° E
2.	Forest Area (In hect.)	—
3.	Agricultural Land Area (In hect.)	375 heetare
4.	Residential Area (In hect.)	403 heetare
5.	Other Area (In hect.)	—
6.	Distance to the nearest railway station (in kilometers):	20 km Surat

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

7.	Name of Nearest Town with Distance:	29.3 bardoli
8.	Distance to the nearest bus station (in kilometers):	6km bamroj
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.	Agriculture
	2.	dairy
	3.	Bussiness

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

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

	Other(Specify)**Lake/ Pond**	—	—	—	—

Suggestions if any:

B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	2.3 lakh		
	Underground Sump	Capacity:	—	—	—

Suggestions if any:

C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1	Facilited but improper	Yes	—	

Suggestions if any:

D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Bituminus	Yes	—	
	Main road	Bituminus	Yes	—	
	Internal streets	Rec of Kutchha	Yes	—	
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH. 8.	Yes	—	

Suggestions if any:

E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	24 km Surat.	Adequate	—	
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	6 km. Kamrej	—	Inadequate	
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	No	—	Inadequate	

Suggestions if any:

F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govet. More than 6h.	Adequate	—	

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	Power supply for Domestic Use	24 x 7	Adequate	–	
	Power supply for Agricultural Use	6 hours	Adequate	–	
	Power supply for Commercial Use	24 x 7	Adequate	–	
	Road/ Street Lights	Night	Adequate	–	
	Electrification in Government Buildings/ Schools/ Hospitals	No	–	Inadequate	
	Renewable Energy Source Facilities (Y/ N)	No	–	Inadequate	
	LED Facilities	No	–	Inadequate	

Suggestions if any:

G.	Sanitation Facility				
	Public Latrine Blocks If available than Nos.	One Nos. between 5 houses	–	Inadequate	
	Location Condition	Out street	–	Inadequate	
	Community Toilet (With bath/ without bath facilities)	No	–	Inadequate	
	Solid & liquid waste Disposal system available	No	–	Inadequate	
	Any facility for Waste collection from road	Not Available	–	Inadequate	

Suggestions if any:

H.	Main Source of Irrigation Facility:				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	River	Adequate	–	

Suggestions if any:

I.	Housing Condition:				
	Kutchha/Pucca (Approx. ratio)	Kutchha 75%	–	Inadequate	

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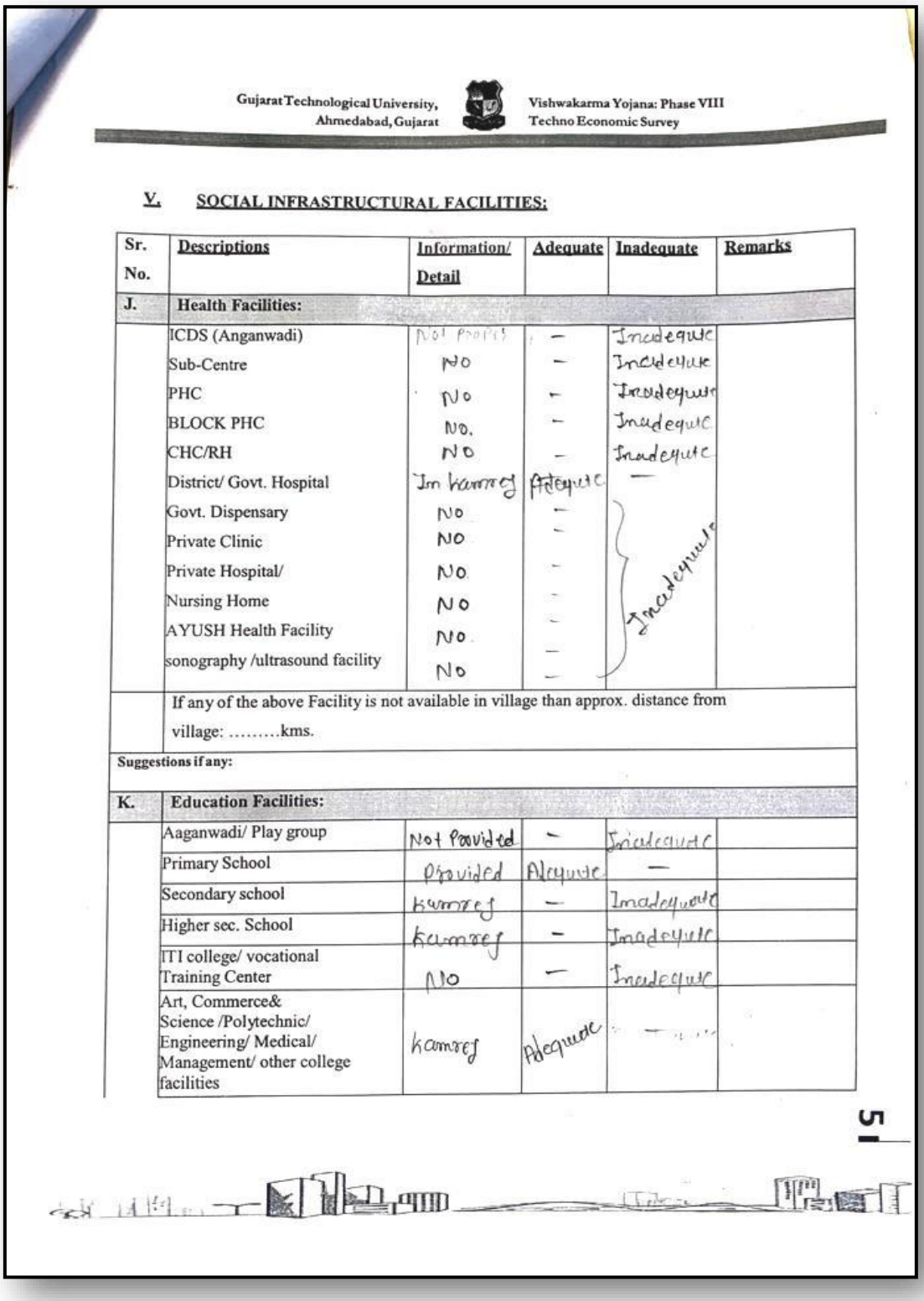

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

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

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If any of the above Facility is not available in village than approx. distance from village: ..24...kms.

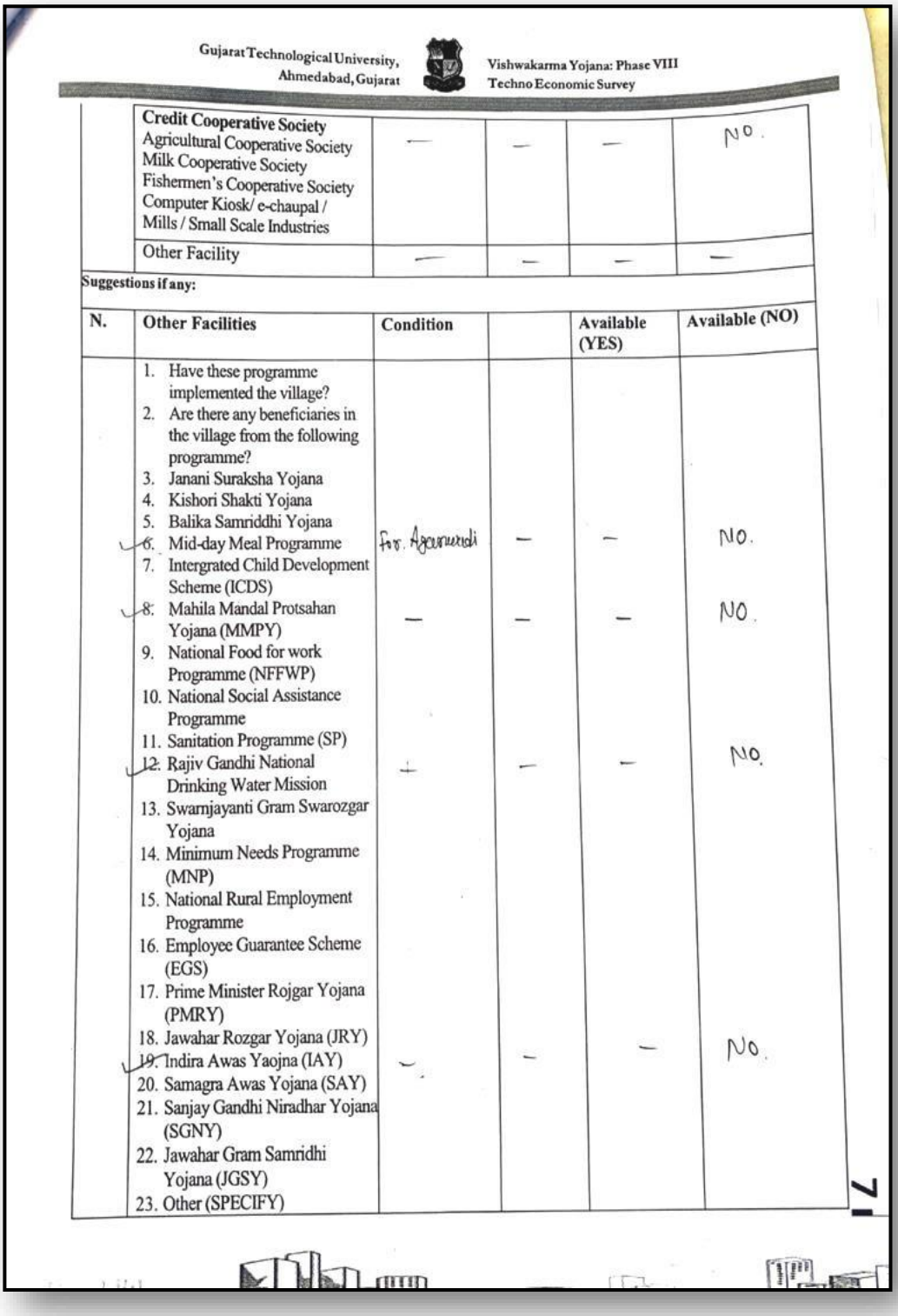
Suggestions if any:

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

If any of the above Facility is not available in village than approx. distance from village: ...6....kms.

Suggestions if any:

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



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

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village?				
	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	For Agganwadi	—	—	NO.
	7. Intergrated Child Development Scheme (ICDS)				
	8. Mahila Mandal Protsahan Yojana (MMPY)	—	—	—	NO.
	9. National Food for work Programme (NFFWP)				
	10. National Social Assistance Programme				
	11. Sanitation Programme (SP)				
	12. Rajiv Gandhi National Drinking Water Mission	+	—	—	NO.
	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)	—	—	—	No.
	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	—	—	Inadequate	—
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	—	—	Inadequate	—
3.	Any Other				

VII. DATA COLLECTION FROM VILLAGE

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

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Vishwakarma Yojana: Phase VIII
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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 ✓	Toilet is not Proper in the school. Public Toilet not available	
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ...1 time in week. FOGGING..... Drive was undertaken in the village?		

IX. Smart Village / Heritage Details

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

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

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

૨૨/૧૧/૨૦૨૧
સરપંચ
ગ્રામ પંચાયત ખોલેશ્વર,
તા. કામરેજ, જિ. સુરત.

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12.4. Gap AnalysisoftheAllocatedVillage: (T-12.4-Gap Analysis)

VILLAGEGAPAnalysis					
VillageFacilities	PlanningCommission/UDPFINorms	Village Name:	Kholeshwar		
		Population:2097			
		Existing	Required as Per Norms	SmartVillage /Cities /Heritage Future Projection Design	Gap
SocialInfrastructureFacilities					
Education					
Anganwadi	Each or Per 2500population	1	1	-	1
PrimarySchool	EachPer2500population	1	1	-	1
Secondary School	Per7,500population	0	1	-	-1
HigherSecondary School	Per15,000Population	0	1	-	-1
College	Per125,000 Population	0	1	-	-1
Tech.Training Institute	Per100000 Population	0	1	-	-1
AgricultureResearchCentre	Per100000 Population	0	1	-	-1
SkillDevelopmentCenter	Per100000 Population	0	1	-	-1
HealthFacility				-	
Govt/PanchayatDispensaryorSubPHCor Health Centre	EachVillage	0	1	-	-1
PrimaryHealth&ChildHealthCenter	Per20,000population	0	1	-	-1
ChildWelfareandMaternityHome	Per10,000population	0	0	-	0
MultispecialtyHospital	Per100000 Population	0	0	-	0
PublicLatrines	1for50families(iftoiletisnot thereinhome,especially for slumpockets & kutchahouse)	0	1	-	-1
PhysicalInfrastructureFacilities					
Transportation		**Adequate**		-	-
PuccaVillageApproachRoad	Eachvillage	**Adequate**	2 km approachroad	-	-

Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	**Inadequate**	Pickup stand at main highway of Kamrej	-	-
			village		
Drinking Water(Minimum70l pcd)		**Adequate**	-	-	-
Over Head Tank	1/3 of Total Demand	**Adequate**	1	1	0
U/G Sump	2/3 of Total Demand	**Adequate**	1	1	0
Drainage Network- Open		**Adequate**	30%open	-	-
Drainage Network- Cover		**Adequate**	70%covered	-	-
Waste Management System		**Inadequate**	-	-	-
Socio infra structure detail					
Community Hall	Per10000Population	0	1	-	-1
Public Library	Per15000Population	0	1	-	-1
Cremation Ground	Per20,000population	0	1	-	-1
Post Office	Per10,000population	0	1	-	-1
Gram Panchayat Building	Each individual/group panchayat	1	0	-	+1
APMC	Per100000 Population	0	0	-	0
Fire Station	Per100000 Population	0	0	-	0
Public Garden	Per village	0	1	-	-1
Police post	Per40,000Population	0	0	-	0
Shopping Mall :shopping mall available at the kamrej Shops are available in village					
ElectricalDesign					
ElectricityNetwork		**Adequate**	-	-	-
Any Smart VillageFacility					
Technology		**RO Water Plant**	185000 lit Total Distribution		
		ESRcap	-		
		Sumpcap	1.85 lac &7500 gallons		
		Lat	-		

Table: 12.1 : Gap analysis

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

Sr. No.	Village Name	Discipline	Part-I	Part-2
1.	Kholeshwar	Civil Engineering	Public Toilet	Pharmacy center
			Anganwadi	Community Hall
			Public Health Center	Library
			Entrance Gate	E-center
			CCTV Room	Market
			Chaburata	Garden
2.	Sanki	Civil Engineering	Anganwadi	Safety wall of pond
			Pond	Community hall Renovation
			Pharmacy Store	Storage Godown
			Entrance gate	Cricket ground
				Ev Rickshaw stand
3.	Bhairav	Civil Engineering	Public Toilet	Community Hall
			Bus stand	Bank
			E-center	Meditation and Yoga Hall
			PHC	Library
			Waste Collection	Post Office
			Clinic	Paver Block

Table: 12.2 :Summary Details of villages

12.6. Drawings(If,required,A1,A2,A3designisnot visible then Only):

All the drawings and images are attached in their respective chapters along with designs and their listing are mentioned in the list of figures along with their page numbers. And we have added A3 sheets of proposed designs at the end of the Vishwakarma Yojana Phase VIII part 1report.

12.7Summaryof Good PhotographsinTable Format (village visits, Ideal,Smart Village oranyother) :(T-12.7-Summary of all villagephotographs)

- **Summary of photographs of Kholeshwar Village**


ખોલેશ્વર ગ્રામ પંચાયત
વર્ષ-૨૦૨૦


ખોલેશ્વર ગ્રામ
દૂધ ઉત્પાદક સહકારી મહિલા મં. લી.
તા. કામરેજ, જી. સુરત.

➢ **Summary of photographs of Kanav Village**

➢ Summary of photographs of Baben Village

12.8 Village Interaction with sarpanch Report with the photograph

Village Interaction with Sarpanch Letter

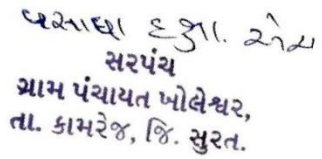
Vishwakarma Yojna Phase VIII
Sanki village , Tal. Kamrej , Dist. Surat
Village code: 394180

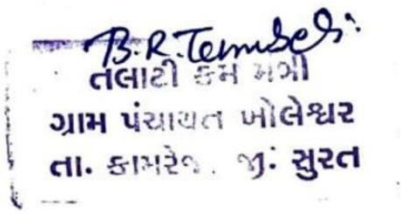
Subject: village interaction form with sarpanch of Kholeshwar village

I sarpanch of Kholeshwar village undersigned gives an approval of doing village interaction activity under Vishwakarma Yojana Phase VIII- an approach towards rurbanization by students of pacific school of engineering,surat named Bhanderi Darshik (181123106006) and Kalathiya Akshit (181123106021).

Date: 08/10/2020

Sign:





12.9 Sarpanch Letter giving information about the village development

Approval Letter For Proposed Design Approval

Vishwakarma Yojna Phase VIII
Kholeshwar village , Tal. Kamrej , Dist. Surat
Village code: 394180

Subject: approval of design proposal for Kholeshwar village

I sarpanch/talati of Kholeshwar village undersigned gives an approval of following main design proposal given under Vishwakarma Yojana Phase VIII- an approach towards rurbanization by students of pacific school of engineering,surat named Bhanderi Darshik (181123106006) and Kalathiya Akshit (181123106021).

Approved main design proposal of part-1

1. Public Toilet
2. Enterance gate
3. Health center
4. Pharmacy store
5. Aanganwadi
6. Community hall
7. Library
8. E-Center
9. Market
10. Garden
11. C.C.T.V. Room
12. Chabutara

Date: 09/03/2021

Sign:

સરપંચ
ગ્રામ પંચાયત ખોલેશ્વર,
તા. કામરેજ, જિ. સુરત.

12.10 Comprehensive report preparation as per format

12.10.1. Concept

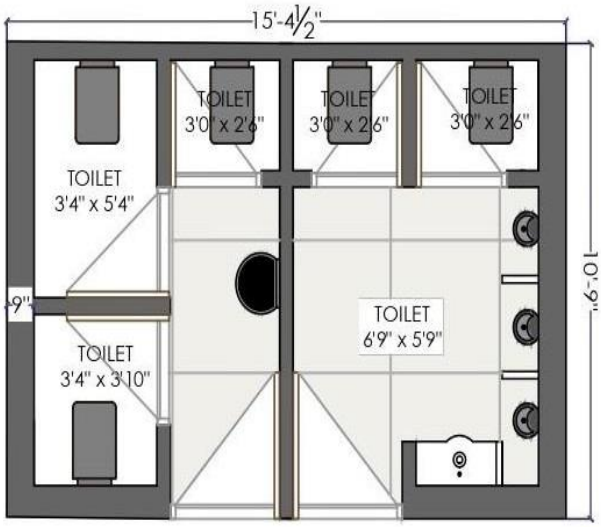
- Rural Development is dynamic process, which is mainly concerned with rural areas. These include- Agriculture growth, putting up of economic and social infrastructure, village planning, public health, education and functional literacy etc. Rural Development is national necessity and has considerable importance in India.

- In this urbanization era, people migrate from their village to near town's or cities due to fulfill their manifold purposes such as essential needs like jobs, good life styles, higher education , business expand and many more reasons. There are both advantage and drawback, one side cities' and Towns developed affirmatively but on the other side villages are not developed successfully despite that some villages has not basic amenities such as electricity and water supply, to overcome this problem. The Government of Gujarat has launched "Vishwakarma Yojana". It is steps towards development of village's civic amenities and rural youth. This is implemented by Gujarat technical University. Under this scheme, student will survey the village by meeting the native peoples and find the existing facilities provided in the village. Moreover, students will make a report on what can be provided to betterment of the village and make an ideal village.

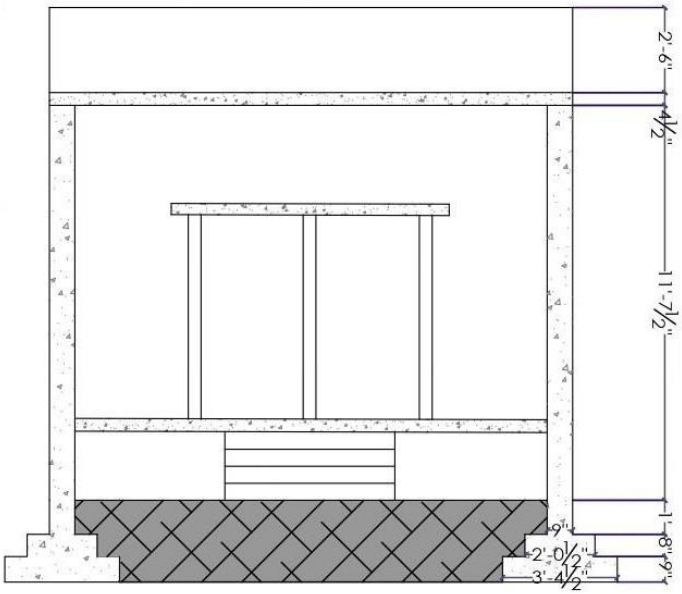
- The kholeshwar village is near to river bank of Tapi that's why all House's are constructed on hill but the main Street of the village is constructed underneath the hill that's why sometime in monsoon main Street are prone from the rain water. Moreover, there are lots of people are poverty-stricken and they live in slums and they don't have a basic amenities such as toilet and bathroom. there are one bathroom and toilet between 50 huts.

- The kholeshwar village don't has a basic amenities such as a public and personal toilet, street light, transport facility, good house condition, new anganwadi structure, wide road and many more should be build in this village. This type of physical structure is not affordable by village people because lots of people are poverty-stricken. The selected village has been surveyed and data collected as per smart village under "Vishwakama Yojna".

12.10.2. Public toilet



PLAN



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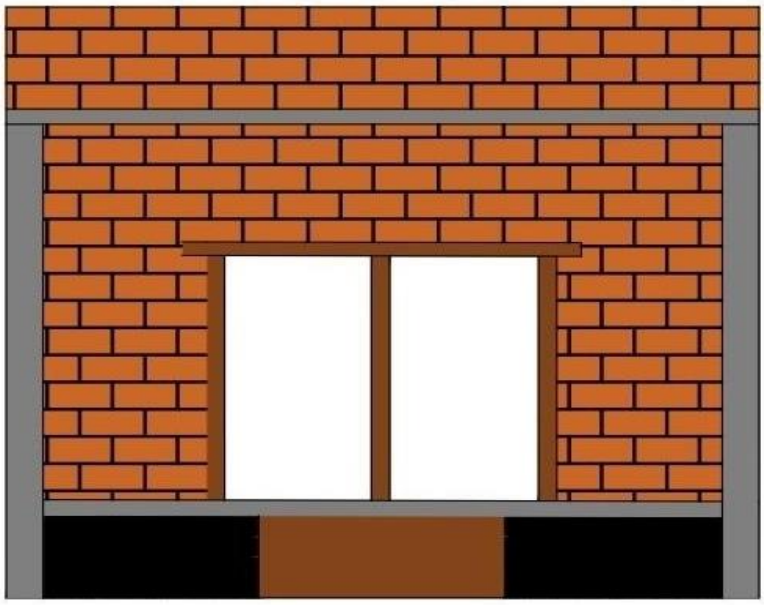
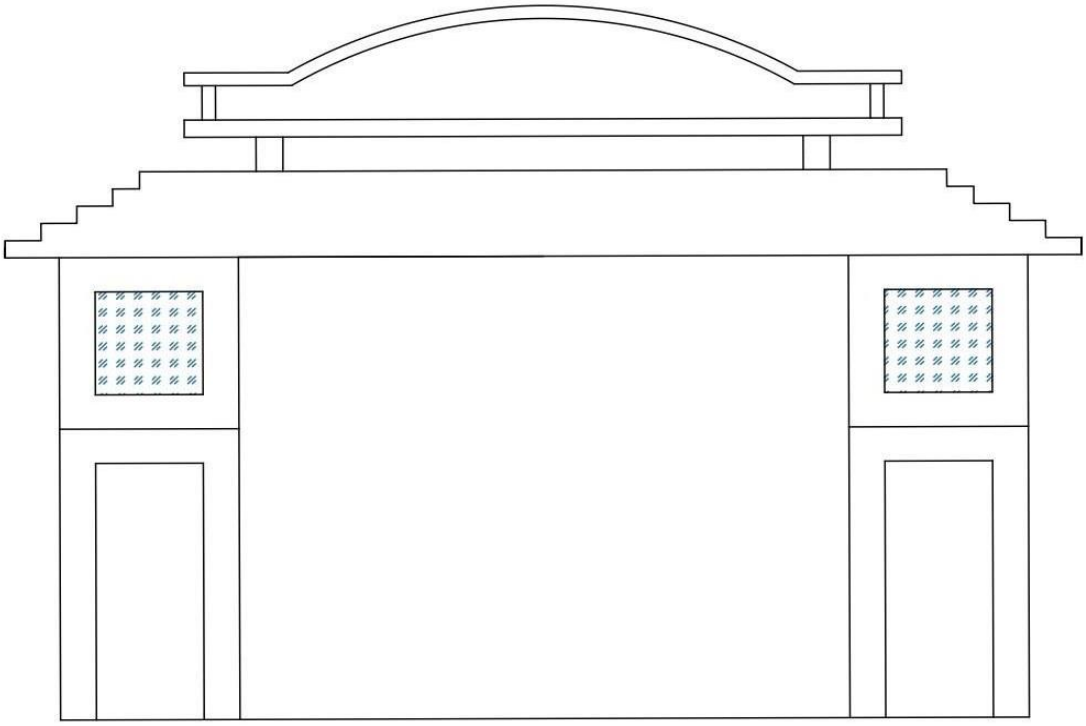


ELEVATION

12.10.3. Entrance gate



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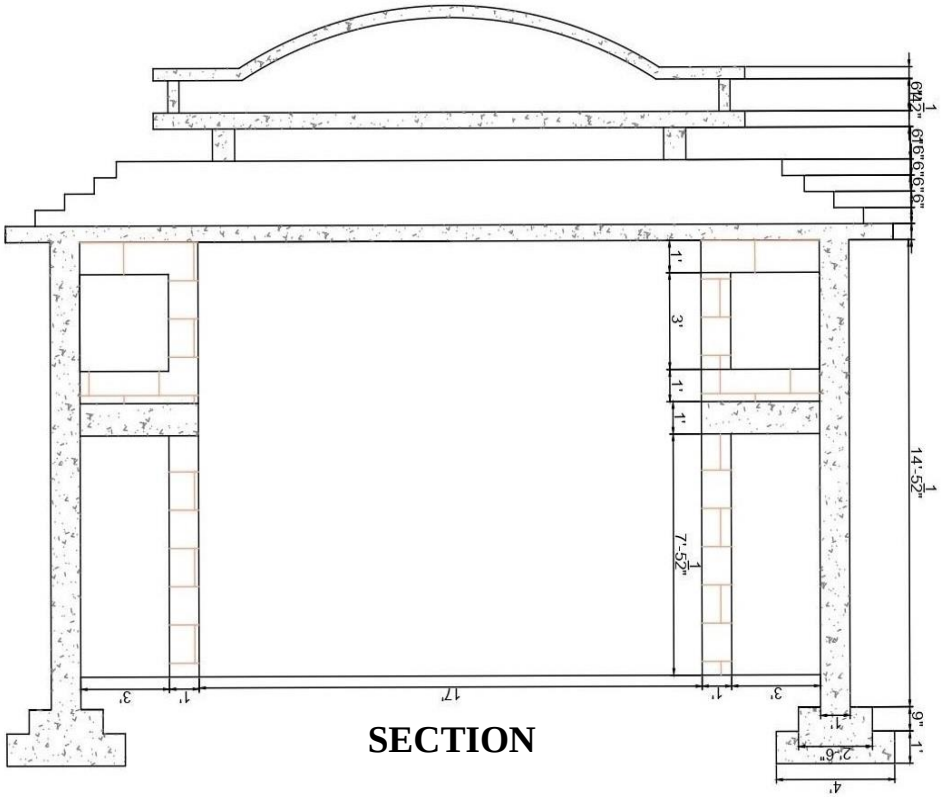

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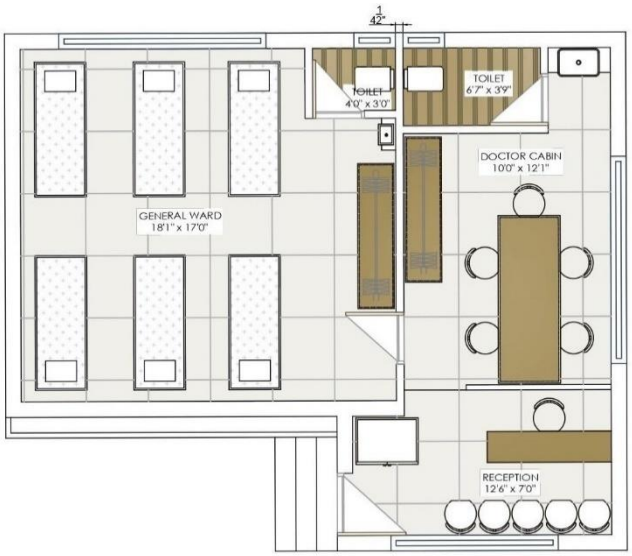
12.10.4 Public. Health Center



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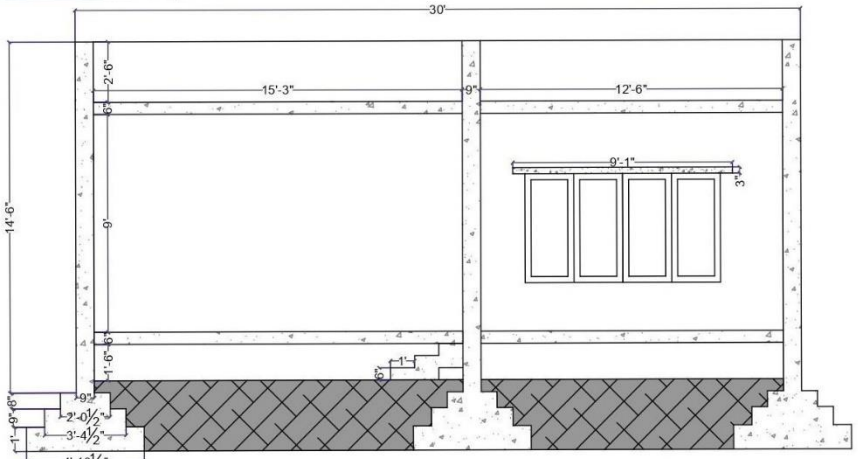

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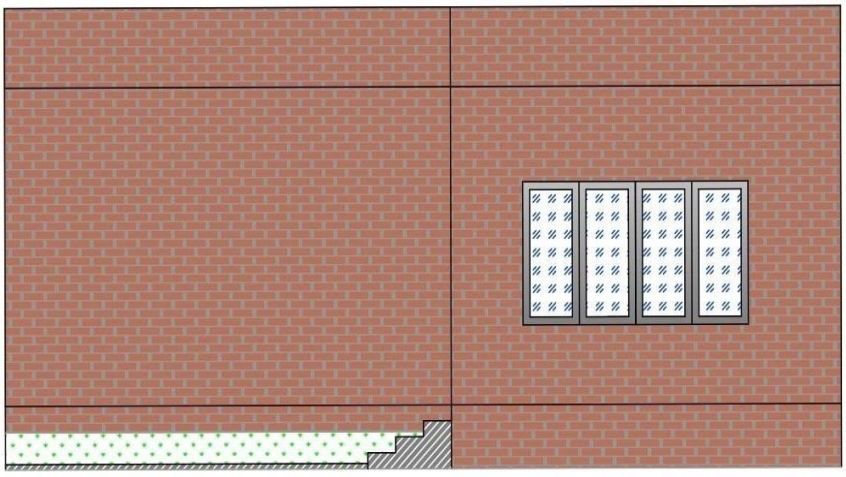

ELEVATION

12.10.5. Anganwadi

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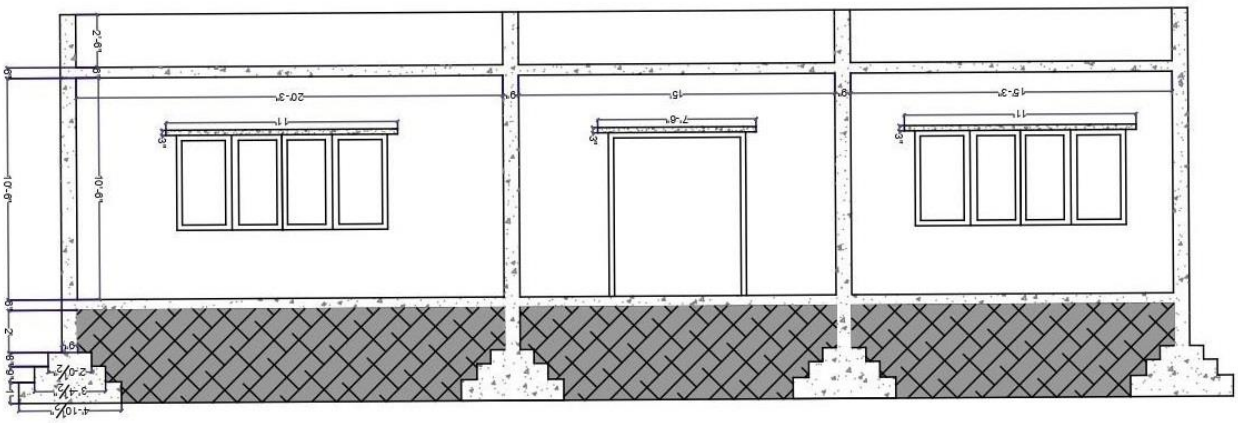

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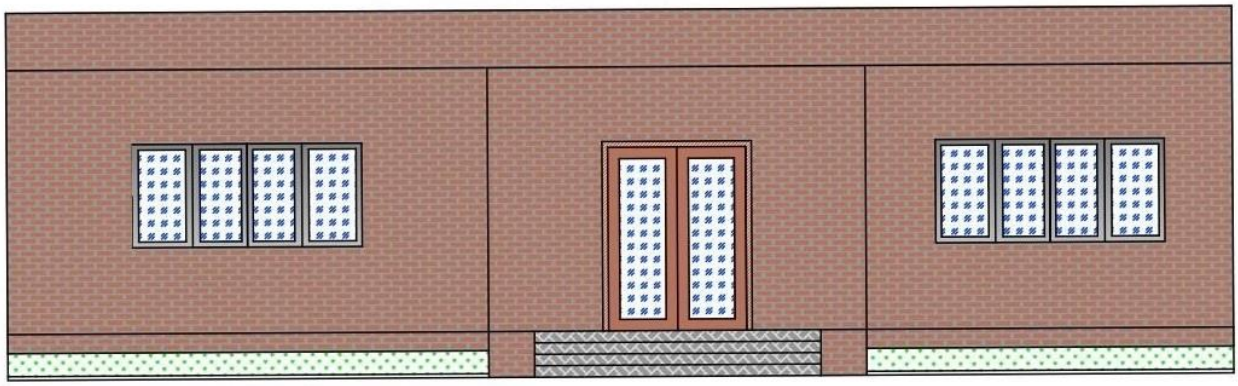
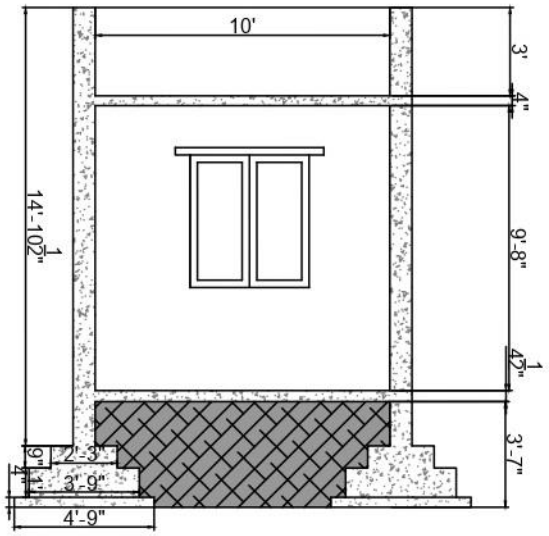


ELEVATION

12.10.6. C.C.T.V Room



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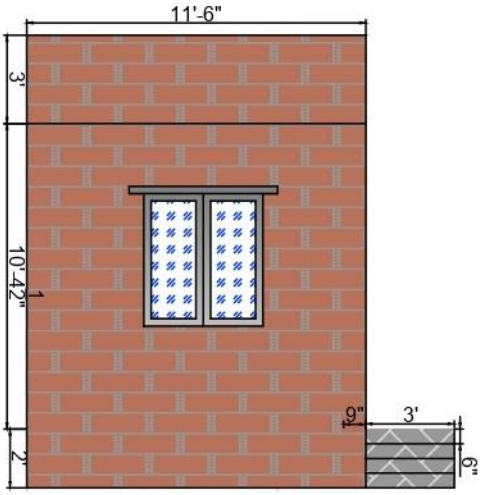

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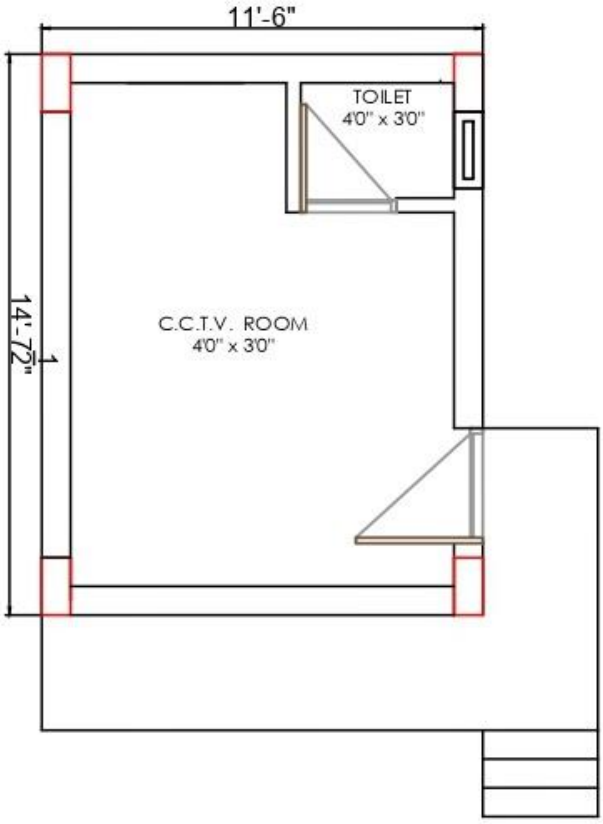

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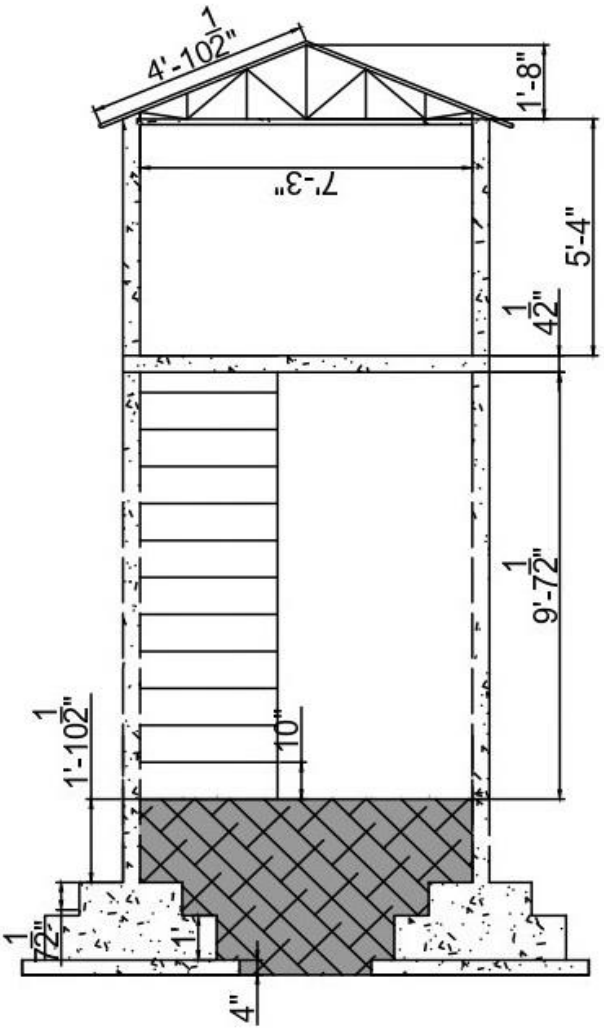
12.10.7.Chabutara



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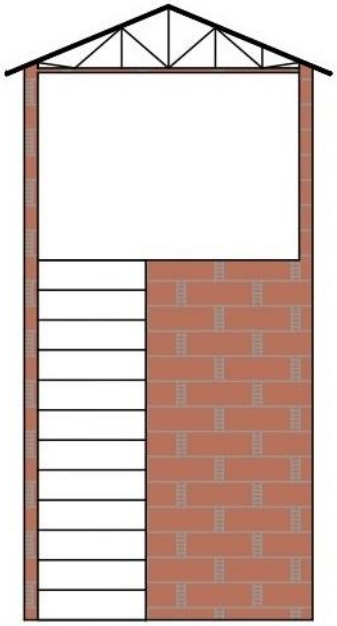


ELEVATION

PLAN

Chapter13 :
From the Chapter- 9 future designs of the aspects (Feasibility, Construction, Operation and maintenance of various design options in Rural Areas along with cost with AutoCAD designs / planning with any software

13.1 Design Proposals

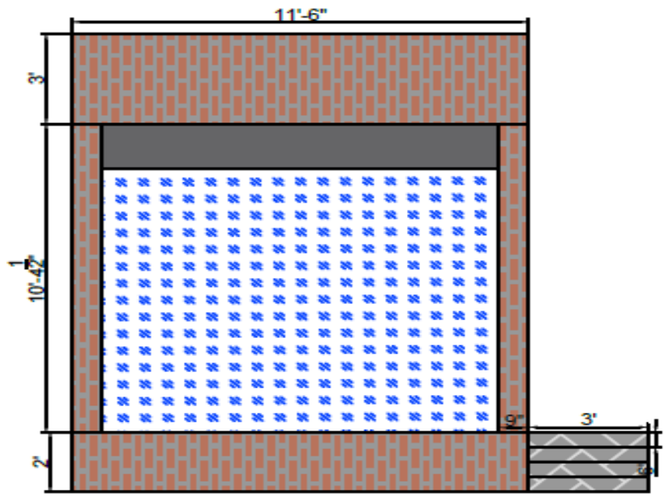
13.1.1 Pharmacy center

The Kholeshwar village there isn't any medical store as well as health center so we all ready provided health center design now we are providing pharmacy center design so that we can easily improve health related issues.

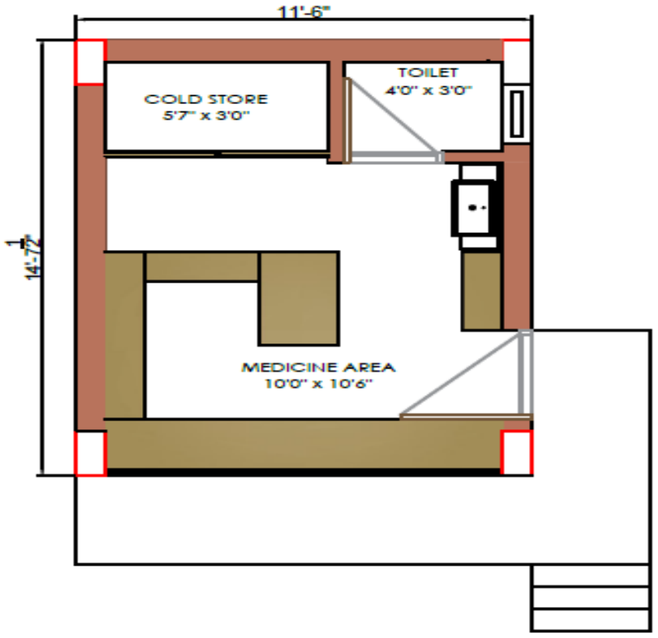
Sr.No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Excavation For Foundation	CUM	1	10.807	1.50	1.53	24.95	24.95
2.	P.C.C For Foundation	CUM	1	10.87	1.50	0.10	1.63	1.63
3.	Brick Work In Foundation							
	Step -1	CUM	1	10.87	1.18	0.30	3.83	
	Step-2	CUM	1	10.87	0.70	0.23	1.73	
	Step-3	CUM	1	10.87	0.23	0.49	1.23	6.83
4.	Brickwork in Superstructure	CUM	1	10.87	0.23	2.96	7.40	
	Toilet 1	CUM	1	1.21	0.115	2.96	0.54	
	Toilet 2	CUM	1	0.91	0.115	2.96	0.31	8.25
	Deduction							
	D1	CUM	1	0.91	0.23	2.30	0.27	
	D2	CUM	1	0.70	0.115	2.30	0.14	
	V1	CUM	1	0.46	0.23	0.40	0.048	7.79
5.	Earthwork in Plinth							

	Medical Area	CUM	1	3.048	3.20	0.61	6.79	
	Washroom	CUM	1	1.71	0.91	0.61	0.95	
	Cold Storage	CUM	1	1.22	0.91	0.61	0.68	8.43
6.	RCC In Slab	CUM	1	3.50	4.45	0.15	2.34	2.34
7.	Plaster	SqM	1	11.15		11.84	32.99	
	Deduction							
	D1	SqM	1	0.91		2.30	2.09	
	D2	SqM	1	0.76		2.30	1.75	
	V1	SqM	1	0.46		0.46	0.92	28.24
8.	External Plaster	SqM	1	12.4		2.96	36.704	
	Deduction							
	D1	SqM	1	0.91		2.30	2.09	
	V1	SqM	1	0.76		2.30	0.92	33.69
9.	Paint	SqM	1	11.15		11.84	32.99	
	Deduction							
	D1	SqM	1	0.91		2.30	2.09	
	D2	SqM	1	0.76		2.30	1.75	
	V1	SqM	1	0.46		0.46	0.92	28.24
10.	External Paint	SqM	1	12.4		2.96	36.704	
	Deduction							
	D1	SqM	1	0.91		2.30	2.09	
	V1	SqM	1	0.76		2.30	0.92	33.69
11.	Door & Ventilation							
	D1	SqM	1	0.91		2.30	2.09	
	D2	SqM	1	0.76		2.30	1.75	
	V1	SqM	1	0.46		0.46	0.92	4.76

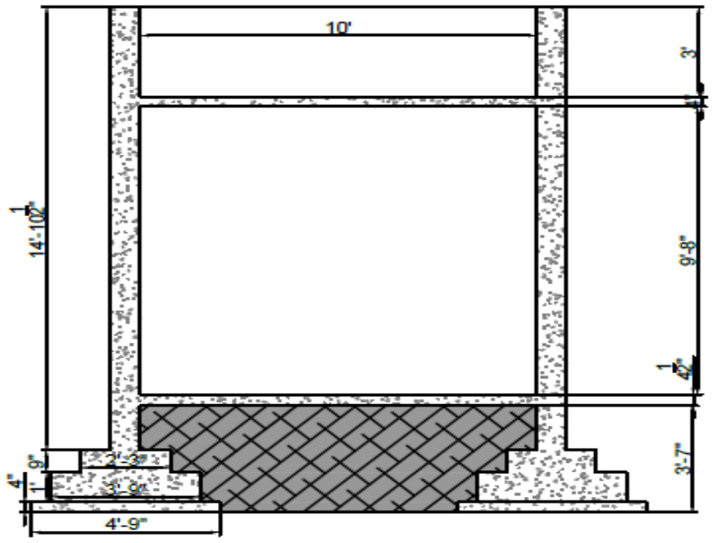
pharmacy center					
Abstract					
Sr.On	**Description**	**Unit**	**Quantity**	**Rate**	**Amount**
1.	Excavation	CuM	24.95	155	3868
2.	P.C.C	CuM	1.63	4000	6520
3.	Brick work in foundation	CuM	6.83	6450	44053
4.	Brick Work super structure	CuM	7.79	6450	50245
5.	Earthwork in Plinth	CuM	8.43	150	1265
6.	RCC	CuM	2.34	8870	20756
7.	Internal Plaster	CuM	28.24	258	7286
8.	External Plaster	SqM	33.69	258	8690
9.	Internal Paint	SqM	28.24	93	2627
10.	External Paint	SqM	33.69	93	3134
11.	Window & Ventilation	SqM	4.76	1500	7140
	Total Amount				155584
	Contingencies	3%			4667
	Total Cost				160251



ELEVATION



PLAN



SECTION

VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	PHARMACY CENTER
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

13.1.2 Community Hall

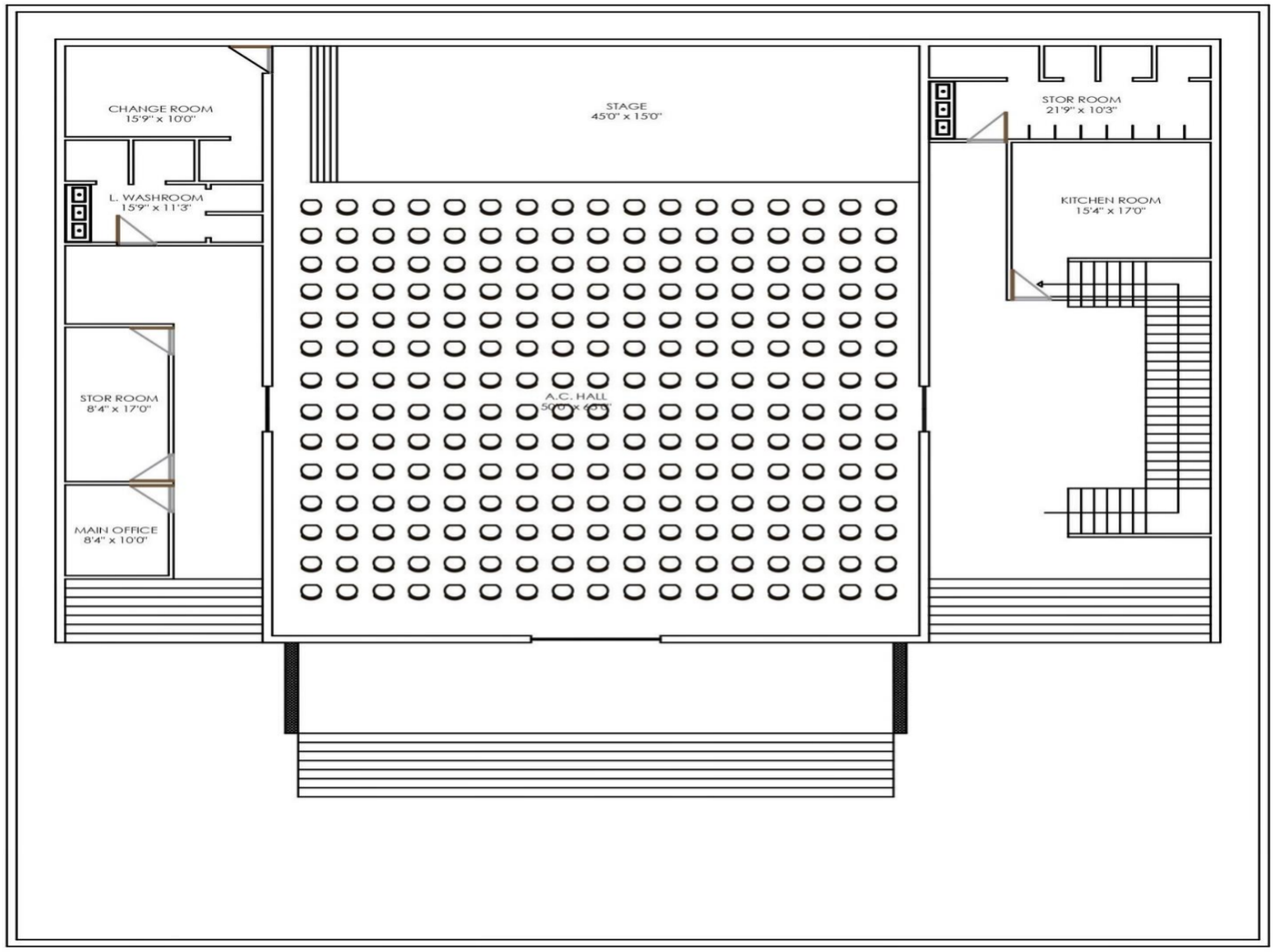
By visiting the kholeshwar village we find that kholeshwar village and there nearer village such as as Dungara, Bhairav, Delod, Dhoran Pardi, and Amboli those village also does not have community hall, library and E-Center and those villages located around 5 km away from each other.

Moreover, to solve this problem we design Community hall on ground floor and on the first

Sr.No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Excavation For Foundation	CUM	1	131.32	1.68	3.11	686.12	686.12
2.	P.C.C For Foundation	CUM	1	131.32	1.68	0.10	22.06	22.06
3.	Brick Work In Foundation							
	Step -1	CUM	1	131.7	1.49	0.30	58.86	
	Step-2	CUM	1	132.68	1.0	0.23	30.51	
	Step-3	CUM	1	133.46	0.61	0.20	16.29	
	Step-4	CUM	1	134.22	0.23	2.32	71.62	199.37
4.	Brickwork	CUM	1	134.22	0.23	4.48	138.3	
	For extra	CUM	1	62.01	0.115	4.48	31.95	
	Deduction							
	D1	CUM	1	3.05	0.23	3.0	2.10	
	D2	CUM	2	1.52	0.23	3.0	2.10	
	D3	CUM	6	0.91	0.115	2.30	1.44	
	D4	CUM	9	0.76	0.115	2.30	1.81	170.25
5.	Earthwork in Plinth							
	Main hall	CUM	1	15.24	19.81	1.0	301.31	
	Toilet	CUM	1	6.62	3.10	1.0	20.52	
	Kitchen	CUM	1	4.66	5.18	1.0	24.14	
	Change Room	CUM	1	4.81	3.05	1.0	14.67	
	L.Washroom	CUM	1	4.82	3.41	1.0	16.44	
	Lobby	CUM	1	4.82	11.22	1.0	54.08	
	Lobby	CUM	1	6.62	9.45	1.0	62.56	493.72

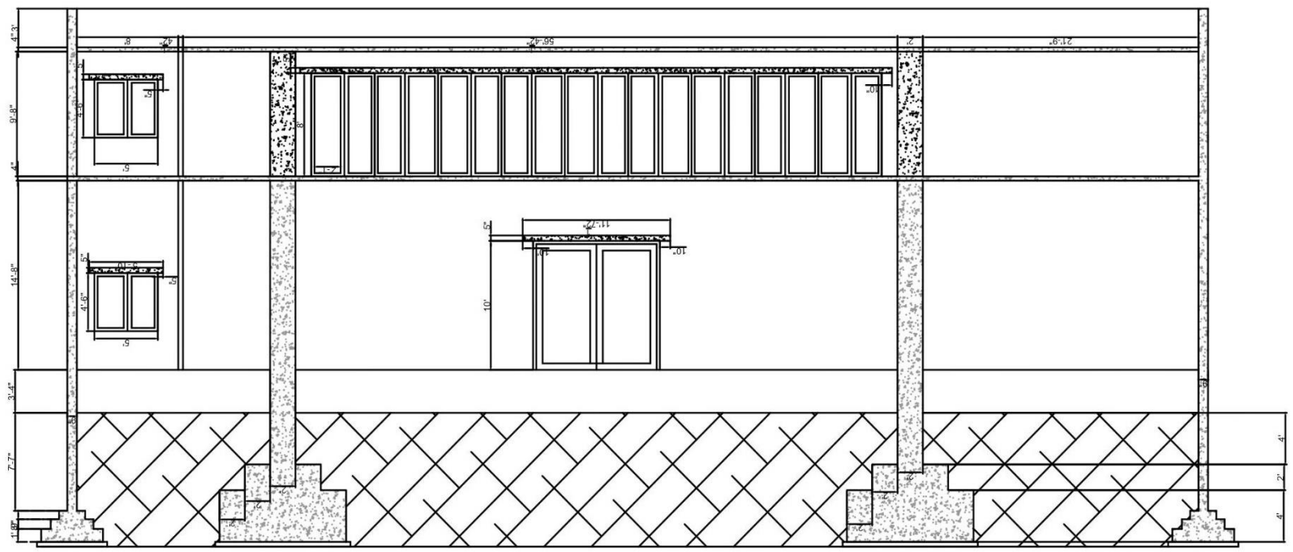
6.	RCC In Slab	CUM	1	27.22	20.06	0.150	81.90	
	Canti. Slab	CUM	1	14.02	3.05	0.150	6.41	88.31
7.	Plaster	SqM	1	168.16		4.48	753.37	
	Deduction							
	D1	SqM	1	3.05		3.0.	9.15	
	D2	SqM	2	1.52		30.	9.12	
	D3	SqM	6	0.91		2.3	12.56	
	D4	SqM	9	0.76		2.3	15.73	706.81
8.	External Plaster	SqM	1	94.56		4.48	423.63	
	Deduction							
	D1	SqM	1	3.05		3.0	9.15	
	ENTRY	SqM	1	4.81		4.48	21.55	
	ENTRY	SqM	1	6.62		4.48	29.66	363.40
9.	PAINT	SqM	1	168.16		4.48	753.37	
	Deduction							
	D1	SqM	1	3.05		3.0.	9.15	
	D2	SqM	2	1.52		30.	9.12	
	D3	SqM	6	0.91		2.3	12.56	
	D4	SqM	9	0.76		2.3	15.73	706.81
10.	External Paint	SqM	1	94.56		4.48	423.63	
	Deduction							
	D1	SqM	1	3.05		3.0	9.15	
	ENTRY	SqM	1	4.81		4.48	21.55	
	ENTRY	SqM	1	6.62		4.48	29.66	363.40
11.	Door & Ventilation							
	D1	SqM	1	3.05		3.0.	9.15	
	D2	SqM	2	1.52		30.	9.12	
	D3	SqM	6	0.91		2.3	12.56	
	D4	SqM	9	0.76		2.3	15.73	706.81

Community Hall					
Abstract					
Sr.On	**Description**	**Unit**	**Quantity**	**Rate**	**Amount**
1.	Excavation	CuM	686.12	155	106348
2.	P.C.C	CuM	22.06	4000	88240
3.	Brick work in foundation	CuM	199.37	6450	1285936.5
4.	Brick Work super structure	CuM	170.25	6450	1098112
5.	Earthwork in Plinth	CuM	493.72	150	74058
6.	RCC	CuM	88.31	8870	783309
7.	Internal Plaster	CuM	706.81	258	182356
8.	External Plaster	SqM	363.40	258	93757
9.	Internal Paint	SqM	706.81	93	65733
10.	External Paint	SqM	363.40	93	33796
11.	Window & Ventilation	SqM	706.81	1500	106021
	Total Amount				3851066
	Contingencies	3%			115531
	Total Cost				3966597

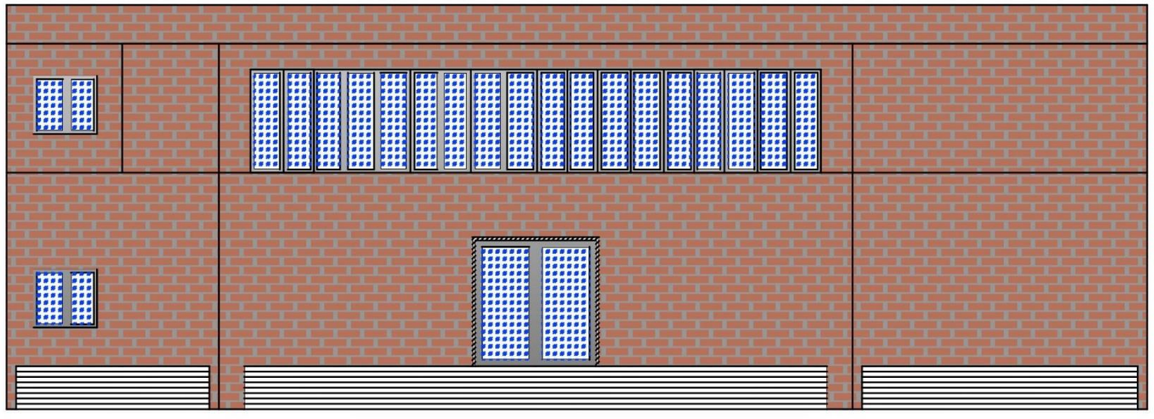


PLAN OF COMMUNITY HALL

VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	COMMUNITY HALL
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181121106006) KALATHIYA AKSHIT (181123106021)



ELEVATION OF COMMUNITY HALL



SECTION OF COMMUNITY HALL

VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	COMMUNITY HALL
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

13.1.3 E-Center

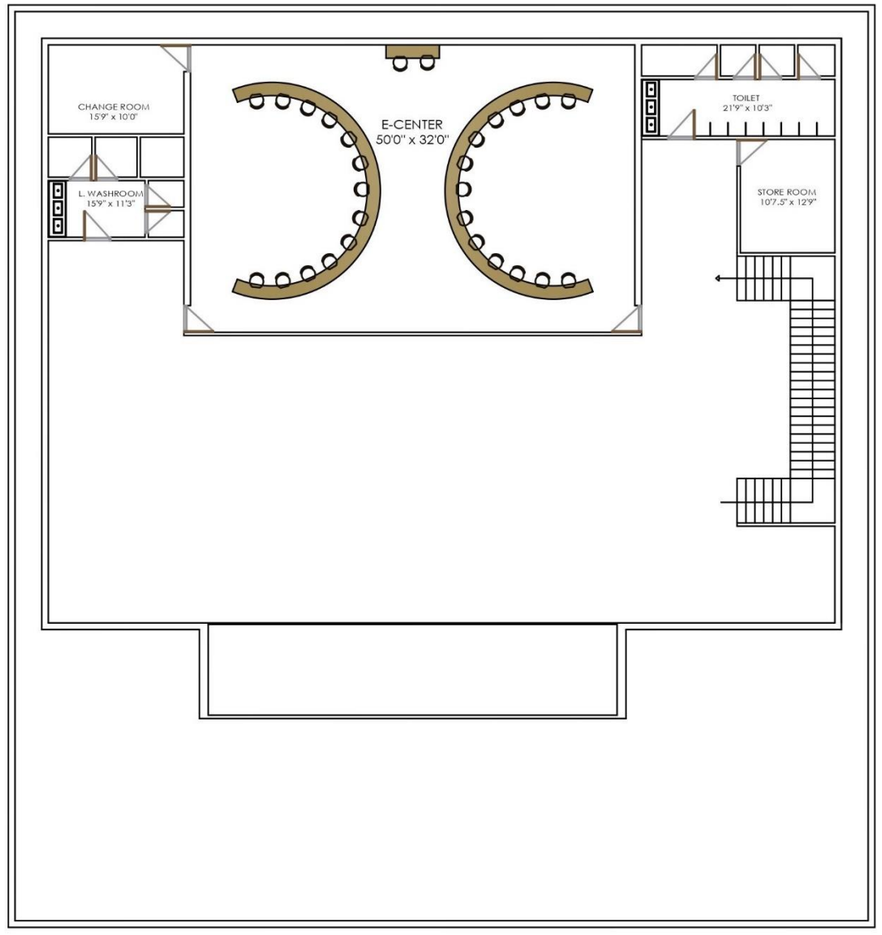
The Kholeshwar village not has any e-center so we design plan and quantity sheets of e-center and to reduce over all cost we placed the e-center at first floor of community hall. Though we can reduce overall cost of structure. Because we don't have to build new footing.

Wall calculation	Unit	Length	Nos.	Quantity	Total Quantity	Total in meter Quantity
Long wall : 1	Sq.ft	66'6"	2	133'	299'10"	91.38 m
Long wall : 2	Sq.ft	33'5"	2	66'10"		
Long wall : 3	Sq.ft	50'0"	2	100'		
Short wall : 1	Sq.ft	15'3"	4	61'	184'2"	56.13 m
Short wall at left wash room : 2	Sq.ft	4'6"	2	9'0"		
Short wall at left wash room : 3	Sq.ft	4'4.5"	1	8'9"		
Short wall at left wash room : 4	Sq.ft	3'0"	2	6'0"		
Short wall : 5	Sq.ft	21'9"	3	65'3"		
Short wall : 6	Sq.ft	3'6"	3	10'6"		
Short wall : 7	Sq.ft	12'8"	1	12'8"		
Short wall : 8	Sq.ft	11'0"	1	11'0"		

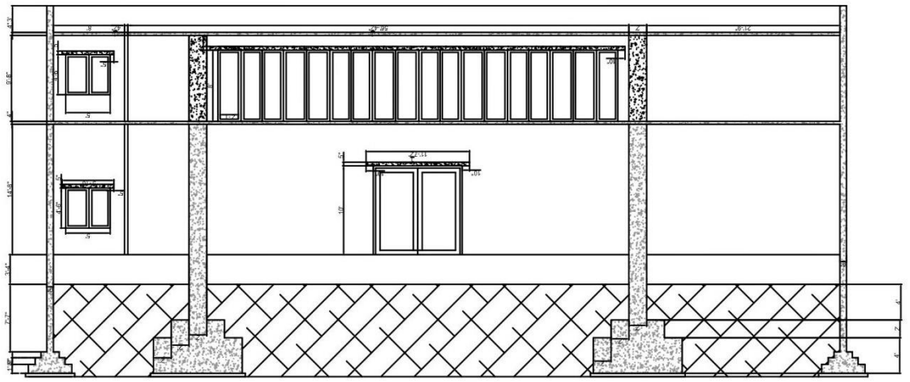
Sr.No	Description	Unit	No	Length Ft	Width Ft	Height Ft	Quantity	Total quantity
1.	Brick work on first floor							
	Long Wall	CUM	1	91.38	0.2	3	54.82	
	Short Wall	CUM	1	56.13	0.2	3	33.67	88.49
	Deduction							
	D1	CUM	6	0.91	0.2	2.3	2.51	
	D2	CUM	8	0.76	0.2	2.3	2.79	
	W1	CUM	5	1.82	0.2	1.82	3.31	
	V1	CUM	6	0.46	0.2	0.40	0.22	8.83
							Total	**79.66**

2.	RCC In Slab	CUM	1	27.22	20.06	0.150	81.90	**81.90**
7.	Plaster	SqM		239.48		2.96	708.86	
	Deduction							
	D1	SqM	6	0.91		2.3	12.55	
	D2	SqM	8	0.76		2.3	13.98	
	W1	SqM	5	1.82		1.82	16.56	
	V1	SqM	6	0.46		0.40	1.104	44.19
							Total	**664.67**
8.	External Plaster	SqM	1	99.83		2.96	295.51	
	Deduction							
	W1	SqM	5	1.82		1.82	16.56	
	V1	SqM	6	0.46		0.40	1.104	17.66
							Total	**277.85**
9.	PAINT	SqM		239.48		2.96	708.86	
	Deduction							
	D1	SqM	6	0.91		2.3	12.55	
	D2	SqM	8	0.76		2.3	13.98	
	D3	SqM	5	1.82		1.82	16.56	
	D4	SqM	6	0.46		0.40	1.104	44.19
							Total	**664.67**
10.	External Paint	SqM	1	99.83		2.96	295.51	
	Deduction							
	D1	SqM	5	1.82		1.82	16.56	
	ENTRY	SqM	6	0.46		0.40	1.104	17.66
	ENTRY	SqM					**Total**	**277.85**
11.	Door & Ventilation							
	D1	CUM	6	0.91	0.2	2.3	2.51	
	D2	CUM	8	0.76	0.2	2.3	2.79	
	W1	CUM	5	1.82	0.2	1.82	3.31	
	V1	CUM	6	0.46	0.2	0.40	0.22	**8.83**

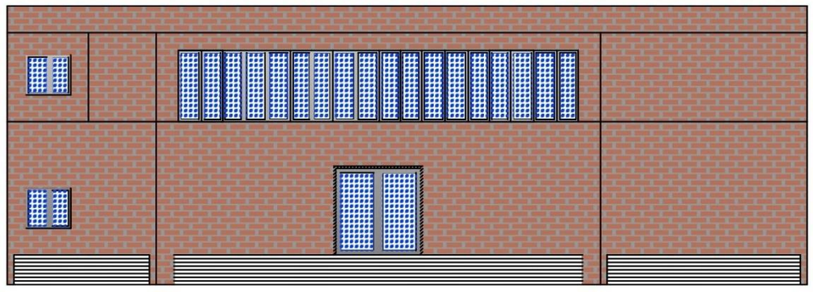
E – center					
Abstract					
Sr.On	**Description**	**Unit**	**Quantity**	**Rate**	**Amount**
1.	Brick work on first floor	CuM	79.66	6450	513807
2.	RCC In Slab	CuM	81.90	8870	726453
7.	Internal Plaster	CuM	664.67	258	171484
8.	External Plaster	SqM	**277.85**	258	71685
9.	Internal Paint	SqM	664.67	93	61814
10.	External Paint	SqM	**277.85**	93	25840
11.	Window & Ventilation	SqM	8.83	1500	13245
	Total Amount				1584328
	Contingencies	3%			47529
	Total Cost				**1631857**



PLAN OF E-CENTER AT 1st FLOOR OF COMMUNITY HALL



SECTION



ELEVATION

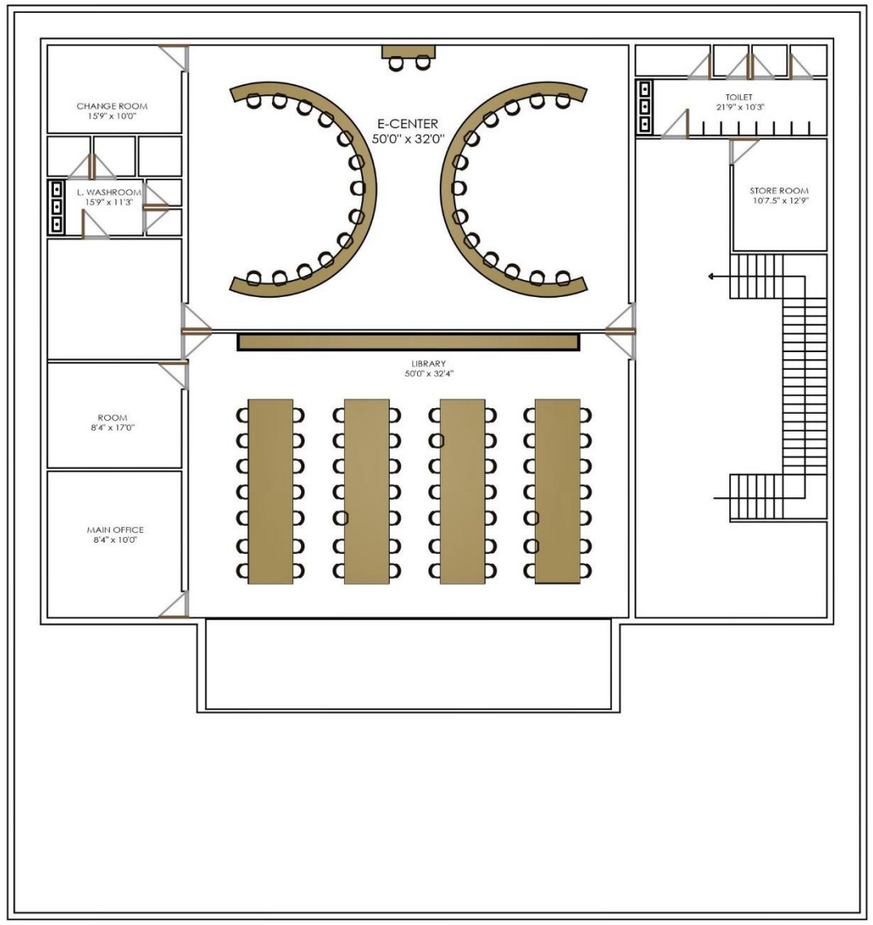
VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	E-CENTER
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181121106001) KALATHIYA AKSHIT (181121106021)

13.1.4. Library

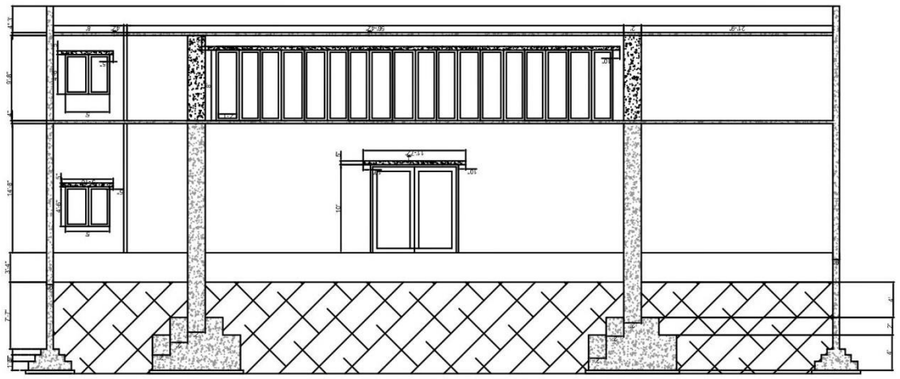
The Kholeshwar village not has any Library so we design plan and quantity sheets of Library and to reduce over all cost we placed the Library at first floor of community hall. Though we can reduce overall cost of structure. Because we don't have to build new footing. The e-center and Library on one floor so over all cos of library is very low as compare to other structure.

Sr.No	Description	Unit	No	Length Ft	Width Ft	Height Ft	Quantity	Total quantity
1.	Brick work on first floor	CUM	1	96.71	0.2	3	58.03	58.03
	Deduction							
	D1	CUM	3	0.91	0.2	2.3	1.25	
							Total	**56.78**
2.	Plaster	SqM		239.48		2.96	70.65	
	Deduction							
	D1	CUM	3	0.91	0.2	2.3	1.25	
							Total	**69.4**
3.	External Plaster	SqM	1	99.83		2.96	17.66	**17.66**
4.	PAINT	SqM		239.48		2.96	70.65	
	Deduction							
	D1	CUM	3	0.91		2.3	1.25	
							Total	**69.4**
5.	External Paint	SqM	1	99.83		2.96	17.66	**17.66**
6.	Door & Ventilation							
	D1	CUM	3	0.91		2.3	0.41	**6.279**

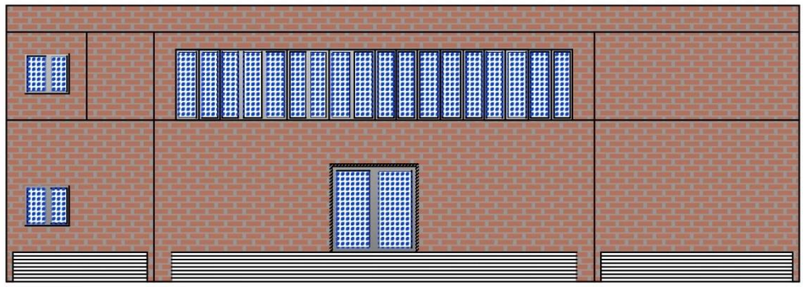
Library					
Abstract					
Sr.On	**Description**	**Unit**	**Quantity**	**Rate**	**Amount**
1.	Brick work on first floor	CuM	56.78	6450	366231
2.	Internal Plaster	CuM	69.4	258	334111
3.	External Plaster	SqM	17.66	258	4556
4.	Internal Paint	SqM	69.4	93	6454
5.	External Paint	SqM	17.66	93	1642
6.	Door	SqM	6.279	1500	9418
	Total Amount				722412
	Contingencies	3%			21672
	Total Cost				**744084**



PLAN OF LIBRARY AT 1st FLOOR OF COMMUNITY HALL



ELEVATION



SECTION

VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	LIBRARY
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181270106006) KALATHIYA AKSHIT (181270106021)

13.1.5. Market

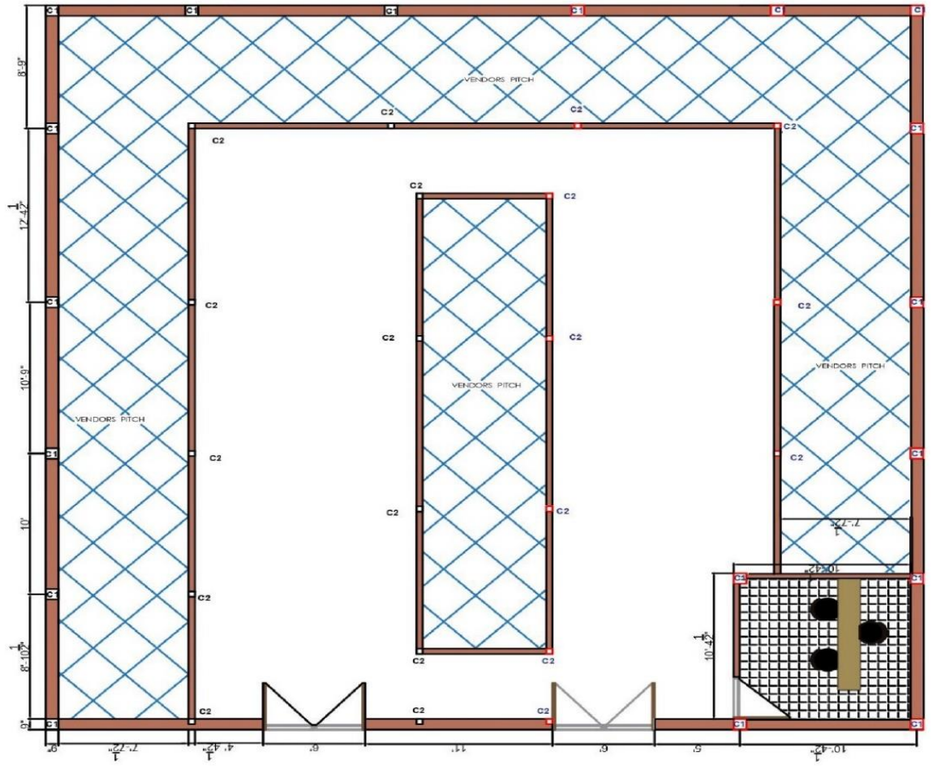
In the kholeshwar village villagers doesn't have amy market yard they have travel surat at sardar market which is around 22 km from surat so if village has any market then villagers and farmer doesn't haven to travel. And this market also useful for near village

Sr.No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Excavation For Foundation	CUM	1	116.68	1.68	3.11	609.63	**609.63**
2.	P.C.C For Foundation	CUM	1	116.68	1.68	0.10	4.71	**19.60**
3.	Brick Work In Foundation							
	Step -1	CUM	1	116.68	1.49	0.30	52.16	
	Step-2	CUM	1	116.68	1.0	0.23	26.84	
	Step-3	CUM	1	116.68	0.61	0.20	14.24	
				116.230	2.32	2.32	62.26	**155.50**
4.	Brickwork in boundry wall	CUM	1	31.4	0.23	2.00	14.44	
	Deduction							
	D1	CUM	4	0.91	0.23	2.0	1.67	**12.77**
5.	Earthwork in Plinth							
	Storage	CUM	1	15.70	15.70	1.10	271.14	**271.14**
6.	RCC In Slab of office	CUM	1	3.16	3.16	0.150	1.49	**1.49**
7.	Plaster	CUM	1	31.4		2.00	62.92	
	Deduction							
	D1	CUM	4	0.91		2.0	7.28	**55.64**
8.	External Plaster	SqM	1	62.76		2.00	125.52	
	Deduction							
	D1	CUM	4	0.91		2.0	7.28	**118.24**
9.	Paint	CUM	1	31.4		2.00	62.92	
	Deduction							
	D1	CUM	4	0.91		2.0	7.28	**55.64**

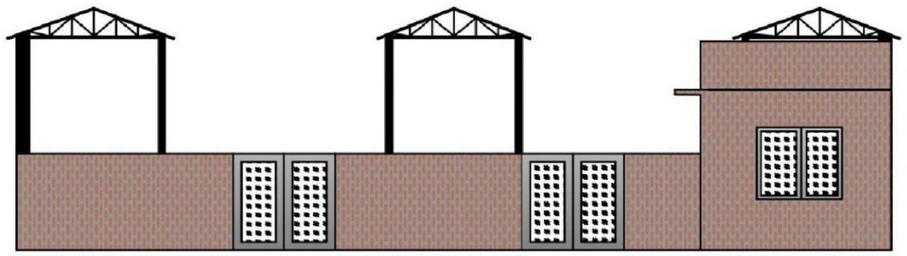
	Paint	SqM	1	62.76		2.00	125.52	
	Deduction							
	D1	CUM	4	0.91		2.0	7.28	**118.24**
11.	Door							
	D1	SqM	4	0.91	0.23	2.0	1.67	**2.79**
12.	Truss	CUM	1	126.66	-	-	**126.66**	**126.66**

Market					
Abstract					
Sr.On	**Description**	**Unit**	**Quantity**	**Rate**	**Amount**
1.	Excavation	CuM	**609.63**	155	94492
2.	P.C.C	CuM	**19.60**	4000	78400
3.	Brick work in foundation	CuM	**168.47**	6450	1085341
5.	Earthwork in Plinth	CuM	**271.14**	150	40671
6.	RCC	CuM	**1.49**	8870	13216
7.	Internal Plaster	CuM	**55.64**	258	14355.12
8.	External Plaster	SqM	**118.24**	258	30505
9.	Internal Paint	SqM	**55.64**	93	5174
10.	External Paint	SqM	**118.24**	93	10996
11.	Window & Ventilation	SqM	**2.79**	1500	4185
12.	Truss	Cum	**126.66**	1500	189990
	Total Amount				1567325
	Contingencies	3%			47019
	Total Cost				**1614344**

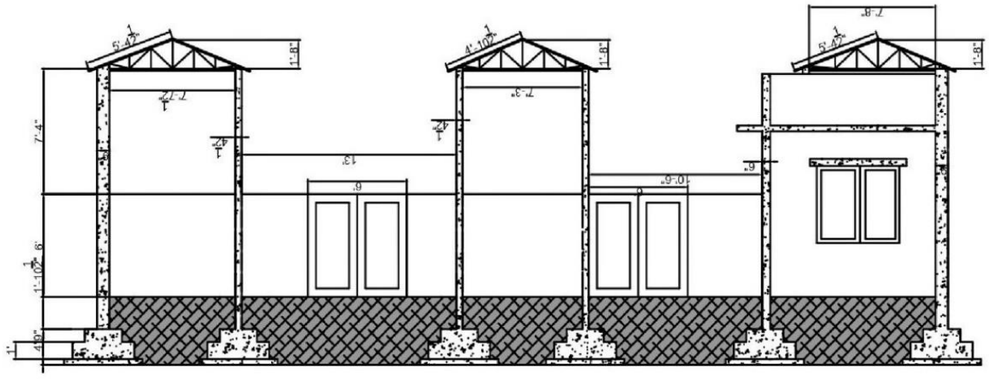
Column No.	Column Size
C1	9" x 9"
C2	4.5" x 4.5"



PLAN OF MARKET



ELEVATION



SECTION

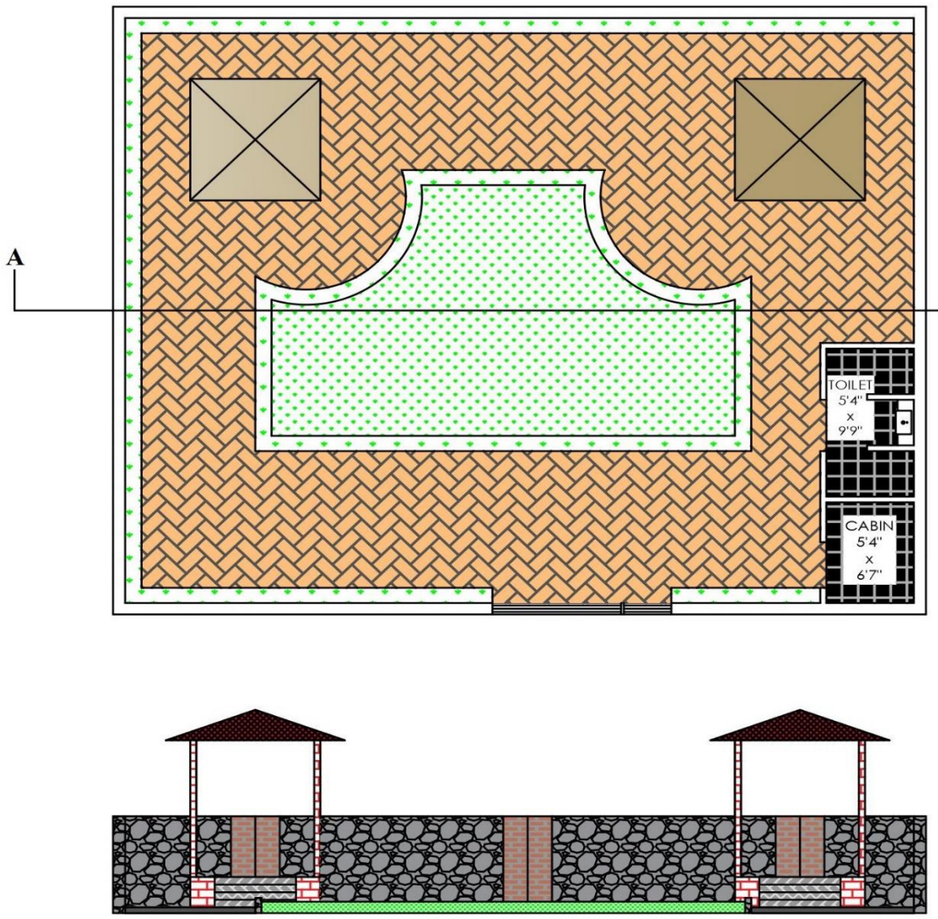
VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	MARKET
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

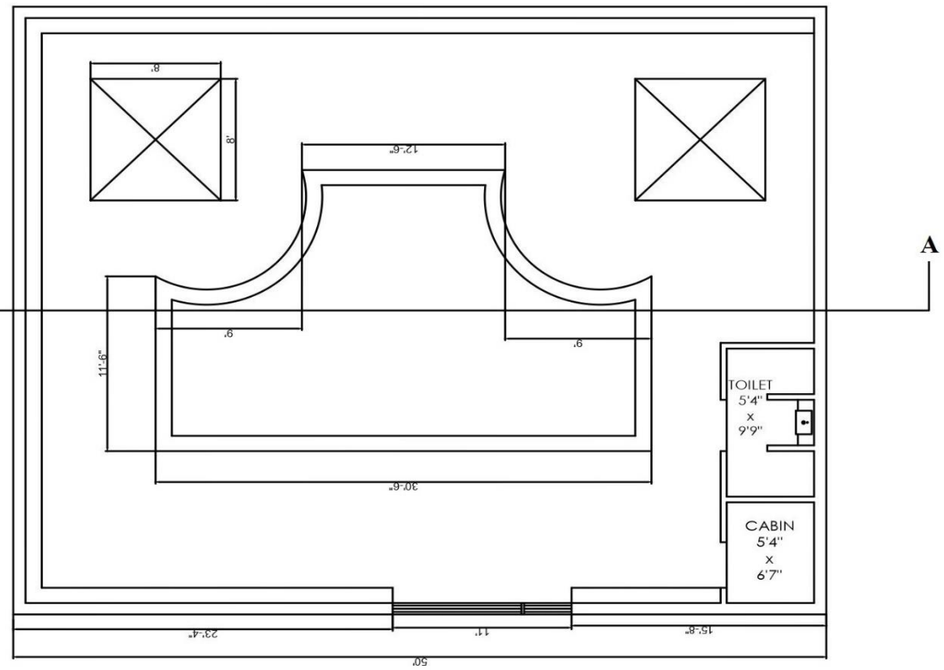
13.1.6. Garden

In the kholeshwar village there is no any garden so children play on the street so overall development of village and their children any normal village should need one garden so we design one small garden place of garden is not decided yet.

Sr.No	Description	Unit	No	Length M	Width M	Height M	Quantity	Total quantity
1.	Land cleaning and leveling	CUM	1	15.24	15.24		232.25	**232.25**
2.	Excavation For outer wall	CUM	1	15.24	15.24	0.30	9.144	**232.25**
3.	P.C.C For wall	CUM	1	15.00	15.00	0.10	22.500	**22.500**
4.	Brickwork in Foundation	CUM	1	60.48	0.23	1.82	25.316	
	Deduction							
	Gate	CUM	1	3.25	0.23	1.82	1.40	
							Total	**23.92**
5.	Brick work up to plinth	CUM	1	16.42	0.11	2.96	15.34	
	Deduction							
	Gate	CUM	1	3.04	0.11	2.96	0.99	
							Total	**4.35**
6.	RCC In Slab for toilet	CUM	1	5.44	1.84	0.150	1.50	**1.50**
7.	Plaster	CUM	1	16.42		2.96	48.60	
	Deduction	CUM	1	3.04		2.96	8.99	
							Total	**57.59**
8.	Paint	CUM	1	16.42		2.96	48.60	
	Deduction	CUM	1	3.04		2.96	8.99	
							Total	**57.59**
9.	Gajebo	CUM	2	2.43	2.43	2.74	16.17	**16.17**

Garden					
Abstract					
Sr.no.	**Description**	**Unit**	**Quantity**	**Rate**	**Amount**
1.	Land cleaning and leveling	CuM	232.25	150	34837
2.	Excavation For outer wall	CuM	232.25	155	35998
3.	P.C.C For wall	CuM	22.500	4000	90000
4.	Brickwork in Foundation	CuM	23.92	6450	154284
5.	Brick work up to plinth	CuM	4.35	6450	28057
6.	RCC In Slab for toilet	CuM	1.50	8870	13305
7.	Plaster	CuM	57.59	258	14858
8.	Paint	SqM	57.59	93	5355
9.	Gajebo	SqM	16.17	1500	24255
	Total Amount				400949
	Contingencies	3%			12028
	Total Cost				412977





VISHWAKARMA YOJNA PHASE : VIII	
PACIFIC SCHOOL OF ENGINEERING	
VILLAGE	KHOLESHWAR
STRUCTURE	PUBLIC GARDEN
NODAL OFFICER	Prof. MAYUR VEKARIYA
STUDENT	BHANDERI DARSHIK (181123106006) KALATHIYA AKSHIT (181123106021)

13.2 Reason for Students Recommending this Design

Sr.No.	Design	Reason / Necessity / requirement
1.	Public Toilet	➢ In the kholeshwar village there is no any public toilet facility due to this some villagers and visitors piss on open areas, so we design one public toilet as per the represents.
2.	Entrance Gate	➢ The Kholeshwar village has no main entrance gate at the village approach road. So that we have designedthevillageentrance gateasheritage village design
3.	Health center	➢ The kholeshwar village has not a primary health centre, peoples are suffering a lot they have to go kamrej for their minor health related problems and some time villagers don't has transportation facilities.
4.	Pharmacy center	➢ The Kholeshwar village there isn't any medical store as well as health center. ➢ so we all ready provided health center design now we are providing pharmacy center design so that we can easily improve health related issues.
5.	Anganwadi	➢ Aanganwadi structure is totally damaged and water is leaked from roof of aaganwadi and roof is covered by cement sheet, so during monsoon situation it is too critical for children's to sit in aaganwadi. ➢ So we need to propose new aaganwadi for the betterment of children in village with the facilities like: class room, hall and a kitchen with a drinking water and toilet facility
6.	Community Hall	➢ By visiting the kholeshwar village we find that kholeshwar village and there nearer village such as as Dungara, Bhairav, Delod, Dhoran Pardi, and Amboli those village also does not have community hall. ➢ To make a smart village or ideal village village should need at list one community hall.
7.	Library	➢ we know that the student wants a book to read/ preparation for an exam they always need silent place and nature to read with focused. ➢ Students of kholeshwar village are travel around 8 to 10km for reading in library or any exam preparation because if they went library then and then they get any out-sider knowledge related government exam and how to prepare for it how to apply etc.
8.	E-center	➢ To make any normal village to smart village villagers should know the knowledge related to technology and computer. ➢ If villagers know the outer knowledge then they automaticalu try to improve their life style and village atmosphere they would be aware from currant affair.
9.	Market	➢ In the kholeshwar village villagers doesn't have amy market

		yard they have travel surat at sardar market which is around 22 km from kholeshwar ➢ So if village has any market then villagers and farmer doesn't haven to travel. And this market also useful for near village
10.	Garden	➢ Garden should be needed for harritage of village ➢ In the kholeshwar village there is no any garden so children play on the street so overall development of village and their children any normal village should need one garden so we design one small garden place of garden is not decided yet.

Table : 13.1 : Reason for recommending design

13.3 About designs Suggestions / Benefit of the villagers

- To develop rural areas in terms of whole in terms of culture, society, economy, technology and health. Rural Development is dynamic process, which is mainly concerned with rural areas.
- These include- Agriculture growth, putting up of economic and social infrastructure, village planning, public health, education and functional literacy etc. Rural Development is national necessity and has considerable importance in India.
- The study will focus the development trend, intensity of growth of the village, and find out the problems related to the physical development of the area and infrastructure services of the village. develop and empower human resource of rural area in terms of their psychology, skill, knowledge, attitude and their other abilities.
- To develop infrastructure facilities of rural area.
- To provide basic facilities in terms of drinking water, education, transport, electricity, sanitation, and communication.
- To restore uncultivated land, provide irrigation facilities and motivating farmers to adopt
- improved seed.
- To minimize gap between urban and rural in terms of facilities availed.

Chapter. 14 :
Technical Options with Case Studies

14.1 Civil Engineering

14.1.1. Advanced Earthquake Resistant

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

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

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

1. Base Isolation
2. Energy Dissipation Devices

Base Isolation Method Of Earthquake Resistant Design

A base isolated structure is supported by a series of bearing pads which are placed between the building and the building's foundation. A variety of different types of base isolation bearing pads have now been developed. The bearing is very stiff and strong in the vertical direction, but flexible in the horizontal direction.

To get a basic idea of how base isolation works, examine Figure . This shows an earthquake acting on both a base isolated building and a conventional, fixed-base, building. As a result of an earthquake, the ground beneath each building begins to move. In Figure, it is shown moving to the left. Each building responds with movement which tends toward the right. The building undergoes displacement towards the right. The building's displacement in the direction opposite the ground motion is actually due to inertia. The inertial forces acting on a building are the most important of all those generated during an earthquake. It is important to know that the inertial forces which the building undergoes are proportional to the building's acceleration

during ground motion. It is also important to realize that buildings don't actually shift in only one direction. Because of the complex nature of earthquake ground motion, the building actually tends to vibrate back and forth in varying directions. By contrast, even though it too displacing, the base-isolated building retains its original, rectangular shape. It is the lead-rubber bearings supporting the building that are deformed.

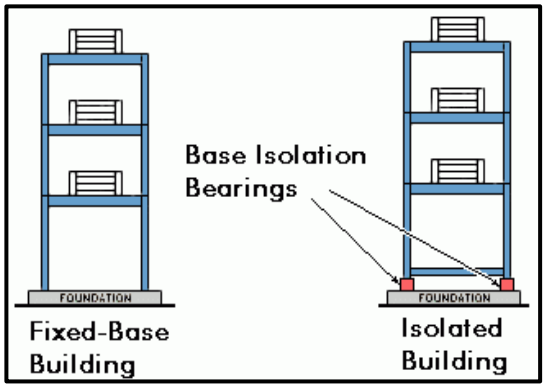


Fig : 14.1 : Base Isolation Method

The base-isolated building itself escapes the deformation and damage, which implies that the inertial forces acting on the base-isolated building have been reduced. Experiments and observations of base-isolated buildings in earthquakes have been shown to reduce building accelerations to as little as 1/4 of the acceleration of comparable fixed-base buildings, which each building undergoes as a percentage of gravity. As we noted above, inertial forces increase, and decrease, proportionally as acceleration increases or decreases.

Acceleration is decreased because the base isolation system lengthens a building's period of vibration, the time it takes for the building to rock back and forth and then back again. And in general, structures with longer periods of vibration tend to reduce acceleration, while those with shorter periods tend to increase or amplify acceleration. Finally, since they are highly elastic, the rubber isolation bearings don't suffer any damage. But the lead plug in the middle of our example bearing experiences the same deformation as the rubber. However, it generates heat.

Energy Dissipation Devices

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

The building will dissipate energy either by undergoing large scale movement or sustaining increased internal strains in elements such as the building's columns and beams. Both of these eventually result in varying degrees of damage. So, by equipping a building with additional devices which have high damping capacity, we can greatly decrease the seismic energy entering the building, and thus decrease building damage.

Accordingly, a wide range of energy dissipation devices have been developed and are now being installed in real buildings. Energy dissipation devices are also often called damping devices. The large number of damping devices that have been developed can be grouped into three broad categories: Friction Dampers: these utilize frictional forces to dissipate energy Metallic Dampers : utilize the deformation of metal elements within the damper Viscoelastic Dampers : utilize the controlled shearing of solids Viscous Dampers: utilized the forced movement (orificing) of fluids within the dampe

Construction Methods

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

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

14.1.2. Seismic Retrofitting of Buildings

Seismic retrofitting is the modification of existing structures to make them more resistant to seismic activity, ground motion, or soil failure due to earthquakes. With better understanding of seismic demand on structures and with our recent experiences with large earthquakes near urban centers, the need of seismic retrofitting is well acknowledged. Prior to the introduction of modern seismic codes in the late 1960s for developed countries (US, Japan etc.) and late 1970s for many other parts of the world (Turkey, China etc.), many structures were designed without adequate detailing and reinforcement for seismic protection. In view of the imminent problem, various research work has been carried out. State-of-the-art technical guidelines for seismic assessment, retrofit and rehabilitation have been published around the world – such as the ASCE-SEI 41 and the New Zealand Society for Earthquake Engineering (NZSEE)'s guidelines. These codes must be regularly updated; the 1994 Northridge earthquake brought to light the brittleness of welded steel frames, for example.

The retrofit techniques outlined here are also applicable for other natural hazards such as tropical cyclones, tornadoes, and severe winds from thunderstorms. Whilst

current practice of seismic retrofitting is predominantly concerned with structural improvements to reduce the seismic hazard of using the structures, it is similarly essential to reduce the hazards and losses from non-structural elements. It is also important to keep in mind that there is no such thing as an earthquake-proof structure, although seismic performance can be greatly enhanced through proper initial design or subsequent modifications.

Strategies

Seismic retrofit (or rehabilitation) strategies have been developed in the past few decades following the introduction of new seismic provisions and the availability of advanced materials (e.g. fiber-reinforced polymers (FRP), fiber reinforced concrete and high strength steel).

- Increasing the global capacity (strengthening). This is typically done by the addition of cross braces or new structural walls.
- Reduction of the seismic demand by means of supplementary damping and/or use of base isolation systems.[6]
- Increasing the local capacity of structural elements. This strategy recognises the inherent capacity within the existing structures, and therefore adopts a more cost-effective approach to selectively upgrade local capacity (deformation/ductility, strength or stiffness) of individual structural components.
- Selective weakening retrofit. This is a counter-intuitive strategy to change the inelastic mechanism of the structure, while recognising the inherent capacity of the structure.[7]
- Allowing sliding connections such as passageway bridges to accommodate additional movement between seismically independent structures.
- Addition of seismic friction dampers to simultaneously add damping and a selectable amount of additional stiffness.

Recently more holistic approaches to building retrofitting are being explored, including combined seismic and energy retrofitting. Such combined strategies aim to exploit cost savings by applying energy retrofitting and seismic strengthening interventions at once, hence improving the seismic and thermal performance of buildings.

Performance objectives

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

- Public safety only. The goal is to protect human life, ensuring that the structure will not collapse upon its occupants or passersby, and that the structure can be safely exited. Under severe seismic conditions the structure may be a total economic write-off, requiring tear-down and replacement.

- Structure survivability. The goal is that the structure, while remaining safe for exit, may require extensive repair (but not replacement) before it is generally useful or considered safe for occupation. This is typically the lowest level of retrofit applied to bridges.
- Structure unaffected. This level of retrofit is preferred for historic structures of high cultural significance

1. External post-tensioning

The use of external post-tensioning for new structural systems have been developed in the past decade. Under the PRESS (Precast Seismic Structural Systems), a large-scale U.S./Japan joint research program, unbonded post-tensioning high strength steel tendons have been used to achieve a moment-resisting system that has self-centering capacity.

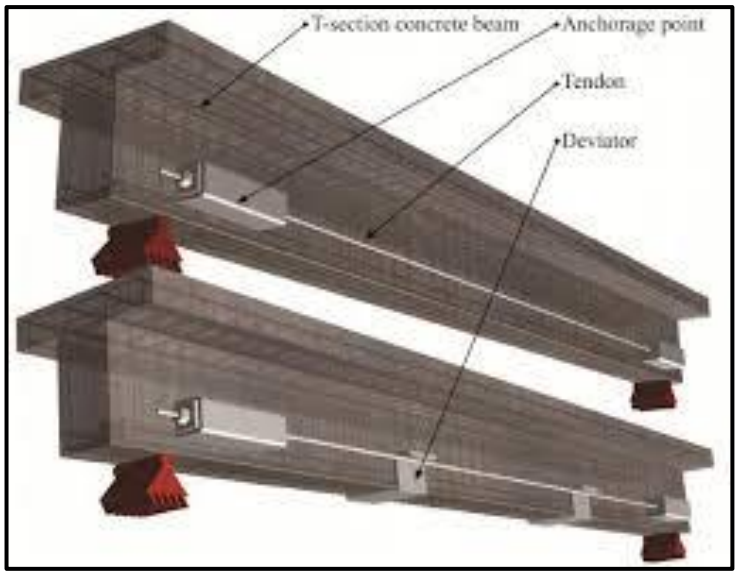


Fig : 14.2 : External Post-Tensioning

An extension of the same idea for seismic retrofitting has been experimentally tested for seismic retrofit of California bridges under a Caltrans research project and for seismic retrofit of non-ductile reinforced concrete frames. Pre-stressing can increase the capacity of structural elements such as beam, column and beam-column joints. External pre-stressing has been used for structural upgrade for gravity/live loading since the 1970s.

2. Base isolators

Base isolation is a collection of structural elements of a building that should substantially decouple the building's structure from the shaking ground thus protecting the building's integrity and enhancing its seismic performance. This earthquake engineering technology, which is a kind of seismic vibration control, can be applied both to a newly designed building and to seismic upgrading of existing structures. Normally, excavations are made around the building and the building is separated from the foundations.

Fig : 14.3 : Base Isolators

Steel or reinforced concrete beams replace the connections to the foundations, while under these, the isolating pads, or base isolators, replace the material removed. While the base isolation tends to restrict transmission of the ground motion to the building, it also keeps the building positioned properly over the foundation. Careful attention to detail is required where the building interfaces with the ground, especially at entrances, stairways and ramps, to ensure sufficient relative motion of those structural elements.

3. Supplementary dampers

Supplementary dampers absorb the energy of motion and convert it to heat, thus damping resonant effects in structures that are rigidly attached to the ground. In addition to adding energy dissipation capacity to the structure, supplementary damping can reduce the displacement and acceleration demand within the structures.

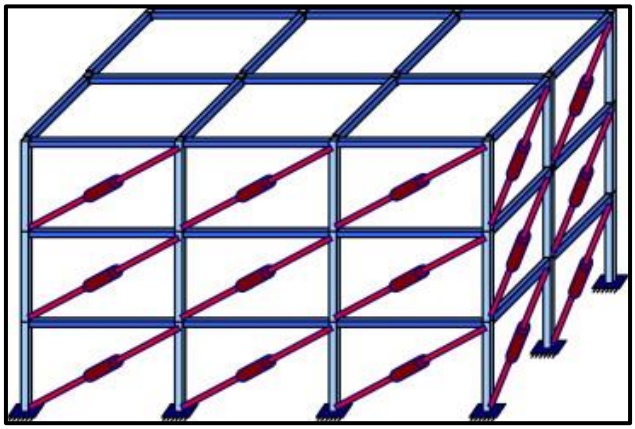


Fig : 14.4 : Supplementary Dampers

In some cases, the threat of damage does not come from the initial shock itself, but rather from the periodic resonant motion of the structure that repeated ground motion induces. In the practical sense, supplementary dampers act similarly to Shock absorbers used in automotive suspensions.

4. Tuned mass dampers

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

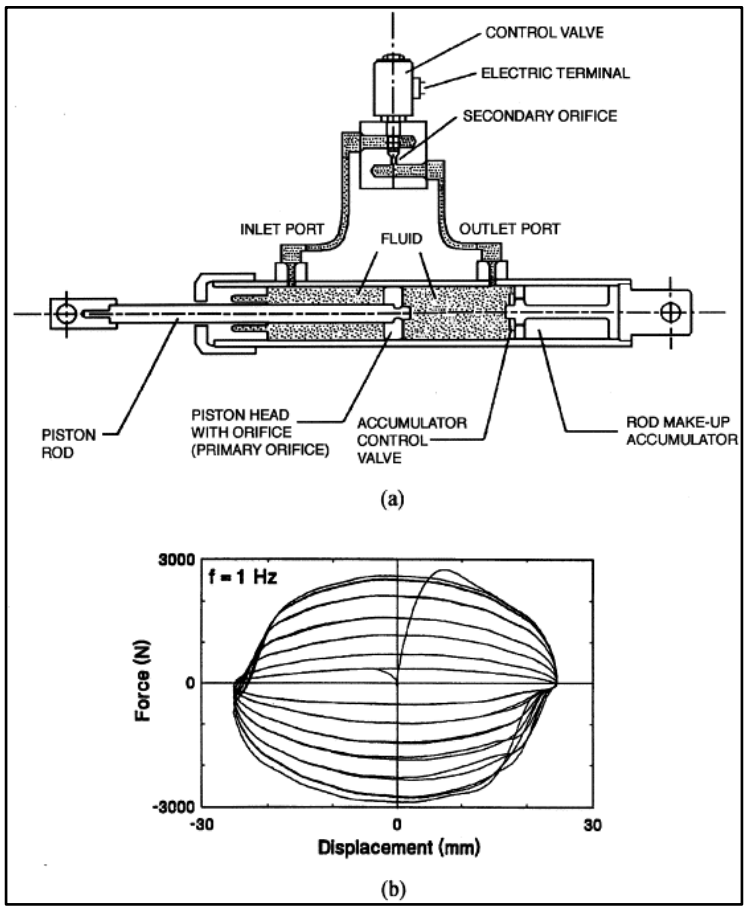
5. Slosh tank

A slosh tank is a large container of low viscosity fluid (usually water) that may be placed at locations in a structure where lateral swaying motions are significant, such as the roof, and tuned to counter the local resonant dynamic motion. During a seismic (or wind) event the fluid in the tank will slosh back and forth with the fluid motion usually directed and controlled by internal baffles – partitions that prevent the tank itself becoming resonant with the structure, see Slosh dynamics.

The net dynamic response of the overall structure is reduced due to both the counteracting movement of mass, as well as energy dissipation or vibration damping which occurs when the fluid's kinetic energy is converted to heat by the baffles. Generally the temperature rise in the system will be minimal and is passively cooled by the surrounding air. One Rincon Hill in San Francisco is a skyscraper with a rooftop slosh tank which was designed primarily to reduce the magnitude of lateral swaying motion from wind.

A slosh tank is a passive tuned mass damper. In order to be effective the mass of the liquid is usually on the order of 1% to 5% of the mass it is counteracting, and often this requires a significant volume of liquid. In some cases these systems are designed to double as emergency water cisterns for fire suppression.

6. Active control system



Very tall buildings ("skyscrapers"), when built using modern lightweight materials, might sway uncomfortably (but not dangerously) in certain wind conditions. A solution to this problem is to include at some upper story a large mass, constrained, but free to move within a limited range, and moving on some sort of bearing system such as an air cushion or hydraulic film. Hydraulic pistons, powered by electric pumps and accumulators, are actively driven to counter the wind forces and natural resonances.

These may also, if properly designed, be effective in controlling excessive motion – with or without applied power – in an earthquake. In general, though, modern steel frame high rise buildings are not as subject to dangerous motion as are medium rise (eight to ten story) buildings, as the resonant period of a tall and massive building is longer than the approximately one second shocks applied by an earthquake.

7. Adhoc addition of structural support/reinforcement

The most common form of seismic retrofit to lower buildings is adding strength to the existing structure to resist seismic forces.

The strengthening may be limited to connections between existing building elements or it may involve adding primary resisting elements such as walls or frames, particularly in the lower stories. Common retrofit measures for unreinforced masonry buildings in the Western United States include

The addition of steel frames, the addition of reinforced concrete walls, and in some cases, the addition of base isolation.

8. Connections between buildings and their expansion additions

Frequently, building additions will not be strongly connected to the existing structure, but simply placed adjacent to it, with only minor continuity in flooring, siding, and roofing As a result, the addition may have a different resonant period than the original structure, and they may easily detach from one another. The relative motion will then cause the two parts to collide, causing severe structural damage. Seismic modification will either tie the two building components rigidly together so that they behave as a single mass or it will employ dampers to expend the energy from relative motion, with appropriate allowance for this motion, such as increased spacing and sliding bridges between sections.

9. Exterior concrete columns

Historic buildings, made of unreinforced masonry, may have culturally important interior detailing or murals that should not be disturbed. In this case, the solution may be to add a number of steel, reinforced concrete, or poststressed concrete columns to the exterior. Careful attention must be paid to the connections with other members such as footings, top plates, and roof trusses.

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

- There is several advance construction techniques which is given below.

1. Precast Flat Panel System
2. 3D Volumetric Modules
3. Flat Slab Construction
4. Precast Concrete Foundation.
5. Concrete Wall and Floors
6. Twin Wall Technology

1. Precast Flat Panel System

This method of construction involves the procedure of making floor and wall units off site. For this, separate factory outlets and facilities is required. Once the panel units are made as per the design specification and requirements, they are brought to the site and placed. This method is best suited for repetitive construction project activities.

Fig : 14.6 : Precast Flat Panel System

The panels manufactured has the services of windows, doors and the finishes. This method also brings building envelope panels which are provided with insulation and decorative cladding that is fitted by the factory which can also be used as load – bearing elements.

2. 3D Volumetric Modules

As the name implies, the 3D volumetric construction involves the manufacture of 3D units in the form of modules in off site. At the time of installation, they are brought to the site and assembled module by module. Each modular unit manufactured are 3D units, hence this construction is called as 3D volumetric construction or modular construction.

Fig : 14.7 : 3D Volumetric Modules

The transportation of the modules can be carried out in various forms or methods. This can involve the transportation of the basic structure or a completed unit with all the internal and external finishes, services installed within it, that the only part remaining is the assembly. The factory construction brings different unit of same product maintaining their quality throughout. Hence this method is best suited for repetitive projects so that rapid assembly of the products is possible.

3. Flat Slab Construction

The flat slabs are structural elements that are highly versatile in nature. This is this versatility that it is used widely in construction.

The flat slab provides minimum depth and faster construction. The system also provides column grids that are flexible

Fig : 14.8 : Flat Slab Construction

Wherever it is necessary to seal the partitions to the slab soffit as a reason of acoustic and fire concerns, the flat slabs are a desirable solution. When compared with other forms of construction, the flat slabs are faster and more economic in nature. The construction of flat slabs can be completed with good surface finish for the soffit, this enables to utilize he exposed soffits. The flat slab construction is also a means of increasing the energy efficiency as this allows the exploitation of building thermal mass in the design of ventilation, heating and the cooling requirements.

4. Precast Concrete Foundations

For the rapid construction of foundation, the precast concrete system can be employed. This method is more suited for a bespoke design. Here, the elements required for the construction of foundation are constructed separately in the factory (off site) and brought to the site and assembled. The manufactured product must have the assured quality as specified by the designer

Fig : 14.9 : Precast Concrete Foundations

The foundation assembled is mainly supported by concrete piles. During assembling, both the systems are connected together. These foundation systems helps in increasing the productivity, increase quality, decrease the soil excavation quantity. This is best suited for extreme and adverse weather conditions. When the construction is dealt on a highly contaminated ground, this system of construction is a best choice.

5. Concrete Wall and Floors

Concrete walls are mainly applied for seat walls, retaining wall, decorative exterior, and interior finishes. The concrete is also used a flooring material. As per the latest technology, the concrete floors can be provided with good finish to provide smooth and attractive flooring. When compared with any other material, the concrete floors provide a wide variety of material for applications like acid-stained painted, radiant floors, overlays, and micro toppings.

The concrete flooring can also be called as cement flooring. When compared with other flooring types, concrete flooring is affordable and maintenance is easy. Proper sealing of concrete flooring can be cleaned by a dust mop.

6. Twin Wall Technology

The twin wall technology is a hybrid solution of wall system that combines the qualities of erection speed and precast concrete with the structural integrity of in-situ concrete. This type of wall system guarantees structural integrity and waterproof reliability for the structure.

Fig : 14.10 : Twin Wall Technology

The twin wall system has two walls slabs that are separated as shown in the The two slabs are separated by a cast in lattice girders. The procedure involves:

1. The wall units are placed in the site.
2. The twin units are propped temporarily.
3. The wall units are later joined by means of reinforcing.
4. The gap between the wall units are filled by means of concrete.

This system of construction is faster than normal construction methods and economical. The twin wall system is mainly employed in association with the construction of precast floors.

Other Buliding Construction Techniques And Technology

1. LIGHTWEIGHT BLOCKS & CONCRETE

The density of normal concrete varies from 2200 to 2600 kg/m3 while that of lightweight concrete varies from 300 to 1850 kg/m³.

Advantage

- Reduction of dead load.
- Increases the progress of work.
- Lowers the handling cost.
- This leads to a lighter structural design.
- Advantageous for structures resting on weak soils.

3. FERROCRETE TECHNIQUES

Ferrocrete consists of wire mesh and cement mortar. The wire mesh is spaced closely & impregnated with a rich cement mortar mix.

Advantages

- It has got a higher ratio of tensile strength to weight and superior cracking behavior compared to R.C.C.

- It can be used for septic tanks, water tanks, fishing boats, roofs and wall panels for low-cost housing, bio-gas digesters, silos, kitchen otta, door and window frames, cupboard, etc.
- It is cheaper than conventional concrete.

4. EARTH MOVING MACHINES

For mass excavation works & a huge amount of filling, earthmoving machines are useful. They save considerable time & manpower.

Advantages

- Save time.
- Cost-effective.
- Save manpower.
- Useful for mass excavation & filling basements, canals, etc.

5. SLIP TUNNEL FORMWORK TECHNIQUES

For mass concreting of high rise buildings, slip tunnel formwork can be used.

Advantages

- Save the de-shuttering & shuttering time.
- More number of repetitions for formwork
- More accuracy in work.
- Reduce labor.
- Overall quality increases, with a reduction in cost.
- Most suitable for identical vertical lifts.
-

6. PRECAST COMPONENTS

They are factory-made components of the building which are joined to form the structure.

Advantages

- Controlled quality of the final product.
- Better curing and higher strength due to mechanization.
- Saves space for raw material stackings.
- Reduces the requirement of skilled labor.
- Increase in construction speed due to symmetrical and simple joining methods.
- Saves, total project time.
- Dependability of the activities can be nullified & most of the activities can be taken up simultaneously.

14.1.4 Engineering Aspects Of Soil mechanics - Environmental Impact Assessment

The term "soil" can have different meanings, depending upon the field in which it is considered.

To a geologist, it is the material in the relative thin zone of the Earth's surface within which roots occur, and which are formed as the products of past surface processes. The rest of the crust is grouped under the term "rock".

To a pedologist, it is the substance existing on the surface, which supports plant life.

To an engineer, it is a material that can be:

- built on: foundations of buildings, bridges
- built in: basements, culverts, tunnels
- built with: embankments, roads, dams
- supported: retaining walls

Soil Mechanics is a discipline of Civil Engineering involving the study of soil, its behaviour and application as an engineering material.

Soil Mechanics is the application of laws of mechanics and hydraulics to engineering problems dealing with sediments and other unconsolidated accumulations of solid particles, which are produced by the mechanical and chemical disintegration of rocks, regardless of whether or not they contain an admixture of organic constituents.

Soil consists of a multiphase aggregation of solid particles, water, and air. This fundamental composition gives rise to unique engineering properties, and the description of its mechanical behavior requires some of the most classic principles of engineering mechanics.

Engineers are concerned with soil's mechanical properties: permeability, stiffness, and strength. These depend primarily on the nature of the soil grains, the current stress, the water content and unit weight.

The Environmental Impact of Soil Contamination

Sites which contain contaminated soils are common. While the need to protect human health and the environment at these sites is rarely debated, there are questions about the magnitude of risk posed by the chemicals in such soils and about the cleanup levels that should be achieved. Currently, soil cleanup levels are based on chemical- or media-specific criteria or guidelines, or on limits stemming from risk-based analyses. Chemical availability-the ability of a chemical to reach and adversely affect human health and the environment-is rarely taken into consideration with these approaches.

Recently, however, knowledge about the availability of chemicals in soils-i.e. leachability, mobility, rate of release, and relative toxicity-has increased. There is now considerable weight-of-evidence information from laboratory and field data indicating that for certain common situations-i.e., after chemicals have "weathered" over time, or after bioremediation has been performed-organic chemicals in soils may not be readily available for uptake by organisms, may not have an adverse impact on human health or the environment, and may not require costly remediation.

In this study, the issues associated with chemical bioavailability are presented and discussed, along with a review of current data on the availability of organic chemicals in both treated and untreated soils. The primary conclusions of this study are:

Increasing experience indicates that measures of chemical concentration alone are insufficient to determine the actual risk posed by the chemicals or concentrations that constitute an environmentally acceptable endpoint.

Environmentally acceptable endpoints for soils at some sites may be determined using simple approaches such as waste- or material-specific criteria or generic, risk-based state or federal values or standards however, in other circumstances such generic criteria can result in environmentally acceptable endpoints for a specific site that are unnecessarily conservative and that may not be applicable to the conditions at that site.

Variations in chemical availability, mobility and toxicity are important factors to consider in making decisions about the necessary degree of cleanup or remediation at a given site. Chemical availability differs for fresh and weathered chemicals: chemicals recently released to soils will be more available for leaching, degradation, and bio-uptake than will be weathered chemicals. For some sites where the chemicals have weathered for decades, and where the chemicals are held tightly by the soil and are unavailable for transport, there may be little need for remediation.

- Chemical availability can also change as soil is remediated. Though some of the chemicals originally contaminating the soil might still be detectable, they may have been naturally "stabilized" in the soil matrix. Thus, these remaining chemicals are less mobile and less available, posing a reduced risk to the environment and may require no further remediation.
- Decisions relating to soil cleanup should reflect the fact that many chemicals in soil move slowly, and may be retarded and transformed during such movement. They should also reflect the fact that only a fraction of the chemical associated with a soil is readily

available to cause adverse impact. In addition, not every site will have an ultimate use that requires cleanup to background conditions.

- The weight of evidence information on chemical availability in soils has important implications to research directions as well as to remediation and regulatory policy.

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

There is a several steps of sewage treatment plats for treatment of waste waterwhich is given below

1. Screening and Pumping
2. Grit Removal
3. Primary Settling
4. Aeration/Activated Sludge
5. Secondary Settling
6. Filtration
7. Disinfection
8. Oxygen Uptake
9. Sludge Treatment

1. Screening and Pumping

The incoming wastewater passes through screening equipment where objects such as rags, wood fragments, plastics, and grease are removed.

The material removed is washed and pressed and disposed of in a landfill. The screened wastewater is then pumped to the next step: grit removal.

Fig : 14.11: Screening and Pumping

2. Grit Removal

In this step, heavy but fine material such as sand and gravel is removed from the wastewater. This material is also disposed of in a landfill

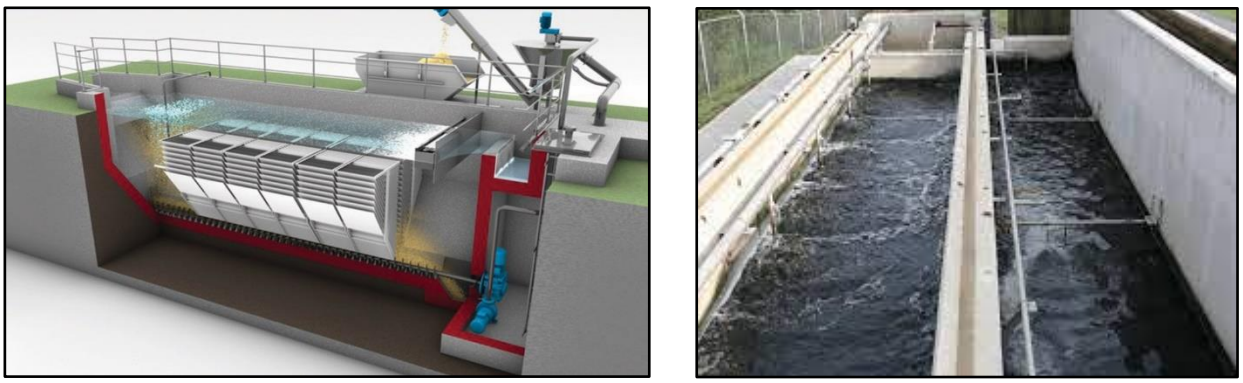


Fig : 14.12: Grit Removal

3. Primary Settling

The material, which will settle, but at a slower rate than step two, is taken out using large circular tanks called clarifiers. The settled material, called primary sludge, is pumped off the bottom and the wastewater exits the tank from the top. Floating debris such as grease is skimmed off the top and sent with the settled material to digesters. In this step, chemicals are also added to remove phosphorus.

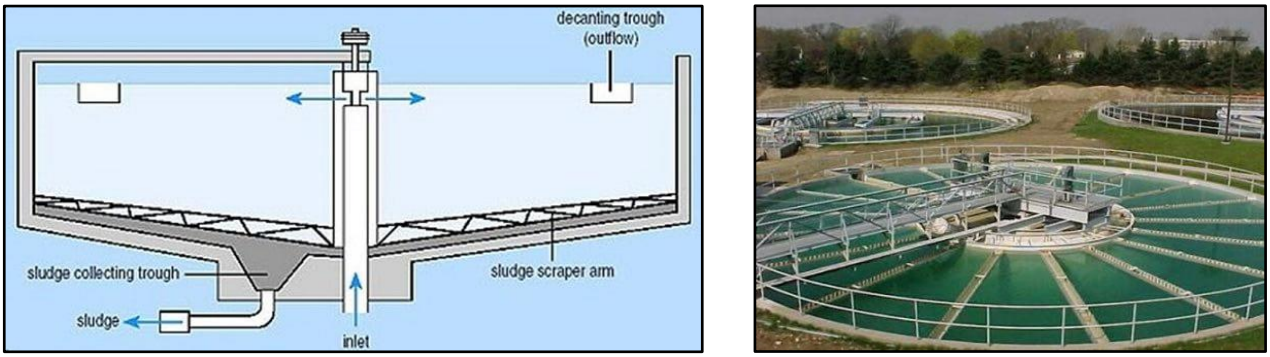


Fig : 14.13: Primary Settling

4. Aeration / Activated Sludge

Simply put, aeration is the process of adding air into wastewater. While this doesn't sound like much, the oxygen fed to the bacteria present in the wastewater is a vital component for allowing these bacteria to go to work.

Providing oxygen for the bacteria that break down organic matter in wastewater is vital, because it acts as the fuel for the aerobic biodegradation of pollutants. Put another way, aeration allows for microbial growth, and the microbes growing in the wastewater feed on the organic matter to form flocs which can be settled out later in the process.

Without the addition of air through aeration the bacteria are unable to break down the pollutants as quickly or cleanly. The lack of oxygen would also result in septic conditions producing odours.

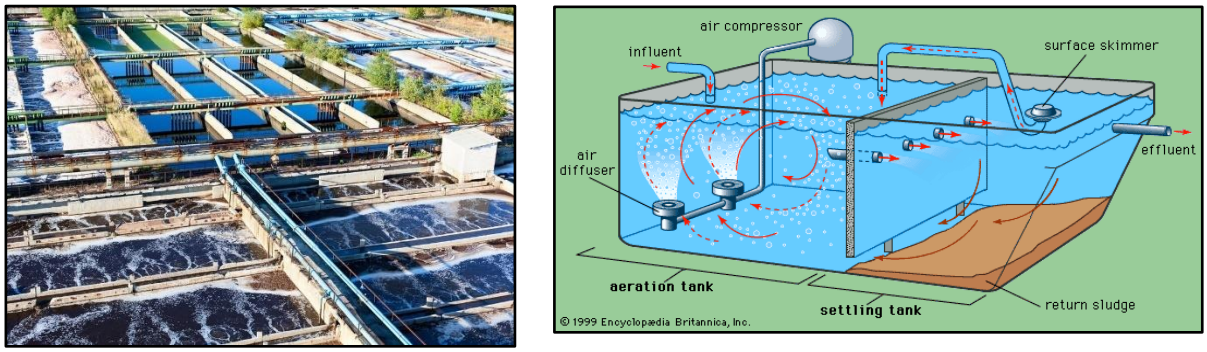


Fig : 14.14: Aeration

5. Secondary Settling

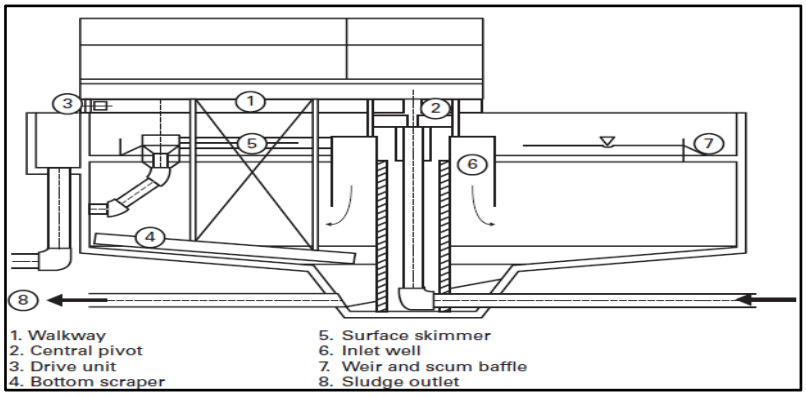


Fig : 14.15: Secondary Settling

Large circular tanks called secondary clarifiers allow the treated wastewater to separate from the biology from the aeration tanks at this step, yielding an effluent, which is now over 90% treated. The biology (activated sludge) is continuously pumped from the bottom of the clarifiers and returned to the aeration tanks in step four.

6. Filtration

The clarified effluent is polished in this step by filtering through 10-micron polyester media. The material captured on the surface of the disc filters is periodically backwashed and returned to the head of the plant for treatment.

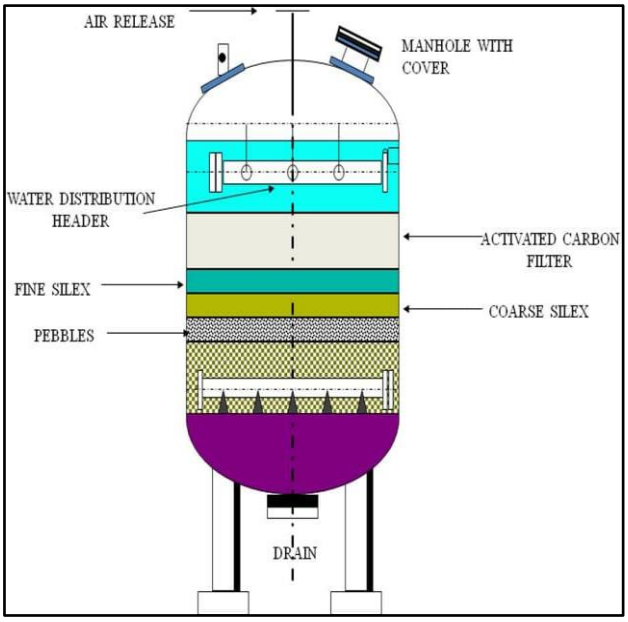


Fig : 14.16: Filtration

7. Disinfection

To assure the treated wastewater is virtually free of bacteria, ultraviolet disinfection is used after the filtration step. The ultraviolet treatment process kills remaining bacteria to levels within our discharge permit.

8. Oxygen Uptake

The treated water, now in a very stabilized high-quality state, is aerated if necessary, to bring the dissolved oxygen up to permit level. After this step, the treated water passes through the effluent outfall where it joins the Oconomowoc River. The water discharged to the river must meet stringent requirements set by the DNR. Pollutant removal is maintained at 98% or greater.

9. Sludge Treatment

The primary sludge pumped from the bottom of the primary clarifiers in step three, along with the continuous flow of waste activated sludge from the aeration / activated sludge process in step four, must be treated to reduce volume and produce a usable end product. The sludge treatment process involves four steps as described here.

Chepter 15 :

Smart and/or Sustainable features of Chapter 8 & 13 designs, Impact on society. (For Allocated village development, villagers happiness, comfortable and for enhancement of the village) (With the Smart village development Concept As Per Your Idea And Village Visit, modern technology with innovation). with doing small changes, Period, Amount Expenditure and Benefit a) Immediately b) Within 1 year c) Long term (3-5 years) along with cost estimation.

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

a) Immediately

- By visiting and survey of the kholeshwar village we seen that there is lots of problem in the village but we can solve some minor problem by some minor corrections which is describe further, we didn't given design of some normal issues, because it can be fix by small implement in older construction.
- First and fore most one is the primary school toilet which is right now close because of poor construction and privacy reason we took some picture of that toilet which is located next to the primary school.

Fig : 15.1 : primary school toilet

- We can see that from picture that toilet needs some plastering and proper roofing material and it would be fix and usable so students cannot face a issues.
- The second problem we seen that on river side road, the retaining wall of that portion is too small in moon soon season when water level at its higher level children's and even younger one could fall from that wall so that wall should be with railings we also took photo of that portion.

Fig : 15.2 : River side wall

- Moreover, we can implement village by constructing a public toilet and for village heritage development of main entrance gate.

Sr. No.	Design	Amount
1.	Public Toilet	216395
2.	Entrance Gate	103872

Table : 15.1 : Amount of Expenditure

b) With in one year. :

- The kholeshwar village should approach to different government sector likewise education territory, health territory and etc. for development of anganwadi and health center development and their staff requirements.

- However, we can implement education and health facility in this village by reconstructing that both emilites anganwadi and health center. Within the one year we can rebuild or construction healthcare, medical shop and anganwadi.

Sr. No.	Design	Amount
1.	Health center	609616
2.	Pharmacy center	1044188
3.	Anganwadi	160251

Table : 15.2 : Amount of Expenditure

C) Long Term (3-5 Year) :

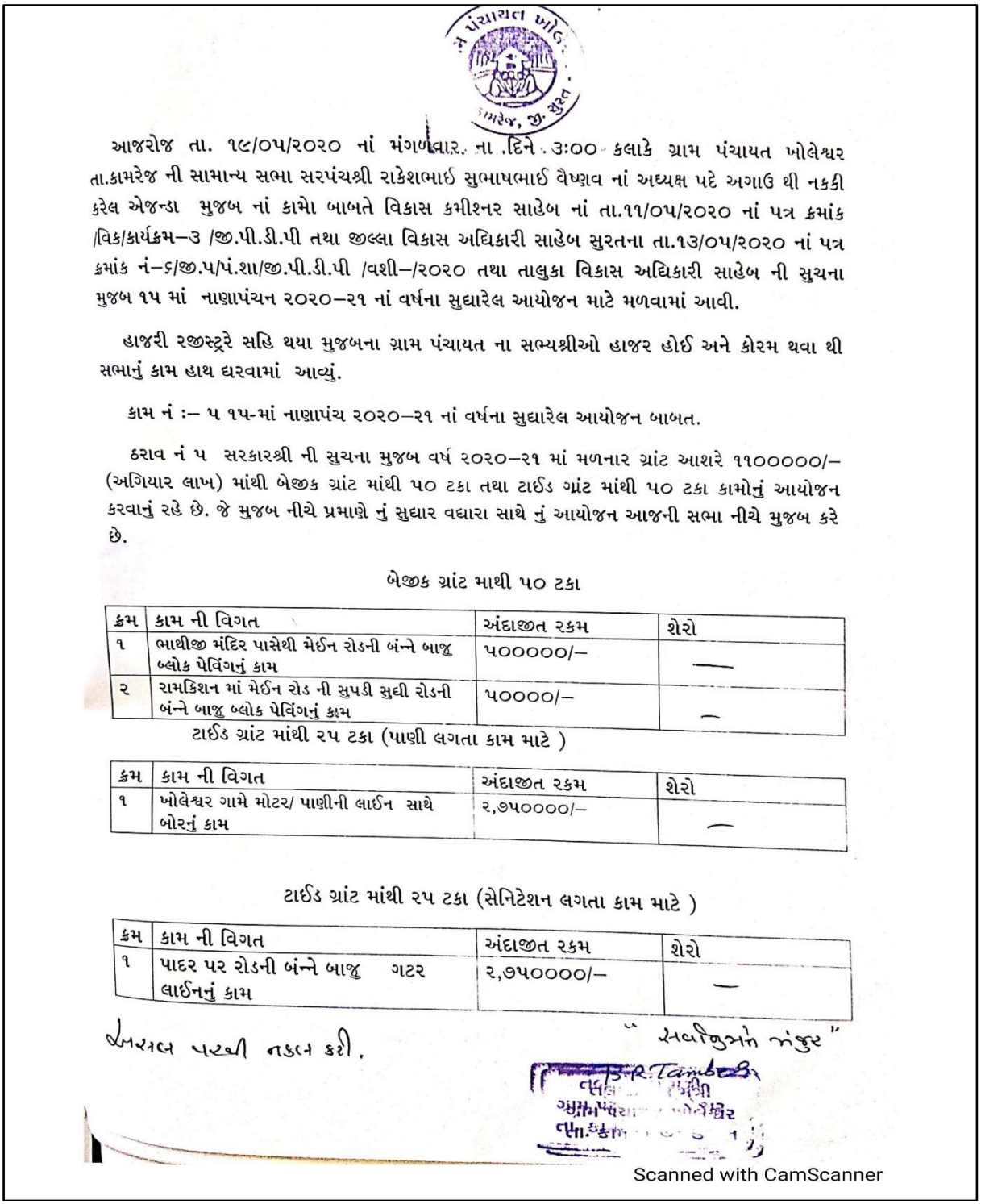
- In this long term planning we can include infrastructure which should need huge amount and land for proper development infrastructure likewise Community hall, Market, Library, E-center and Garden this facility needed to make any normal village into the smart village.

- If that could implement in Kholeshwar then other nearer village such as Dungara, Bhairav, Delod, Dhoran Pardi, and Amboli those village also use this infrastructure.

Sr. No.	Design	Amount
1.	Community Hall	3966597
2.	Library	744084
3.	E-center	1631857
4.	Market	1614344
5.	Garden	412977

Table : 15.3 : Amount of Expenditure

- **List the sources of the funding available with the Village gram panchayat.**



આજરોજ તા. ૧૯/૦૫/૨૦૨૦ નાં મંગળવાર. ના .દિને ૩:૦૦ કલાકે ગ્રામ પંચાયત ખોલેશ્વર તા.કામરેજ ની સામાન્ય સભા સરપંચશ્રી રાકેશભાઈ સુભાષભાઈ વૈષ્ણવ નાં અધ્યક્ષ પદે અગાઉ થી નકકી કરેલ એજન્ડા મુજબ નાં કામો બાબતે વિકાસ કમીશ્નર સાહેબ નાં તા.૧૧/૦૫/૨૦૨૦ નાં પત્ર ક્રમાંક /વિક/કાર્યક્રમ–૩ /જી.પી.ડી.પી તથા જીલ્લા વિકાસ અધિકારી સાહેબ સુરતના તા.૧૩/૦૫/૨૦૨૦ નાં પત્ર ક્રમાંક નં–૬/જી.પ/પં.શા/જી.પી.ડી.પી /વશી–/૨૦૨૦ તથા તાલુકા વિકાસ અધિકારી સાહેબ ની સુચના મુજબ ૧૫ માં નાણાપંચન ૨૦૨૦–૨૧ નાં વર્ષના સુધારેલ આયોજન માટે મળવામાં આવી.

હાજરી રજીસ્ટ્રરે સહિ થયા મુજબના ગ્રામ પંચાયત ના સભ્યશ્રીઓ હાજર હોઈ અને કોરમ થવા થી સભાનું કામ હાથ ઘરવામાં આવ્યું.

કામ નં :– ૫ ૧૫-માં નાણાપંચ ૨૦૨૦–૨૧ નાં વર્ષના સુધારેલ આયોજન બાબત.

ઠરાવ નં ૫ સરકારશ્રી ની સુચના મુજબ વર્ષ ૨૦૨૦–૨૧ માં મળનાર ગ્રાંટ આશરે ૧૧૦૦૦૦૦/– (અગિયાર લાખ) માંથી બેજીક ગ્રાંટ માંથી ૫૦ ટકા તથા ટાઈડ ગ્રાંટ માંથી ૫૦ ટકા કામોનું આયોજન કરવાનું રહે છે. જે મુજબ નીચે પ્રમાણે નું સુધાર વધારા સાથે નું આયોજન આજની સભા નીચે મુજબ કરે છે.

બેજીક ગ્રાંટ માથી ૫૦ ટકા

ક્રમ	કામ ની વિગત	અંદાજીત રકમ	શેરો
૧	ભાથીજી મંદિર પાસેથી મેઈન રોડની બંન્ને બાજુ બ્લોક પેવિંગનું કામ	૫૦૦૦૦૦/–	—
૨	રામકિશન માં મેઈન રોડ ની સુપડી સુધી રોડની બંન્ને બાજુ બ્લોક પેવિંગનું કામ	૫૦૦૦૦/–	—

ટાઈડ ગ્રાંટ માંથી ૨૫ ટકા (પાણી લગતા કામ માટે)

ક્રમ	કામ ની વિગત	અંદાજીત રકમ	શેરો
૧	ખોલેશ્વર ગામે મોટર/ પાણીની લાઈન સાથે બોરનું કામ	૨,૭૫૦૦૦૦/–	—

ટાઈડ ગ્રાંટ માંથી ૨૫ ટકા (સેનિટેશન લગતા કામ માટે)

ક્રમ	કામ ની વિગત	અંદાજીત રકમ	શેરો
૧	પાદર પર રોડની બંન્ને બાજુ ગટર લાઈનનું કામ	૨,૭૫૦૦૦૦/–	—

જરૂરત પરથી નકલ કરી.

" સર્વાનુમતે મંજુર "

Scanned with CamScanner

Fig : 15.3 : Fud Latter from Punchayat office

Chepter 16.

Survey By Interviewing With Talati And/Or Sarpanch

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Survey with Interviewing

SURVEY BY INTERVIEWING WITH TALATI AND/OR SARPANCH

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

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

CHAPTER- 16

Sr.	Questions	Yes/ No	Remarks
1	What are the sources of income in village?	Yes	Agriculture
2	What are the chances of employment in village?	Yes	Personal., Jobs
3	What are the special technical facilities in village?	No	
4	Is any debt on village dwellers?	No	
5	Are village people getting agricultural help?	Yes	
6	Is women health awareness Program organized in village?	No	
7	Are women having opportunity to work and income?	No	
8	Child girl education is appreciated in village?	Yes	
9	Facility of vaccination to child is available in village?	Yes	
10	Are village people aware about child vaccination and done to each and every child as per norms?	Yes	
11	Women help line number information is provided to village people?	No	
12	Is water scarcity in village? How many days per year?	No	No Shortage of water
13	Is village under any debt?	No	
14	Is any serious issue due to debt from bank or any person happened in village?	No	
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	No	
16	Is any death of patient occurred due to unavailability of medical facility in village?	No	But People or Suffering
17	How many disabled (physically challenged) is observed in village? Provide list with Male/female/girl/boy with age and type of disability and reason of disability.	Yes.	only one male. Jayantt bhai M. Patelwala
18	Is village improvement is observed in comparative scenario from past to present?	Yes.	
19	Is any unavoidable difficulty village people are facing? Any natural calamity is there?	No.	
20	Life Living standard of girls and women is appreciated and uplifted in village?	Yes	

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

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

B.B. Tamboli
તલાટી કમ મંત્રી
ગ્રામ પંચાયત ખોલેશ્વર
તા. કામ , જી. સુરત

11

Chepter 17.
Irrigation / Agriculture Activites And Agro Industry, Altenate Technics And Solution

17.1 Types of soil in Gujarat

The state is endowed with a wide range of macro and microclimates, physiography, landforms, geology and vegetation that have an influence on the genesis of soil. Soil systems have developed over many millions of years. The soil characteristics in a given area at a given point of time are a function of both natural influences and human activities. This section deals with the different types of soils found in Gujarat.

Agro climatic zone	Type of soil	Rain fall (in mm)
South Gujarat (Heavy Rain Area)	Deep black with few patches of coastal alluvial, laterite and medium black	1500 and more
South Gujarat	Deep black clayey	1000-1500
Middle Gujarat	Deep black, medium black to loamy sand	800-1000
North Gujarat	Sandy loam to sandy	625-875
Bhal & Coastal Area	Medium black, poorly drained and saline	625-1000
South Saurashtra	Shallow medium black calcareous	625-750
North Saurashtra	Shallow medium black	625-750
North West Zone	sandy and saline	250-500

Table : 17.1 : Types of soil in Gujarat

- **Black Soil :** Black Soil is the most dominant soil type of Gujarat. Three major variations recorded are:

1 **Shallow black soils:** Shallow black soils have been developed from the basaltic trap in Saurashtra and the Deccan trap in extreme eastern part while the remaining strips in Chhotaudepur and Saurashtra districts have been developed from granite and gneiss parent material. The depth of soil ranges from a few cm to 30 cm. (Gujarat State Agricultural Marketing Board (GSAMB) 2007). Shallow black soils are light grey in colour and mainly sandy clay loam in texture. The soil is poor in fertility.

2 **Medium black soil:** Medium black soils have a basaltic trap parent material. Such soils in some parts of Sabarkantha and Panchmahals have been also developed from the granite and gneiss parent material. These soils vary in depth from 30 to 60 cm.

They are calcareous in nature except in the Panchmahals and Sabarkantha districts. A layer of murum (unconsolidated material of decomposed trap and limestone) is found below a

depth of about 40 cm, especially in the Saurashtra region (GSAMB 2007). The soils are silt loam to clay in texture and neutral to alkaline in reaction. These soils are adequately supplied with potassium and poorly supplied with phosphorous and nitrogen.

3 **Deep black soils:** The districts of Bharuch, Surat, Valsad and southern part of Vadodara, and the Bhal region have deep black soils. Similarly, in the Ghed tract of Junagadh districts mostly covering the talukas of Porbandar, Kutiyana, and Manavadar and part of the Mangrol taluka, the deep black soils have been formed due to the deposition of basaltic trap materials transported by the rivers Bhadar, Minsar, Osat Madhuvanti etc.

They have faced the problem of salinity and alkalinity. They are also impregnated with a fairly high amount of free lime. The soils are dark brown to very dark greyish brown in colour. They contain 40 to 70 percent clay minerals. The deep black soils, in general, are clay-like in texture, poor in drainage, and neutral to alkaline in reaction. These soils are most fertile soil in Black soils.

4 **Mixed red and black soils:** The mixed red and black soils are shallow in depth with reddish brown colour at higher and greyish brown colour at lower elevations. Texturally, they are clay loam to clay and skeletal in nature, with stony material as high as 50 percent in subsurface layer. This provides an ideal drainage conditions for these soils. The soils are highly calcareous in nature and alkaline in reaction.

- **Lateritic soil :** True laterites in the real sense of the term don't occur in Gujarat. However, in the Dangs district, which has an abundant forest vegetation and high annual precipitation of about 250 cm, lateritic soils have developed. They support good forests. Clayey in texture they become hard within hours of receiving irrigation and rainfall.

- **Alluvial soils** : These soils are very deep. These soils are further divided into alluvial sandy to sandy loam soils, alluvial sandy loam to sandy clay loam, and coastal alluvial soil.

1. **Alluvial sandy to sandy loam soils:** These soils cover all the northern districts, namely, Banaskantha and Mehsana except the southern part and the area of Sabarkantha bordering the Kheralu and Vijapur talukas of Mehsana district. The original alluvial material in Banaskantha and some parts of the Mehsana district has been overlaid by sandy material brought in by the winds blowing through the desert of Kutch. From a fertility point of view, these soils are low in available nutrients.

2. **Alluvial sandy loam to sandy clay loam:** Alluvial sandy loam to sandy clay soils are found in the Kheda, Gandhinagar, Ahmadabad and Mehsana district and the western part of the Vadodara district. These soils are the most productive soils in the state and contains fairly good amount of potassium.

3. **Coastal alluvial soils:** The coastal alluvial soils are sandy clay loam to clay in texture. The fertility of this type of soil is of medium class.

- **Hill soils:** This type of soil occurs in the hilly areas and eastern strip of the mainland Gujarat.

The soil profile is not well developed due to steep slope and erosion. Soil is shallow in depth formed by undecomposed rock and poor in fertility. Hill soils have been developed from parent materials existing in the respective areas. Shallow and composed of undecomposed rock fragments, they are poor in fertility.

- **Desert soils :** Desert soil is generally found in the little and greater desert of Kutch. The soil is deep and light grey in colour with no definite structure. It is sandy to sandy loam with silt clay loam in structure. This type of salt has high salt content and sufficient amount of gypsum in the soil profile.

17.2 Various types of land in Gujarat

According to the government statistics 51% land is arable land suitable for cultivation. In the remaining 49% of land are included forest land, grazing or pastoral land, not cultivated land and other land.

Land	Hectares
Forest Land	18,61,200
Waste land or barren land not suitable for cultivation	26,04,000
Land used for purposes other than agriculture	11,38,400
Arable or cultivable land but not cultivated	19,73,700
Pastoral land suitable for gazing	8,49,000
Land not regarded as or included in thickets or forest land	4,000
Uncultivated land	7,59,000
Other uncultivated land	24,100
Arable land suitable for cultivation	95,99,500
Total land of Gujarat	**1,88,12,900**

Table : 17.2 : Various types of land in Gujarat

17.3 Irrigation

Irrigation is the process of applying water to the crops artificially to fulfil their water requirements. Nutrients may also be provided to the crops through irrigation. The various sources of water for irrigation are wells, ponds, lakes, canals, tube-wells and even dams. Irrigation offers moisture required for growth and development, germination and other related functions.

The frequency, rate, amount and time of irrigation are different for different crops and also vary according to the **types of soil** and seasons. For example, summer crops require a higher amount of water as compared to winter crops.

Let us have a look at different types of irrigation and the methods used for irrigation.

17.3.1 Types of Irrigation

There are different types of irrigation practised for improving crop yield. These types of irrigation systems are practised based on the different types of soils, climates, crops and resources. The main types of irrigation followed by farmers include:

Irrigation can be carried out by two different methods:

1. **Traditional Methods**
2. **Modern Methods**

1. Traditional Methods of Irrigation

In this method, irrigation is done manually. Here, a farmer pulls out water from wells or canals by himself or using cattle and carries to farming fields. This method can vary in different regions.

The main advantage of this method is that it is cheap. But its efficiency is poor because of the uneven distribution of water. Also, the chances of water loss are very high.

Some examples of the traditional system are pulley system, lever system, chain pump. Among these, the pump system is the most common and used widely.

2. Modern Methods of Irrigation

The modern method compensates the disadvantages of traditional methods and thus helps in the proper way of water usage.

The modern method involves two systems:

- Sprinkler system
- Drip system

- **Sprinkler System :** A sprinkler system, as its name suggests, sprinkles water over the crop and helps in an even distribution of water. This method is much advisable in areas facing water scarcity.

  Here a pump is connected to pipes which generate pressure and water is sprinkled through nozzles of pipes.

- **Drip System :** In the drip system, water supply is done drop by drop exactly at roots using a hose or pipe. This method can also be used in regions where water availability is le

1. **Surface Irrigation :** In this system, no irrigation pump is involved. Here, water is distributed across the land by gravity.

1. **Localuized Irrigation :** In this system, water is applied to each plant through a network of pipes under low pressure

2. **Sprinkler Irrigation :** Water is distributed from a central location by overhead high-pressure sprinklers or from sprinklers from the moving platform.

3. **Drip Irrigation :** In this type, drops of water are delivered near the roots of the plants. This type of irrigation is rarely used as it requires more maintenance.

4. **Centre Pivot Irrigation :** In this, the water is distributed by a sprinkler system moving in a circular pattern.

5. **Sub Irrigation :** Water is distributed through a system of pumping stations gates, ditches and canals by raising the water table.

6. **Manual Irrigation :** This a labour intensive and time-consuming system of irrigation. Here, the water is distributed through watering cans by manual labour.

Importance of Irrigation

The importance of irrigation can be explained in the following points:

1. Insufficient and uncertain rainfall adversely affects agriculture. Droughts and famines are caused due to low rainfall. Irrigation helps to increase productivity even in low rainfall.
2. The productivity on irrigated land is higher as compared to the un-irrigated land.
3. Multiple cropping is not possible in India because the rainy season is specific in most of the regions. However, the climate supports cultivation throughout the year. Irrigation facilities make it possible to grow more than one crop in most of the areas of the country.
4. Irrigation has helped to bring most of the fallow land under cultivation.
5. Irrigation has stabilized the output and yield levels.
6. Irrigation increases the availability of water supply, which in turn increases the income of the farmers.

Chepter 18.

Social Activities – Any Activates Planned by Students e.g Teaching Learning activities, awareness camp, business idea for SELF HELP GROUP OR ANY OTHER

As a part of Vishwakarma project we decided to held activities related to women Empowerment Our society comprises men and women. In earlier times, men were considered to be the leading members of a family. They were responsible for earning the livelihood and were the decision takers of the family. On the other hand, women were responsible for doing household work and upbringing of the children. So, the roles were mainly based on gender. There was no involvement of women in decision making. If we assess our entire sector, then research says that women's issues are either focused on her reproductive role and her body or on her economic role as a worker. But none of them is focused on empowering the women.

What Does Women Empowerment Mean?

Women Empowerment is the process that creates power in women to live a happy and respectable life in a society. Women are empowered when they are able to access opportunities in a variety of fields such as in education, profession, lifestyle, etc., without any limitations and restrictions. It includes raising their status through education, awareness, literacy and training. It also includes the authority to take decisions. When a woman makes a crucial decision, she feels empowered.

Women's empowerment is the most crucial point for the overall development of a country and any village Suppose, in a family, there is one earning person, while in another family, both men and women are earning, then who will have a better lifestyle. The answer is simple, the family where both men and women are earning money. Thus, the country where men and women work together develops at a faster rate.

Need for Women Empowerment

History says that women were ill-treated. The Sati Pratha in the ancient times to the girl child abortion in the present scenario, women continue facing such violence. Not only this, heinous crimes against women such as rape, acid attack, dowry system, honour killing, domestic violence, etc., are still happening in India.

Out of the total population, 50% of the population should consist of women. However, due to female foeticide practices, girl child numbers are decreasing sharply in India. It has also impacted the sex ratio in India. The literacy rate in girls is very low. Most of the girls are not even provided with primary education. Moreover, they are married early and made to raise children and shoulder only household work. They are not allowed to go out and are dominated by their husbands. Women are taken for granted by men as they are considered their property. Even at the workplace, women are discriminated against. They are paid less for the same work as compared to their male counterparts.

Steps to Empower Women

Women can be empowered in various ways. We discuss some of our point of views with the sarpanch and talati of kholeshwar. It can be done through government schemes as well as on an individual basis. At the individual level, we should start respecting women and start giving them opportunities equal to men. We should promote and encourage them to take up jobs, higher education, business activities, etc. The Government has come up with various schemes such as Beti Bachao Beti Padhao Yojana, Mahila-E-Haat, Mahila Shakti Kendra, Working Women Hostel, Sukanya Samriddhi Yojana, etc. to empower women. Apart from these schemes, we as individuals also empower women by providing them job abolishing social evils like the dowry system, child marriage. These small steps will change the situation of women in society and make them feel empowered.

Fig : 18.1 : Women Empowerment

Chepter 19.

Kholeshwar SAGY Questionnaire Survey form with the Sarpanch Signature (Scanned copy attachment in the soft copy report and Original copy in hardbound report)

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Kholeshwar Gram Panchayat: Kholeshwar Ward No. 158 - Kamrej

Block: 23- Bardoli District: Surat

State: Gujarat L S Constituency:

1. Family Identity and Size

Name of Head of Household	Champakbhai K. Patel							Male/ Female	M
SECC Survey ID:		Family Size	4	Over 18	4	6 to 18	0	Under 6	0

2. Category & Entitlement Details (Tick as appropriate)

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

2. Adults (above 18 years)

Name	Age	Sex M/F/O	Disability Status Y/N	Marital Status[3]	Education Status[4]	Adhaar Card (Y/N)	Bank A/C (Y/N)	Social Security Pension[5]
Chandaikaben K. Patel	63	F	No	02	01	Yes	Yes	0
Kuzal Kumar K. Patel	39	M	No	01	02	Yes	Yes	0
Kinaben K. Patel	37	F	No	01	02	Yes	No	0
—	—	—	—	—	—	—	—	—

3. Children from 6 years and up to 18 years

Name	Age	Sex M/F/O	Disability Y/N	Marital Code*	Level of Education: Code#	Going to School /College (Y/N)	Current Class	Computer Literate Y/N
Rutvik A. Parmar	18	M	No	01	08	Y	02	0
Chinmay B. Pathak	18	M	No	01	08	Y	02	0
Kavpali C. Patel	18	F	No	01	08	Y	02	0

4. Children below 6 years

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

[1] Scheduled Caste 1, Scheduled Tribe 2, Other Backward Castes 3, Other 4
[2] Enter the BPL Survey round being used in the Gram Panchayat for identification of BPL Families (e.g. 1997/2002/2011)
[3] *Marital Status: Not Married – 1, Married – 2, Widowed – 3, Divorced/Separated – 4*
[4] *Level of Education: Not Literate – 01, Literate – 02, Completed Class 5 - 03, Class 8th – 04, Class 10th-05, Class 12th-06, ITI Diploma-07, Graduate-08, Post Graduate/Professional – 09 (write the highest level applicable)*
[5] No Pension – 0, Old Age Pension – 1, Widow Pension – 2, Disability Pension – 3, Other Pension – 4 (mention)

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

5. Hand washing

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

6. Use of Mosquito Net

Children: ~~Yes~~ / No Adults: Yes / ~~No~~

7. Do members take Regular Physical Exercise

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

8. Consumption of Tobacco

	Smoking	Chewing
Adults	Yes	—
Children	NO	—

9. House & Homestead Data

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

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

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

11. Source of Lighting and Power

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

12. Landholding (Acres)

1. Total	194.209 heactor	2. Cultivable Area	188.209 heactor → No
3. Irrigated Area	188.209	4. Uncultivable Area	19 heactor

B.R. Tembe
તલાટી કમ મંત્રી
ગ્રામ પંચાયત ખોલેશ્વર
તા. કામરેજ. જી: સુરત

13. Principal Occupations in the Household

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

14. Migration Status

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

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

15. Agriculture Inputs

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

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

Name	Unit	Quantity
Sugar cane	—	—
Vegetable	—	—
—	—	—

17. Livestock Numbers

Cows: 49	Bullocks: —	Calves: —
Female Buffalo: —	Male Buffalo: —	Buffalo Calves: —
Goats/ Sheep: —	Poultry/ Ducks: —	Pigs: —
Any other: Type —		No. —
Shelter for Livestock: Pucca / ~~Kutcha~~ / None		
Average Daily Production of Milk(Litres): —		

18. What games do Children Play

→ Cricket and Volleyball.

19. Do children play musical instrument (mention)

→ No

Schedule Filled By: Darshik Bhanderi & Akshit Kalasu

Principal Respondent:

Date of Survey: 20-05-2021

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

I. Basic Information

a. Gram Panchayat: Kholeshwar.

b. Block: Kamrej

c. District: Surat

d. State: Gujarat

e. Lok Sabha Constituency: Baardoli

f. Number of Wards in the Gram Panchayat: 7-Wards

g. Number of Villages in the Gram Panchayat: 1

h. Names of Villages:

Only Kholeshwar Village.
1) Nishat faliyu
2) Patel faliyu
3) Panchayat Street.
4) Parmeshvar
5) Padar faliyu
6) Ramkishan
7) Tekara faliyu.

Demographic Information

Number of Households 280 Total Population 1300 Male 657 Female 643

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

I. Access to Infrastructure / Facilities / Services

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

1

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

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

IV. Sports Facilities in the Gram Panchayat

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

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

V. Education, ICDS

a. Number of Angan Wadi Centres: 01

b. Number of villages without Angan Wadi Centres –

Names of such villages: –

c. Schools (Number)

Primary Private: 0 Primary Govt.: 1

Middle Private: 0 Middle Govt.: 0

Secondary Private: 0 Secondary Govt.: 0

Higher Secondary Private: 0 Higher Secondary Govt: 0

VI. Public Distribution System

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

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

VII. Coverage of Villages under different Facilities & Services

	Parameter	Villages Status[1]	Names of Villages Covered	Names of Villages not Covered
a.	Piped Water Supply Coverage to Villages	✓Covered Good Not Covered	Kholeshwar	–
b.	Hand Pump Coverage in Villages:	Covered ✓Not Covered	–	–
c.	Coverage under Covered Drains:	✓Covered Good Not Covered	Kholeshwar	–
d.	Coverage under Open Drains:	✓Covered Good Not Covered	Kholeshwar	–
e.	Villages with Household Electricity Connection (Numbers)	✓Connected house All the Not Connected	Kholeshwar.	–

VIII. Land and Irrigation

	Private Land	Area in Acres		Common Land	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	188.209	d.	Pasture / Grazing Land	–	g.	Check Dam	–
b.	Irrigated Land	188.209	e.	Forests/ Plantations	14 heqtor	h.	Wells/Bore Wells	–
c.	Un-irrigated Land	14 heqtor	f.	Other Common Land	✓	i	Tanks /Ponds	–

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

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

IX. Parameters relating to Households & Institutions

		Number
a)	Number of eligible Households for pension (old age, widow, disability)	–
b)	Number of Households receiving pension (old age, widow, disability)	–
c)	Number of eligible Households who are not receiving pension	–
d)	Number of Households eligible for Ration Card	–
e)	Number of eligible HHs having ration cards	350
f)	Number of households covered under RSBY (Rashtriya Swasthya Bima Yojana)	–
g)	Number of HHs covered under AABY (Aam Aadmi Bima Yojana)	–
h)	Number of active Job Card holders under MGNREGA	–
i)	Number of Job Card holders who completed 100 days of work during 2013-14	–
j)	Number of shops selling alcohol	–
k)	Number of BPL families	–
l)	Number of landless households	159
m)	Number of IAY beneficiaries	0
n)	Number of FRA[2] beneficiaries	–
o)	Number of Community Sanitary Complexes	–
p)	Number of Households headed by single women	–
q)	Number of Households headed by physically handicapped persons	–
r)	Total number of Persons with Disability in the village	01
s)	Number of SHGs	–
t)	Number of active SHGs	–
u)	Number of SHG Federations	–
v)	Number of Youth Clubs	–
w)	Number of Bharat Nirman Volunteers	–

Name and Signature of Surveyor and Respondent'

Darshik Bhunderi Darshik. B Akshit Kakathiya Surveyor	B.B. Tarmale તલાટી કમ મંત્રી ગ્રામ પંચાયત ખોલેશ્વર તા. કામરેજ, જી. સુરત PRI Respondent (Preferably Gram Panchayat Chairperson)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	20-5-2021 Date of Survey

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

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

I. Basic Information

a. Village: Kholeshwar
b. Ward Number: 158 - Kamrej
c. Gram Panchayat: Kholeshwar
d. Block: 23 - Bardoli
e. District: Surat
f. State: Gujarat
g. Lok Sabha Constituency: Bardoli
h. Number of Habitations / Hamlets in the Gram Panchayat: —
i. Names of Habitations / Hamlets:
1) Nishal faliyu
2) Patel faliyu.
3) Panchayat Street
4) Parmeshvar'
5) Padar faliyu.
6) Rumkishan
7) Tekaru faliyu.

Demographic Information

Number of Households 280 Total Population 1300 Male 657 Female 643

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

II. Access to Infrastructure/Amenities etc.

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

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

1

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

ii. Road Connectivity

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

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

iii. Drinking Water Facilities

a.Piped Water Supply Coverage to Habitations: 180 (1-All 2-None 3-Some)

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

b.Hand Pump Coverage in Habitations: 0 (1-All 2-None 3-Some)

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

iv. Coverage of Habitations under Waste Management System

a. Coverage under Covered Drains: 180 (1-All 2-None 3-Some)

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

b. Coverage under Open Drains: 100 (1-All 2-None 3-Some)

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

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

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

v. Coverage of Habitations under Electrification

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

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

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

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

vi. Sports Facilities in the Village

a.Number of Play Grounds in the Village (minimum size 200 square meters): No

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

vii. Education, ICDS

a. Number of Anganwadi Centres: 1

c. Schools (Number)

Primary Private: — Primary Govt.: 1

Middle Private: — Middle Govt.: —

Secondary Private: — Secondary Govt.: —

Higher Secondary Private: — Higher Secondary Govt: —

2

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

viii. Land Category		Area in Acres		Land Category	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	181209	d.	Pasture / Grazing Land	—	g.	Check Dam	—
b.	Irrigated Land	177.09	e.	Forests/ Plnatations	14 Hector	h.	Wells/Bore Wells	—
c.	Un-irrigated Land	14 Hector	f.	Other Common Land	—	I	Tanks /Ponds	—

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	142
2	Number of active Job Card holders who have completed 100 days of work	—
3	Number of shops selling alcohol	—
4	Number of BPL families	159
5	Number of landless households	—
6	Number of IAY beneficiaries	—
7	Number of FRA beneficiaries	—
8	Number of common sanitation complexes	—
9	Number of SHGs	—
10	Number of active SHGs	—
11	Existence of SHG Federation in the Village (Yes / No)	—
12	Number of Youth Clubs	—
13	Number of Bharat Nirman Volunteers	—

Name and Signature of Surveyor and Respondent'

Darshita Bhanderi Darshita .D. Akshi Kakathiya Akshit	B.R.Tandel તલાટી કમ મંત્રી ગ્રામ પંચાયત ખોલેશ્વર તા. કામરેજ, જી. સુરત		20-5-2021
Surveyor	PRI Respondent (Preferably a ward member from a ward that is fully or partially covered under the Village)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey

Chapter 20.

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

Gmail

Darshik Bhanderi <darshik9090@gmail.com>

Development scenario of Kholeshwar village, Kamrej, Surat.

1 message

Darshik Bhanderi <darshik9090@gmail.com> Sat, Aug 7, 2021 at 12:41 PM
To: ddo-sur@gujarat.gov.in, tdosanki@gmail.com, collector-sur@gujarat.gov.in, gpkholeshwar-gj@gov.in
Cc: Vishwakarma Yojana <rurban@gtu.edu.in>

Respected Sir/Madam We are the students of Pacific School of Engineering , Palsana, Surat affiliated to Gujarat Technological University-GTU. University has been assigned to Vishwakarma Yojanaa-VY in which students survey various villages and design various amenities. To deliver it to them making them ideal for living a better life as per requirements and village problem statements.

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

Village : Koleshwar, Kamrej		Population : 1300 (as per census 2011)
Key issue	Remarks	Design given
Health Care	Habitats has to travel minimum 8 km for any health care aids(Kamrej PHC),	Public Health Center, Pharmacy store.
Recreational Area	Currently Koleshwar Village does not have any recreational place.	Public Garden
Community Place	The village does not have any place for gatherings.	Community hall
Market	Village does not have any market so villagers would go far to sell their crops.	Public Market
Identification & Security	Village comes within the premises of other village but it was seen that village direction holdings were not proper which can cause difficulty in finding and also village must have security unit for safety of villagers	Entrance Gate, C.C.T.V. Room
Skill development	There are lots of students not only in villages but also nearby villages so their overall development village must have a library and other structure.	Library, E-center

Sr.no	Design name	Period (months)	Amount expenditure	Benefits
1	Aanganwadi	2-3	160251	To improve educational activities
2	Pharmacy store	1-15	1044188	To Facilitate Good Health
3	Entrance gate	1	103872	Aesthetics And Heritage
4	Market	6-7	412977	Growth of villagers
5	Library	12	744084	To improve student education
6	E-Center	12	1631857	Overall development of villagers for
7	C.C.T.V. Room	1	160000	For safety of villagers
8	PHC Center	2-3	1044188	For Health of villagers
9	Community hall	12	3966597	To organize events
10	Chabutara	1	68696	Save birds from verge of extinction

11	Public Garden	2-3	412977	Recreational
12	Public Toilet	1-2	216395	Good Health of village

Please find herewith attached,
detailed project report of Kholeshwar village

Best regards,
Darshik Bhanderi & Kalathiya Akshit
Guided by : Mr. Mayur Vekaiya
(HOD of civil Department)
u.g. civil engineering
Pacific school of engineering, Palsana, surat
Gujarat technological university

mail: darshik9090@gmail.com

Detailed project report of Kholeshwar village.pdf
19088K

Chapter 21.
Comprehensive report for the entire village

In the India, villages are the heart of the nation and villages is backbone of Indian culture, due to this development of villages is very important for employment, education and good accommodation, connectivity between high ways, city and towns. As per the survey of 2001 in the India, statics shows that there are 638365 villages are existed and in the Gujarat 18544 village are there. Apart from that in the India 70% population live in villages. However, most of them are poor and illiterate.

The Government of Gujarat has launched "Vishwakarma Yojana ". It is steps towards development of village's civic amenities and rural youth. This is implemented by Gujarat technical University. As a part of Vishwakarma yojana we have to select one village which was not taken by any other student so we select a "Kholeshwar village". This village is located 24 km away from the Surat. The Kholeshwar needs lots of development related to education, health, women empowerment, cleanness, village heritage etc.

In the first step of Vishwakarma yojna for over all development of allocated village we have to select any one smart village and one Ideal village from that we can correct some issues and also we can reference some amenity's from smart village and ideal village we selected a "Baben" as a smart village and "Kanav" as a ideal village. Baben is located near to Bardoli taluka in Surat and Kanav village is located on palsana Bardoli highway both villages are around 20 to 24 km away from the Surat station.

Moreover, as a part of Vishwakarma yojana we do have to refer some case studies Advance Sustainable construction techniques/Practices, Soil Liquefaction, Sustainable Sanitation, Transport Infrastructure/system, Vertical Farming, Corrosion Mechanism, Prevention& Repair Measures of RCC Structure, Sewage treatment plant, Technical Case "Narmada Bridge", Advanced Earthquake Resistant, Seismic Retrofitting of Buildings, Advance Practices in Construction field in Modern Material, Techniques and Equipment's, Engineering Aspects Of Soil mechanics - Environmental Impact Assessment, Water Supply-Sewerage system-Waste Water- Sustainable development techniques.

By visiting and suverying smart and ideal village and also our allocated village we find that kholeshwar village not has a proper aganwadi structure, primary health care center, village entrance gate, public toilet, garden, market, community hall, library, E-center and etc. To make any village to smart village or ideal village needs this all amenities. However, some of mentioned amenities are quite expensive but government should provide that in 3 to 5 years.

Though, we design all amenities that we mentioned in above paragraph and we provide calculation measures of area of that amenity and provided with currant price and provided approximate costing of that structure. All design is given with suitable plan in AutoCAD A3 size sheets.

Sr. No.	Design	Amount
1.	Public Toilet	216395
2.	Entrance Gate	103872
3.	Public Health centre	609616
4.	Pharmacy centre	1044188
5.	CCTV Room	160000
6.	Chabutara	68696
7.	Anganwadi	160251
8.	Community Hall	3966597
9.	Library	744084
10.	E-centre	1631857
11.	Market	412977
12.	Garden	412977

Table : 21.1 : Amount of Expenditure