DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII
AN APPROACH TOWARDS RURBANISATION
KUBADTHAL Village
AHMEDABAD District

PREPARED BY

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
JOSHI RUTVIK VIJAY	CIVIL ENGINEERING	180243106002
SUNIL KUMAR PRAJAPAT	CIVIL ENGINEERING	180243106018

NODAL OFFICER
PROF. SRINATH KARLI

HASMUKH GOSWAMI
COLLEGE
OF ENGINEERING
VAHELAL, AHMEDABAD

YEAR: 2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmedabad – 382424 Gujarat

DETAIL PROJECT REPORT

ON

Vishwakarma Yojana: Phase VIII

AN APPROACH TOWARDS RURBANISATION

KUBADTHAL Village
AHMEDABAD District

Prepared By

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
JOSHI RUTVIK VIJAY	CIVIL ENGINEERING	180243106002
SUNIL KUMAR PRAJAPAT	CIVIL ENGINEERING	180243106018

HASMUKH GOSWAMI COLLEGE OF ENGINEERING
VAHELAL, AHMEDABAD

NODAL OFFICER
PROF. SRINATH KARLI

Year: 2020-21

Gujarat Technological University,
Chandkheda, Ahmedabad – 382424 Gujarat

CERTIFICATE

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

Detail Project Report for,

VILLAGE: KUBADTHAL

DISTRICT: AHMEDABAD

Under

Vishwakarma Yojana: Phase-VIII

in partial fulfillment of the project offered by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

during the academic year 2020-21.

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

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
JOSHI RUTVIK VIJAY	CIVIL ENGINEERING	180243106002
SUNIL KUMAR PRAJAPAT	CIVIL ENGINEERING	180243106018

Date of Report Submission:	
Principal Name and Signature:	**DR. J. K. RATNADHARIYA**
VY-Nodal Officer Name and Signature:	**PROF. SRINATH KARLI**
Internal(Evaluator) Guide Name and Signature:	**PROF. VRUNDANI VAIDYA**
College Name:	**HASMUKH GOSWAMI COLLEGE OF ENGINEERING**
College Stamp:	

ABSTRACT

"Developing village with rural soul but with all urban facilities that a city may have."

Vishwakarma Yojana is one of the initiatives towards rurbanisation by govt of Gujarat which was selected as a real time situation type project provide to GTU the student and faculty members meet all the inhabitant of the village, survey the existing accommodations. Then they reimagine and design the whole of the infrastructure of the village. The students use their engineering skills to prepare detailed project report for the infrastructure as the part of their final year project work. By this project, students are experience a real work and able apply own technical knowledge on any real problem. This involves hard work, many students visit to the village and do survey on his specific village.

According to Census 2011 information the location code or village code of Kubadthal village is 511641. Kubadthal village is located in Daskroi Tehsil of Ahmadabad district in Gujarat, India. It is situated 25km away from Ahmadabad, which is both district & sub-district headquarter of Kubadthal village. As per 2009 stats, Kubadthal village is also a gram panchayat. The total geographical area of village is 954.63 hectares. Kubadthal has a total population of 3691 peoples. There are about 750 houses in Kubadthal village. Ahmedabad is nearest town to Kubadthal which is approximately 22km away.

There is closed type of drainage system in KUBADTHAL. For transportation, there is a bus stand in the main road of village from where buses connecting to the different cities are easily not available.60% of the houses are pucca while 40% of the houses are kutcha. There is one Primary school and one Anganwadi. Village is connected with 24-hour electricity supply. The development of city will lead the people to develop their villages otherwise there will be more migration towards cities, which will setup RURBAN planning.

We decided to plan various six designs for the future development of the village. The six designs are Prathmik Arogya Kendra, Skill development classes, Cyber cafe, Anganwadi, Bank, Post office. All this design might help for the village development.

For future prospect, the village KUBADTHAL can use more advanced technologies for agricultural prospect and for other requirements also. They can make the village Wi-Fi zone and can improve the computer lab in the schools. They can also provide biogas plant in the village. In the future, due to the development of Ahmedabad city the development of the KUBADTHAL will increase and the area of the city become spreads so that the allocated village will include in the city area and it will make a portion of the Ahmedabad city.

KEYWORDS: Rurbanisation, Rural soul, Development, Migration.

ACKNOWLEDGEMENT

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

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

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

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

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

We are also thankful to our **DR. J. K. RATNADHARIYA Principal**, faculties of our colleges for their encouragement and support to complete this project work.

An act of gratitude is expressed to our internal guide / Evaluator / Nodal Officer,
PROF. SRINATH KARLI from college HASMUKH GOSWAMI COLLEGE OF ENGINEERING for their invaluable guidance, constant inspiration and active involvement in our project work.

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

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

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

CONTENT

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

SHORT NAME / SYMBOL	FULL NAME
PURA	Provision of Urban Amenities in Rural
PHC	Public health center
TDO	Taluka Developer Officer
DDO	District Developer Officer
NGO	Non-government Organization
PPP	Public Privet Partnership
DRDA	District Rural Development Agency
MNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
NRUM	National Rurban Mission
RCC	Reinforced Cement Concrete
G.L.	Ground Level
P.L.	Plinth Level
CM	Cement Mortar
PHC	Primary health centre
ATM	Automated teler machine
AGRSARI	Academy of grass road studies and Research of india
CCTV	Closed circuit television
TRC	Tax residency certificate
PUC	Pollution under control
RO	Reverse osmosis
LED	Light emiting diode
WBM	Water bound macadam
RCC	Reinforced cement concrete
IIT	Indian institute of technology
SWOT	Strength, weakness, opportunities, threats
NSSO	National sample survey organisation
SC	Scheduled caste
ST	Scheduled tribe
UDPFI	Urban development plans, formations and implementations

CHAPTER: 1 IDEAL VILLAGE VISIT FROM DISTRICT OF GUJARAT STATE

1.1 Background & Study Area Location

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 will have 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. This is roughly my idea of a model village. In the present circumstances its cottages will remain what they are with slight improvements. Given a good zamindar, where there is one, or co-operation among the people, almost the whole of the programme other than model cottages can be worked out at expenditure within means of the villagers including the zamindar or zamindars, without Government assistance. With that assistance there is no limit to the possibility of village reconstruction. But my task just now is to discover what the villagers can do to help themselves if they have mutual co-operation and contribute voluntary labour for the common good. I am convinced that they can, under intelligent guidance, double the village income as distinguished from individual income.

By this Vishwakarma yojana project government want technical solution of the problem of villages at the engineering point of view. In this project the common problem of village are solved by the engineering students.

The basic need of rural development program have been alleviation of poverty and unemployment through creation of basic social and economic infrastructure, provision of training to rural unemployed youth and providing employment to marginal Farmers/Labourers to discourage seasonal and permanent migration to urban areas

Through various government departments are involved in various infrastructural development works, a holistic view and modern solutions (aesthetic, Vastushastra) etc. can be provided by new engineers under Vishwakarma yojana. Study of villages is done by the students with this view.

1.2 Concept: Ideal Village, Normal Village

Mahatma Gandhi had once said that 'The future of India lies in its villages'. Even today, villages are like the backbone of a country where almost seventy percent of our population dwell. In order to call a village an ideal one, it should have the following traits:

Villagers or Inhabitants:

A village is formed, governed and maintained by its villagers. The People of an ideal village should be honest and hard-working. They should possess qualities like tolerance to every faith and religion, brotherhood and unity. They should live like a large family and help one another in the hour of need. They should have a sense of discipline and a spirit of service before self. They should keep themselves abreast of not only the happenings of the village but also of the country

and the world as a whole. They should always be active and cheerful.

Basic Infra-structures:

Besides the people, an ideal village should have the following basic infra-structures:

Good Connectivity:

Good connectivity is one of the most essential requirements of an ideal village. The village should be well-connected to other parts of the country by roads and also by rails, if possible. The streets and lanes of the village should also be well maintained so that people can easily commute from one part to another.

Houses:

The houses should be neat and clean. They should be well-ventilated to allow free flow of light and air. There should be good arrangement for proper sanitation and drainage system.

Sufficient sources of potable water:

An ideal village should have good supply of clean drinking water. There should be enough wells, tube-wells and even submersibles to meet the needs of the villagers. It would help everyone get good drinking water. There should also be separate ponds for villagers to take bath and to get water for their cattle.

Proper sanitation and drainage facilities:

An ideal village should have good system of sanitation and drainage so that dirty water and waste can be easily drained out. It would help the village keep clean and free from many diseases caused by filthy water. It would also save the villagers from water-logging during the rainy season.

Pasture land for cattle:

Almost every villager living in a village keeps cattle. There should be enough paster land for grazing of their cattle. Generally, it should be within the village, at a distance from the houses or just outside the village.

Food and fodder:

The villagers grow food and vegetables not only for themselves but also for the urban people. They also grow fodder for their cattle. They also produce dairy, poultry and other products for their own consumption as well as for supply to urban areas. There should be proper arrangements in the village itself to provide them with good seeds and all assistance related to their produces.

Wholesale market within the village:

Most of the people living in villages are farmers by profession. They grow food crops, cash crops and fodders in their fields. While they consume the food crops for themselves and the fodder for their cattle, the cash crops the other surplus products are sold in the market to meet their other requirements. There should be provision for wholesale market in the village itself so that the villagers can sell their surplus products there at reasonable rates and get good return. This would save them from the hands of the middle men and bring prosperity.

Cottage Industries:

An ideal village should have well-established small cottage industries so that the artisans and small farmers can utilize their skills and extra time to produce articles necessary for day to day use and earn a handsome profit by selling them in the market.

Healthcare Centres and hospitals:

Besides food, the other most important aspect of human life is health. An ideal village should have proper facilities taking care of the health of the villagers as well as of their cattle and poultry. There should be one-two healthcare centres depending upon the population of the village. A small hospital also adds to the quality of such a village. Besides health centres for the villagers, veterinary dispensaries should also be there to take care of their live-stock.

Educational facilities:
An ideal village should have proper arrangements of education for the children. There should be Primary schools and High schools so that the little children need not go out of the village for education. Primary education should be free and compulsory for every child up to a certain age.

1.2.1 Objectives

An ideal village should have all possible provisions and basic intra-structures for the all-round development of the people living there. The life in such a village would be such as would never lure a person to leave his home and dowel in an urban area.

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

Village of Millionaires. Hiware Bazar, Maharashtra. ...

Asia's Cleanest **Village**. MAWLYNNONG, MEGHALAYA. ...

Smart **Village** of Gujarat. PUNSARI, GUJARAT. ...

Solar **Village** of Bihar. ...
An **Indian village** that distributes sweets when a girl is born. ...
Village of scarecrows. ...
The Twin **Village** of Kerala. ...

1.2.3 The Idea of a model/Smart Village:

Any village can become such a republic today without much interference, even from the present Government whose sole effective connection with the villages is the exaction of the village revenue. I have not examined here the question of relations with the neighbouring villages and the centre if any. My purpose is to present an outline of village government. Here there is perfect democracy based upon individual freedom. The individual is the architect of his own government. The law of non-violence rules him and his government. He and his village are able to defy the might of a world. For the law governing every villager is that he will suffer death in the defence of his and his village's honour. There is nothing inherently impossible in the picture drawn here. To model such a village may be the work of a lifetime. Any lover of true democracy and village life can take up a village, treat it as his world and sole work, and he will find good results. He begins by being the village scavenger, spinner, watchman, medicine man and school-master all at once. If nobody comes near him, he will be satisfied with scavenging and spinning.

1.2.4 Ancient History Civil / Electrical concept about Indian Village / Foreign Countries Perspective and its Development

In India as well as other developing countries the economic development strategies failed which turn our attention to _Rural Development as the main objective of development. The lessons of the development experiences were as follows:

The practice of identifying development with growth in terms of aggregate figures was not correct;

1. Economic growth had only selective impact which benefited the relatively developed areas and the relatively better off people. The percolation theory of growth had failed;
2. If development is not viewed only as growth, then the creation of employment opportunities and deliberate distributive measures were required to achieve the objective of developing the forgotten majority of rural poor in developing countries,
3. Development should cover larger dimensions of the quality of life of the vast majority of the people; and
4. The realization that the traditional method of agriculture in the developing countries could be transformed through modern technology and modern farming practices were other aspects of the rethinking on development.

A major consequence of all these new truths of the development experience is current concern of Rural Development. It occupied the central place in the development dialogue of the World Bank, which became the champion of the cause.

1.3 Detail study of Ideal village / Smart Village with photograph:

VILLAGE LOCATION:-

Punsari village is located in Gujarat state, district Sabarkntha, Taluka Talod.
Punsari is 20 km far from the Talod bus station. This connectivity due to the district road.

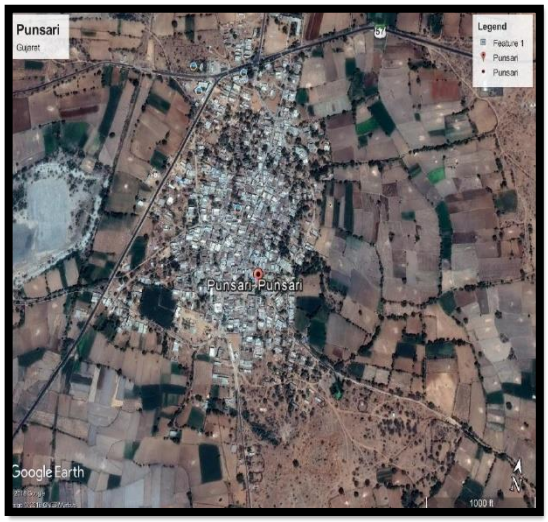


FIG 1: VILLAGE MAP OF PUNSARI (GUJARAT)

The ideal village concept is a community village with a self-sustaining income producing projects, independent electrification system generated from non-fuel based device, clean water facility for drinking including water for irrigation, quality but affordable housing, school, medical facilities for human being and animal, proper sanitation system, information Centre, bank, police station, post office retail outlet for household and agriculture needs, communication facility, connecting roads to nearby villages and towns, legal councilor. It‘s necessary to visit an ideal village for our project. So we decided to get visit of Punsari.

An ideal village means:-

- Village which has a good connectivity with other villages and cities to communicate their important data
- There is also facility to good R.C.C. and bituminous roads to connect of other cities.
- There is also a good rail way for traveling and transporting.
- There is good water supply system for general public.
- There is good sanitary and sewage system to protect people from dirt and illness.
- In the ideal village there is also requirement for good govt. schools for the education and development.
- There is also requirement for govt. offices like PWD department, Panchayat raj, post office to communication, police station to protect their public.
- There is a scope of village development and developing of their local occupations.
- There is good educations system for public like, primary school, higher secondary school and skill development center.
- There are also medical help center and govt. offices like post office, gram Panchayat, govt. hospitals etc.
- There is many requirement of development and get progress also govt. and general villagers.

We went in Punsari and visited all physical and social infrastructure of village. There is so many facility. All facility is depicted below through photographs.

Fig.2: ENTRANCE GATE PUNSARI **Fig.3: SBI Bank & ATM PUNSARI**

Punsari is considered as India's smartest village. The village has undergone a transformation under the panchayat. There has been use of new and advanced technology in education. This village has wi-fi connection for all people. Entrance Gate appearance look like also Smart village part, it shows the first impression of village development.

FIG.4: GOVT. PRIMARY SCHOOL

FIG.5: DIGITAL I.T. SECTION

FIG.6: POST OFFICE, PUNSARI

FIG.7: AUTOMATED FLOOR WHEEL

For future prospect, the village Punsari can use more advanced technologies for agricultural prospect and for other requirements also. They can make the village wifi zone and can improve the computer lab in the schools. They can also provide biogas plant in the village. In the future, due to the development of Sabarkantha the development of the Punsari will increase and the area of the city become spreads so that the allocated village will include in the city area and it will make a portion of the Sabarkantha.

1.4 SWOT analysis of Ideal village / Smart Village

Table 1: Basic amenities in ideal village Punsari	
• Drinking water facilities	• Individual toilets
• Rural roads	• Play grounds
• Burial ground	• Animal ground
• Community hall	• Open air theater
• Citizen service center	• Skill development center
• Water harvesting	• Roads to farms

Table 2: Other amenities in ideal village Punsari	
• Public library	• Village tank/lake
• Water treatment plant	• Street light (Solar system)
• Shopping center	• Electricity generation plant

Resources available in ideal village:

Development, livelihood etc. could be utilized, and based on the specific demands of the village, resource could be channelized into the development of the village. Some important Centrally Sponsored Schemes (CSS) which could be utilized are NLM, NH, SSA, NRE A, BRGF, RKVY and Mid-day Meal Scheme.

In Punsari village, CSR funds, of which a much larger corpus is available after the latest Amendment to the Companies Act, could also be used for the purpose of infrastructure development in consistency.

Self-help groups, who are eligible for subsidized loans under various **Central and State government initiatives.**

Gram Panchayat could also raise loans, if legally permitted to do so under the **State Panchayat Raj Acts**

Table 3: Population detail of village:

	2001	2011
MALE	**2221**	**3246**
FEMALE	**2456**	**2798**
TOTAL	**4677**	**6044**

Population detail of village

Economic Profile:

The main economic activity of the people of the area is farming, and other is business and job. Some People of this village is engaged with dairy products (Milk, butter and Ghee). The people who are living there because the transportation facility is there which connect the Punsari to Talod, and Modasa City.

The people, who are businessmen, get more opportunity here because the area is workers or the officers in the Talod city or in Punsari area other surrounding small village's peoples are come in punsari because there is good employments opportunity. This people preferred to live in Punsari because there are many facilities is available. The basic economic activity is farming that people are also live in Punsari because there is better facility for his children like primary school, higher secondary school, skill development center, public library and public health center etc.

Table 4: Economic Status:

Punsari Village	
ECONOMICAL STATUS	
	PERCENTAGE (%)
FARMER	85.00

Economic Status

JOB	12.00
OTHER	03.00

Social Scenario:

Table 5: Literacy profile:

Literacy profile of Punsari	
	Percentage (%)
MALE	84.84

FEMALE	53.06
TOTAL	69.38

Infrastructure facilities (All types):-

1) Main source of drinking water:

Bore Well – 512, Dug Well - 13, Hand Pump – 3, Bottled Water – 4 Rs. per 20 Lit.
Water Tank – 100 Rs. per 1000 Lit.

2) Road Network:

Village Approach Road - Good Condition, Main Road – Good Condition, Internal Street – Good (Paved Block), State Highway – 44 km Far, Major District Road – 19.75 Km Far,
Other District Road – 32.5 Km Far.

3) Transport facility:

Railway Station – 20 km far (Talod), Bus Station – 8 to 10 Bus Daily,
Local Transportation – Auto and Chhakara.

4) Sanitation facility:

Public Latrine Blocks: 4 Unit (Mobile Toilet), Solid and Liquid Waste Disposal System
Waste Collection Facilities.

5) Health facilities:

Public Health Center, Medical Center, Nursing Homes, Private Clinic.

6) Educational Facilities:

Anganwadi – 8 Nos, Primary School – 2 Nos, Secondary School – 1 Nos, Skill Development Center – 1 (Sewing Operating, Basic Computer Course etc.), College – 12 Km. Far.

7) Socio - Culture Facilities:

Community Hall (With T.V), Public Library (With Daily News Paper Supply), Public Garden, Village Pond, Assembly Polling Center.

8) Sustainable / Green Infrastructure Facilities:

Adoption Of Non-Conventional Energy Sources/ Renewable Energy Sources, Bio-gas Plant, Solar Street Lights, Rain Water Harvesting System.

9) Other Facilities:

Post Office, Panchayat Building, Agriculture Co-Operative Soc., Milk Co-Operative Soc.
Youth Club, Mandal.

- **SWOT Analysis**

SWOT Stands for the Strength, Weakness, Opportunities and Threats:

Strength of Punsari village:

Good response of sarpanch, Guide facility for visitors, 24 hours Wi-Fi facilities, Central sound system, Woman empowerment (Sakhi mandal), 24 X 7 Electricity available, R.C.C. road in village, Mobile Library, Mobile Toilet Block, Skill Development Centre, Water Treatment plant, Water Tank.

Weakness of Punsari village:

- Old method of agricultural system
- Lack of maintenance of some existing facilities

Opportunity in Punsari village:

Women Empowerment, Skill Development Centre (Sewing Operating, Basic Computer Course, Beauty parlor & Garment Sector), Private Nursing Homes, Shopping Shops.

Threat of Punsari village: Illiteracy of some people in village.

1.5 Future prospects of village

- Develop Rain Water harvesting System In village
- Use of this Water for Agriculture and Domestic Purpose
- Provide Drainage facilities And They Provide Solid Waste Reduce Machine

1.6 Benefits of the visits of Ideal village / Smart Village

- Well Maintain Sanitation Facilities
- Cleanliness of Village
- Good connectivity of MDR and State highway
- Individual and Mobile Toilet block
- Providing Drinking water

➢ In a smart village major thrust is given on the technology as a means for development, enabling education and agricultural entrepreneurial opportunities, improving health and social welfare, enhancing democratic engagement and overall enhancement of rural village dwellers. Smart Villages are the need of the hour as development is needed for both rural and urban areas for better livelihood and Information technology will offer effective solution. There are successful technologies available, which have been implemented in urban areas. smart village knows about its citizens, offered resources, applicable services and schemes. ... Smart village initiative focuses on superior resource-use efficiency, empowered local self-governance, access to assured basic amenities and responsible individual and community behavior to build a vibrant and happy society.

CHAPTER 2: VILLAGE LITERATURE REVIEW

2.1 Urban & Rural village concept:

Rural:

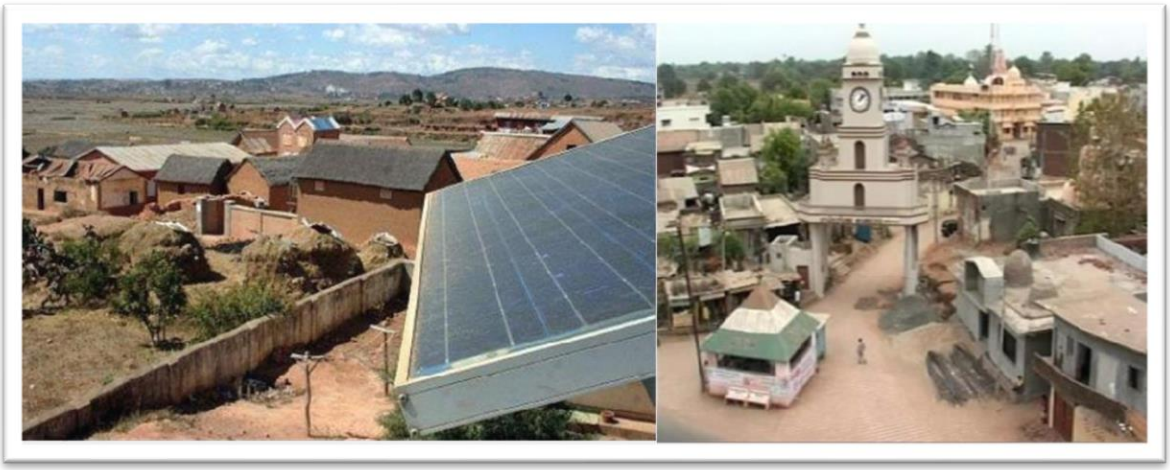


Fig. 8 RURAL VILLAGE PHOTOGRAPH

Rural has been defined in two different ways, most often in terms of non-urban status.

The Federal Office of Rural Health Policy (ORHP).

The National Sample Survey Organization (NSSO).

- **The Federal Office of Rural Health Policy (ORHP) defines:**

Rural as located outside a Metropolitan Statistical Area (MSA), or located in a rural census tract of a MSA as determined under the Rural Urban Commuting Area codes.

- **The National Sample Survey Organization (NSSO) define 'rural' as follows:**

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 allied activities.

According to the Planning Commission, a town with a maximum population of 15,000 is.

- There is a scope of village development and developing of their local occupations.
- There is good educations system for public like, primary school, higher secondary school and skill development center.
- There are also medical help center and govt. offices like post office, gram Panchayat, govt. hospitals etc.

Urban:

Fig.9 URBAN CITY PHOTOGRAPH

"Urban" is a place-based characteristic that incorporates elements of population density, social and economic organization, and the transformation of the natural environment into a built environment.

Census of India 2011, defines 'urban' as follows:

All places with a municipality, corporation, cantonment board or notified town area committee, which satisfied the following criteria:

i) A minimum population of 5,000;
ii) At least 75 per cent of the male main working population engaged in non- agricultural pursuits; and
A density of population of at least 400 persons per sq. km.

2.2 Importance of the Rural development

A village is a clustered human settlement or community, larger than a hamlet but smaller than a town, with a population ranging from a few hundred to a few thousand.

2.3 Definition of Rural Area/ Village

A: a settlement usually larger than a hamlet and smaller than a town

B: an incorporated minor municipality

2.4 & 2.5 SCENARIO: RURAL/ URBAN INDIA & GUJARAT AS PER CENSUS 2011 (POPULATION GROWTH)

Gujarat:

The total **population growth of Gujarat** in this decade was 19.28 percent while in previous decade it was 22.48 percent. The population of Gujarat forms 4.99 percent of India in 2011. In 2001, the figure was 4.93 percent.

Gujarat Population 2011

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

Table 6: Population of India Population (in Cr)

	2001	2011	Difference
India	102.9	121.0	18.1
Rural	74.3	83.3	9.0
Urban	28.6	37.7	9.1

2.6 Rural Development Issues & Concerns

The concerns in relation to rural credit – other than those relating to structural issues - are generally expressed in terms of –

- Inadequacy of credit, Constraints on timely availability of credit, High interest rates, Neglect of small and marginal farmers, Low credit-deposit ratios in several states and, Continued presence of informal markets.

Rural People with Disabilities:

People with disabilities, young and old, who live in rural areas where essential services are often limited or non-existent face difficulties seldom encountered in urban areas. Access to housing, transportation, employment, educational programs, and specialized healthcare are some of the challenging issues found throughout rural.

2.7 Various Measures for Rural Development

Rural areas are facing major challenges today which arise mainly from globalization, demographic change and the rural migration of young, well-trained people. Policies for rural areas aim to contribute to recognizing and making use of strengths and opportunities. Background With its rural policies Germany aims to ensure that the infrastructural prerequisites for decent living conditions in rural areas are fulfilled and that existing and new potentials are developed through economic development. Environmental concerns are also considered and integrated during the planning phase of programs of measures to support rural areas. A large share of policies targeted at land use in rural areas serves to promote agrobiodiversity and environmental measures in agriculture. Access to services and infrastructure is generally available nationwide in Germany (drinking water supply, sewage treatment, mail, telecommunications, transport). The quality of these services, however, differs from region to region. One field which needs improvement is sewage treatment where, for economic reasons, the number of decentralized systems is growing. The call for nationwide access to broadband in the field of IT and telecommunications creates new challenges.

2.8 Other Projects / Schemes of Gujarat / Indian Government

Projects like SBA (Swachh Bharat Abhiyan), Pradhan Mantri Awas Yojna are carried out by government for village development.

Bharat Nirman through Pradhan Mantri Gram Sadak Yojana

Rural connectivity is one of the major goals of Bharat Nirman. In India, there are more than 6 lakh villages located in different terrains e.g. plain, hilly, deserts, swamps, coastal region, mountainous region, back water areas, tribal pockets, etc. The climatic condition also varies from place to place to a great extent. Due to improper planning, some villages are having multi road connection while others are deprived of even single road connection.

In Pradhan Mantri Gram Sadak Yojana (PMGSY) has been decided to give one and only connection to each village. It is centrally sponsored program with 100% financial assistance. All PMGSY roads are guaranteed defect free by the contractors for a period of 5 years and maintained by him under a contract. Funds for the maintenance contract are provided from the State Budget. After the period of 5 years, the roads will be transferred to the District Panchayat for further maintenance.

PMGSY achievements can be summarized as follows:

- 53,000 Km. of new rural roads constructed
- 27,000 Km. of rural roads upgraded and modernized
- Rs. 15,117 crore invested up to January 2006.

Indira Aawas Yojana:

IAY is the flagship rural housing scheme which is being implemented by the Government of India with an aim of providing shelter to the poor below poverty line. The Government of India has decided that allocation of funds under IAY (Indira Awas Yojna)will be on the basis of poverty ratio and housing shortage.

• Objective:

The objective of IAY is primarily to help construction of new dwelling units as well as conversion of unserviceable kutcha houses into pucca/semi-pucca by members of SC/STs, freed bonded labourers and also non-SC/ST rural poor below the poverty line by extending them grant-in-aid.

• Scope:

IAY is a beneficiary-oriented programme aimed at providing houses for SC/ST households who are victims of atrocities, households headed by widows/unmarried women and SC/ST households who are below the poverty line.

This scheme has been in effect from 1st April, 1999

CHAPTER 3. SMART CITIES/ VILLAGE CONCEPT AS PER YOUR IDEA AND ITS VISIT

3.1 Understanding smart cities Concept

In Smart Villages access to sustainable energy services acts as a catalyst for Development – enabling the provision of good education and healthcare, access to clean water, sanitation and nutrition, the growth of productive enterprises to boost Incomes, and enhanced security, gender equality and democratic engagement.

Definition:

Smart village means all the necessaries facilities is developed in the village and no need to moves in city for any kind of requirement.

3.2 Bench mark-vision goals:

Smart village initiative focuses on improved resource use efficiency, empowered local self-governance, access to assured basic amenities and responsible individual and community behavior to build a vibrant and happy society.

3.3. Technological Options for Smart Cities:

Fig.10 Smart cities

Technological literacy is a kay to turn a city into smart city which is well connected, sustainable and resilient where information is not just available but also findable.it is not a new thing that smart city is all about providing smart services to its citizens which can save their time and ease their lives.it is also about connecting them to the government as of how they want their city to be and this aim can be turned into reality without technology.

Information and Communication Technology:

Creating a two-way communication channel is very important for a city to be smart. And here come the role of information and communication technology ICT builds a bridge between the citizens and the government where the citizens can interact and the government and in return the government can build a city which the choice of its citizens. ICT helps the government to analyze

the demand pattern of the state and thus create a pool of resources to address the same online the electronic medium of communication in a community helps in creating a collective intelligence which can be deployed for resource optimization with the help of analytics and deep learning

Internet of Things

Internet of thinks is like veins of the city spread all across and connecting and dot. Every device that is part of a smart city needs to be connected to each other so that they can talk amongst and can take decisions for themselves which in return allows managing resources of a megacity population.

Sensors

Sensors are hidden but ubiquitous components of the urban landscape. Sensors are a crucial component of any intelligent control system. A process is improved based on its environment. and for a control system to be aware of its environment It is typically fitted with an array of sensors ,from which it collects the required data.

3.4 Road Map and Safe Guards for Smart Cities Road map

A smart city roadmap consists of four/three (the first is an initial check) major components.

1. Study the Community: Before deciding to build a smart city, first we need to know why. This can be done by defining the benefits of such an initiative. Study the community to know the Citizens, the business's needs – know the citizens and the community's unique qualities, such as the age of the citizens, their education, hobbies, and attractions of the city.
2. Develop a Smart City Policy: Develop a policy to drive the initiatives, where roles, responsibilities, objective, and goals, can be defined. Create plans and strategies on how the goals will be achieved.

Engage the Citizens: This can be done by engaging the citizens through the use of e government initiatives, open data, sport events, etc.

India is a country of villages. Any product or solution that has to succeed and be popular in the country has to be of direct relevance to village life of this country. As per Census of India 2011, the country has a 69% rural population spread across more than 600,000 villages. Now, that being the case, no marketer worth his salt can ever dream of ignoring rural India. Governments need to transform our villages into smart habitats by generating lucrative economic opportunities and addressing the basic challenges rural areas are facing for decades. Delhi and Mumbai add almost 200 migrants every day.
A combination of factors like agriculture becoming less remunerative, poor civic services, defunct infrastructure, and unavailability of good career opportunities has accelerated the migration from rural areas to cities. Be it the push of the ‘Smart City’ concept from solution providers, real estate developers or the government itself, the concept finds wide appeal. The Government of India’s stated plan to set up 100 Smart Cities across the country has the potential to be a game-changer in the country’s urban landscape and the lives of ordinary citizens.

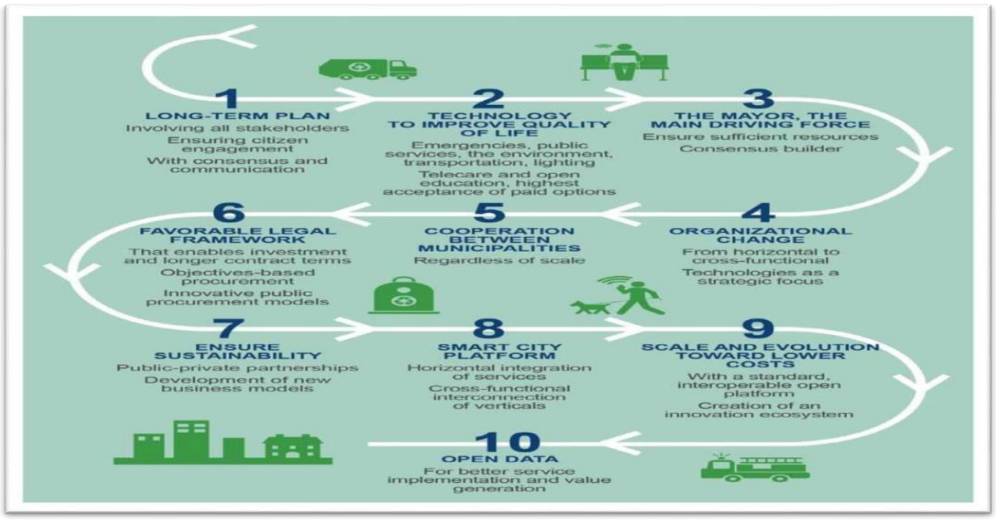


Fig.11 Road map for Smart city

3.5 Smart Cities: Issues & Challenges by Smart City Council India:

This is the first time, a MOUD programme is using the Challenge or competition method to select cities for funding and using a policy of area-based development. This captures the spirit of viable and helpful federalism States and ULBs will show a key helpful role in the growth of Smart Cities. Smart management and vision at this level and ability to act conclusively will be important factors determining the success of the Mission.

Understanding the concepts of retrofitting, redevelopment and Greenfield development by the policy makers, implementers and other stakeholders at different levels will require capacity assistance.

The Smart Cities Mission requires smart people who actively contribute in governance and improvements. Citizen contribution is much more than an official participation in governance. Smart people involve themselves in the definition of the Smart City, decisions on organizing Smart Solutions, implementing reforms, doing more with less and mistake during applying and designing post-project structures to make the Smart City developments sustainable. The participation of smart people will be enabled by the SPV through increasing use of ICT, especially mobile-based tools.

3.6 Smart 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 building, Smart mobility, Smart energy, Smart waste management, Smart health.

FIG.12 Social Infrastructure system

3.7 Cyber Security:

Cyber security in the context of Smart Cities is a hot topic. The objective of Smart Cities is to optimize the city in a dynamic way to offer a better quality of life to the citizens through the application of information and communication technology (ICT). The range of areas where cities can become smarter is extensive: it is an evolution of ―Connected Cities‖ with the prevalence of data exchange at a larger scale. The increase of data exchange controls multiple services and assets leads to more automation in the city.

As several critical services become interconnected, the need for cyber security surges to protect data exchanges, privacy as well as the health and safety of citizens. However, there is currently no harmonized guideline or standard to model these data exchanges. This leads IPT operators, municipalities, policy makers as well as manufacturers, solution providers and vendors to adopt specific solutions with low scalability and disparate requirements.

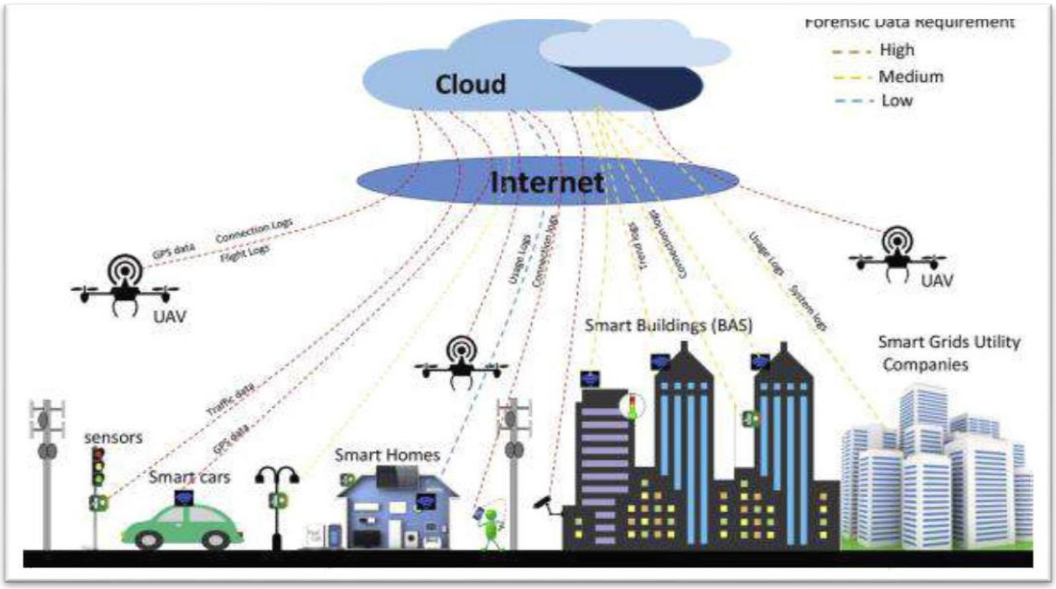


Fig.13 Cyber security component

3.8 District cooling and heating:

Air condition from Hammond services, In the Southeast, air conditioners are almost crucial pieces of equipment for home comfort. However, it can be difficult to find the right air

conditioner for your home, one that will provide enough cool air in the summer to cool your home without driving your energy costs through the roof. We can help! At Hammond Services, we can help you choose the perfect air conditioner for your home, install it professionally, and even maintain/repair it in the years ahead.

Energy Efficient and Affordable Air Conditioners,

When it comes down to selecting a new air conditioner for your home, there are a few things you should consider. First of all is efficiency. By choosing an energy efficient model, you can be sure your money is being well spent and isn't being thrown away with inefficiencies. Get the most bang for your buck with an air conditioner that won't cost a fortune to run. Reliability You Can Count on as a Carrier Factory Authorized Dealer, our commitment to quality products you can count on is clear. We're confident when we say that with the proper maintenance, you can count on our air conditioners to operate efficiently for years to come. If you're having trouble choosing an air conditioner for your home, contact us today – we can help you weigh your options!

DC involves many different components to make it work. It uses a chiller plant to cool water to around 4-5ºC, **offering a centralized use of refrigerants and heat rejection methods, such as seawater, river water, or even treated sewage effluent**. In addition to a chiller, the central plant also houses a water filtration and treatment system, to help to keep the water recirculated through the network conditioned and prevent the fouling of equipment.

Finally, the plant also houses equipment to control and monitor the entire system; these controls ensure that the system achieves adequate temperatures, pumps work as anticipated, and opens and closes automated valves in the system.

- **BENEFITS OF DISTRICT COOLING ENERGY SYSTEMS**

District Cooling offers many benefits over the reduced emissions, reduction in the use of harmful chemicals, and energy use. There is an economy of scale when using District Cooling for a cluster of buildings including increased efficiency, stabilizes electric loads, and reduced costs when compared to cooling buildings individually**.** The use of District Cooling considerably reduces electrical demands, particularly those which occur during times of peak demand. Since these demands typically coincide with the peak cooling demands, this reduces some of the burdens on the power grid and avoid paying the inflated cost of peak power.

- **Financing Smart Cities Development:**

➢ User charges
➢ parking fees
➢ PUBLIC-PRIVATE PARTNERSHIPS
➢ Advertisement tax, Entertainment tax, Profession tax, Telecom, gas, power and water.

3.9 Strategic options for fast development:

Sometimes the smartest tech is low-tech

➢ When exploring ways to extract value from open sensor data, don't overlook the invaluable role inexpensive, low-tech options can play in advancing Smart City goals.

Go small before you go big

➢ The use of pilot projects and open sensor data can play a pivotal role in ensuring high returns for Smart City initiatives.

Collaborate, collaborate, collaborated

➢ Open data sharing and collaboration with residents, civic tech communities and ecosystem partners is essential for driving Smart City innovation.

Treat sensor data like a valuable asset: it is

➢ Cities are discovering the importance of having full access to their own Smart City data.

Attend to the tech must haves

➢ Some technologies that are promoted as essential are really just nice-to-haves, but there are two technologies for succeeding with open sensor data that are undeniably must-haves.

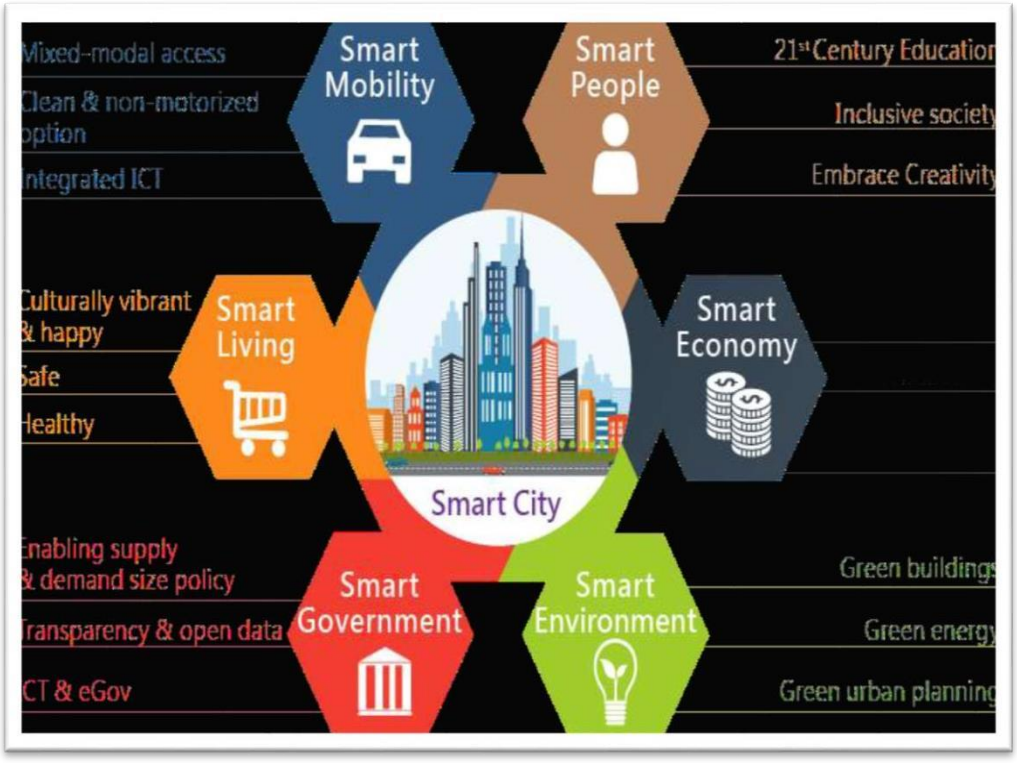


Fig.14 Smart City Standards

3.10 India's urban water and sanitation challenges and role of indigenous technologies

Swachh Bharat Abhiyaan was launched by Hon,,ble Prime Minister of India on 2nd October 2015, which caught attention of everybody not only in India, but also in the world. The government has taken various steps to create awareness among the masses for keeping the area surrounding them

neat and clean. Government is also paying special attention for cleaning of rivers, railway stations, tourist destinations and other public places.

To achieve the target of cleanliness, the technologies to treat the waste material should also be developed along with creating awareness. There are many technologies that are used to treat waste material. They are usually very costly, very complex to be understood and viable only for large size units. At the same time, indigenous technologies are low cost capital and easy to use and they can also be used by different size units. In India, they are particularly suitable for the small and medium units. In this regard, a National workshop on Indigenous water, Wastewater and Solid Waste Treatment Technologies was organized by the Department of Atomic Energy (DAE) in January 2015 at Gujarat Technological University (GTU) in Ahmadabad. The objective of the workshop was to disseminate indigenous technologies of water, wastewater and solid waste treatment developed by the Bhabha Atomic Research Centre (BARC) under

―Swachh Bharat Abhiyan‖ and to bridge gap between the research at the research centers and the practical application of the technologies.

The BARC is playing a pivotal role in the development of these technologies. Some of these technologies are as follows:

Indigenous water purification technologies:

These technologies can improve the drinking water quality of smaller villages as well as larger cities. It uses the Pressure Driven Membrane Processes. These are suitable for all capacity units

e.g. they are adaptable from household level unit or community level unit to large scale unit. Water purification technologies make use of the nuclear energy and solar energy also.

Environment friendly Plasma technologies:

Solid waste dumping sites or landfill sites need more amount of land which is not available in urban areas. Incineration of solid waste pollutes the environment if the incinerators are not designed or operated properly. Thermal Plasma Technology is ideally suited for waste treatment. By plasma technology Hazardous & toxic compounds are broken down to elemental constituents at high temperatures; Inorganic materials are converted to Vitrified Mass; and Organic materials are Pyrolysed or Gasified, converted to flue gases (H2 & CO) & Lower hydrocarbon gases when operated at low temperature (500 – 600OC). Disposal of carcass is also being thought of using plasma pyrolysis.

Unique Multi Stage Biological Treatment Solution:

Multi Stage Biological Treatment Solution (MSBT) can be implemented on existing STP which is not able to process Sewage to optimum efficiency. MSBT can be implemented as a modular or container on the banks of rivers on Drains/Nalas which discharge waste water to the river. It can also be implanted in small urban societies and housing complex for better water management. Benefits of MSBT are: No Surplus of Organic Sludge, No Odour problem, drastic reduction of electrical Power usage which minimizes operating costs, No need for return sludge pumping (minimizing electromechanical component which ultimately reduces operating cost).

A biological treatment system designed to passively remove high concentrations of metals from leachate collected from a landfill near a large integrated zinc lead smelter has been in operation

intermittently for the past five years including winter time operations. High metal removal efficiencies in the system were achieved. The deconstruction of the bioreactor allowed systematic sampling at all depths of the biological matrix. Samples were analyzed for metal, S and TOC concentrations; as well bacterial populations were determined. Results of this sampling procedure are examined and compared at various depths within layers and between layers using one-way ANOVA and linear regressions. Metal concentrations were positively correlated with sulphur and negatively with total organic carbon. This is in concurrence with a model of biogenic precipitation of metal sulphides. Keywords: biological metal removal, anaerobic bioreactor, zinc, cadmium, dissimilatory arsenate reduction.

Role of environmental isotope techniques in the water resources development and management:

There are two types of isotopes, stable isotopes and radioactive isotopes. Isotope techniques are used to find out the type of contamination in surface water and ground water, the sources and origin of contamination, pollutant dispersion in surface water bodies, to assess the groundwater salinity, to assess the changes due to long-term exploitation of groundwater, for hydro-chemical investigation and to carry out geochemical evolution of groundwater.

The BARC UF Membrane Technology for Domestic Water Purifiers:

Water filters manufactured by Sondhka based on membrane based water Purification Technology has been developed by BARC. Benefits of BARC Polysulfone Membrane are high tech 0.02micron or 20nm, simple form factor, rugged (life of more than 1 year) and low maintenance (about Rs. 500 per year). It is very easy to use and very low-cost solution for the water contamination.

Radiation Hygienization of Municipal Sewage Sludge:

The Sewage is the waste water generated from domestic premises and consists mainly of human waste. It typically contains 99.9% water and about 0.1% solid. The solid waste in sewage is typically organic in nature and is broken down in the sewage treatment plants resulting in sewage sludge as a byproduct. In Radiation Hygienization process dry sludge generated at STP„s is hygienized using radiation technology using standard Gamma facility at a Dose of 10 kGs. Such radiation plants are operating in India for sterilizing medical products.

3.11 Initiatives in village development by local self-government:

In the past "government as provider" approach, the priorities were to secure budget allocations and develop projects. The Housing Policy and the NCU statement implicitly give higher priority to two other requirements: first, the reform of policies and regulations that now inhibit development initiatives by the people; and second, more efficient resource management and the building of institutional capacity. Resource Management and Institutional Development.

As discussed in Section 5, India's urban institutions do not have the capacity to provide adequate services at present, let alone address the requirements of accelerated urban growth in the future. Proposals relate to three types of institutions. He primes public sector actors in the urban development process; call for clearer allocations of responsibility and authority to them; and recognize the need for new organizational relationships between local gover-ents and development authorities and State governments that would avoid overlaps and facilitate coordinated programming.

Improved recruitment and retention of qualified staff as will skills training programs. Resource constraints, however, preclude simply expanding local government under current practices in proportion to urban growth.

In many areas, the very nature of the way work is conducted will have to be redesigned to permit much higher levels of productivity. The NCU recognizes reforms of internal management as vital. This is likely to entail implementing more systematic and efficient approaches in many areas: for example, budgeting and financial management; project management and control; billing and collections; infrastructure systems maintenance; and personnel management.

A. Financial Systems

Constraints on government budgets and the rigidities of the present system of intergovernmental transfers prevent an adequate response of traditional arrangements to the challenge of urbanization. A new and more decentralized system of public and private financial intermediaries will be required. The establishment of the NHB represents an important step: an apex institution that will stimulate the creation of a network of mortgage financing. The NCU also calls for the creation of Urban Infrastructure Development banks to permit local governments to borrow for infrastructure.

B. Non-Governmental Organizations

Given the size of the job and the difficulty governmental agencies have in dealing directly in some aspects of the development of urban areas (eg, stimulating informal sector enterprise and provision of shelter) there is a recognition of the need for new and expanded NGOs to assist in facilitating the urbanization process.

3.12 Smart initiatives by district Municipal Corporation: GIFT:

GIFT is planned as a financial Central Business District (CBD) between Ahmedabad and Gandhinagar as a greenfield development. GIFT shall be a part of the future urban complex of Ahmedabad &Gandhinagar. GIFT is designed as a hub for the global financial services sector. More particularly, state-of-the-art connectivity, infrastructure and transportation access have been integrated into the design of the city.

GIFT Master Plan reflects a sophisticated planning approach that integrates the intended program into the existing context of both the site and the region.

The GIFT development is expected to become a contemporary model development in India, advancing the ideas of sustainability and ecology. The project regenerates the area as high-quality, mixed use district of residential, commercial and open space facilities that optimize land and real estate values.

Location of GIFT:

12 km from Ahmedabad
8 km from Gandhinagar
13 GIFT Area: 550 acres

Fig.15 Gift city Map

The vision for GIFT is achieved through the objectives which are enumerated as follows:

- To develop a new format for globally benchmarked Integrated City
- To propose a road map for fast-track development and implementation
- To make the city scalable in each & every aspect for a distant future
- To derive the city format from fast changing lifestyles & new technologies
- To achieve an image of Global city, that keeps pace with modern technologies

Propelled by a competitive economy anchored on commerce and related industry, GIFT, envisaged as an Eco-City, will serve as the Vibrant Hub of Western India and as a habitat showcasing business oriented, environmentally-sensitive growth with equity. The fundamental principles of life and livability lays the foundation for the city.

Basic Principles:

The development of GIFT offers a significant opportunity to be a test-bed to drive reforms and innovation in various fields including in delivery systems, local government, physical planning, infrastructure development, environmental protection and so on. Getting these foundation principles right is crucial to plan and execute the development strategies.

Fulfillment of Human Needs for

- Safe and clean environment, Food & Shelter, Education, Arts, Culture, and Useful and satisfying employment

Maintenance of Ecological Integrity Through

- Low energy consumption, Careful stewardship, Education, Reduction in wastes and. Culture.

Smart Urban Governance:

Academic attention to smart cities and their governance is growing rapidly, but the fragmentation in approaches makes for a confusing debate. This article brings some structure to the debate by analyzing a corpus of 51 publications and mapping their variation. The analysis shows that publications differ in their emphasis on

(1) smart technology, smart people or smart collaboration as the defining features of smart cities,
(2) a transformative or incremental perspective on changes in urban governance.

We argue for a comprehensive perspective: smart city governance is about crafting new forms of human collaboration through the use of ICTs to obtain better outcomes and more open governance processes. Research into smart city governance could benefit from previous studies into success and failure factors for e-government and build upon sophisticated theories of socio- technical change. This article highlights that smart city governance is not a technological issue: we should study smart city governance as a complex process of institutional change and acknowledge the political nature of appealing visions of socio- technical governance.

Urban Renewal:

Urban renewal (also called urban regeneration in the United Kingdom, urban revitalization in the United States is a program of land redevelopment in cities, often where there is urban decay. Modern attempts at renewal began in the late 19th century in developed nations, and experienced an intense phase in the late 1940s under the rubric of reconstruction. The process has had a major impact on many urban landscapes, and has played an important role in the history and demographics of cities around the world.

Urban renewal involves the relocation of businesses, the demolition of structures, the relocation of people, and the use of eminent domain (government purchase of property for public purpose) as a legal instrument to take private property for city-initiated development projects. This process is also carried out in rural areas, referred to as village renewal, though it may not be exactly the same in practice. Many cities link the revitalization of the central business district and gentrification of residential neighborhoods to earlier urban renewal programs.

3.13 Project contributed working by NGO:

As a part of smart village project the EF youth leader selected Dhaurahara Mukundha, a Village in Faizabad District of Uttar Pradesh State, India. Milkipur is the Community Development Block (C.D. Block) of this village. It is situated 11km away from sub-district headquarter Milkipur, 34km away from district headquarter Faizabad and around 135.5 kilometer state capital Lucknow. The state code is 09 and the village code is 166014. The total geographical area of the village is 248.4 hectares. As per 2009 stats, Dhaurahara Mukundha village is also a gram panchayat. As per constitution of India and Panchayati Raj Act, Dhaurahara Mukundha village is administrated by Sarpanch (Head of Village) who is elected representative of village.

3.14 How to implement other countries smart villages projects in Indian village context:

A smart city and village are different. In city there are different opportunities to employ smart technologies. These are limited in villages. However, one can employ such technologies to improve several aspects of rural life. Some examples are,

1. Schooling – smart class rooms can improve the quality of education by providing access to a large amount of educational resources.
2. Health care – improving information available on the availability, location and cost of various types of health care.
3. Agriculture – provide information to farmers on the types of crop that can fetch them returns, by ensuring that there is no glut of one product and shortage of another.

CHAPTER 4: INTRODUCTION ABOUT THE KUBADTHAL VILLAGE DETAILS

4.1 Introduction

4.1.1 Introduction about KUBADTHAL village:

GTU allocated one village to us of Gujarat for surveying which is the Kubadthal in Ahmedabad district. This is our study area to find problem related to structure and general amenities. Kubadthal village is located at 23 km from Ahmedabad and 38 km from Gandhinagar. Ahmedabad is nearest town of Kubadthal village. The local language is gujarati. Total population of the village is 7535 as per census 2011. Main occupation of the Kubadthal village is farming. 80% people of Kubadthal village depend on farming while 10% people are doing dairy and milk production and remaining 10% people are in labour work. Literacy rate of Kubadthal is 85%.

The village has primary school and milk production business. Village has poor drainage system. Village has gram panchayat building and bus stand. The village elevated reservoir and sump for water storage. There is 24*7 electricity supply for residential use and 8 hour for agricultural use. There are no management for collect and damping of garbage.

Fig.16 Sign Board Of Kubadthal Village
Fig.17 Interaction with principal of primary school Kubadthal

Fig. 18 Prathmik Arogya Kendra of Kubadthal, **fig.19 Communication with Doctor of PH**

4.1.2 Study justification:

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

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

4.1.3 Study area:

Gtu allocated one village to us of Gujarat for surveying which is the Kubadthal near Ahmedabad district. This is our study area to find problem related to structure and general amenities. Kubadthal village is located at 23 km from Ahmedabad and 38 km from Gandhinagar. Ahmedabad is nearest town of Kubadthal village.

Any village can become such a republic today without much interference, even from the present Government whose sole effective connection with the villages is the exaction of the village revenue. I have not examined here the question of relations with the neighbouring villages and the centre if any. My purpose is to present an outline of village government. Here there is perfect democracy based upon individual freedom. The individual is the architect of his own government. The law of non-violence rules him and his government. He and his village are able to defy the might of a world. For the law governing every villager is that he will suffer death in there is nothing inherently impossible in the picture drawn here. To model such a village may be the work of a lifetime. Any lover of true democracy and village life can take up a village, treat it as his world and sole work, and he will find good results. He begins by being the village scavenger, spinner, watchman, medicine man and school-master all at once. If nobody comes near him, he will be satisfied with scavenging and spinning.

4.1.4 Objective of the study:

1. To analyze the existing conditions
2. To find out the problems of Kubadthal village.
3. To analyses existing social and physical amenities, public buildings as well as infrastructure.
4. To collect socio-economic data through techno-economic survey.
4. To propose the comprehensive planning suited for ideal village.

Creation of Infrastructure:

To provide connectivity, civic and social infrastructure with provision of alternative Economy generation is the key pillars that the concept.

Basic Physical Infrastructure:

To provide Water Supply, Transport, Sewerage and Solid Waste Management should be the priority on it. To provide internal roads within village

Efficient Transportation systems to improve connectivity between urban and rural areas, Public transportation facilities that need to be developed like bus stops, transport depot etc.

Basic Social Infrastructure:

To provide Health and Education facilities should be provided and ensure proper delivery of facilities to village houses.

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

To reduce migration from rural to urban areas due to lack of basic services.

4.1.5 Scope of study:

Sustainability:

1. Clean drinking water
2. Sanitation
3. Primary& secondary education
4. Drainage
5. Electricity
6. Solid waste management
7. utilizing renewable source
8. Housing& livelihood
9. Better health
10. Environmental sustainability

Technology:

1. Irrigation facilities
2. Delivery of government services
3. Telecommunication & internet facilities
4. ATM Machines, Biometrics for better targeting of services such as PDS, insurance.
5. Delivery of government service
6. Smart education by projector and wifi
7. Modern equipment for farming

Connectivity:

1. Physical connectivity to towns and other places through roads
2. Easy and cheap means of transportation
3. Financial connectivity
4. Digital connectivity

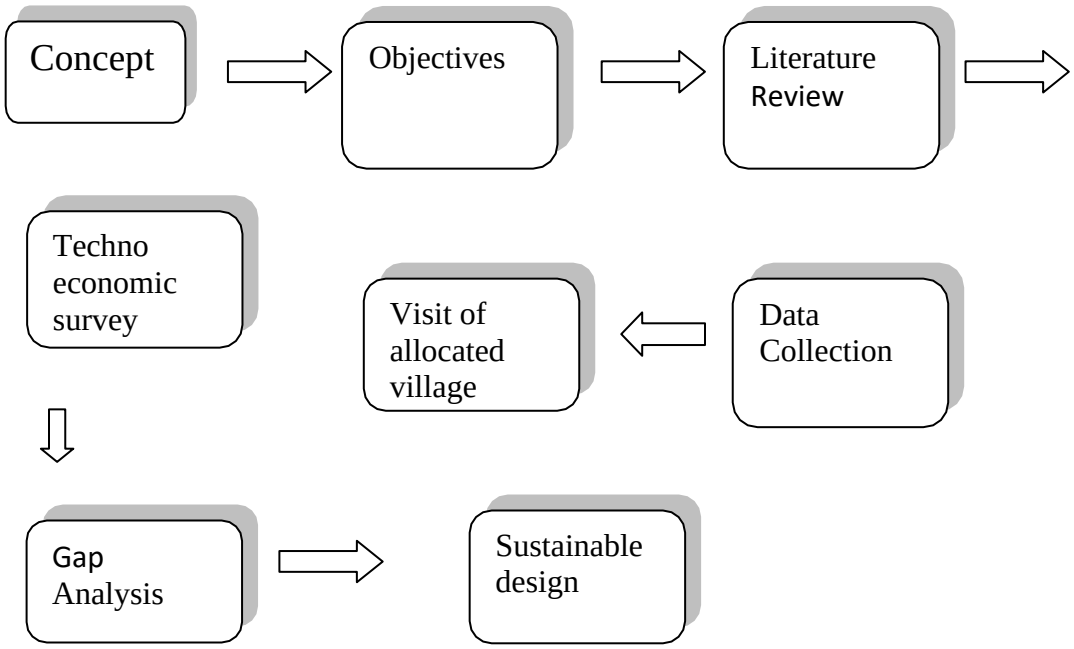
Community Involvement:

1. Village development
2. Stable panchayti raj
3. Influencing personal and community behavior
4. Monitoring the utilization of government funds to increase accountability

By the analysing present conditions, we can improve the basic amenities and facilities like agricultural facilities, milk cooperative facility, education facilities. To improve life style of the villagers by helping them to develop their skills by assisting them in implementing income generating activities in close coordination and cooperation with national and international organizations. The Primary survey was conducted to identify the various general problems of the

villagers by interacting with them and enquiring about the problems faced by them in daily life. They were asked to suggest the possible and desirable solutions for these problems as well as other infrastructural facilities they would like to have in their village.

4.1.6 Methodology:



4.1.7 Available Methodology for development of related to Civil:

Reinforced cement concrete road, Overheaded water tank: rectangular, circular, Drainage system, Transportation system, Pond, River, Primary school, Aanganwadi.

4.2 Study Area Profile:

4.2.1 Study area location:

Gtu allocated one village to us of Gujarat for surveying which is the Kubadthal near Ahmedabad district. This is our study area to find problem related to structure and general amenities. Kubadthal village is located at 23 km from Ahmedabad and 38 km from Gandhinagar. Ahmedabad is nearest town of Kubadthal village.

Table 7: study area location

Village Name	Kubadthal
Taluka	Daskroi
District	Ahmedabad
State	Gujarat
Language	Gujarati
Time Zone	IST(UTC+5:30)

4.2.2 Base Location map, Land Map, Gram Tal Map

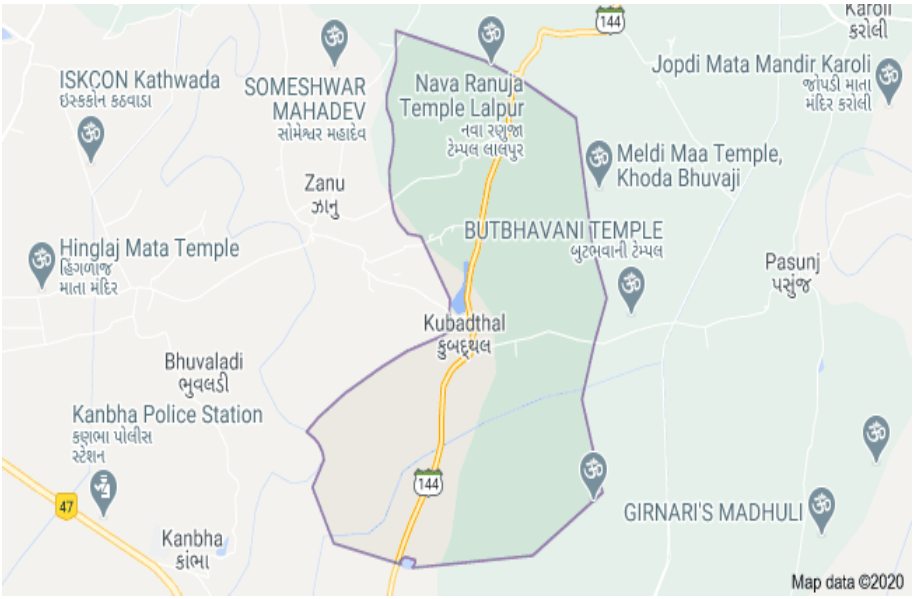


FIG.20 KUBADTHAL GOOGLE MAP

4.2.3 Physical demographical growth:

Physical Growth

- 1 primary school
- Anganwadi
- Private clinic
- Bus stand
- Water tanks

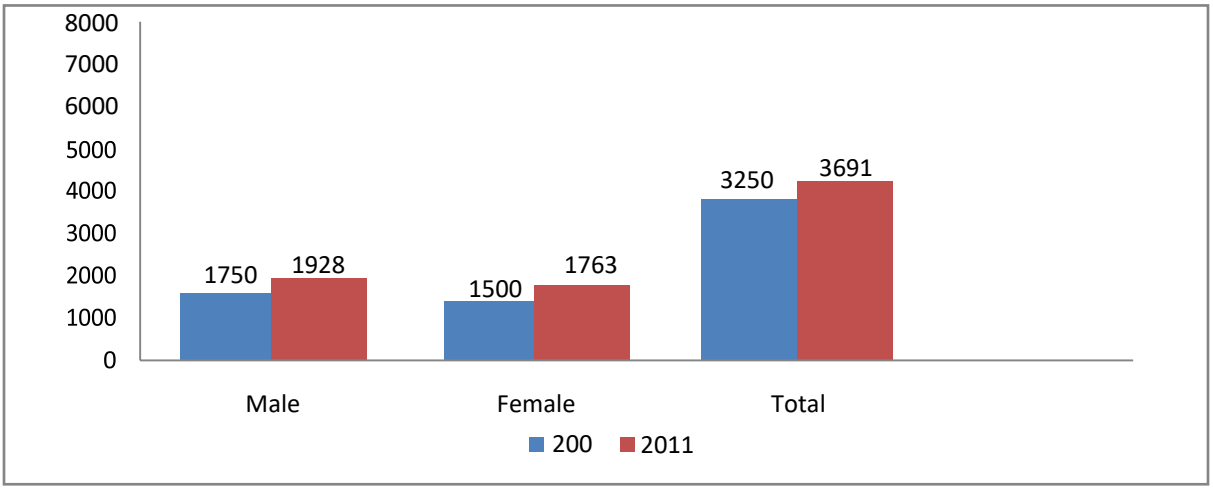


Fig.21 (Demographic growth of KUBADTHAL)

4.2.4 Economic profile / Banks

About the economic profile of this village, many citizens‟ work interest is farming and labour work. Dairy and milk production also the prime source of income.

The village doesn't have any better facilities regarding infrastructure but has good electrification System which distributed 24*7 hours for domestic use and 8 hours for agricultural use.
Village does not have good drainage system because the drainage system is underground but not efficient.
The economic development of rural areas indirectly depends on the rural population's living standard and socio-economic life conditions. The depopulation of rural areas, the outflow of skilled labor, underdeveloped or neglected transport infrastructure, the absence or lack of information and communication infrastructure etc. not only discourage new business that could enter the region, but are also detrimental to the survival of existing business entities in the rural areas. The paper analyzes the socio-economic life conditions of the rural population in Chernivtsi region in the following dimensions: provision of rural residents with housing equipment and utilities; dynamics of indicators of trade enterprises and consumer services activity; availability of pre-school and school education in rural areas and library network development trends; healthcare provision to the population in the permanent residence area; problems of transport and communications network; material and financial security of the rural population.

4.2.5 Actual problem faced by villagers and smart solution:

In the Kubadthal village, RCC road is in a poor condition and it is very difficult to drive on this road in rainy season so it is necessary to redevelopment of RCC road.

Drainage condition is under ground in Kubadthal village but it is not efficient in the heavy rain. So it is necessary to make efficient drainage system.

In the Kubadthal village, there are no facilities to disposal of drainage water. So it should be necessary to provide connection of drainage in the main line of drainage system.

There no facilities for collecting and damping of wastage coming from resident. It's only solution that provide dustbin at some interval and collect timely.

4.2.6 Social scenario:

The major population is get income through the farming and there are no other job opportunities.The major crops produced in the village are cotton, Millets and wheat.

It was found that all the people of this village are not very much connected with today's technology environment rather than their main major working area. The education is limited to Primary school.

4.2.7 To know the reason of migration/trends of migration/Problem and potential of migration:

People are migrates from rural to urban area to get employment, better education, better health care and other recreation facilities. Now the young generation does not want to live in village and they need more facilities that they cannot get from village.

Study area land use details:
Agricultural land use: - 67%
Residential land use: - 20%
Future development: - 8%
Infrastructure: - 5%

4.3 General (methods for data collection)

Data collection related to village is the most important first step for development of any village. Without data we cannot identify what is the future requirement for development of village. The following data was collected by various means like: Office record of concerned office department like- R&B Department, Talati office etc. Interaction with Sarpanch, Upsarpanch, villagers etc. Visit to different parts of village.

Fig.22 Health Centre of Kubadthal

Fig.23 Animal Treatment Hospital

4.3.1 Method for Collection:

House hold for population
Occupational survey
Transportation survey

Educational survey Techno

Economic survey

4.3.2 Primary survey data

The Primary survey was conducted to identify the various general problems of the villagers by interacting with them and enquiring about the problems faced by them in daily life. They were

asked to suggest the possible and desirable solutions for these problems as well as other infrastructural facilities they would like to have in their village.

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

1. Do you have enough water supplies?
2. Which type of irrigation facility you are using? Is it enough?
3. Are you comfortable with your Road network facility?
4. What are your Sources of economy?
5. Which type of medical facility is available?
6. What is your primary need?
7. Which type of facility you want first?
8. Where you dispose your waste?
9. Are comfortable with available medical facility?

4.3.3 Average size of the House in Village:

Number and proportion of Indians living in homes with a per capita space of less than 100 sq ft have gone up substantially.

The average size of the house in Kubadthal village and any rural area it is 494 sq ft.

4.3.4 No of human being in one house:

As per the sarpanch and our survey there are average 4 persons per household in village.

4.3.5 Locally used material

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

4.3.6 Geographical Detail

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

Labour work doing

In the village 10 to 12 % people doing labor work for money. They either work in the village or go to the nearest city for some labor work.

4.3.7 Demographical details:

Table 8: Demographical details

particular	total	Male	Female
Population	3691	1928	1763
Child (0-6)	187	107	80
literacy	68%	71%	65%

4.3.8 Occupational details

In this village 80 to 85 % people connected with agriculture activities it is the villages main source of income. But village has the milk production business so that is a income of source too.

4.3.9 Agriculture Detail

Main source of income in this village is farming. Farmers use drip irrigation system to do farming. The main agriculture product is groundnut, cotton, wheat**.** 920-hectare area covered in the agriculture activity out of 2015.48hectare**.**

4.3.10 Physical Infrastructure Facilities - Manufacturing HUB:

Groundnut, cotton, wheat and milk are the main manufacturing product of this village. Also Phoenix company in Kubadthal village.

Fig.24 Phoenix Flexibles Company in Kubadthal village

4.3.11 Tourism development available in the village for attracting the tourist

No tourism in this village

4.4 Infrastructure Details

4.4.1 Drinking water: For drinking Purpose ground water tank, tube well and tap water available. Some people also use hand pump for water purpose. There are over headed water tank is available in village for drinking purpose and for irrigation the canal water used the villagers.

Fig.25 Pure water Canal for drinking and also used for irrigation

4.4.2 Drainage facility:

Underground drainage facilities are available in all areas of the village. No treatment is given to the waste water, it is directly disposed to the River and Drainage Strom water facility is not available in village; due to that clogging of rain water on road is problem in monsoon.

Fig.26 No waste Managment , No Garbage Facility

For lack of Garbage facility we talk about Gram Panchayat's Sarpanch and discuss about this problem and we complaint municipal corporation for regularly collect the garbage from village so villagers don't face any problem regarding garbage and village look neat and clean.

This is our responsibility to do work for our nation clean and support swachh bharat abhiyan.

4.4.3 Transportation & Road network:

Main road of village are in good condition and all main roads are of black topped. The width of main road is 3m. Road maintenance is required in some areas of village. The internal street roads are also 90% of R.C.C. But buses are easily not available at the entrance of village.

Other transport facilities like Auto, chhakda and private vehicles are also available. There is no railway station near the Kubadthal village.

Fig.27 Internal Roads

4.4.4 Housing condition:

In the Kubadthal village, the condition of house is good.

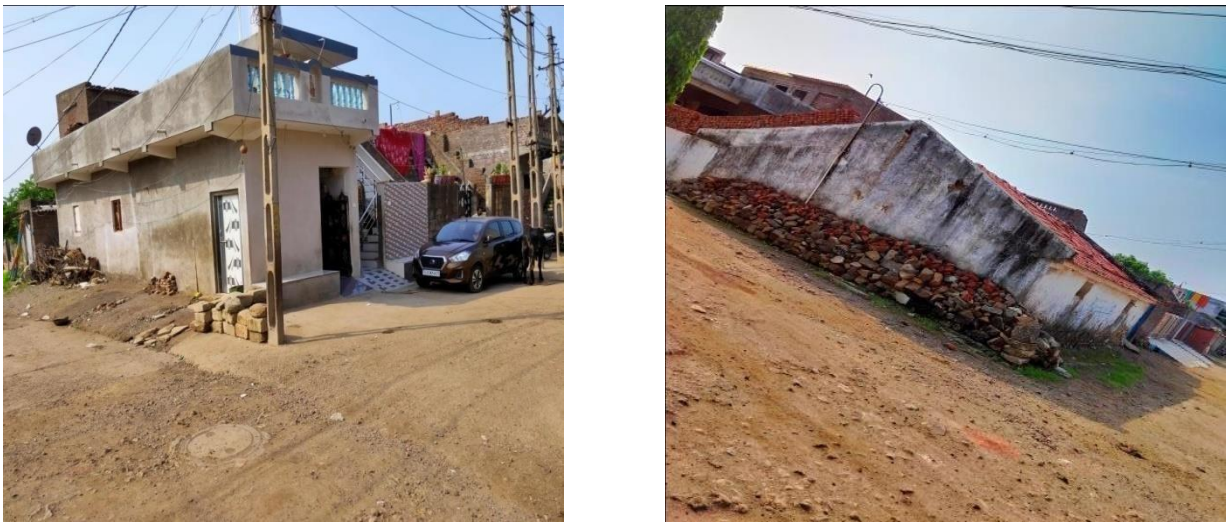


Fig.28 PUCCA & KACCHA HOUSE

4.4.5 Social Infrastructure Facilities

Public Library:

There is No Availability of Public library in Kubadthal.

Community Hall:

No community hall is available in Kubadthal.

4.4.6 Existing Condition of Public Building:

In Kubadthal public building like gram panchayat, school is good in condition. But anganwadi, post office condition is not well so maintenance is required.

4.4.7 Technology mobile / wifi / internet usage details in percentage:

In the Kubadthal village, there are only 20% people are using smart mobile and internet.

4.4.8 Sport Activity as Gram Panchayat

There is no Any Sport Activity as Gram Panchayat.

4.4.9 Socio-cultural Facility:

There is no availability of any socio-cultural facility like public library, public garden, and cinema hall.

Etc. inside the village so Socio-cultural Facility is required.

Public garden/park/playground:

There is no playground, park and public garden in the village.

Village pond:

One pond is available in village. Solid waste is disposed in surrounding the pond area. So, proper solid waste management and development of pond is necessary**.**


Fig.29 Beautiful Lake of Kubadthal

4.4.10 Other Recreation Facilities:

In the village, none recreational facilities available like there is no cinema hall or theatre.

4.4.11 Other Facilities:

One public food distribution shop available in the village. Primary school and secondary school, water tank for drinking purpose are available in village.

- Village needs sewage treatment plant
- Needs public library
- Need a community hall

4.5 Existing Institution like - Village Administration – Detail Profile:

4.5.1 Bachat Mandali:

- No bacchat mandali in village.

4.5.2 Dudh Mandali:

- There is a Dudh Mandali in the Village where People can Sell their Milk and also Buy Milk for the House Usage.
- It Helps People to Earn Money and also Increasing their Economic Status.

4.5.3 Mahila forum:

- There is No Any Mahila Forum in the Village.

4.5.4 Plantation for the Air Pollution:

- For reducing pollution panchayat has stated planting trees over the areas on which plantation is possible.

4.5.5 Rain water harvesting:

There are no facilities for rain water harvesting in Kubadthal village. Rain water is directly flow in drainage. So villagers are not used rain water for agriculture and domestic use.

- Rainwater can be used for irrigation use, indoor non-potable water use, and/or potable water supply.
- Rainwater harvesting can provide an independent water source in areas where other water sources are unavailable, or the water quality is unacceptable, or they are too expensive to develop, or they are too difficult to obtain.
- If used as a potable water source, the zero hardness of rainwater provides many advantages. It eliminates the scale build-up in household appliances that could occur with the use of other water sources. This will extend the life of the appliances. In addition, it reduces the amount of detergent or soaps needed in laundry and dishwashing appliances, reducing money spent on these detergents and soaps.
- Rainwater from a potable rainwater harvesting system that has been properly filtered and disinfected is some of the best tasting water available. It doesn't have the many chemicals that municipally treated water has such as fluoride or chloramines (chlorine).

That's why Rain water harvesting is very needful for village.

4.5.6 Agricultural development:

Farmers do not use modern equipments for agriculture activities. Fertilizer is easily available by sahakarimandali in village for a crop. For agricultural use electricity is available for only 8 hours per day.

Agriculture also plays an important part in rural development, especially due to land use, in countries where the sector is of less economic significance. ... The main potential contributions of farming to rural development are in terms of supporting employment, ancillary businesses, and environmental services.

Main road of village are in good condition and all main roads are of black topped. The width of main road is 3m. Road maintenance is required in some areas of village. The internal street roads are also 90% of R.C.C. But buses are easily not available at the entrance of village.

Other transport facilities like Auto, chhakda and private vehicles are also available. There is no railway station near the Kubadthal village.

4.5.7 Any Other:

- Infrastructure are Very Poor.
- Basic Facilities are Not Available.
- Transportations are Not Available Easily.

CHAPTER: 5 SUSTAINABLE TECHNICAL OPTIONS WITH CASE STUDY OF EXISTING VILLAGE:

5.1.1 Advance Sustainable construction techniques / Practices and Quantity Surveying:

The term 'advanced construction technology' covers a wide range of modern techniques and practices that encompass the latest developments in materials technology, design procedures, quantity surveying, facilities management, services, structural analysis and design, and management studies.

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

Sustainable construction technologies typically include mechanisms to lessen energy consumption. The construction of buildings with wood, for instance is a sustainable construction technology because it has a lower embodied energy in comparison to those build of steel or concrete. Sustainable green construction also makes use of designs that cuts back air leakage and allows for free flow of air while at the same time using high performance windows and insulation techniques.

Sustainable resource sourcing as the name suggests is a prime example of sustainable construction technology because it ensures the use of construction materials designed and created from recycled products and have to be environmentally friendly. In most cases, agricultural wastes or by-products are used to produce the construction materials. Overall, the materials are remanufactured, recycled, recyclable, and obtained from sustainable sources.

Advanced construction technologies are commonly described as including (amongst many others) advanced forms of:

- 3D printing.
- Materials.
- Building information modeling (BIM).
- Construction plant.
- Modern methods of construction.
- Modular construction.

Recommendations:

In mapping out sustainable practices that India must adopt a "cradle to grave" analysis is required. And for this we need to have a total approach than a patch work point system or a grade based certification system. In order to have a comprehensive plan for sustainable construction, every structure may be thought about based on the following parameters:

- Planning, design and specifications based on performance and service life
- Construction Practices
- Material Conservation and Selection
- Demolition and recycling
- Energy Conservation

1. Planning, Design and Specifications: Structures in India are designed well however so far in most specifications, there is no reference to any service life or calculations thereof. To this effect, deeper study of various service life prediction models and calculations are essential. Specifications must to be performance based as opposed to their present form of being prescription based.

2. Construction Practices: Creation of an industry consortium or lean construction forum may be a good beginning. In the construction industry, best practice is commonly defined by standards, which are published documents that are intended to define the common specifications, methods and procedures that are to be used.

3. Material Conservation and Selection: Presence of concrete is all pervading simply because it has the capacity to utilize locally available ingredients, develop adequate engineering properties for a variety of applications, easily adapt to any shape and size and has comparatively low initial and maintenance costs.

4. Demolition and Recycling: Recycling serves to transform the wastes into products of their own genre through industrial processing. Paper, glass, aluminum, and plastics are commonly recycled. It is environmentally friendly to reuse the wastes instead of adding them to nature. However, processing technologies are pretty expensive.

5. Energy Conservation: The use of local materials helps reduce the carbon footprint associated with transport. Thus, from sustainability angle, the emphasis should be placed on using locally-available aggregates, even if there are small deficiencies in their quality. It has been amply demonstrated that desired properties of concrete can be obtained by intelligent blending of available aggregates with crushed sand, inert fillers, supplementary cementitious materials and chemical admixtures. Another important issue is that river sand and other construction materials are usually transported by road. India has a well-developed and efficient rail and water transport system that need to be leveraged by the construction industry. This is not only more sustainable option but also most cost effective.

5.1.2 Soil Liquefaction:

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

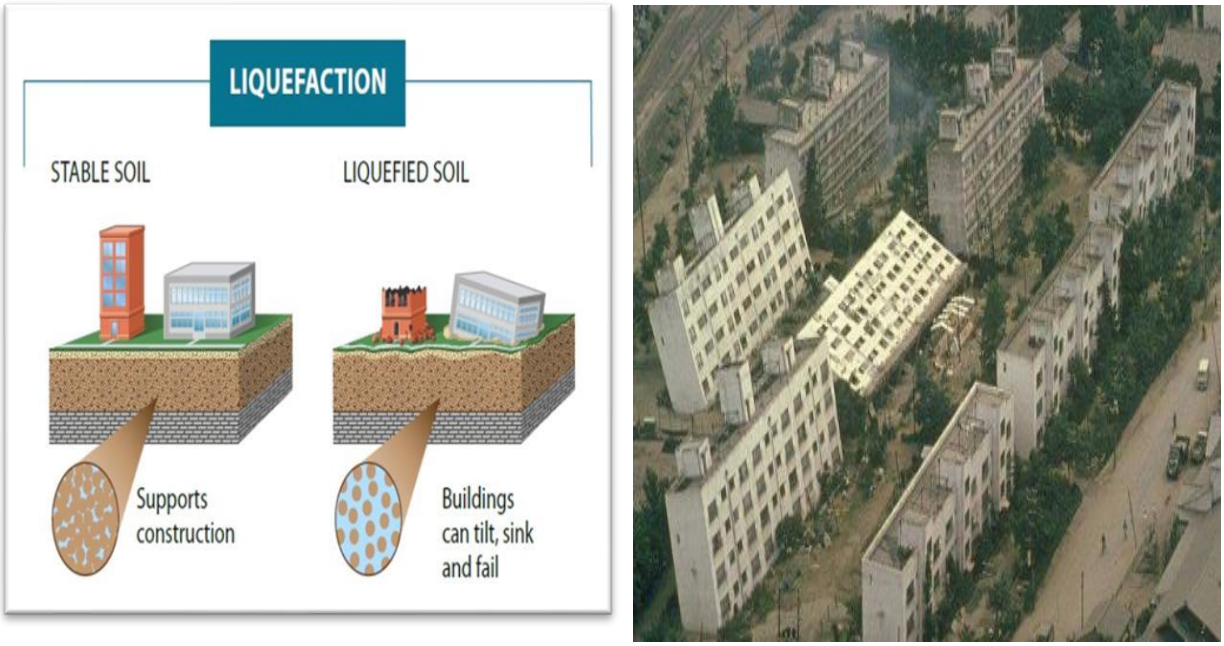


Fig.30 (Soil Liquefaction)

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.

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

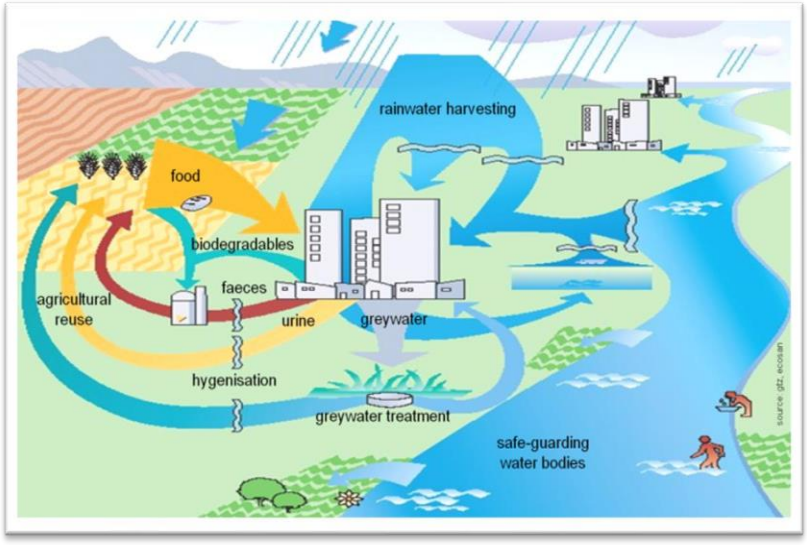


Fig.31 (Sustainable Sanitation)

5.1.4 Transport Infrastructure / system :

Transport infrastructure consists of the fixed installations necessary for transport and includes roads, railways, airways, waterways, and terminals.

Transport is vital to the well-functioning of economic activities and a key to ensuring social well-being and cohesion of populations. Transport ensures everyday mobility of people and is crucial to the production and distribution of goods. Adequate infrastructure is a fundamental precondition for transport systems. In their endeavour to facilitate transport, however, decision-makers in governments and international organizations face difficult challenges. These include the existence of physical barriers or hindrances, such as insufficient or inadequate transport infrastructures, bottlenecks and missing links, as well as lack of funds to remove them. Solving these problems is not an easy task. It requires action on the part of the governments concerned, actions that are coordinated with other governments at international level.

Transport infrastructure is an integral part of the transport system of any city or state. In connection with the development of society and intensification of international relations due to the globalization processes, the importance of transport as a factor for economic and social development has enhanced. Various aspects of the activities related to the development of transport infrastructure have increasingly become the objects of scientific researches. Transportation as an economic factor is a measure of economic activity and at the same time transportation is a reflection of economic activity. So, the questions about transport infrastructure performance measurement and relationship between transport infrastructure and economic growth are the subjects for discussions in both academic and non-academic circles.

Transport infrastructure as an important part of the state transport system, and estimates the employed international approaches to the measurement of performance of transport infrastructure development.

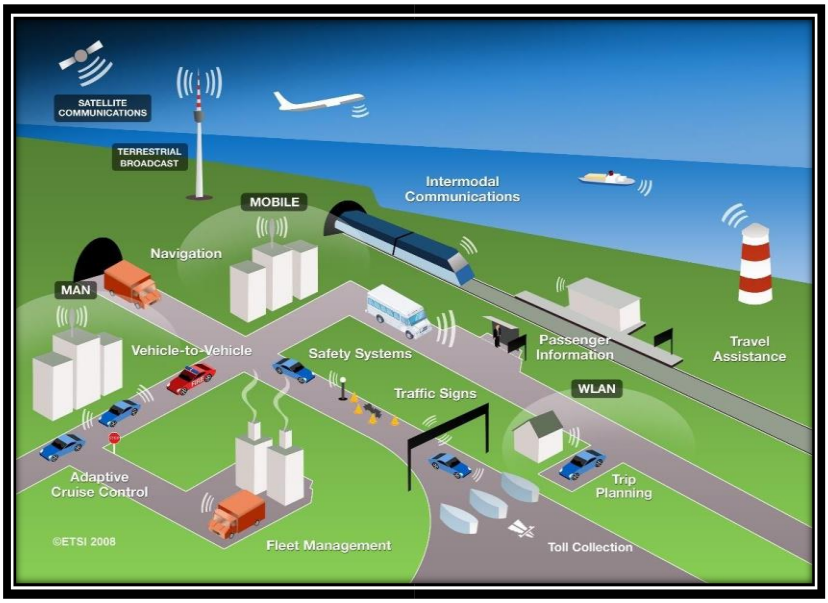


Fig.32 Transportation Infrastructure

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.

Despommier and his students came up with a 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 farming 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.

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 cubic 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.

Fig.33 Vertical Farming

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 lead to 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 a life of 10 years. Nowadays the increase content of pollutants in the city atmosphere has very much affected the life span 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 conventional reinforcing 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 plant is a plant where waste water is treated. 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 pretreatment 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.

5.1.8 Technical Case Study on Sewage treatment plant:

Sewage treatment is the process of removing contaminants from wastewater and household sewage, both runoff (effluents) and domestic. It includes physical, chemical, and biological processes to remove physical, chemical and biological contaminants. Its objective is to produce a treated effluent and a solid waste or sludge suitable for discharge or reuse back into the environment. This material is often inadvertently contaminated with many toxic organic and inorganic compounds.

Sewage implies the collecting of wastewaters from occupied areas and conveying them to some point of disposal. The liquid wastes will require treatment before they are discharged into the water body or otherwise disposed of without endangering the public health or causing offensive conditions.

As the cities have grown, the more primitive method of excreta disposal have gain place to the water-carried sewerage system. Even in the small cities the greater safety of sewerage, its convenience, and freedom from nuisance have caused it to be adopted wherever finances permit.

Treatment Of Sewage:

The treatment of sewage consists of many complex functions. The degree of treatment depends upon the characteristics of the raw inlet sewage as well as the required effluent characteristics.

Treatment processes are often classified as:

1. Preliminary treatment
2. Primary treatment
3. Secondary treatment
4. Tertiary treatment

1. Preliminary Treatment:

Preliminary treatment consists solely in separating the floating materials like tree branches, papers, pieces of rags, wood etc. and heavy settable inorganic solids. It helps in removal of oils and greases and reduces the BOD by 15% to 30%.
The processes under this are:

- ➢ Screening - to remove floating papers, rags, clothes.
- ➢ Grit chamber - to remove grit and sand.
- ➢ Skimming tank - to remove oils and greases

2. Primary Treatment:

Primary treatment consists in removing large suspended organic solids. It is usually accomplished by sedimentation in settling basins. The liquid effluent from the primary treatment often contains a large amount of suspended organic material and has a high BOD (about 60% of original).

3. Secondary Treatment:

Here the effluent from primary treatment is treated through biological decomposition of organic matter carried out either aerobic or anaerobic conditions.

Aerobic Biological Units:

I) Filters (intermittent sand filters, trickling filters)
II) Activated Sludge Plant (feed of active sludge, secondary settling tank and aeration tank .
III) Oxidation ponds and Aerated lagoons.

Anaerobic Biological Units:

I) Anaerobic lagoons
II) Septic tanks
III) Imhoff tanks.

The effluent from the secondary treatment contains a little BOD (5% to 10% of original) and may contain several milligrams per litre of s DO.

4. Tertiary Treatment:

The purpose of tertiary treatment is to provide a final treatment stage to raise the effluent quality before it is discharged to the receiving environment (sea, river, lake, ground, etc.). More than one tertiary treatment process may be used at any treatment plant. If disinfection is practiced, it is always the final process. It is also known as "effluent polishing".

Design Result of SEWAGE TREATMENT PLANT:

1) SCREENING -

- Shape of bars = M.S. Bars
- Size = 10mm x 50mm with clear spacing of 30mm
- Velocity of flow = 0.8m/sec
- No. of bars required = 33
- Size of Screen = 1.32m x 0.8m

The screening produced are disposed of either by burning, or by burial (Composting).

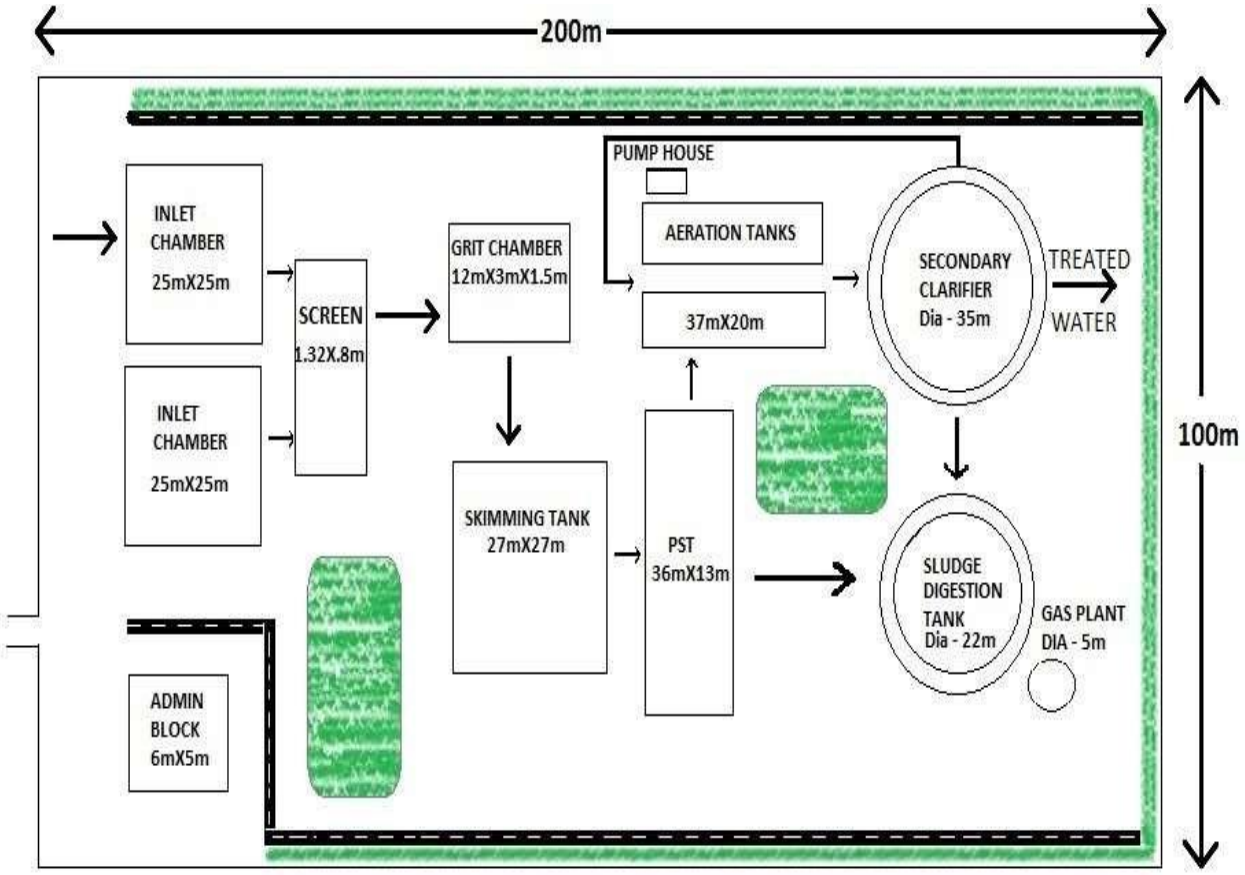


Fig.34 Layout of Sewage treatment plant

2) GRIT CHAMBER -

- Critical horizontal velocity (V_c) = 0.228m/s
- Flow velocity (V) = 0.2m/s (V< V_c)
- Detention time = 60sec
- Size of Grit Chamber = 12m x 3m x 1.5m

3) SKIMMING TANK-

- Detention time= 4 min
- Size of tank = 27m x 27m

The grit deposited at bottom can be either incinerated with sludge or disposed in low lying areas. The oil & greasy material removed from tanks can be disposed either by burning or burial. It is generally too polluted for any economic use.

4) PRIMARY SEDIMENTATION TANK –

- In this design, continuous flow tank is to be provided.
- Velocity of flow through the tank = 0.3m/min
- Size of rectangular sedimentation tank = 36m x13m x6m.
- Since the tank is provided with mechanical cleaning arrangement, no space at bottom is required for sludge zone.

5) AERATION TANK-

- Providing conventional aeration process.**,** No. of aeration tanks = 2
- BOD entering STP = 189mg/l, BOD left at effluent = 25mg/l

- Minimum efficiency required in activated plant = 86.77% (85-92%), F/M Ratio = 0.3
- MLSS = 2500mg/l , Sludge retention time = 5days
- Aeration tank dimension = 37m x 20m x 5.5m.

6) AERATOR SIZE –Oxygen requirement = 1kg/kg BOD applied

- Provide 10 Generators of 30 HP, with 1 generator at standby.

7) SECONDARY CLARIFIER-

- Recirculated flow(assuming 50% of total flow) = 15000m^3/day.
- Surface loading rate of flow = 30m^3/m^2/hr.
- Solid loading rate = 112.5kg/day/m^2.
- Size of secondary clarifier = 35m diameter with overall depth of 5.5m

8) SLUDGE DIGESTION TANK –

- Mass of suspended solids in 30MLD wastewater = 12840kg/day
- Volume of digested sludge at 75% moisture content = 32.89 m^3/day
- Digestion period = 30 days
- Provide a cylindrical sludge digestion tank 6m deep and of 22m diameter.

9) ESTIMATION OF GAS PRODUCED FROM DIGESTER TANK –

- Total quantity of gas produced = 3154.79 cu. m.
- Assuming that gas produced contains 65% methane and 30% CO_2.
- Methane produced = 2050.6 cu. m. CO_2 produced = 1104.18 cu. m.
- Total fuel value = 73.82 MKJ.
- Assuming boiler efficiency is 80%, heat produced by boiler =59.06 MkJ which is equal to 14.335 million kilo Calories.
- The gas collected may be utilized for operating engines, and for heating sludge to promote quick digestion.

➢ The major aim of wastewater treatment is to remove as much of the suspended solids as possible before the remaining water, called effluent, is discharged back to the environment. As solid material decays, it uses up oxygen, which is needed by the plants and animals living in the water. Thus in a biological sewage treatment plant, the main aim is to maintain the flow of fresh air. This chamber is fed with raw sewage which has been grounded to form small particles. The source document for this Digest states: Disinfection is unquestionably the most important step in the treatment of water for drinking-water supplies. The microbial quality of drinking-water should not be compromised because of concern over the potential long-term effects of disinfectants and DBPs. Waste management is an important issue that needs governmental action quickly. At present there is very little awareness exists regarding this issue in our society. The practices of bringing forth waste are too risky not only for today but they could be dangerous for our future generation.

CHAPTER: 6. SWACHH BHARAT ABHIYAN(CLEAN INDIA)

6.1 Swatchhta needed in allocated village -Existing Situation with photograph:

Swachh Bharat Abhiyan:

Swachh Bharat Mission is a mass movement for cleanliness launched on 2nd October 2014 by the Prime Minister of India. The Swachhta Abhiyan has turned into a National Movement with citizens now becoming active participants in cleanliness activities across the nation. The dream of a „Clean India" once seen by Mahatma Gandhi is being realized with millions of people across the country joining the cleanliness initiatives of the government departments, NGOs and local community centres to make India clean as a part of this Jan Andolan".

Fig.35 Need Swachhta in village

Need Swachhta:

Sanitation Plan for Health in the Village, Waste Collection System, Drainage System, Waste Disposal System, Public Toilet, Increase In Health Status Of Public, Awareness Of Public for Waste Management.

Garbage condition in village:

Kubadthal village system of waste disposal in this photo, we can see this people are throwing garbage on the open ground because there is no waste disposal system in the village. And we have suggested a compost pit for all village to dump the waste so no pollution is occurred in that area and people don't get ill. The fertilizer that will be generated by compost pit will useful to the people of the village.

Garbage in village

In our village there are public toilet, individual toilet and community toilet. But the maintenance of community toilet and public toilet is done in a proper way there is an issue regarding the cleanliness of the public and community toilet.

6.2 Guideline for the process of implementation of SBA Mission Objectives:

First of all we have to give some information about Swachhta abhiyan and also the benefits of the Swachhta. We also aware them about the illness because of the dirty roads and village.

In our allocated village we were gave the knowledge on swachh bharat abhiyan for the student and also try to convince them for the stop throwing garbage on the roads and in the village. We also do a activity with the help of student for the swachhta in village and also try to encourage the villagers to take part in this abhiyan.

Fig.36 Implementation SBA in Urban

Mission Components:

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

- Community toilets,, Public toilets and urinals, Solid waste management, IEC & Public Awareness, Capacity building and Administrative & Office Expenses (A&OE)

6.3 Activities Done by Students for allocated village with Photograph:

According to Talati, Sarpanch and villagers, the people are cleaning their nearby area regularly and collect that waste and dispose it to out of the village and burn it. No daily basis waste collection is there in the Kubadthal village.

We took a permission from village Talati and Sarpanch for doing one Swachhta awareness camp and then we have done one activity of swachhta awareness in the village and we have done an interaction with villagers and aware them about the importance of swachhta in our life and told them to keep the village and infrastructure clean and safe. We have also done a cleaning of village street. We have suggested them for not dumping the waste in village streets and dispose it at right place.

- While travelling doesn't throw any wrapper, paper or any dry waste on road. Keep it in your bag or pocket (as it is a dry waste you can keep them in your bag/pocket).
- Keep paper bags with yourself to store wet waste and throw them in dustbin only.
- Spitting on roads (as it can be the reason of viral disease).
- Avoid chewing Pan-Masala, Gutka and Tobacco.
- Avoid use of plastic bag.
- Follow government's rules and regulations.
- If someone is breaking the rule then make them aware of it.
- Stop your friends if they are making such mistakes.
- Spread awareness to keep our village clean.

Fig.37 Cleaning activity with the help of student for the Swachhta abhiyan

Fig.38 Clean village road done by students and Garbage collection vehicle in our village

CHAPTER:7 VILLAGE CONDITION DUE TO COVID-19

7.1 Taken Steps in Allocated village related to existing situation with photograph:

The COVID-19 disease has become a nightmare for farmers, labourers and small-time traders in villages,

People had no clue about the situation. They got confused when the district collector started daily bulletins of lockdown, on what to do and what not to do. Unfortunately, half of the population doesn't use cell phones in the village. No newspapers either.

They got incomplete information from the few who use smartphones. We require greater cooperation, understanding and adaptability to the situation. Importantly, there is a pressing need to sensitively analyse the impact of the pandemic, as well as the role played by communities in agrarian part of the village.

After this pandemic all the peoples knows the how to aware themselves and they take the all precautions against the fight of corona. In village all peoples are wear masks and also use sanitizer.

If COVID-19 is spreading in your community, stay safe by taking some simple precautions, such as physical distancing, wearing a mask, keeping rooms well ventilated, avoiding crowds, cleaning your hands, and coughing into a bent elbow or tissue. Check local advice where you live and work. **Do it all!**

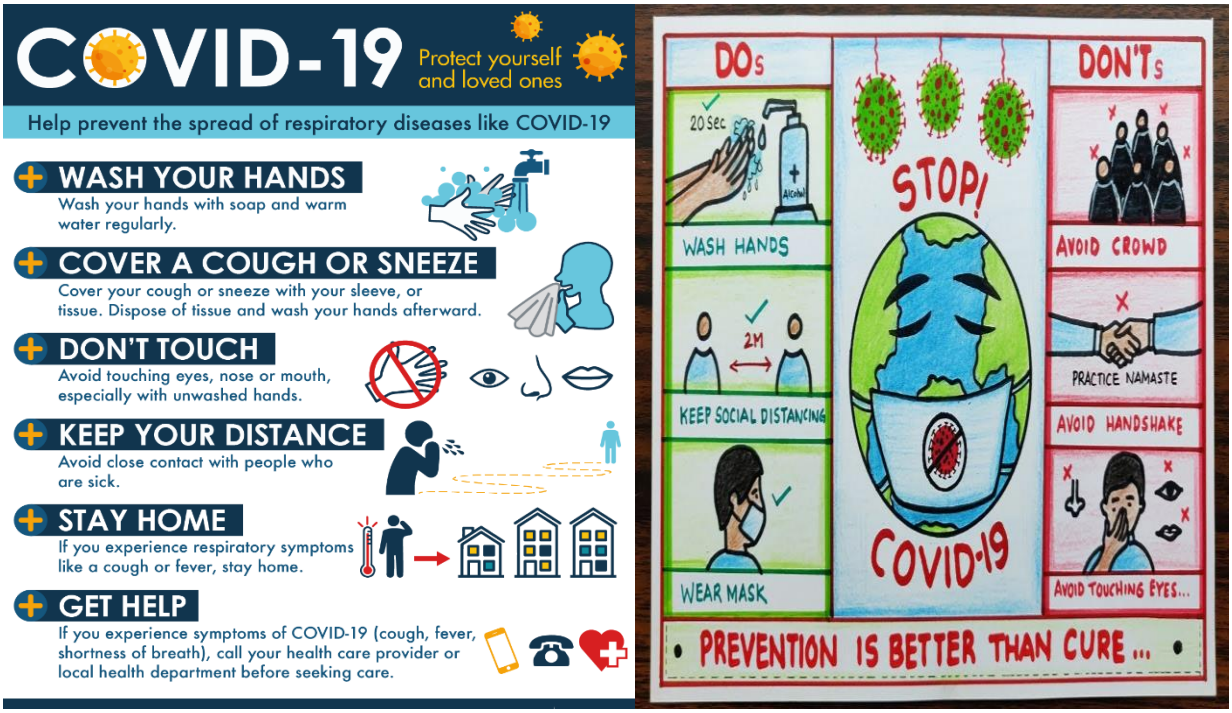


Fig.39 Posters show the precautions from covid 19

7.2 Activities Done by Students for allocated village with Photograph:

We taught villagers that the what to do to keep yourself and others safe from COVID-19

Maintain at least a 1-metre distance between yourself and others to reduce your risk of infection when they cough, sneeze or speak. Maintain an even greater distance between yourself and others when indoors.
The further away, the better. Make wearing a mask a normal part of being around other people. Here are the basics of:
Clean your hands before you put your mask on, as well as before and after you take it off Make sure it covers both your nose, mouth and chin.

Small Steps You Can Take to Protect Yourself from Corona:

- Wash or sanitize your hands before and after putting on your mask.
- Place your mask over your mouth and nose and chin.
- Tie it behind your head or use ear loops. Make sure it's snug.
- Don't touch your mask while wearing it.
- If you accidentally touch your mask, wash or sanitize your hands.
- If your mask becomes wet or dirty, switch to a clean one. Put the used mask in a sealable bag until you can get rid of it or wash it.
- Wash your hands immediately after removing your mask.
- Regularly wash cloth masks in the washing machine or by hand.

And don't forget these precautions: Don't put masks on anyone who has trouble breathing or is unconscious or otherwise unable to remove the mask without help. Don't put masks on children under 2 years of age. Don't use face masks as a substitute for physical distancing.

7.3 Any other steps taken by the students / villagers

Fig.40 Vegetables Market in Village

In the village where public place we notice the public is already following the instructions and precautions for awareness of covid 19 situations. And some are not following than we suggest them and aware them for this pandemic situation and also said them wear mask they do not cause a lack of oxygen or carbon dioxide poisoning. Oxygen and carbon dioxide can simply pass through the face mask and protect yourself from corona. Maintain at least a 1-metre distance between yourself and others to reduce your risk of infection when they cough, sneeze or speak. Maintain an even greater distance between yourself and others when indoors. The further away, the better.

Fig.41 Following precaution for avoid corona by wearing mask at shop

CHAPTER 8: SUSTAINABLE DESIGN PLANNING PROPOSAL (PROTOTYPE DESIGN):

8.1 Design proposal:

As there is no facility of waste disposal, it is very important to provide Sustainable Infrastructure in the village. It will be economical, eco-friendly and efficient also. We can provide Sustainable Infrastructure like Compost pit, Biogas plant, Rain Water Harvesting System etc. We can provide solid waste management system in which we will construct the compost pit, all the villagers would throw their daily waste on their dustbin, that waste would be collected and through the trolly, the waste would be disposed on that compost pit and that waste and the waste would get recycled into the useful fertilizer that will be useful to farmers and the villagers. It is the most efficient system for the waste disposal.

Recommendations of the Designs:

- The Solid Waste Management system of the village must be improved for the sake of the cleanliness and health of the people of village because there is no provision for disposal of solid waste generated. People through the waste out in open land areas.
- Primary health center can be provided as their is no facility of medical treatment in the village. Villagers need to go out of the village for their medical treatment.
- For the gatherings of all the villagers for any activity an assembly can also be provided.

In the Vishwakarma Yojana Phase-VIII Part – I we have given total six design according to the village need and useful for the villagers.

The design proposals are: -

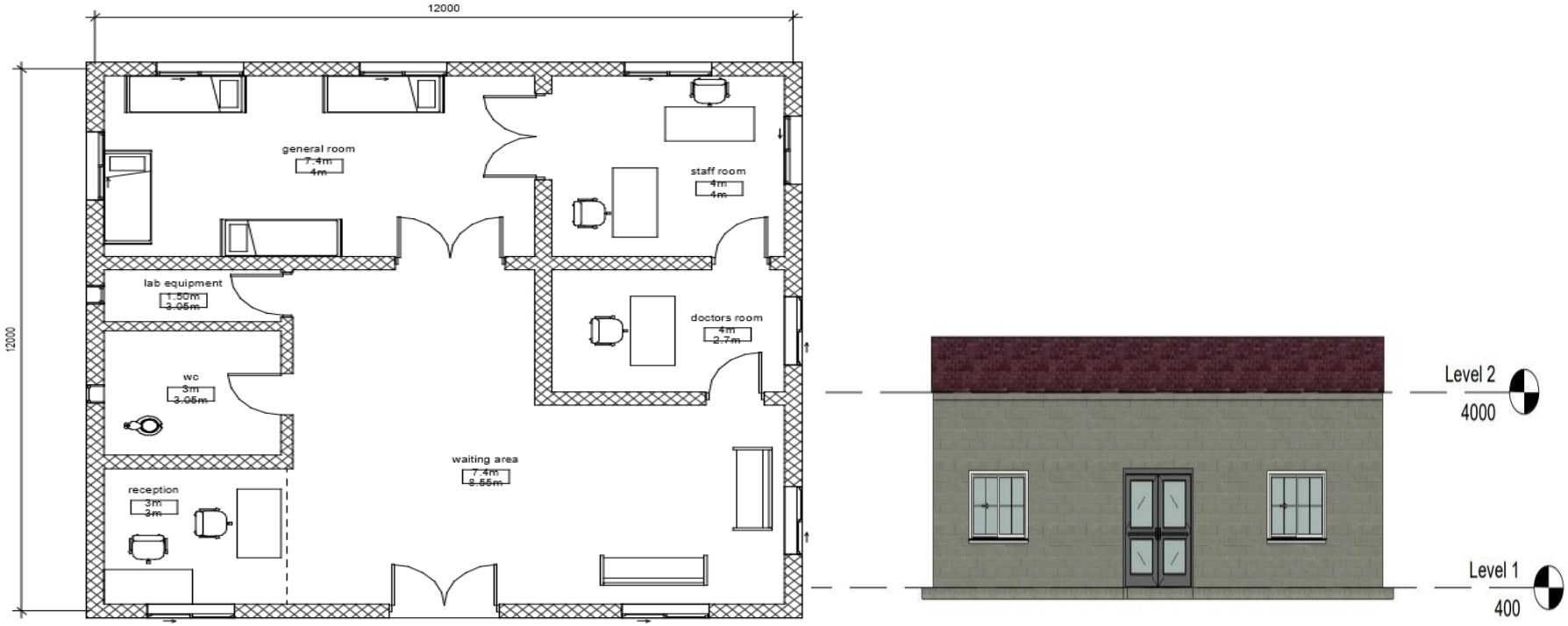
1) Prathmik Arogya Kendra
2) Anganwadi
3) Bank
4) Cyber Café
5) Skill Development Class
6) Post Office

8.1.1 Physical design (Design of Prathmic Arogya Kendra):

Objectives of Prathmic Arogya Kendra:

- Build a consumer-focused integrated primary health care system.
- Improve access and reduce inequality.
- Increase the focus on health promotion and prevention, screening and early intervention.

According to the World Health Organization (WHO), the goal of public health is to prevent disease, promote health, and prolong life among the population as a whole. Therefore, public health initiatives are aimed at fostering conditions in which people can be healthy within specific populations.



PLAN AND ELEVATION

DESIGN NAME:	Prathmik Arogya Kendra
PREPARED BY:	Joshi Rutvik Vijay, Sunil Kumar Prajapat
PROJECT NAME:	Vishwakarma Yojana Phase-VIII Kubadthal, Ahmedabad
INSTITUTE NAME:	Hasmukh Goswami College of Engineering
UNIVERSITY NAME:	Gujarat Technological University

Measurement sheet of Prathmic Arogya Kendra

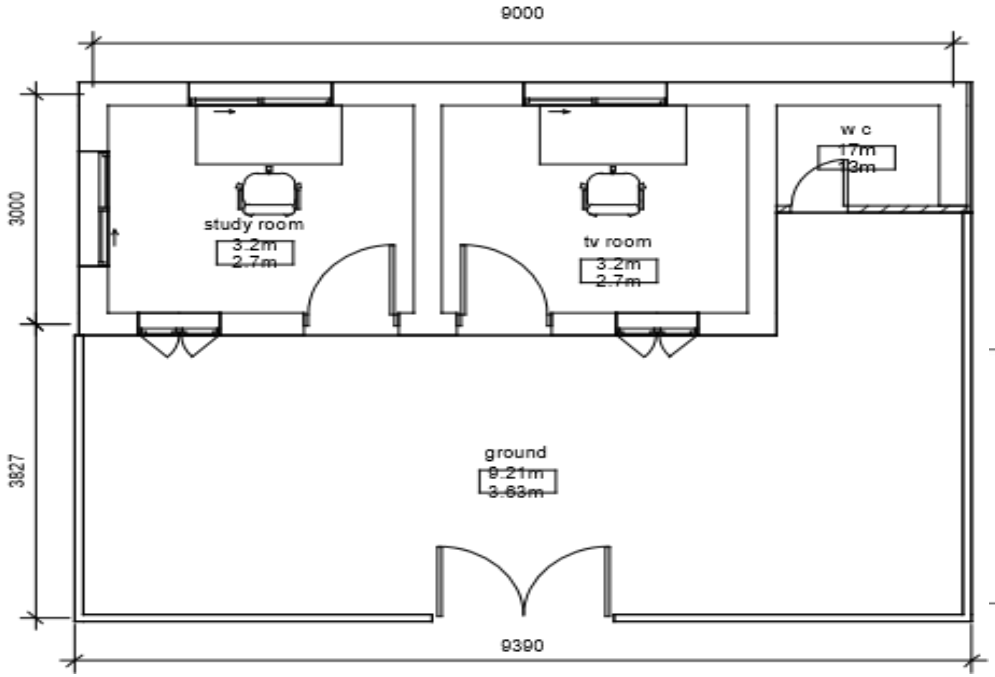
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	79.75	0.90	0.80	**57.42m^2**
2	Cement concrete in foundation (PCC1:4:8)	1	79.75	0.90	0.20	**14.35m^3**
3	Brick work in foundation &plinth					
	1st footing	1	80.95	0.60	0.20	9.71
	2nd footing	1	81.35	0.50	0.20	8.13
	3rd footing	1	81.75	0.40	0.20	6.54
	4th footing	1	82.15	0.30	0.80	19.71
					Total	**44.09 m^3**
4	Flooring 0.10m thick					
	Staff room	1	4.00	4.00	0.10	1.6
	General room	1	7.40	4.00	0.10	2.96
	Doctor room	1	4.00	2.70	0.10	0.45
	Lab equipment	1	3.05	3.00	0.10	0.45
	W c	1	3.05	3.00	0.10	0.91
	Reception	1	3.00	3.00	0.10	0.9
	Waiting area	1	8.55	7.40	0.10	6.32
					Total	**14.27 m^3**
5	DPC	1	82.15	0.30	0.05	**24.69 m^3**

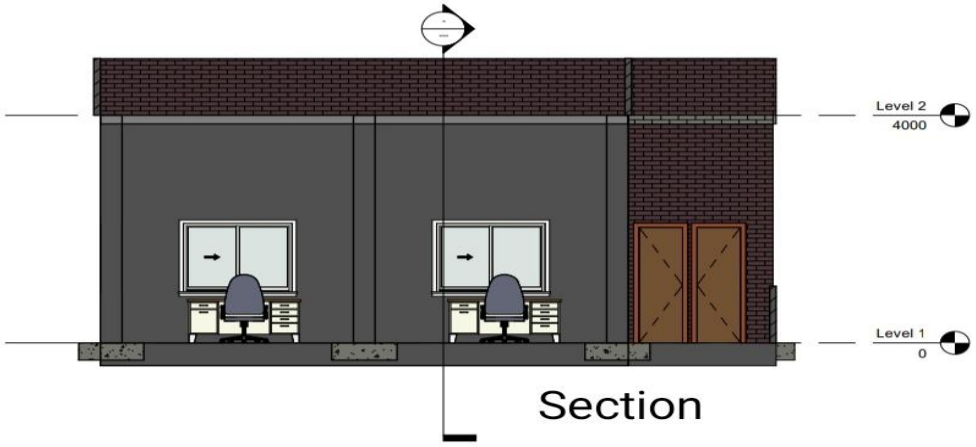
6	Brickwork in superstructure	1	82.15	0.30	3.00	**73.93 m^3**
7	Deduction for door/window					
	Door1	3	2.0	0.30	2.10	3.78
	Door2	4	1.10	0.30	2.10	2.77
	Window1	2	1.0	0.30	1.0	0.60
	Window2	9	1.20	0.30	1.40	4.5
						(-)11.65
	Deduction for lintel 0.10m thick (1:1.5:3)					
	Door1	3	2.0	0.30	0.10	1.9
	Door2	4	1.10	0.30	0.10	0.13
	Window1	2	1.00	0.30	0.10	0.06
	Window2	9	1.20	0.30	0.10	0.32
						(-)2.41
						(-)14.06
					Total	**59.87 m^3**
8	Smooth plaster inside	1	102.35		3.0	307.05
	Smooth plaster outside	1	49.20		3.0	147.6
					Total	**454.65m^3**
9	RCC slab 0.12m thick	1	12.3	12.3	0.12	**18.75m^3**

Abstract Sheet of Prathmic Arogya Kendra

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	57.42	100	M^3	**5742**
2	Cement concrete in foundation (PCC1:4:8)	14.35	3500	M^3	**50225**
3	Brick work in foundation &plinth	44.09	4000	M^3	**176360**
4	Flooring 0.10m thick.(1:3:6)	14.27	1000	Sq m	**14270**
5	DPC	24.69	500	M^3	**12345**
6	Brickwork in superstructure	59.87	4000	M^3	**239480**
7	Smooth plaster	454.65	300	Sq m	**136395**
8	RCC slab 0.12m thick	18.75	9000	M^3	**168750**
				Total =	**803567**

8.1.2 Sustainable Design (Design of Anganwadi):





DESIGN NAME:	Anganwadi
PREPARED BY:	Joshi Rutvik Vijay, Sunil Kumar Prajapat
PROJECT NAME:	Vishwakarma Yojana Phase-VIII Kubadthal, Ahmedabad
INSTITUTE NAME:	Hasmukh Goswami College of Engineering
UNIVERSITY NAME:	Gujarat Technological University

Measurement sheet of Anganwadi

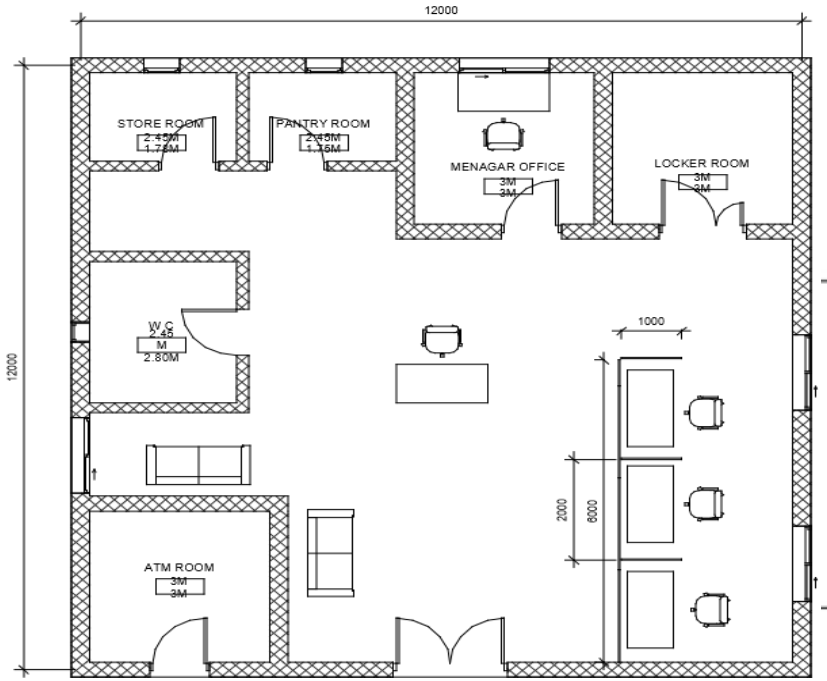
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	28	0.90	0.80	**20.16 m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	28	0.90	0.20	**5.04 m^3**
3	Brick work in foundation &plinth					
	1st footing	1	28.6	0.60	0.20	3.43
	2nd footing	1	28.8	0.50	0.20	2.88
	3rd footing	1	29	0.40	0.20	2.32
	4th footing	1	29.2	0.30	0.20	7.0
					Total	**15.63 m^3**
4	Flooring 0.10m thick.(1:3:6)					
	Room 1	1	3.2	2.7	0.10	0.864
	Room 2	1	3.2	2.7	0.10	0.864
	W C	1	1.7	1.3	0.10	0.221
					Total	**1.94 m^3**
5	DPC	1	29.2	0.30	0.10	**0.876 m^3**
6	Brickwork in superstructure	1	29.2	0.30	3	**25.40 m^3**
7	Deduction for door/window					
	Door	3	1.10	0.30	2.10	2.07
	Window	5	1.20	0.30	1.40	2.52
						(-)4.59
	Deduction for lintel 0.10m thick (1:1.5:3)					

	Door	3	1.40	0.30	0.10	0.12
	Window	5	1.50	0.30	0.10	0.25
						(-)0.35
						(-)4.94
					Total	**20.46 m^3**
8	Smooth plaster inside	1	30.8		3.0	92.4
	Smooth plaster outside	1	25.2		3.0	75.6
					Total	**168 m^3**
9	RCC slab 0.12m thick	1	9.3	3.3	0.12	**3.68 m^3**

Abstract Sheet of Anganwadi

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	20.16	100	M^3	**2016**
2	Cement concrete in foundation (PCC1:4:8)	5.04	3500	M^3	**17640**
3	Brick work in foundation &plinth	15.63	4000	M^3	**62520**
4	Flooring 0.10m thick.(1:3:6)	1.94	1000	Sq m	**1949**
5	DPC	0.87	500	M^3	**438**
6	Brickwork in superstructure	20.46	4000	M^3	**81840**
7	Smooth plaster	168	300	Sq m	**50400**
8	RCC slab 0.12m thick	3.68	9000	M^3	**33120**
				Total =	**250000 Rs**

8.1.3 Socio-Cultural design (Design of Bank):



PLAN

DESIGN NAME:	Bank
PREPARED BY:	Joshi Rutvik Vijay, Sunil Kumar Prajapat
PROJECT NAME:	Vishwakarma Yojana Phase-VIII Kubadthal, Ahmedabad
INSTITUTE NAME:	Hasmukh Goswami College of Engineering
UNIVERSITY NAME:	Gujarat Technological University

Measurement sheet of Bank

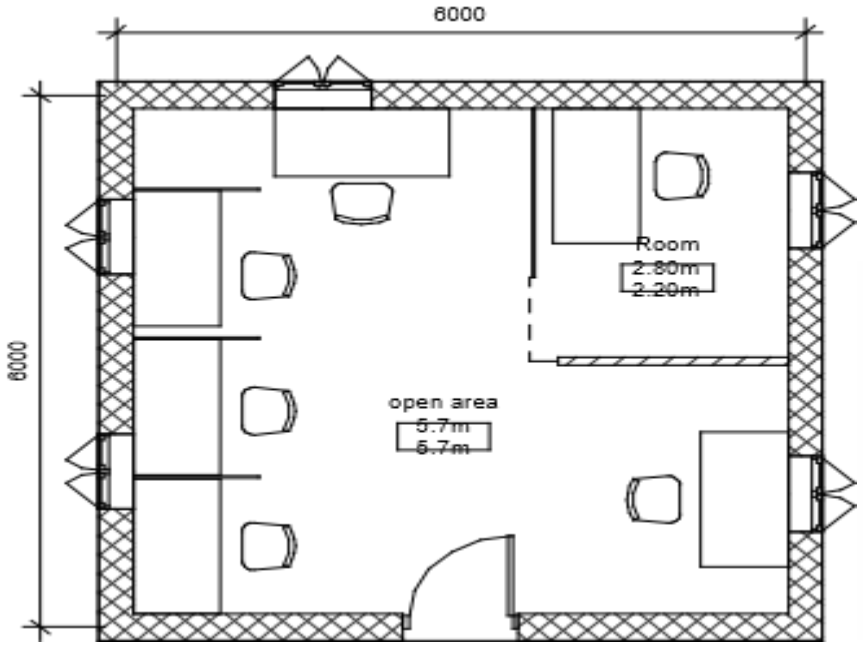
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	77.65	0.90	0.80	**55.90 m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	77.65	0.90	0.20	**13.97 m^3**
3	Brick work in foundation &plinth					
	1st footing	1	79.45	0.60	0.20	9.53
	2nd footing	1	80.05	0.50	0.20	8.00
	3rd footing	1	80.65	0.40	0.20	6.45
	4th footing	1	81.25	0.30	0.80	19.5
					Total	**43.48m^3**
4	Flooring 0.10m thick					
	Locker room	1	3.0	3.0	0.10	0.9
	Manager room	1	3.0	3.0	0.10	0.9
	Pantry room	1	2.45	1.75	0.10	0.42
	Store room	1	2.45	1.75	0.10	0.42
	W c	1	2.80	2.45	0.10	0.68
	ATM	1	3.0	3.0	0.10	0.9
	Open area	1	9.7	13.5	0.10	13.09
					Total	**17.31m^3**
5	DPC	1	81.05	0.30	0.05	**81.4m^3**

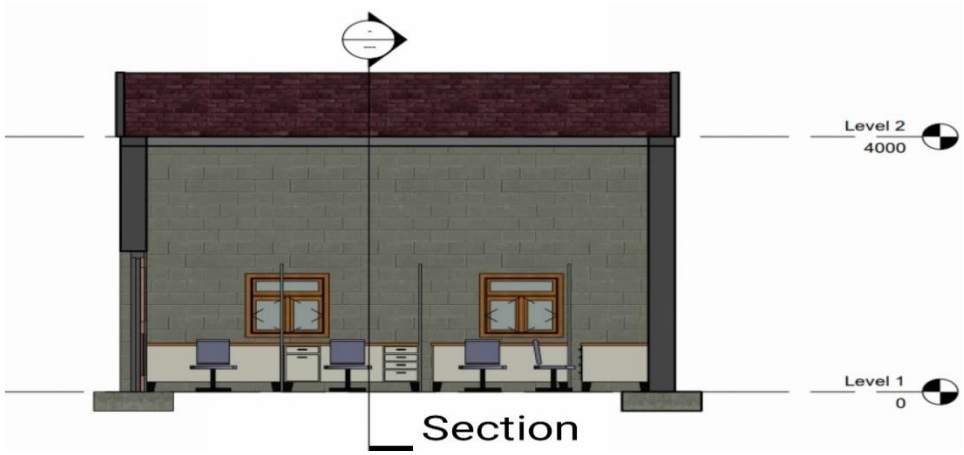
6	Brickwork in superstructure	1	81.05	0.30	3	**70.51m^3**
7	Deduction for door/window					
	Door1	2	2.0	0.30	2.10	3.3
	Door2	5	1.10	0.30	2.10	3.46
	Window1	4	1.00	0.30	1.00	1.20
	Window2	3	1.20	0.30	1.40	1.51
						(-)9.47 m^3
	Deduction for lintel 0.10m thick (1:1.5:3)					
	Door1	2	2.0	0.30	0.10	0.12
	Door2	5	1.10	0.30	0.10	1.75
	Window1	4	1.00	0.30	0.10	0.12
	Window2	3	1.20	0.30	0.10	2.09
						(-)2.09
						(-)11.56
					Total=	**58.95m^3**
8	Smooth plaster inside	1	111.6		3.0	334.8
	Smooth plaster outside	1	49.2		3.0	147.6
					Total	**482.4m^3**
9	RCC slab 0.12m thick	1	12.3	12.3	0.12	**18.15m^3**

Abstract Sheet of Bank

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	55.90	100	M^3	**5590**
2	Cement concrete in foundation (PCC1:4:8)	13.97	3500	M^3	**48895**
3	Brick work in foundation &plinth	43.48	4000	M^3	**173920**
4	Flooring 0.10m thick.(1:3:6)	17.31	1000	Sq m	**17310**
5	DPC	81.4	500	M^3	**40700**
6	Brickwork in superstructure	58.95	4000	M^3	**235800**
7	Smooth plaster	482.4	300	Sq m	**144720**
8	RCC slab 0.12m thick	18.15	9000	M^3	**163350**
				Total =	**830285**

8.1.4 Social design (Design of Cyber Café):





DESIGN NAME:	Cyber Cafe
PREPARED BY:	Joshi Rutvik Vijay, Sunil Kumar Prajapat
PROJECT NAME:	Vishwakarma Yojana Phase-VIII Kubadthal, Ahmedabad
INSTITUTE NAME:	Hasmukh Goswami College of Engineering
UNIVERSITY NAME:	Gujarat Technological University

Measurement sheet of Cyber Café

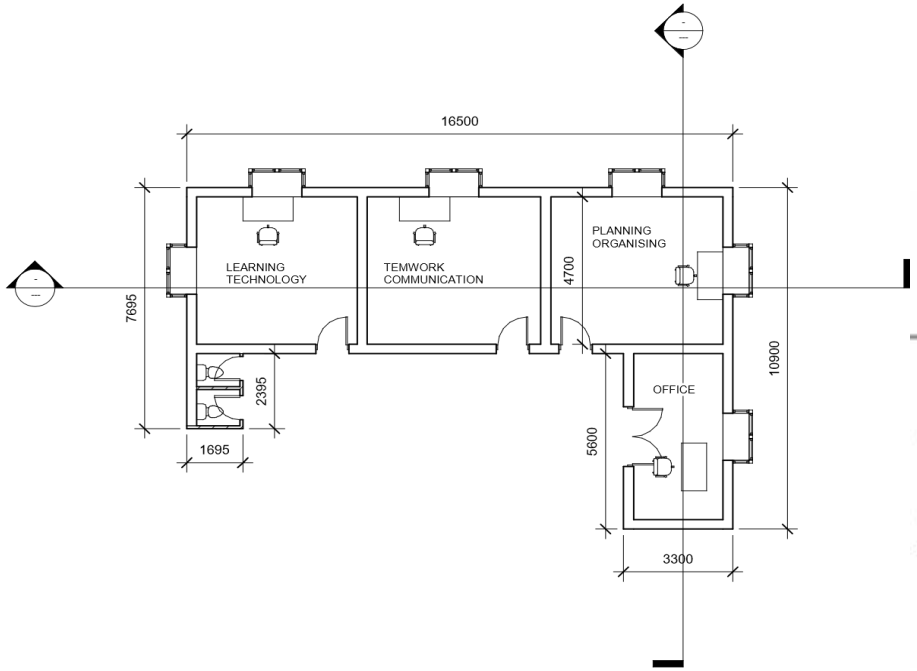
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	25.75	0.90	0.80	**18.54 m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	25.75	0.90	0.20	**4.63 m^3**
3	Brick work in foundation &plinth					
	1st footing	1	25.9	0.60	0.20	3.10
	2nd footing	1	25.95	0.50	0.20	2.59
	3rd footing	1	26	0.40	0.20	2.08
	4th footing	1	26.05	0.30	0.80	6.25
					Total	**14.02 m^3**
4	Flooring 0.10m thick.(1:3:6)	1	5.7	5.7	0.10	**3.24 m^3**
5	DPC	1	26.05	0.3	0.05	**0.39075 m^3**
6	Brickwork in superstructure	1	26.05	0.30	3	**22.66 m^3**
7	Deduction for door/window					
	Door	1	1.10	0.30	2.10	(-)0.693
	Window	5	1.20	0.30	1.40	(-)2.52
						(-)3.213

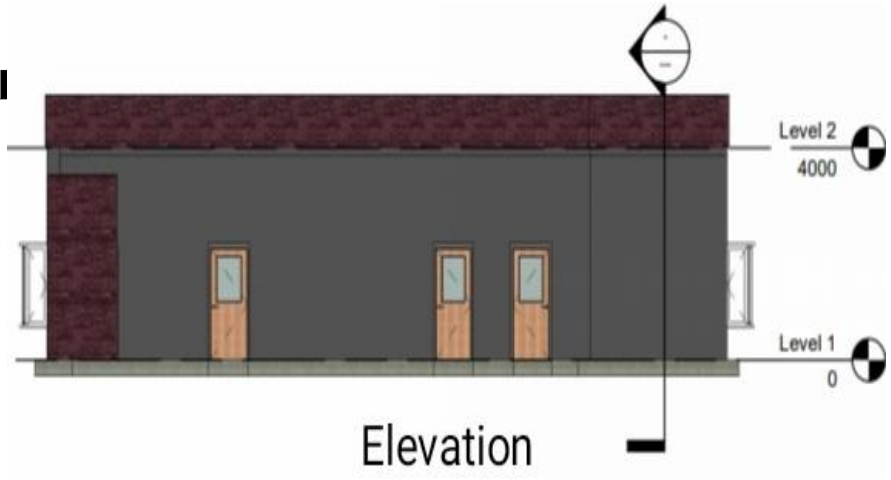
	Deduction for lintel 0.10m thick (1:1.5:3)					
	Door	1	1.40	0.30	0.10	(-)0.04
	Window	5	1.50	0.30	0.10	(-)0.22
						(-)0.26
						(-)3.48 m^3
					Total	**19.18 m^3**
8	Smooth plaster inside	1	22.8		3.0	68.4
	Smooth plaster outside	1	25.2		3.0	75.6
					Total	**140.79 m^3**
9	RCC slab 0.12m thick	1	6.3	6.3	0.12	**4.76 m^3**

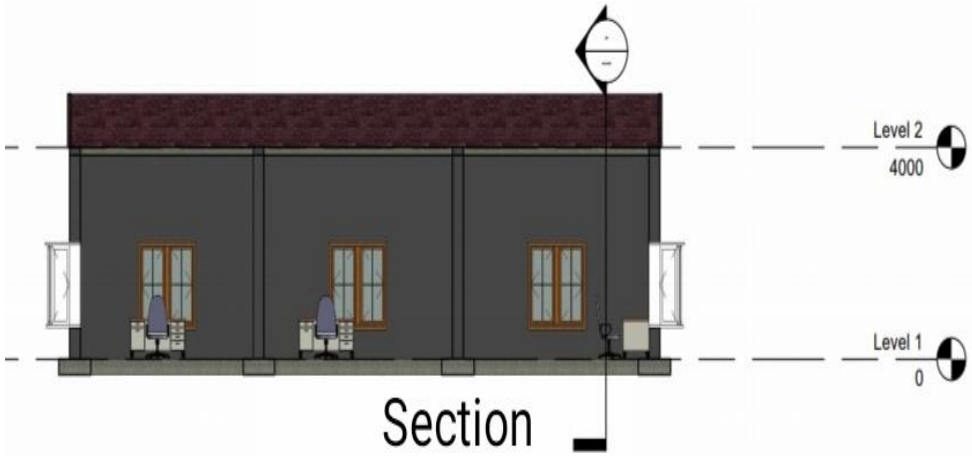
Abstract Sheet of Cyber Café

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	18.54	100	M^3	**1854**
2	Cement concrete in foundation (PCC1:4:8)	4.63	3500	M^3	**16205**
3	Brick work in foundation &plinth	14.02	4000	M^3	**56080**
4	Flooring 0.10m thick.(1:3:6)	3.24	1000	Sq m	**3240**
5	DPC	0.39	500	M^3	**195**
6	Brickwork in superstructure	19.18	4000	M^3	**76720**
7	Smooth plaster	140.79	300	Sq m	**42237**
8	RCC slab 0.12m thick	4.76	9000	M^3	**42840**
				Total	**239371 Rs**

8.1.5 Heritage Village design (Design of Skill Development Class):







DESIGN NAME:	Skill Development Class
PREPARED BY:	Joshi Rutvik Vijay, Sunil Kumar Prajapat
PROJECT NAME:	Vishwakarma Yojana Phase-VIII Kubadthal, Ahmedabad
INSTITUTE NAME:	Hasmukh Goswami College of Engineering
UNIVERSITY NAME:	Gujarat Technological University

Measurement sheet of Skill Development Class

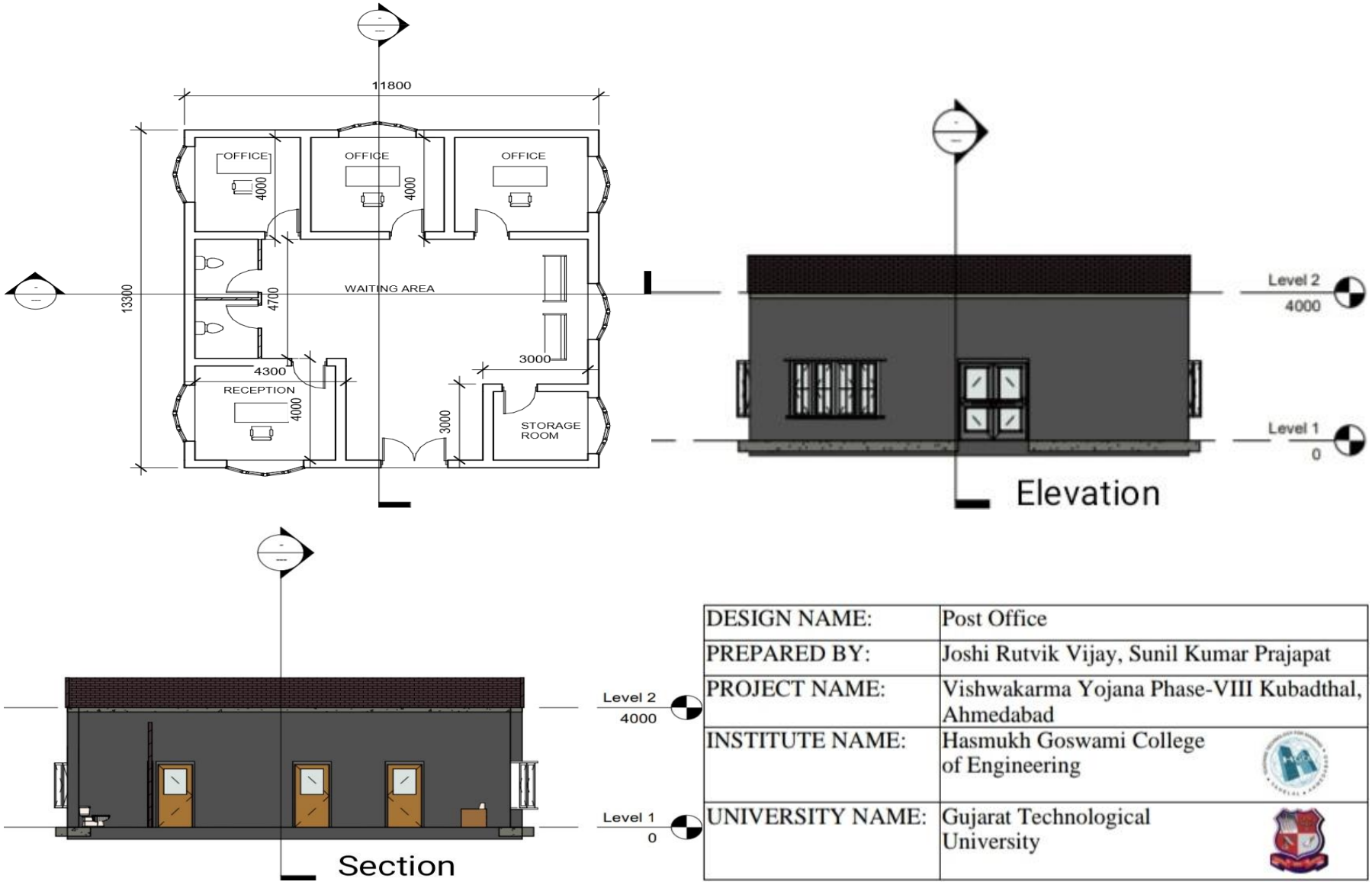
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	66.44	0.90	0.80	**47.83m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	66.44	0.90	0.20	**11.95m^3**
3	Brick work in foundation &plinth					
	1st footing	1	64.34	0.60	0.20	7.72m^3
	2nd footing	1	64.69	0.50	0.20	6.46m^3
	3rd footing	1	65.04	0.40	0.20	5.20m^3
	4th footing	1	65.39	0.30	0.80	15.69m^3
					Total	**35.07m^3**
4	Flooring 0.10m thick.					
	1 learning technology	1	5.1	4.7	0.10	2.39m^3
	2temwork communication	1	5.1	4.7	0.10	2.3m^3
	3planning &organizing	1	5.1	4.7	0.10	2.39m^3
	4 office	1	5.6	3.3	0.10	1.84m^3
	5 WC	1	2.3	1.6	0.10	0.39m^3
					Total	**9.28m^3**

5	DPC 0.05m thick	1	65.39	0.30	0.05	**0.980m^3**
6	Brick work for superstructure	1	65.39	0.30	3.0	**68.69m^3**
7	Deduction for door & window					
	Door1	5	1.10	0.30	2.10	3.75m^3
	Door2	1	2.8	0.30	2.10	2.94m^3
	Window	6	1.20	0.30	1.40	3.02m^3
						(-)9.71m^3
	Deduction of linter 0.10m thick.					
	Door1	5	1.10	0.30	0.10	0.165m^3
	Door2	1	1.8	0.30	0.10	0.59m^3
	Window	6	1.20	0.30	0.10	2.26m^3
						(-)3.01m^3
					Total	**56.24m^3**
8	Plastering					
	1 outside	1	47.8		3.0	143.4
	2 Inside	1	91.4		3.0	274.2
					=	417.6m^
	Deduction for door & window					(-)12.72m^3
					Total	**404.88m^3**
9	RCC slab 0.12m thick	1	Area	96.03	0.12	**11.52m^3**

Abstract Sheet of Skill Development Class

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	47.83	100	M^3	4783
2	Cement concrete in foundation (PCC1:4:8)	11.95	3500	M^3	41825
3	Brick work in foundation &plinth	35.67	4000	M^3	140280
4	Flooring 0.10m thick.(1:3:6)	9.28	1000	Sq m	9280
5	DPC	0.98	500	M^3	490
6	Brickwork in superstructure	56.24	4000	M^3	224960
7	Smooth plaster	404.88	300	Sq m	121464
8	RCC slab 0.12m thick	11.52	9000	M^3	10380
				Total =	**646762**

8.1.6 Smart Village design (Design of Post Office):



Measurement sheet of Post Office

Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	84.0	0.90	0.80	**60.48m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	84.0	0.90	0.20	**15.12m^3**
3	Brick work in foundation &plinth					
	1st footing	1	81.6	0.60	0.20	9.79m^3
	2nd footing	1	82.0	0.50	0.20	8.2m^3
	3rd footing	1	82.4	0.40	0.20	6.5m^3
	4th footing	1	82.3	0.30	0.80	19.87m^3
					Total	**44.36m^3**
4	Flooring 0.10m thick.					
	Office1	1	4.0	3.5	0.10	1.4
	Office2	1	4.0	3.5	0.10	1.4
	Office3	1	4.0	3.5	0.10	1.4
	Reception	1	4.3	4.0	0.10	1.72
	Storage room	1	3.0	3.0	0.10	0.9
	Waiting area	1	Total area	64.06	0.10	6.40
	WC	1	4.7	2.0	0.10	0.94
					Total	**14.16m^3**

5	DPC 0.05m thick	1	82.8	0.30	3.0	**74.52m^3**
6	Brick work for superstructure	1	82.8	0.30	3.0	**74.52m^3**
7	Deduction for door & window					
	Door1	7	1.10	0.30	2.10	4.851
	Door2	1	2.8	0.30	2.10	1.764
	Window	6	2.0	0.30	1.40	5.04
						(-)11.65
	Deduction for lintel 0.10m thick					
	Door1	7	1.10	0.30	0.10	0.23
	Door2	1	2.8	0.30	0.10	0.084
	Window	6	2.0	0.30	0.10	0.36
						(-) 12.32
					Total =	**62.20m^3**
8	Plaster					
	1outside	1	79		3.0	237
	2inside	1	99.6		3.0	298.8
					=	535.8m^3
	Deduction for door & window					(-)12.32m^3
					Total plaster	**523.48m^3**
9	RCC slab 0.12m thick.	1	11.8	11.8	0.12	**16.70m^3**

Abstract Sheet of Post Office

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	60.48	100	M^3	6048
2	Cement concrete in foundation (PCC1:4:8)	15.12	3500	M^3	52920
3	Brick work in foundation &plinth	44.36	4000	M^3	177440
4	Flooring 0.10m thick.(1:3:6)	14.16	1000	Sq m	14160
5	DPC	1.24	500	M^3	620
6	Brickwork in superstructure	62.2	4000	M^3	248800
7	Smooth plaster	523.48	300	Sq m	157044
8	RCC slab 0.12m thick	16.70	9000	M^3	150300
				Total =	**807332**

8.1.2 Reason for Students Recommending this Design:

Prathmik Arogya Kendra: Health centers deliver care to the Villagers vulnerable individuals and families.

Anganwadi: Children in the age group of 0-6 years are giving activities by anganwadi centre, for children future Anganwadi needed.

Bank: Banks play an important role in the economy for offering a service for villages's people wishing to save.

Cyber Café: To the community and villagers by, the benefits of the internet café are to put users in touch with the global market and happenings in the world. The internet is also important these days to communication. Finally, the internet café is another economic benefit to the community.

Skill Development Class: Skill development is a vital tool to empower people, to safeguard their future and for the overall development of an individual.

Post Office: The post office accepts telephone bill payments and taxes and other dues to government bodies such as panchayats.

8.1.3 About designs Suggestions / Benefit of the villagers:

Prathmik Arogya Kendra: A strong, accessible primary health care system keeps people well and out of hospital by supporting them to manage their health issues in the community and at home.

Anganwadi: Anganwadi is a government-sponsored child-care and mother-care development programmes in India at the village level. It caters to children in the 0-6 age group.

Bank: A new bank branch opens in a village, it needs facilities such as 24-hour electricity supply, internet connection, new staff etc. This creates employment and the villagers can also benefit from facilities of electricity and internet.

Cyber Café: Cyber cafes offer that computer, software, hardware and Internet connection that villagers will need because of nowadays most of work need internet and Computers.

Skill Development Class: The benefits of Skill Development include increased business profits, improved performance, improved accuracy & quality, improved communication, complies with rules & regulations, improved recruitment & career opportunities, and development of good customer relations.

Post Office: Over the years, the functions have expanded to include the booking and insurance of parcels and postal articles, money orders, registered post and premium mail services such as Speed Post, Express Parcel, Greeting Post, Logistics Post, ePost and others.

CHAPTER 9. PROPOSING DESIGNS FOR FUTURE DEVELOPMENT OF THE VILLAGE FOR THE PART-II DESIGN

In Our Village Kubadthal, Ahmedabad we make gap analysis of all Facilities.
Based on study of gap analysis we design various structures in Village.

We give Design in this semester is below

1. Prathmik Arogya kendra
2. Skill development classes
3. Cyber café
4. Anganwadi
5. Bank
6. Post office

We give Design in next semester is below

- Government Grocery Shop, Design of water tank, Design of Solid Waste Management System Rain Water Harvesting on community hall , Public Toilet Block , Solar based water distribution pump station , Public Library , Social Community Hall , Over headed tank , Maintenance of School building , Bus station.

- Future scope would be study over other different urban amenities that would be sustainable in rural areas of Daskroi.
- The village still lacks in maintenance of the building and various structures. Taking this into consideration the estimation of its rehabilitation with other necessary amenities will be designed in the next semester.
- This all amenities may stop migration from the village towards the urban area.
- By performing this project we are able to reduce the pressure on the urban area. As well as this amenities are very much helpful for overall development of the village.

Final Design for Part-2 is shown below and in chapter-13:

- Community hall
- Public library
- Gram Panchayat
- Grocery Shop
- Public toilet
- Road

CHAPTER 10. CONCLUSION OF THE ENTIRE VILLAGE ACTIVITIES OF THE PROJECT

After carrying out survey and comparing the existing facilities of village with the basic amenities needed by a village based on population norms given by government of India and personal interview with many of the villagers of Kubadthal and meeting with Sarpanch and Talati,
We finalize the remaining amenities required for fulfil basic need of this village, some of the facilities are designed and complete estimate is prepared.
Village needs a good place for the recreational activities so proposal of new walk way garden is given.

All designed are carried out the overall development of the village which cover physical infrastructure facilities, social infrastructure and socio-cultural infrastructure facilities.
A point is considered while designing all amenities.

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

The main objective is "All the Village Developing with Rural Solution but the all Smart Urban Facilities may have". To remember this objective to developed smart village facilities in suitable manner and reduce the migration and pollution in environment.

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

Benefits in Future :

- Create awareness to keep village clean
- Train women in that village so that they can teach children in school
- Wi-Fi system available in the village
- Camera system is also available in the village
- The project is to provide urban amenities in rural areas and maintaining the rural soul.

CHAPTER 11. REFERENCES

1. Prajapati K.P. ET. All: – "Vishwakarma Yojana an Approach towards Rurbanisation VALAD Village"

2. IJIRST –International Journal for Innovative Research in Science & Technology| Volume 2 | Issue 11 |

3. Chavda N.K. ET. All: – "Vishwakarma Yojana an Approach towards Rurbanisation PANSAR Village"

IJIRST –International Journal for Innovative Research in Science & Technology| Volume 2 | Issue 11 |

3. http://censusindia.gov.in - Census department website

4. UDPFI Guidelines

5. Schedule of rate

6. http://vy.gtu.ac.in - Vishwakarma literatures

7. http://theconstructor.org/practical-guide/rate-analysis

8. Google maps

• Jha, Ugra Mohan, et.al, (1995): Rural Development in India: Problems and Prospects, Anmol Publications Pvt. Ltd, New Delhi.

• Kothari, C.R. (1991): Rural Development, Strategy for Rural Development. Vol. I New Delhi, Manak Publications Pvt. Ltd. • Science Tech Entrepreneur, "Green Building Materials for Low Cost Housing," 2009.

• P. Bhattarai, "Straw Bale in Building Construction and Its Future in India," International Journal for Modern Engineering Research, Vol. 2, No. 2, 2012, pp. 422-426.

• Water and Sanitation Program. Economic impacts of inadequate sanitation in India (flagship report for the World Bank). New Delhi: World Bank; 2011 [cited 2013Jun30]. Available from:http://www.wsp.org/sites/wsp.org/files/publications/WSPesiindia

• Performance Assessment System (PAS) Project. Workshop report: innovations for scaling up to citywide sanitation, Ahmedabad, India, 2012 Oct 16-17; Ahmedabad: PAS Project, CEPTUniversity;2013[cited2013Jun30]. Available from http://www.pas.org.in/Portal/document/ResourcesFiles/ReportSanitation%20Workshop.

CHAPTER 12. ANNEXURE

12.1 SCAN COPY OF IDEAL VILLAGE (PUNSARI)

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

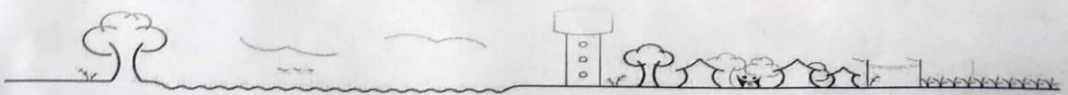
Name of Village:	Punsari
Name of Taluka:	Bayad
Name of District:	Sabarkantha
Name of Institute:	Hasmukh Goswami College of Engg.
Nodal Officer Name & Contact Detail:	Prof. Srinath Karli Mo. 9979895667
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sarpanch = Synand Ben Patel
Date of Survey:	

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	4681	1887	2000	
ii)	2011	5500	2221	2456	

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	1395.65 hector
	Forest Area (In hect.)	
	Agricultural Land Area (In hect.)	45.38 hector
	Residential Area (In hect.)	
	Other Area (In hect.)	
	Water bodies	Top Water Wall Water Tubewell Water
	Nearest Town with Distance:	Himmatnagar (36 Km)



Gujarat Technological University, Ahmedabad, Gujarat

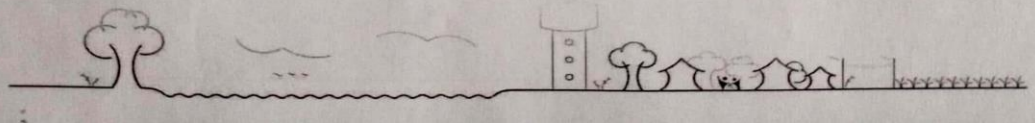
Vishwakarma Yojana: Phase VIII
Techno Economic Survey

3. Occupational Details:

Name of Three Major Occupation groups in Village	1. Aggricultural 2. Home bussiness 3.

4. Physical Infrastructure Facilities:

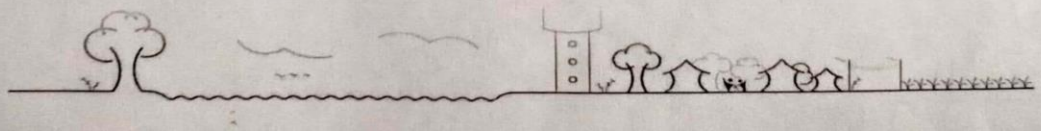
Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated)	Yes	✓		
	• RO Water	Yes	✓		
	• Well (Covered/ Uncovered)	Yes	✓		73
	• Hand pumps	Yes	✓		4
	• Tube well/ Borehole	Yes	✓		5
	• River/ Canal/ Spring/ Lake/ Pond	Yes	✓		
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	✓		
	Underground Sump	Capacity:	✓		
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)	Yes	✓		
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	Yes	✓		
	If Open than Pucca / Kutchcha				
	Whether drain water is discharged directly in to Water bodies/ Sewer plants	Yes	✓		
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	Yes	✓		bitominous
	Main road	Yes	✓		R.C.C
	Internal streets	Yes	✓		R.C.C
	Nearest NH/SH/MDR/ODR Dist. in kms.	Yes	✓		
Suggestions if any:					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No			
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes	✓		GSRTC
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	✓		
Suggestions if any:					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes	✓		
	Power supply for Domestic Use	Yes	✓		
	Power supply for Agricultural Use	Yes	✓		
	Power supply for Commercial Use	Yes	✓		
	Road/ Street Lights	Yes	✓		LED Lights



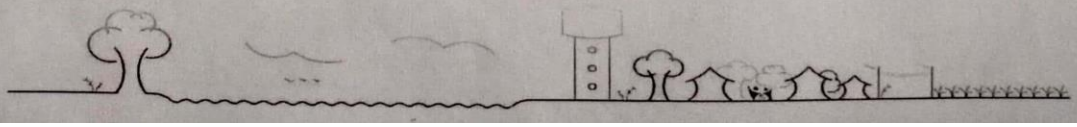
Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

	Electrification in Government Buildings/ Schools/ Hospitals	Yes	✓		
	Renewable Energy Source Facilities (Y/ N)	Yes	✓		Solar ~~Street~~ light
	LED Facilities	Yes	✓		
Suggestions if any:					
H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	Yes	✓		Mobile Toilet
	Location Condition				
	Community Toilet (With bath/ without bath facilities)	Yes	✓		
	Solid & liquid waste Disposal system available				
	Any facility for Waste collection from road	Yes	✓		
Suggestions if any:					
I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	Yes	✓		
Suggestions if any:					
J.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Yes	✓		

5. Social Infrastructural Facilities:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks



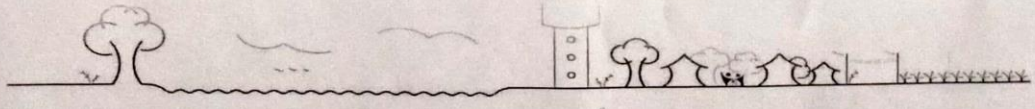
Gujarat Technological University, Ahmedabad, Gujarat

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:		✓		
	Private Clinic/Private Hospital/ Nursing Home		1	✓	
	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		✓		1
	Primary School		✓		1
	Secondary school		✓		1
	Higher sec. School		✓		1
	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:			✓	



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

	Condition:				
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	Yes	✓		
	Public Garden Location: Condition:	No			
	Village Pond Location: Condition:	Yes			
	Recreation Center Location: Condition:	Yes	✓		
	Cinema/ Video Hall Location: Condition:	No			
	Assembly Polling Station Location: Condition:	-			
	Birth & Death Registration Office Location: Condition:	Yes			
If any of the above Facility is not available in village than approx. distance from village: .....kms.					
Suggestions if any:					
N.	**Other Facilities**				
	Post-office	Yes	✓		1
	Telecommunication Network/ STD booth	Yes	✓		1

	General Market	Yes	✓		1
	Shops (Public Distribution System)	Yes	✓		
	Panchayat Building	Yes	✓		
	Pharmacy/Medical Shop	Yes	✓		
	Bank & ATM Facility	Yes	✓		2
	Agriculture Co-operative Society	Yes	✓		
	Milk Co-operative Soc.	Yes	✓		2
	Small Scale Industries	Yes	✓		
	Internet Cafes/ Common Service Center/Wi Fi	Yes	✓		
	Other Facility	Yes	✓		C.C.T.V
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	Yes			Solar Street light.
P.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	Yes	✓		
Q.	Any Other				

7. **Data Collection From Village**

Village Base Map Available: Hard Copy/Soft Copy	

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	Yes	
2.	Additional Information/ Requirement	NO	
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 ?		

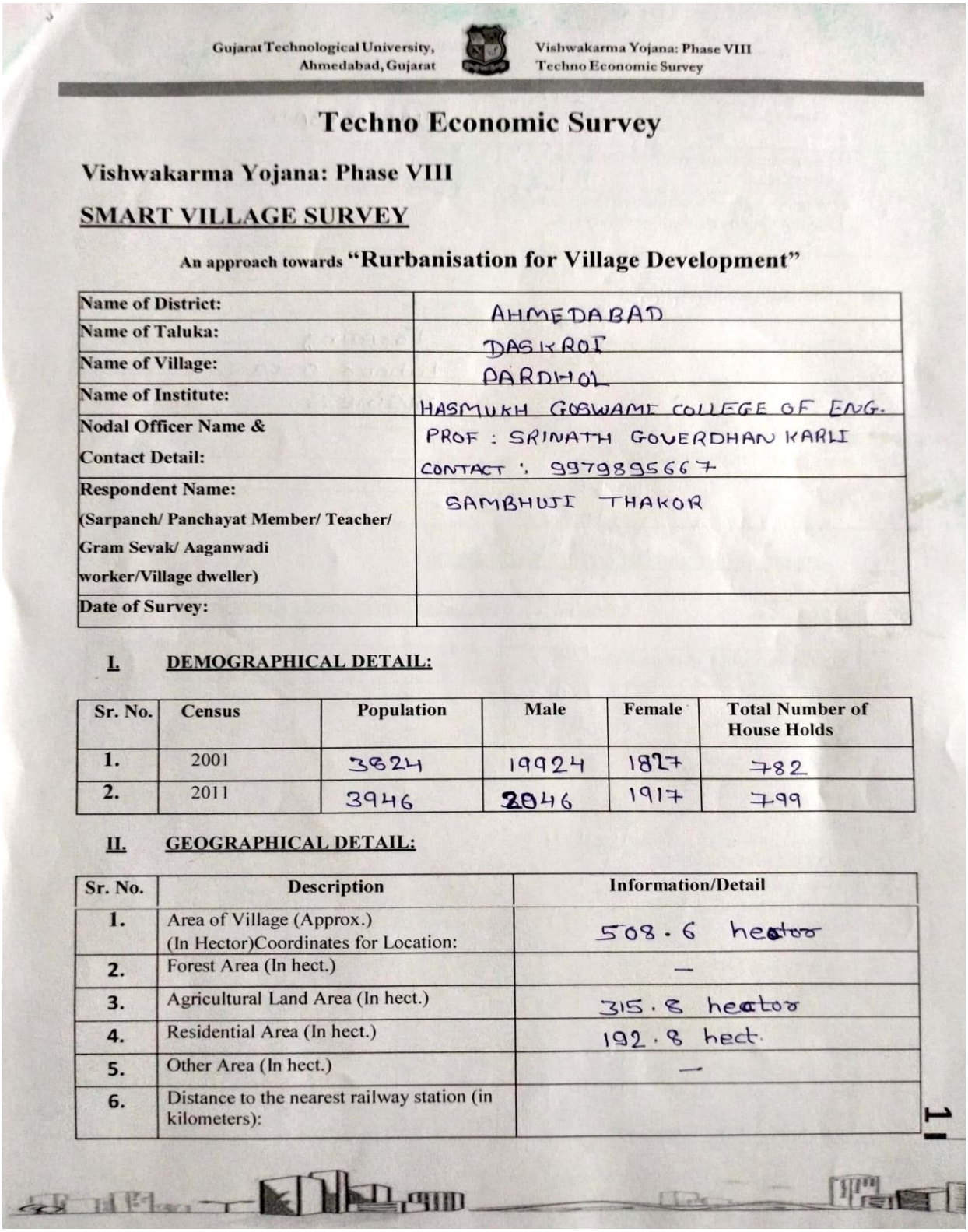
Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:
Ms.Darshana Chauhan,Project Co-ordinator
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in

Himanshu Patel
Proprietor

16

12.2 SCAN COPY OF SMART VILLAGE (PARDHOL)



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

SMART VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Name of District:	AHMEDABAD
Name of Taluka:	DASKROI
Name of Village:	PARDHOL
Name of Institute:	HASMUKH GOSWAMI COLLEGE OF ENG.
Nodal Officer Name & Contact Detail:	PROF : SRINATH GOVERDHAN KARLI CONTACT : 9979895667
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	SAMBHUJI THAKOR
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	3824	19924	1827	782
2.	2011	3946	2046	1917	799

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	508.6 heator
2.	Forest Area (In hect.)	—
3.	Agricultural Land Area (In hect.)	315.8 heator
4.	Residential Area (In hect.)	192.8 hect.
5.	Other Area (In hect.)	—
6.	Distance to the nearest railway station (in kilometers):	

1

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

III. OCCUPATIONAL DETAILS:

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

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

21

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 100000 lit	✓		
	Underground Sump	Capacity: 50000	✓		
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	 YES – –	 ✓ ✗ ✗		
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	YES	✓		
	Main road	YES	✓		
	Internal streets	YES	✓		
	Nearest NH/SH/MDR/ODR Dist. in kms.	15 KM			
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	NO CNARODA-			
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	YES (1.5KM)	✓		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	YES	✓		
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt. More than 6hrs	✓		

3

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

	Power supply for Domestic Use	24 hors	✓		
	Power supply for Agricultural Use	8 hors	✓		
	Power supply for Commercial Use	24 hors	✓		
	Road/ Street Lights	YES	✓		
	Electrification in Government Buildings/ Schools/ Hospitals	24 hors	✓		
	Renewable Energy Source Facilities (Y/ N)	NO			
	LED Facilities	YES	✓		
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	YES (10 NO)	✓		
	Location Condition	Unhygiene			
	Community Toilet (With bath/ without bath facilities)	YES (without bath)	✓		
	Solid & liquid waste Disposal system available	NO			
	Any facility for Waste collection from road	NO			
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL OTHER (SPECIFY)	Well 4 Tube - well	✓		
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Both (85% Pucca, 15%	✓		

4

Gujarat Technological University, Ahmedabad, Gujarat

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	YES	✓		1 CHC
	District/ Govt. Hospital	YES	✓		
	Govt. Dispensary				
	Private Clinic	YES	✓		
	Private Hospital/	YES	✓		1 Private clinic
	Nursing Home				
	AYUSH Health Facility				
	sonography /ultrasound facility				
	If any of the above Facility is not available in village than approx. distance from village: 2.5 .kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	YES	✓		
	Primary School	YES	✓		
	Secondary school	YES	✓		
	Higher sec. School	NO			
	ITI college/ vocational Training Center	NO			
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	NO			
	If any of the above Facility is not available in village than approx. distance from village: 2.5 ..kms.				

5

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	YES	✓		1) Private
	Public Library (With daily newspaper supply: Y/N)	NO			
	Public Garden	NO			
	Village Pond	YES	✓		
	Recreation Center	NO			
	Cinema/ Video Hall	NO			
	Assembly Polling Station	NO			
	Birth & Death Registration	YES	✓		

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

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	YES	✓		
	Telecommunication Network/ STD booth	NO			
	General Market	NO			
	Shops (Public Distribution System)	YES	✓		
	Panchayat Building	YES	✓		
	Pharmacy/Medical Shop	NO			
	Bank & ATM Facility	YES	✓		1 bank 1 ATM
	Agriculture Co-operative Society	YES			
	Milk Co-operative Soc.	YES			
	Small Scale Industries	NO			
	Internet Cafes/ Common Service Center/Wi Fi	NO			
	Youth Club	NO			
	Mahila Mandal	NO			

16

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

Suggestions if any:

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

7

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

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

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks

8

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana Phase VI
Techno Economic Survey

Recent Projects going on for Development of Village	-Pradhan Mantri Yojna ; -Vikrang Sahay
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)	Yes	- At Anganvadi ; - At bank - At primary health centre
2.	Additional Information/ Requirement	No	

9. Smart Village Proposal Design

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Is their Any thing from the vinage enhancement possible?	Yes (Greenhouse building)	

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

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

સરપંચ
પરઠોલ ગ્રામ પંચાયત
દસ્ક્રોઈ, જિ. અમદાવાદ.

12.3 SCAN COPY OF ALLOCATED VILLAGE (KUBADTHAL)

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Name of District:	Ahmedabad
Name of Taluka:	Daskroi
Name of Village:	kubadthal
Name of Institute:	Hasmukh Goswami College of Eng.
Nodal Officer Name & Contact Detail:	PROF: Srinath Goverdhan Kaoli Contact : 9979895667
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Vishnuji Rumalji Thakor
Date of Survey:	28/9/2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001		1750	1500	
2.	2011	3691	1928	1763	750

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	954.63 Hectors.
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):	Ahmedabad In at 19 KM

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

7.	Name of Nearest Town with Distance:	Ahmedabad (23 KM)
8.	Distance to the nearest bus station (in kilometers):	In the village
9.	Whether village is connected to all road for the any facility or town or City?	Yes, Ahmedabad Indore-Highway.

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Main Farmers
	2.	working persons
	3.	Animal was

Major crops grown in the village:	1.	Paddy, Rice, wheat
	2.	wheat
	3.	vegetables

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
1.	**PIPED WATER**	Through water Tank	✓	✓	
	Piped Into Dwelling				
	Piped To Yard/Plot				
	Public Tap/Standpipe				
	Tube Well Or Bore Well				
2.	**DUG WELL**			✓	no such wells are available
	Protected Well				
	Un Protected Well				
3.	**WATER FROM SPRING**			✓	Spring are Not available
	Protected Spring				
	Unprotected Spring				
	Rainwater				
	Tanker Truck				
	Cart With Small Tank				
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/**	- Narmda Canal	✓		Through Lake is seasonal
	Irrigation Channel	- Lake	✓		Therefore water is taken from private bore & canal
	Bottled Water	- Private bore	✓		
	Hand Pump				

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

	Other(Specify)**Lake/ Pond**	Lake	✓		
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 75 kl		✓	
	Underground Sump	Capacity: 60 kl	✓		
Suggestions if any:	1 gallon = 5 liters				
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1	For sewage	✓		
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Asphalt Road	✓		
	Main road	Asphalt Road	✓		Ahmedabad Indore-NH
	Internal streets	R.C.C. Road	✓		
	Nearest NH/SH/MDR/ODR Dist. in kms.	Asphalt Road NH2 KM	✓		Ahmedabad Indore NH-59 2KM from village
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Ahmedabad		NO	17-20 KM
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Kubadthal	Yes		Bus Station in working condition.
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Auto and Private vehicles	Yes		
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Gout. Cuttor Gujarat vij company	Yes		More than 6 hrs

3

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

	Power supply for Domestic Use	24 hrs			
	Power supply for Agricultural Use	12 hrs			
	Power supply for Commercial Use	24 hrs			
	Road/ Street Lights	12 hrs			
	Electrification in Government Buildings/ Schools/ Hospitals	24 hrs.			
	Renewable Energy Source Facilities (Y/ N)			NO	No such amenities.
	LED Facilities	Yes	Yes		

Suggestions if any: Every Tuesday for fault in electric line electricity is off and solar lights need to provided.

G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.			NO	Private Toilet at every home
	Location Condition				
	Community Toilet (With bath/ without bath facilities)			NO	
	Solid & liquid waste Disposal system available	Solid	Yes	NO	Through gram Panchayat private disposal system
	Any facility for Waste collection from road		Yes		villagers clear village at time.

Suggestions if any:

H.	**Main Source of Irrigation Facility:**				
	TANK/POND	-	NO		
	STREAM/RIVER	-	NO		
	CANAL	Yes	-		
	WELL	-	NO		Private bore
	TUBE WELL	Yes	-		
	OTHER (SPECIFY)	-	NO		

Suggestions if any: Waterstank also used

I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	All most Pucca	Yes		Ratio of Home is 1.

41

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)		✓		
	Sub-Centre			✓	
	PHC			✓	
	BLOCK PHC			✓	
	CHC/RH			✓	
	District/ Govt. Hospital			✓	
	Govt. Dispensary			✓	
	Private Clinic		✓		
	Private Hospital/ Nursing Home			✓	
	AYUSH Health Facility			✓	
	sonography /ultrasound facility			✓	
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	2	✓		
	Primary School	2	✓		
	Secondary school	1	✓		
	Higher sec. School	1	✓		
	ITI college/ vocational Training Center	0		✓	
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	0		✓	

51

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

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

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

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	design require	Kubath	✓	
	Telecommunication Network/ STD booth	2-Private 2-Panchaye	"	✓	
	General Market		"	-	No
	Shops (Public Distribution System)	50 shops	"	✓	
	Panchayat Building	good	"	✓	
	Pharmacy/Medical Shop	good	"	✓	
	Bank & ATM Facility	1- Bank	"	✓	
	Agriculture Co-operative Society	1 good Condition	"	✓	
	Milk Co-operative Soc.	3 [1- gov 2- Privat	"	✓	
	Small Scale Industries	Woodenand goods	"	✓	
	Internet Cafes/ Common Service Center/Wi Fi		"		No
	Youth Club	For villege	"		No
	Mahila Mandal	For villege	"		No

19

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

17

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources			✓	No such Sources
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System			✓	Not available
3.	Any Other			✓	Khater Fertilizer only

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy			✓	
2.	Recent Projects going on for Development of Village	R.C.C Road Block drainage	✓		
3.	Any NGO working for village development	Made toilet	✓		Almost House Toilet Availad
4.	Any natural calamity in the village during the last one year: EARTHQUAKES				
	FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)			✓	Only due to heavy rain Failure of Crops

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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	water tank Health centre Renovation require	repair work need Renovation needed
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ……N.o…….. FOGGING……N.o…….. Drive was undertaken in the village?	Municipal driver through gram panchayat	

IX. Smart Village / Heritage Details

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

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

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

સરપંચ
કુબડથલ-લાલપુર ગ્રુપ ગ્રામ પંચાયત
તા.દસ્ક્રોઈ, જી.અમદાવાદ.

16

12.4 Gap Analysis

Facilities	Planning Commission/UDPFI Norms	Village Name:	Kubadthal		
		Population:			3691
		Existing	Required as per Norms	Smart Village / Cities / Heritage Future Projection Design	Gap
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	1	0	0	Provided
Primary School	Each Per 2500 population	1	0	0	**1**
Secondary School	Per 7,500 population	1	0	0	**1**
Higher Secondary School	Per 15,000 Population	0	1	0	**-1**
College	Per125,000Population	0	0	0	**0**
Tech. Training Institute	Per 100000 Population	0	1	1	**-1**
Agriculture Research Centre	Per 100000 Population	0	1	1	**-1**
SkillDevelopment Centre	Per 100000 Population	0	1	1	**-1**
Health Facility					
Govt./Panchayat Dispensary or Sub PHC or Health Centre	Each Village	1	0	1	**1**
PHC & CHC	Per 20,000 population	1	0	0	Provided
Child Welfare and Maternity Home	Per 10,000 population	0	0	1	**0**
Multispecialty Hospital	Per 100000 Population	0	1	0	**-1**

Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum & kutcha house)	0	4	3	**-4**
Physical Infrastructure Facilities					
Transportation		**Adequate**	**Inadequate**		
Pucca Village Approach Road	Each village	-	-	-	Provided
Bus/Auto Stand provision	All Villagesconnected by PT (ST Bus, auto)	YES	-	-	**1**
Drinking Water (Minimum 70 lpcd)		**Adequate**	**Inadequate**		
Over Head Tank	1/3 of Total Demand	YES	-	-	**-**
U/G Sump	2/3 of Total Demand	-	-	-	**1**
Drainage Network		**Adequate**	**Inadequate**		
Open	-	YES	-	-	Good Condition
Waste Management System		-	NO	-	Needed
Electricity Network		YES	-		-

Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	0	1	0	Provided
Public Library	Per 15000 Population	0	1	0	Provided
CremationGround	Per 20,000 population	0	1	0	**-1**
Post Office	Per 10,000 population	1	0	0	Provided
Gram Panchayat Building	Each individual/group panchayat	1	0	0	Provided
APMC	Per 100000 Population	0	1	1	**-1**
Fire Station	Per 100000 Population	0	1	1	**-1**
Public Garden	Per village	0	1	1	**-1**
Police post	Per 40,000Population	0	1	0	**-1**
Any Smart Village Design					
NIL					
		ESR cap	102106.6667		
		Sump cap	204213.3333		
		Lat	38.29		

12.5 SUMMARY OF ALL VILLAGES DESIGN AS PART I AND PART II IN TABLE FORMAT

Sr. No.	Village	Discipline	Part I	Part II
1.	Kubadthal	Civil	Prathmik Arogya Kendra	Community Hall
			Skill Development Classes	Govt. Grocery shop
			Cyber Café	Public library
			Anganwadi	Maintenance of Road network
			Bank	Public toilet
			Post Office	CCTV system
2.	Kuha	Civil	Public Toilet	Road
			Auditorium	Play Ground
			Ground Water Recharge Shaft	Activity Hub
			Public library	Mahila mandli
			Government Medical shop	Gate
			Waste Management	Overhead water tank
3.	Kanbha	Civil	Public toilet	Public garden
			RCC road	Sport club
			Library	Arogya kendra
			Super Market	Mahila mandli
			Bus Stand	Rcc road network
			Under Ground Water tank	
4.	Bilasiya	Civil	Public Toilet	Bank
			Public Garden	Bus stop
			Library	Rain water harvesting
			Solar Water Distribution Pump	Grocery store
			Community Hall	Medical store
			P.H.C.	Animal Husbandry

12.6 Drawings (If, required A1, A2, A3 design is not visible then Only):

All the drawings and images are clear and properly specified so we think there no require any other paper drawing that's why not attached paper drawing of any design or figure.

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

- **Summary of Photographs of Kubadthal – Allocated Village**

fig.42 Kubadthal Primary School

Fig.43 Kubadthal village Swaminarayan mandir

Fig.44 Phoenix company in Kubadthal village GIDC

Fig.45 Houses in Kubadthal village

Fig.46 Roads and Internal Village Photos of Kubadthal

12.8 Village Interaction with sarpanch/talati Report with the photograph

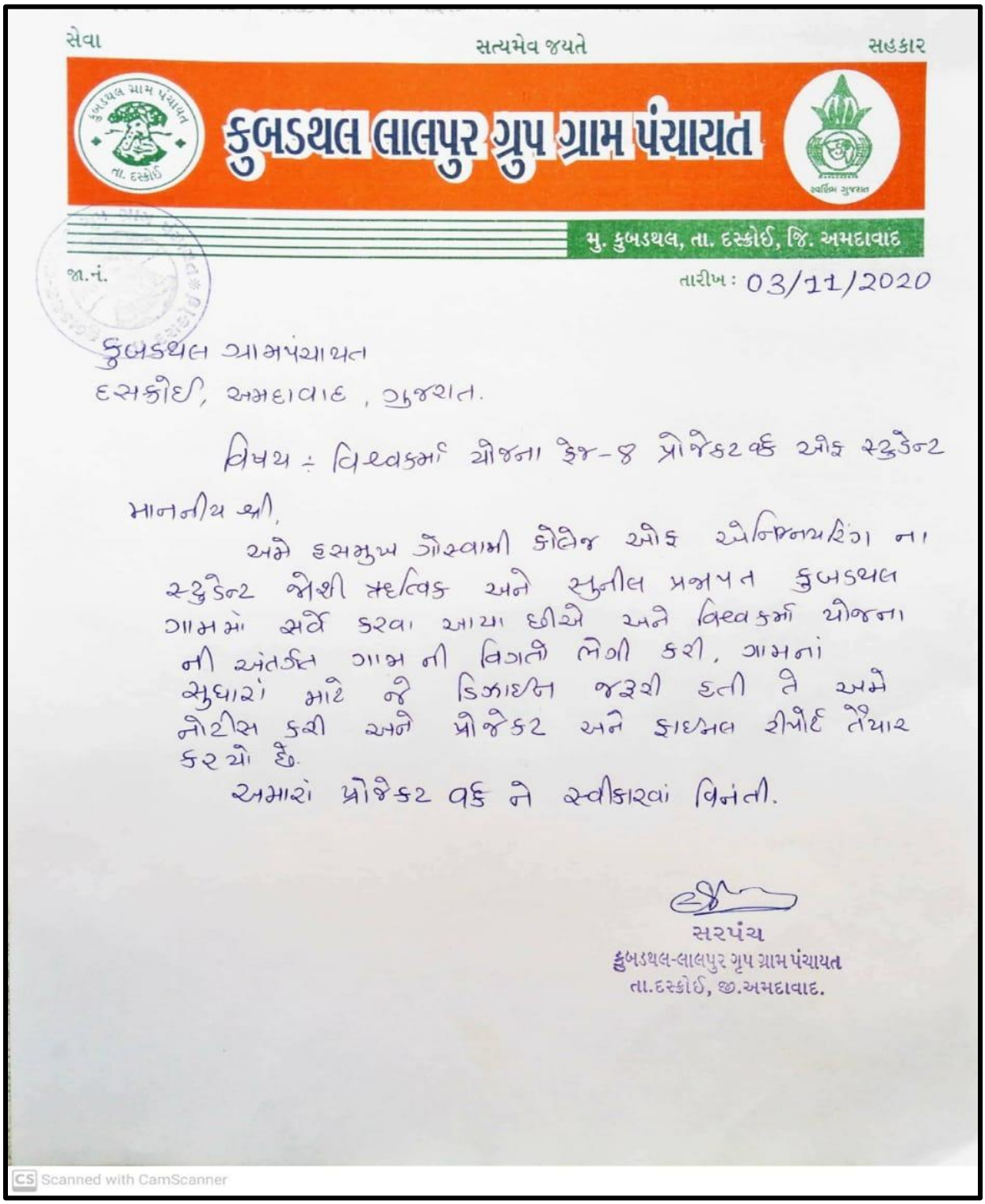
Techno economic survey forms give much information about village by interacting with Talati and Sarpanch. But interaction with village dwellers and observation of village condition is required.

- We visited allocated village Kubadthal and also collect information about ideal village and Smart village Punsari. We met to Sarpanch Vishnuji Rumalji Thakor and Talati of Kubadthal village. They both are very dynamic person and gave us the detailed information and data whenever we required.
- We visited all the internal part of the village and interacted with villagers directly and ask them about the present situation of village. We conducted a Techno-economic survey of Kubadthal village. After all, we analyzed the gap analysis and provided the necessary facilities to village.
- We saw that as per UDPFI norms there are some non-adequate facilities.
- We provide Prathmik Arogya Kendra, Skill development centre, Anganwadi, Bank, Cyber café, post office, for village at primary basis. Then in second stage we will provide open party plot, Biogas Plant, samsan, public library, primary school, public garden.
- We also send our design proposal to Gram Panchayat of Kubadthal Village. In this way we approach to various problems faced by villagers and various criteria given by GTU

(VY section)

Fig.47 Photo with SARPANCH

12.9 Sarpanch Letter giving information about the village development



સેવા સત્યમેવ જયતે સહકાર

કુબડથલ લાલપુર ગ્રુપ ગ્રામ પંચાયત

મુ. કુબડથલ, તા. દસ્ક્રોઈ, જિ. અમદાવાદ

જા.નં. તારીખ : 03/11/2020

કુબડથલ ગ્રામપંચાયત
દસક્રોઈ, અમદાવાદ, ગુજરાત.

વિષય : વિશ્વકર્મા યોજના ફેઝ-૪ પ્રોજેક્ટ વર્ક ઓફ સ્ટુડેન્ટ

માનનીય શ્રી,

અમે હસમુખ ગોસ્વામી કોલેજ ઓફ એન્જિનિયરિંગ ના સ્ટુડેન્ટ જોશી મૃત્વિક અને સુનીલ પ્રજાપત કુબડથલ ગામમાં સર્વે કરવા આવ્યા હીએ અને વિશ્વકર્મા યોજના ની અંતર્ગત ગામ ની વિગતો લેવી કરી, ગામનાં સુધારાં માટે જે ડિઝાઇન જરૂરી હતી તે અમે નોટીસ કરી અને પ્રોજેક્ટ અને ફાઇનલ રીપોર્ટ તૈયાર કરેલ છે.

અમારાં પ્રોજેક્ટ વર્ક ને સ્વીકારવાં વિનંતી.

સરપંચ
કુબડથલ-લાલપુર ગ્રુપ ગ્રામ પંચાયત
તા.દસ્ક્રોઈ, જી.અમદાવાદ.

Fig.48 Sarpanch Letter with Stamp of Kubadthal Village

CHAPTER 13. From the Chapter- 9 future designs of the aspects

13.1 Design Proposals:

In the Vishwakarma Yojana Phase-VIII Part – II we have given total six design according to the village need and useful for the villagers.

The design proposals are:

- Community hall
- Public library
- Gram Panchayat
- Grocery Shop
- Public toilet
- Road

1. Community Hall- A village hall is a charitable community facility that is available to the public in a particular area for community-related recreational activities.
Community centres or community halls are public locations where members of a community tend to gather for group activities, social support, public information, and other purposes. The greater the community involvement in activities there, the more the sense of pride grows, both in the place and what it achieves, and in the neighbourhood itself. ... A good community centre encourages and often initiates programmes that involve local residents as a way to bring them together.

2. Public Library- The primary purposes of the public library are to provide resources and services in a variety of media to meet the needs of individuals and groups for education, information and personal development including recreation and leisure.

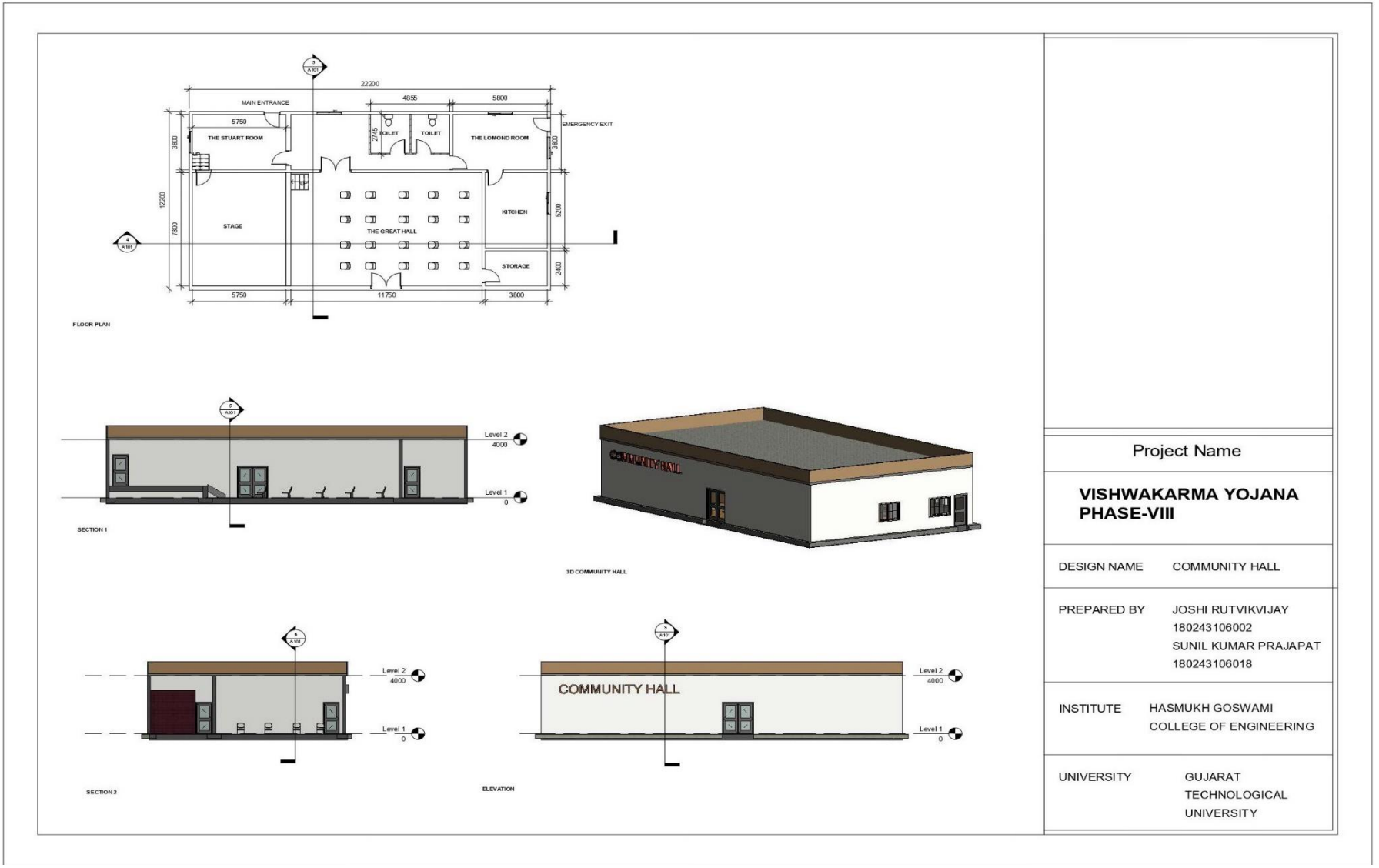
3. Gram Panchayat- There are some basic requirements for a healthy living, such as clean drinking water, cleaning and lighting of roads, medical facilities, primary education for children, roads for transport, etc. Village Panchayats provide for these requirements.

4. Grocery shop- Availability of all the Goods of Daily Need. Villagers enjoy full freedom of selection and Availability of variety Goods.

5. Public Toilet- More access to toilet for urination and defecation. There is not any public toilet in the village and toilet is necessary because of privacy and cleanliness of village.

6. Road- There is positive relationship between connectivity and development is smaller towns and villagers in India. With better roads and highways, there can be better flow of business, trade and communication that will eventually enhance growth.

13.1.1 Community Hall (Civil Design):



Measurement sheet of Community Hall

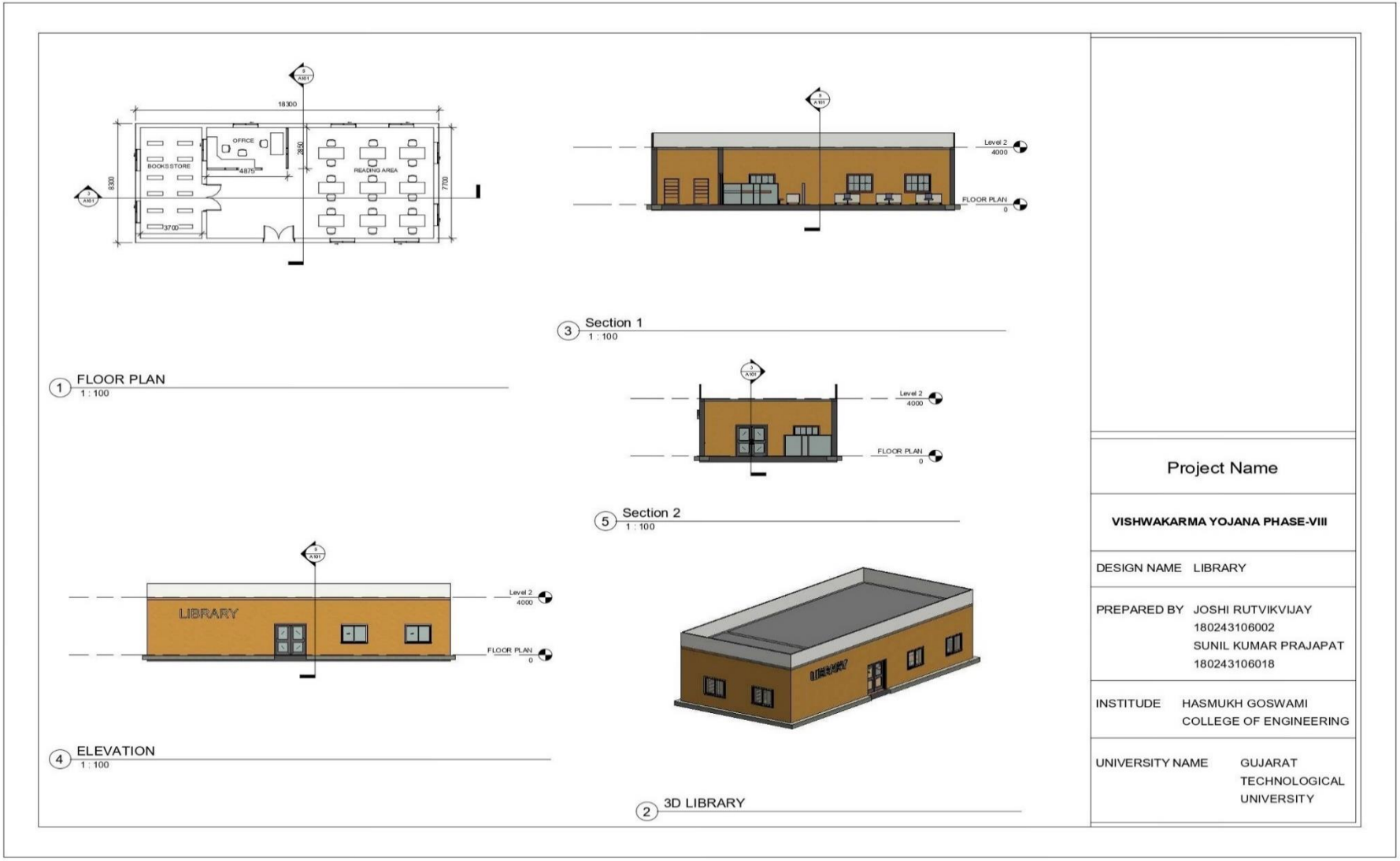
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	117.25	0.90	0.80	**84.42m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	117.25	0.90	0.20	**21.10m^3**
3	Brick work in foundation &plinth					
	1st footing	1	118.43	0.60	0.20	14.21
	2nd footing	1	118.88	0.50	0.20	11.88
	3rd footing	1	119.33	0.40	0.20	9.54
	4th footing	1	119.78	0.30	0.80	28.74
					Total	**64.37m^3**
4	Flooring 0.10m thick.					
	Stuart room	1	5.7	3.8	0.10	2.16
	Stage	1	7.5	5.7	0.10	4.44
	Great hall	1	11.7	7.8	0.10	9.12
	Storage	1	3.8	2.4	0.10	0.91
	Kitchen	1	5.2	3.8	0.10	1.97
	Lomond room	1	5.8	3.8	0.10	2.20
	Toilet	1	4.8	2.7	0.10	1.29
	Open area	1	5.6	3.8	0.10	2.12
					Total	**24.21sq.m**
5	DPC 0.05m thick.	1	119.33	0.30	0.05	**1.78m^3**
6	Brick work for superstructure	1	119.33	0.30	3.0	**107.39m^3**
7	Deduction for door and window					
	Door1	2	2.8	0.30	2.20	3.69
	Door2	8	1.10	0.30	2.20	5.80
	Window	5	2.0	0.30	1.40	4.2
					(-)	13.69

	Deduction for lintel 0.10m thick.					
	Door1	2	2.8	0.30	0.10	0.168
	Door2	8	1.10	0.30	0.10	0.264
	Window	5	2.0	0.30	0.10	0.3
					(-)	0.72
					TotalBrick work	**94.42m^3**
8	Plaster					
	Outside	1	68.8		3.0	206.4
	Inside	1	167		3.0	503.4
						709.8
	Deduction for door and window				(-)	12.97
					Total plaster	**696.83sq.m**
9	RCC slab 0.12m thick	1	22.2	12.2	0.12	**35.50m^3**

Abstract Sheet of Community Hall

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	84.42	100	M^3	8442
2	Cement concrete in foundation (PCC1:4:8)	21.10	3500	M^3	73850
3	Brick work in foundation &plinth	64.37	4000	M^3	406437
4	Flooring 0.10m thick.(1:3:6)	24.21	1000	Sq m	24210
5	DPC	1.78	500	M^3	890
6	Brickwork in superstructure	94.42	4000	M^3	377680
7	Smooth plaster	696.83	300	Sq m	209049
8	RCC slab 0.12m thick	35.50	9000	M^3	319500
				Total =	**1420058**

13.1.2 Public Library (Civil Design):



Measurement sheet of Public Library

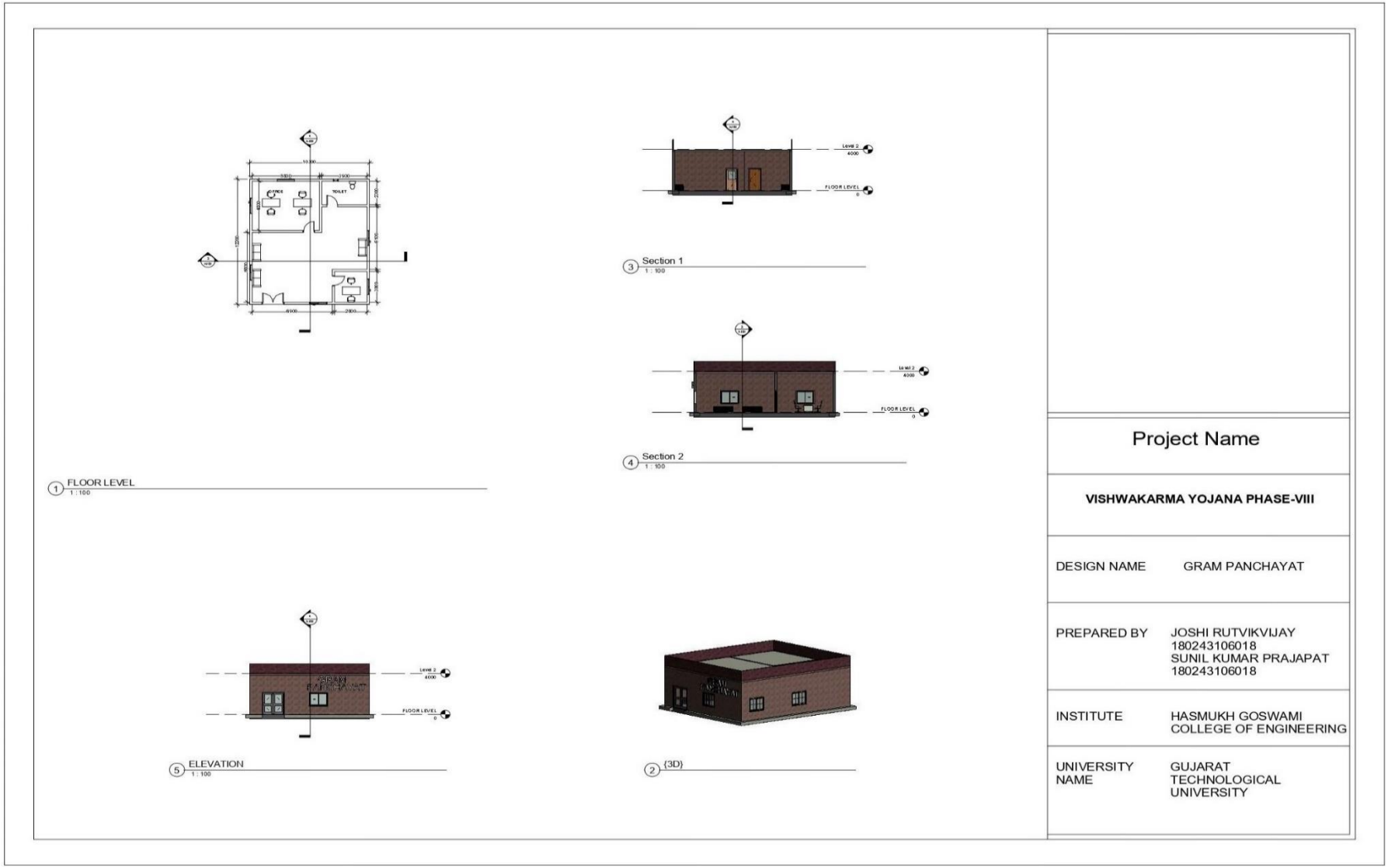
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	60	0.90	0.80	**43.2m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	60	0.90	0.20	**10.8m^3**
3	Brick work in foundation &plinth					
	1st footing	1	60.3	0.60	0.20	7.23
	2nd footing	1	60.4	0.50	0.20	6.04
	3rd footing	1	60.5	0.40	0.20	4.84
	4th footing	1	60.6	0.30	0.80	14.54
					Total	**32.65m^3**
4	Flooring 0.10m thick.					
	Book store	1	7.7	3.7	0.10	2.8
	Reading area	1	13.7	7.7	0.10	10.54
					Total	**13.34sq.m**
5	DPC 0.05m thick	1	60.6	0.30	0.05	**0.90m^3**
6	Brick work for superstructure	1	60.6	0.30	3.0	**54.54m^3**
7	Deduction for door and window					
	Door 1	2	2.8	0.30	3.0	5.04
	Window	9	2.0	0.30	1.40	7.84
					(-)	12.88
	Deduction for lintel 0.10m thick.					
	Door	2	2.8	0.30	0.10	0.16
	Window	9	2.0	0.30	0.10	0.54
					(-)	0.70

					Total brick work	**40.96m^3**
8	Plaster					
	Outside	1	53.2		3.0	**159.6m^3**
	Inside	1	69.8		3.0	**209.4m^3**
	Deduction for door and window				(-)	13.58
					Total plaster	**355.42sq.m**
9	RCC slab 0.12m thick	1	18.3	8.3	0.12	**18.22m^3**

Abstract Sheet of Public Library

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	43.2	100	M^3	4320
2	Cement concrete in foundation (PCC1:4:8)	10.8	3500	M^3	37800
3	Brick work in foundation &plinth	32.65	4000	M^3	130600
4	Flooring 0.10m thick.(1:3:6)	13.34	1000	Sq m	13340
5	DPC	0.90	500	M^3	450
6	Brickwork in superstructure	40.96	4000	M^3	163840
7	Smooth plaster	355.42	300	Sq m	106626
8	RCC slab 0.12m thick	18.22	9000	M^3	163980
				Total =	**620956**

13.1.3 Gram Panchayat (Civil Design):



Measurement sheet of Gram Panchayat

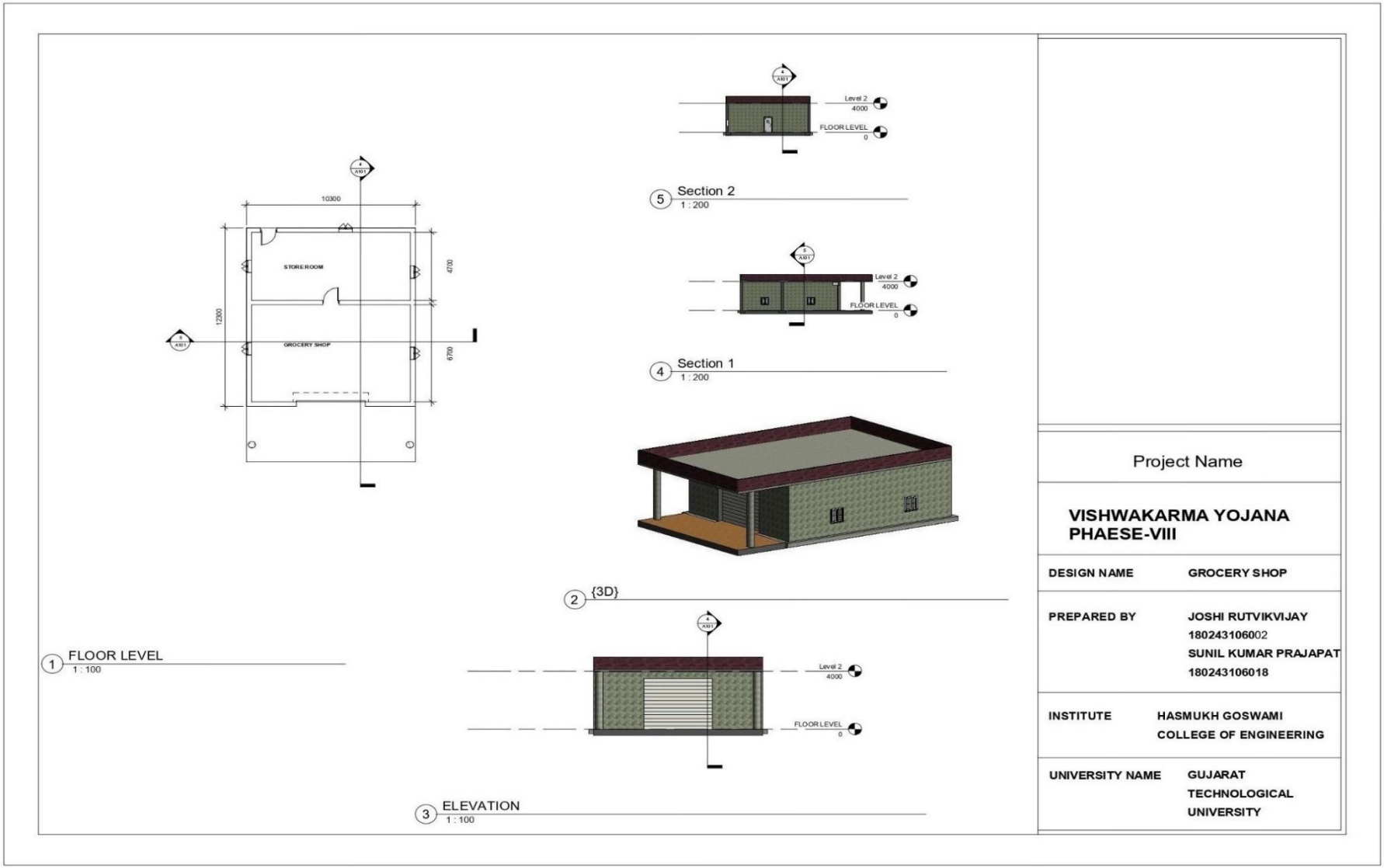
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	62.8	0.90	0.80	**45.21m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	62.8	0.90	0.20	**11.30m^3**
3	Brick work in foundation &plinth					
	1st footing	1	63.7	0.60	0.20	7.6
	2nd footing	1	64	0.50	0.20	6.4
	3rd footing	1	64.3	0.40	0.20	5.1
	4th footing	1	64.6	0.30	0.80	15.50
					Total	**34.6m^3**
4	Flooring 0.10m thick.					
	Office	1	5.8	4.8	0.10	2.7
	Toilet	1	3.9	2.3	0.10	0.89
	Open area	1	6.8	10.3	0.10	7.0
					Toilet	**10.59sq.m**
5	DPC 0.05m thick.	1	64.6	0.30	0.05	**0.969m^3**
6	Brick work for superstructure	1	64.6	0.30	3.0	**58.14m^3**
7	Deduction for door and window					
	Door1	1	2.8	0.30	2.10	1.76
	Door2	3	1.10	0.30	2.10	2.07
	Window	6	2.0	0.30	1.40	5.04
					(-)	8.87m^3
	Deduction for lintel 0.10m thick					
	Door 1	1	2.8	0.30	0.10	0.084
	Door2	3	1.10	0.30	0.10	0.099

	Window	6	2.0	0.30	0.10	0.36
					(-)	0.53
					Total brick work	**49.77m^3**
8	Plaster					
	Outside	1	45		3.0	135
	Inside	1	85.6		3.0	256.8
						391.8
	Deduction for door and window				(-)	8.37
					Total plaster	**383.43sq.m**
9	RCC slab 0.12m thick.	1	12.2	10.3	0.12	**15.0m^3**

Abstract Sheet of Gram Panchayat

SR NO	**PATICULARS OF ITEM**	**QUANTITY**	**PER**	**RATE**	**AMOUNT Rs.**
1	Excavation of foundation	45.21	100	M^3	4521
2	Cement concrete in foundation (PCC1:4:8)	11.30	3500	M^3	39550
3	Brick work in foundation &plinth	34.6	4000	M^3	138400
4	Flooring 0.10m thick.(1:3:6)	10.59	1000	Sq m	10590
5	DPC	0.96	500	M^3	480
6	Brickwork in superstructure	49.77	4000	M^3	199080
7	Smooth plaster	383.43	300	Sq m	115029
8	RCC slab 0.12m thick	15	9000	M^3	135000
				Total =	**642650**

13.1.4 Grocery Shop (Civil Design):



Measurement sheet of Grocery shop

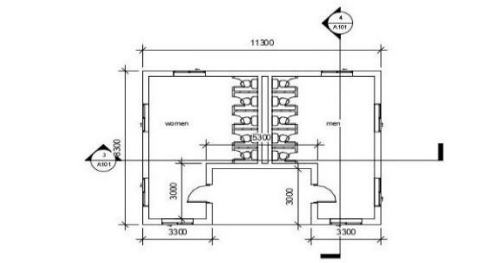
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	54.6	0.90	0.80	**39.31m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	54.6	0.90	0.20	**9.82m^3**
3	Brick work in foundation &plinth					
	1st footing	1	54.9	0.60	0.20	6.58
	2nd footing	1	55	0.50	0.20	5.5
	3rd footing	1	55.1	0.40	0.20	4.40
	4th footing	1	55.2	0.30	0.80	13.24
					Total	**29.72m^3**
4	Flooring 0.10m thick.					
	Grocery shop	1	10..3	6.7	0.10	6.90
	Store room	1	10.30	4.7	0.10	4.84
	Open area	1	10.3	3.0	0.10	3.09
					Total	**14.83sq.m**
5	DPC 0.05m thick.	1	55.2	0.30	0.05	**0.828m^3**
6	Brick work for superstructure	1	55.2	0.30	3.0	**49.68m^3**
7	Deduction for door and window					
	Door1	1	2.8	0.30	3.0	2.52
	Door2	2	1.20	0.30	2.10	1.38
	Window	5	2.0	0.30	1.40	4.2
					(-)	8.1
	Deduction for lintel 0.10m thick.					
	Door1	1	2.8	0.30	0.10	0.08
	Door2	2	1.20	0.30	0.10	0.06

	Window	5	2.0	0.30	0.10	0.3
					(-)	7.66
					Total brick work	**42.02m^3**
8	Plaster					
	Outside	1	45.2		3.0	135.6
	Inside	1	65.8		3.0	197.4
						333
	Deduction for door and window				(-)	7.66
					Total plaster	**325.34sq.m**
9	RCC slab 0.12m thick	1	15.3	10.3	0.12	**18.91m^3**

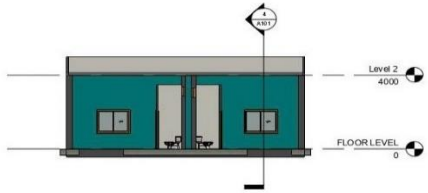
Abstract Sheet of Grocery shop

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	39.31	100	M^3	3931
2	Cement concrete in foundation (PCC1:4:8)	3500	3500	M^3	34370
3	Brick work in foundation &plinth	29.72	4000	M^3	118880
4	Flooring 0.10m thick.(1:3:6)	14.83	1000	Sq m	14830
5	DPC	0.828	500	M^3	414
6	Brickwork in superstructure	42.02	4000	M^3	168080
7	Smooth plaster	325.34	300	Sq m	97602
8	RCC slab 0.12m thick	18.91	9000	M^3	170190
				Total =	**608297**

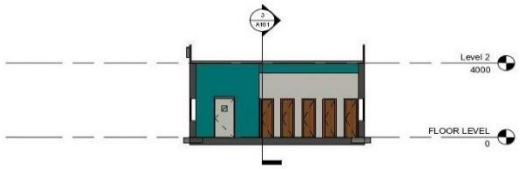
13.1.5 Public Toilet (Civil Design):



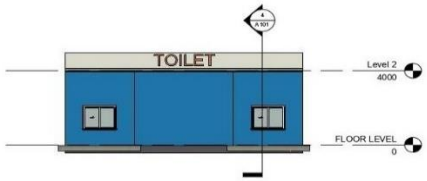
1 FLOOR LEVEL
1 : 100



3 Section 1
1 : 100



4 Section 2
1 : 100



5 ELEVATON
1 : 100

2 {3D}

Project Name

VISHWAKARMA YOJANA PHASE -VIII

DESIGN NAME	TOILET
PREPARED BY	JOSHI RUTVIKVIJAY 180243106002 SUNIL KUMAR PRAJAPAT 180243106018
INSTITUTE	HUSMUKH GOSWAMI COLLEGE OF ENGINEERING
UNIVERSITY NAME	GUJARAT TECHNOLOGICAL UNIVERSITY

Measurement sheet of Public Toilet

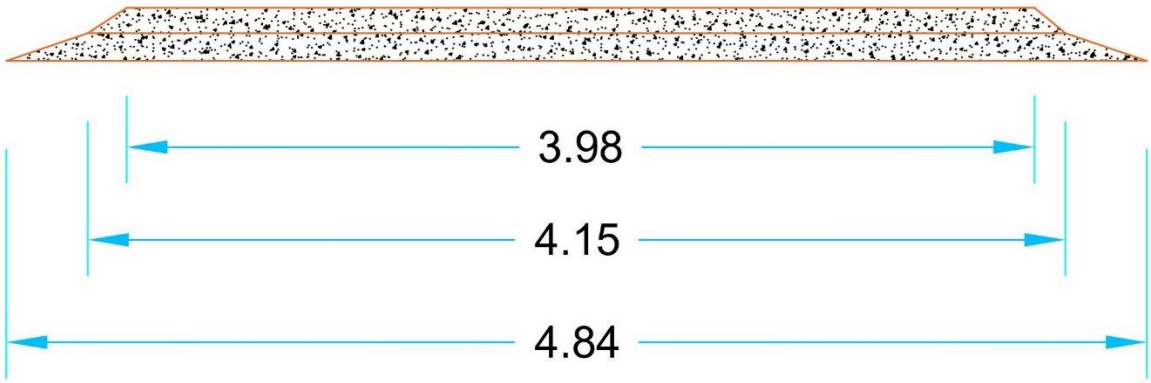
Sr.	Item	No.	Length	Width	Height	Quantity
1	Excavation of foundation	1	54	0.90	0.80	**38.88m^3**
2	Cement concrete in foundation (PCC1:4:8)	1	54	0.90	0.20	**9.72m^3**
3	Brick work in foundation &plinth					
	1st footing	1	54.6	0.60	0.20	6.55
	2nd footing	1	54.8	0.50	0.20	5.48
	3rd footing	1	55	0.40	0.20	4.48
	4th footing	1	55.2	0.30	0.80	13.24
					Total	**29.67m^3**
4	Flooring 0.10m thick.	1	11.3	8.3	0.10	**9.37sq.m**
5	DPC 0.05m thick	1	55.2	0.30	0.05	**0.82m^3**
6	Brick work for superstructure	1	55.2	0.30	3.0	**49.68m^3**
7	Deduction for door and window					
	Door1	2	1.00	0.30	2.10	1.38
	Door 2	10	2.0	0.30	2.10	17.64
	Window	8	1.5	0.30	1.00	6.72
					(-)	25.74m^3
	Deduction for lintel 0.10m^thick.					
	Door1	2	1.10	0.30	0.10	0.06
	Door 2	10	2.8	0.30	0.10	0.84
	Window	8	2.0	0.30	0.10	0.48
					(-)	1.38m^3

					Total brick work	**22.56m^3**
8	Plastering					
	Outside	1	45.2		3.0	135.6
	Inside	1	75.4		3.0	226.2
	Deduction for door and window				(-)	27.12
					Total plaster	**334.68m^3**
9	RCC slab 0.12m thick.	1	11.3	8.3	0.12	**11.25m^3**

Abstract Sheet of Public Toilet

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Excavation of foundation	38.88	100	M^3	3888
2	Cement concrete in foundation (PCC1:4:8)	9.72	3500	M^3	34020
3	Brick work in foundation &plinth	29.67	4000	M^3	118680
4	Flooring 0.10m thick.(1:3:6)	9.37	1000	Sq m	9370
5	DPC	0.82	500	M^3	410
6	Brickwork in superstructure	22.56	4000	M^3	90240
7	Smooth plaster	334.68	300	Sq m	100404
8	RCC slab 0.12m thick	11.25	9000	M^3	101250
				Total =	**458262**

13.1.6 Road (Civil Design):



Measurement sheet of Road

Sr.	Item	No.	Length	Width	Height	Quantity
1	Preparing sub grade	1	800	4.84	0.01	**38.72m^3**
2	Preparing base course	1	800	4.15	0.135	**448.2m^3**
3	Preparing wearing course	1	800	3.98	0.115	**366.16m^3**

Use 125mm granular size broken stone in sub grade.
Use 90mm granular size aggregate in base course.

Abstract sheet of Road

SR NO	PATICULARS OF ITEM	QUANTITY	PER	RATE	AMOUNT Rs.
1	Preparing sub grade	38.72	M^3	1200	46464
2	Preparing base course	448.2	M^3	1000	448200
3	Preparing wearing course	366.16	M^3	1300	476008
				Total =	**970672**

13.2 Reason for Students Recommending this Design:

Community Hall:
There is not any building or public space in a village where social gathering functions can be organized. So it is necessary to provide community hall in village.

Public library:
Library is useful for students for study purpose and also get books department.

Grocery Shop:
Availability of all the Goods of Daily Need.

Gram Panchayat:
The condition of the Panchayat Building is not good and it needs to be repair.

Public Toilet:
There is not any public toilet in the village and toilet is necessary because of privacy and cleanliness of village.

Roads:
In the village only 60% roads are CC roads and the rest are kutccha road.

13.3 About designs Suggestions / Benefit of the villagers

Community Hall: Boosts the local economy, Easy access and space for village programmes.

Public Library: Students will be able to read and learn good things from the variety of books available in the library.

Grocery Shop: Villagers enjoy full freedom of selection and Availability of variety Goods.

Gram Panchayat: There are some basic requirements for a healthy living, such as clean drinking water, cleaning and lighting of roads, medical facilities, primary education for children, roads for transport, etc. Village Panchayats provide for these requirements.

Public Toilet: More access to toilet for urination and defecation.

Roads: There is positive relationship between connectivity and development is smaller towns and villagers in India. With better roads and highways, there can be better flow of business, trade and communication that will eventually enhance growth.

CHAPTER 14. Technical Options with Case Studies

14.1 Civil Engineering

14.1.1 Advanced Earthquake Resistant:

An Earthquake is Earth‘s Shaking or in other words release of energy due to the movement of tectonic plates. This can be destructive enough to kill thousands of people and bring huge economic loss. This natural disaster has many adverse effects on earth like ground shaking, landslides, rock falls from cliffs, liquefaction, fire, tsunami etc. Buildings are highly affected by an earthquake, and in some cases they are shattered down to the ground level. When the ground shaking occurs beneath the building‘s foundations they vibrate in an analogous manner with that of the surrounding ground. The inertia force of a structure can develop shearing effect on it which in turn causes stress concentration on the connections in structure and on the fragile walls. This results in partial or full failure of structure. The excitement and prevalence of shaking depends on the orientation of the building. High rise structures have the tendency to magnify the magnitude of long time periodic motions when comparing to the smaller one. Every construction has a resonant prevalence which are the characteristics of structure. Taller buildings have a tendency for long time periods than shorter one which make them relatively more susceptible to damage.

Hence, one has to be careful while performing the analysis of a tall structure. In order to analyze a tall structure many analysis procedures are valid like a) Equivalent static analysis, b) Response spectrum analysis, c) Linear dynamic analysis, d) Nonlinear static analysis or nonlinear pushover analysis and e) Nonlinear dynamic analysis. Soil structure interaction analysis is also essential to be considered. After identifying the soil type, analyzing procedure is selected to do the detailed analysis of the interaction between soil and structure. To reduce the seismic effects on tall buildings several equipment is used like dampers or base isolation process. In dampers viscous damper, friction damper, yielding damper, magneto rheological fluid dampers tuned mass damper or harmonic absorber can be used. In base isolator magneto rheological elastomeric, elastomeric bearing system, sliding system can be used.

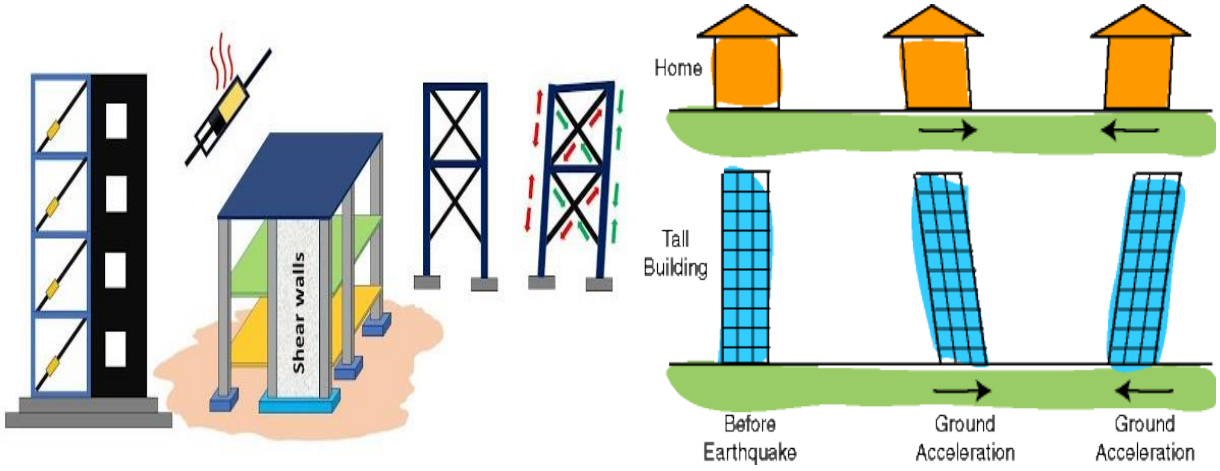


Fig.49 Earthquake resistant building

Among the most important advanced techniques of earthquake resistant design and construction are: (1) Base Isolation (2) Energy Dissipation Devices

Base Isolation Method:

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.

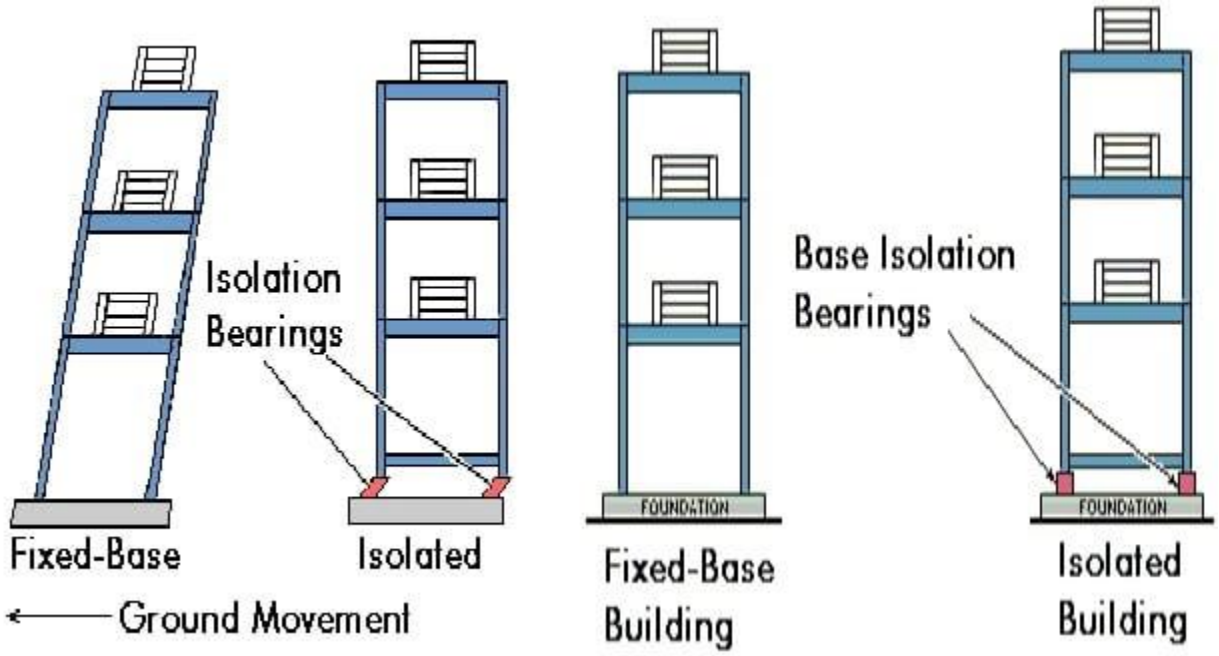


Fig.50 Earthquake resistant design for Base isolation method

Earthquake Generated Forces:

To get a basic idea of how base isolation works examine, figure 2. 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 2, 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 direction.

Deformation and Damages to Structures:

In addition to displacing toward the right, the un-isolated building is also shown to be changing its shape-from a rectangle to a parallelogram. It is deforming. The primary cause of earthquake damage to buildings is the deformation which the building undergoes as a result of the inertial forces acting upon it.

Responses of Base isolated building: By contrast, even though it too is displacing, the base-isolated building retains its original, rectangular shape. It is the lead-rubber bearings supporting the building that are deformed. The base-isolated building itself escapes the deformation and damage, which implies that the inertial forces acting on the base-isolated building have been reduced. 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.

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 damper.

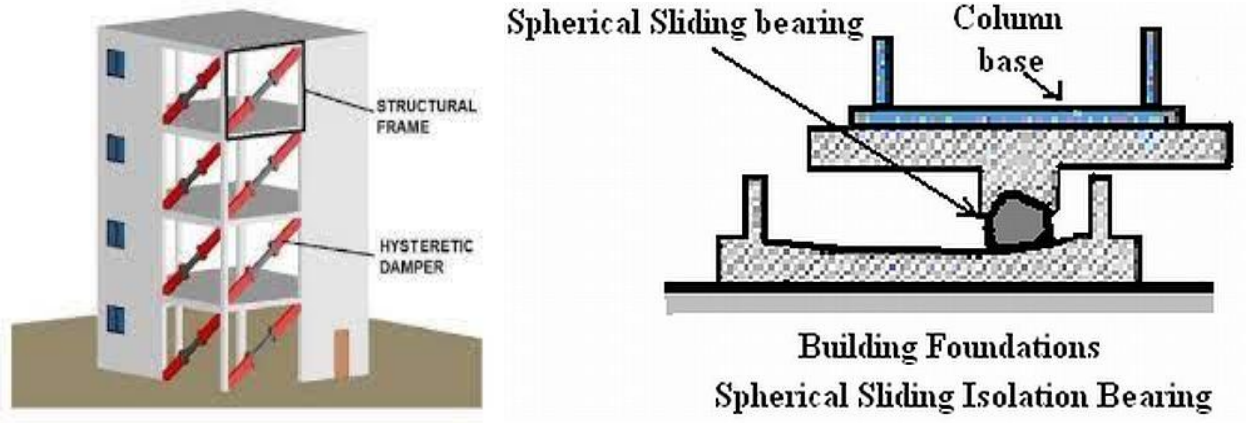


Fig.51 Energy Dissipation Devices

14.1.2 Seismic Retrofitting of Buildings:

Nowadays, seismic retrofit through isolation strategy represents a consolidated technique of protection against design earthquakes. This technique is also applied on existing structures extensively, due to the fact that it usually does not require any interruption of the building use and occupants evacuation. If applicable, it rapidly allows the seismically retrofitting of a building installed with seismic devices with low horizontal stiffness between the structure and the foundation decoupling, in fact, this allows the motion of the superstructure from the ground one. In this paper an application on an existing RC building of the seismic isolation is presented. The chosen building was built in the '90s only for vertical loads and realized without any detailing rule for structural ductility. The seismic retrofitting requirement stems from the fact that only recently, after the National seismic hazard maps update in 2003, the considered area has been upgraded to a medium-low seismic intensity zone, while at construction time no seismic classification was in existence by law. Many existing reinforced concrete structure in present world are inadequate for earthquakes. Recent earthquakes which occurred during last decade have indicated that major damage occurred was not directly due to actions of earthquakes but due to poor performance of structure during earthquake. The existing building structure, which were design and constructed according to early codal provisions, do not satisfy requirements of current seismic code and design practices. It is recognized that the most effective method of reducing the risk of damaging structure is seismic retrofitting. In recent years, there is a significant improvement of retrofitting techniques.

The main purpose of this study is to increase knowledge and proficiency in earthquake resistant design and seismic rehabilitation of existing structures and to gain familiarity with modeling and analyzing buildings against seismic loads by using computer software.
The objectives of this research are:
(i) to investigate the effects of earthquake forces on buildings and literature search on earthquake resistant design.
(ii) to evaluate the feasibility of seismic evaluation of buildings and advantages of applying the retrofit measures developed for strengthening.
(iii) to analyze performance based design and compare different seismic analysis method.
(iv) to model a real building with a structural analysis software and investigate the earthquake effects with different analysis methods prescribed in codes & standards and propose appropriate rehabilitation methods in terms of the performance. Most earthquakes occur through the sudden movement of earth crust in faults zones. The sudden movement releases strain.

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

The paper deals with an introduction and implementation of super performing building materials and techniques all in terms of energy saving efficiency of the material, cost efficiency, application feasibility, availability, vernacular characteristics, life span, etc. A material is considered smart only when it contributes something to upgrade the quality of building. With all those advancements in construction techniques and also with the demand of end users for the smart buildings we as constructors and designers are ought to introduce something new and smart to fulfill their demands and needs. Smart structures and material technologies are a tool for sharing the knowledge of how various building materials can significantly increase production and profit using advanced communication, collaboration and management technologies. The paper provides an overview of

the types of materials available giving a new insight into innovative methods and techniques that will be available, and open new doors for advancement and improvement in the construction industry. The new materials discussed in this paper present a small fraction of the options that are available for use by industry.

Super Performing Multi Purposed Material:

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

Some Repurposed Materials and techniques:

- **Rubber Sidewalks**: Sidewalks or walkways made using used tires and hard boarding sheets.
- **Strawboard**: Made from agro waste mainly.
- **Bagasse Boards**: Boards made of material left from sugarcane after extracting juice.
- **Natural Fiber Insulation**: Insulation panels made out of used cloths.
- **Frit**: Fine powdered glass from waste with ceramics remolded for reuse.
- **Acousti-cell**: Boards made for acoustics from rubber shredding.
- **Plasphalt**: Plastic blended with asphalt on roads for waste management.
- **Fly-Ash Concrete**: Using Fly-ash residue as strengthening material with cement.

14.1.4 Engineering Aspects of Soil mechanics - Environmental Impact Assessment

The study involved environmental impact assessment of upgrading of existing flow station dealing with different civil engineering works such as road network, housing, water supply, to name a few. Data was collected from Federal Environmental Protection Agency (FEPA), Department of Petroleum Resources (DPR) Port Harcourt, Nigerian Meteorological Department (NMD), Lagos, Rivers State Ministry of Environment and Natural Resources (RSMENR), Port Harcourt, Ahoada West Local Government Area (AWLGA), Akinima, Rivers State and the Internet. Data collected was used to get an overview of the existing Environment. Relevant test of existing water, soil, noise and air samples were carried out. Comparisons were made with results of the test carried out and data of the area collected. Formal and informal interviews were also carried out with some of the inhabitants of the area. All these were done with the aim of assessing the impact the infrastructure had on the environment, and projection of the likely impact of the upgrading exercise. The study revealed that civil engineering infrastructure development projects impacted greatly on the environment especially in areas of noise pollution, water pollution, decrease in size of available land, etcetera. Based on the findings, recommendations were made for the elimination of the negative effects in some cases; and for amelioration of the effects in situations where it will be impossible to completely eradicate such effects.

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

In order to develop sustainable wastewater treatment it is needed to view the wastewater treatment systems using a holistic approach. A holistic approach implies considering the primary and secondary environmental effects and costs that the systems produce. Examples are the pollution produced at the power plant (generating electricity for wastewater treatment) and the energy cost of producing treatment chemicals.

Sustainability Analysis of Wastewater Treatment Systems:

The term sustainability describes development that meets the needs of the present without compromising the ability of future generations to meet their own needs, while the term sustainability assessment can be used to refer to "processes that are ex post evaluate techniques as well as those that are forward-looking ex ante processes that aim to predict the potential effects of an activity prior to its implementation".

Sustainable development of wastewater treatment and provide scientific support in decision procedures towards sustainable solutions, new approaches, frameworks and methodologies about different possible solutions and their potential sustainability implications are needed. One way to facilitate sustainability assessment of wastewater is Life Cycle Assessment (LCA) methodology; however, it fails to map the full scope of wastewater impacts. This paper presents a framework to evaluate the performance of Wastewater Treatment Facilities taking into consideration various factors for insuring environmental sustainability. A total of nine indicators, seven environmental and two economic related to four wastewater treatment facilities, were assessed. Apart from evaluating the sustainability, this study also discussed the link of life cycle approach and social aspects of wastewater. The results show that for the environmental dimension using life cycle assessment provides information on different types of environmental activities and different impact categories.

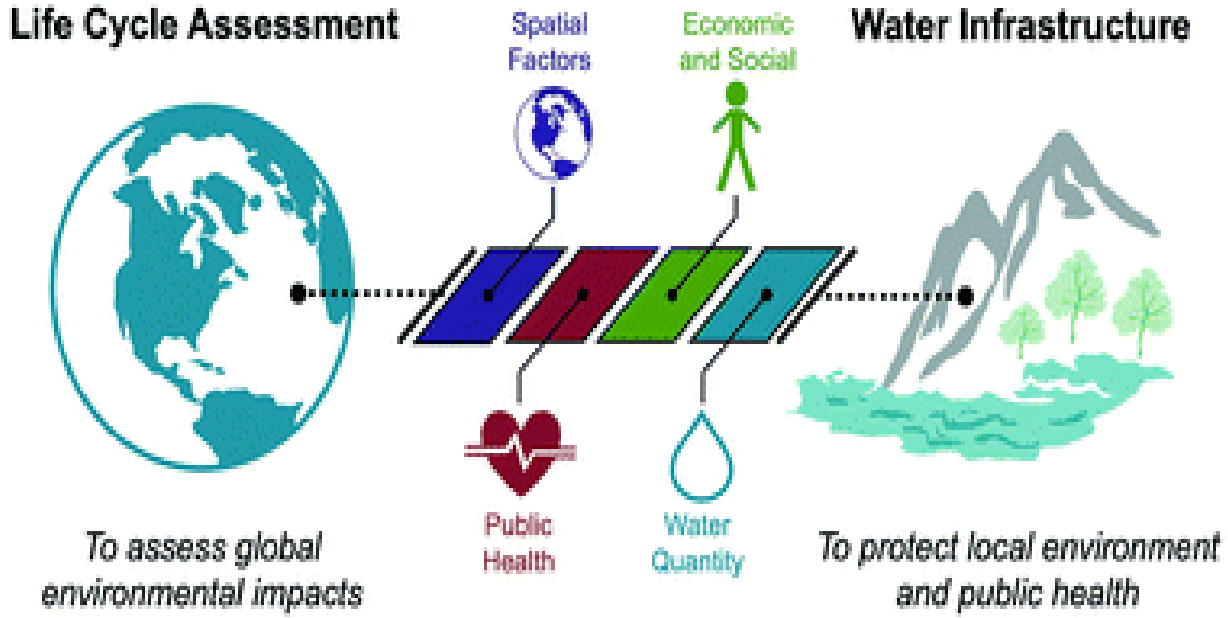


Fig.52 Life Cycle Assessment

14.1.6 A Case Study on Low cost Earthquake resistant house using Cold Formed Steel [CFS] member:

The major earthquake of last ten year has left a great food for thought for civil engineers to improve the design practice and quality of construction to withstand the natural disasters. Engineers are working at individual and organizational level to meet such challenges. This research work is a part of the same process. A design of simple-to-construct small residential building is presented which has capability to meet the strength and serviceability requirements of a major seismic activity.

Cold Formed member (CFS), a material recommended by AISI-97, is proposed for this house. CFS performs excellently due to its strength. This will be a very economical option for temporary and permanent construction for the years to come. Shortly after the earthquake this design was proposed, keeping in mind the cost efficiency, availability of materials, quick time of fabrication and flexibility of extension and portability.

No level of earthquake preparedness can guarantee that an earthquake will not damage a building. Structures cannot be completely earthquake-proof, but good seismic design will minimize structural damage, and the most importantly, safeguard the lives of the occupants during a major seismic event. Seismic resistance is best achieved by following modern building codes and standards and in large or complex buildings, using the services of a professional structural engineer.

Cold Formed Member [CFS]

The use of cold formed steel member in building construction began in the 1850 in both United States & Great Britain. However, such steel members were not widely used until 1940 i.e. after the research sponsored by AISI at Cornel University under the direction of George winter in year 1939. The thickness of steel sheets used in cold formed structure is usually 1 to 3mm & it is formed at room temperature .Due to these quality this is also called as Light gauge steel member. The method of manufacturing is important as it differentiates these products from hot rolled steel sections. Normally, the yield strength of steel sheets used in cold-formed sections is at least 280 N/mm2.

Cold-formed steel structural members are shapes commonly manufactured from steel plate, sheet or strip material. The manufacturing process involves forming the material by either press-braking or cold roll-forming to achieve the desired shape. Press-braking is often used for production of small quantity of simple shapes. Cold roll-forming is the most widely used method for production of roof, floor and wall panels. It is also used for the production of structural components such as Cees, Zees, and hat sections. Sections can usually be made from sheet up to 60 inches (1.5m) wide and from coils more than 3,000 feet (1,000m) long.

Causes of failure during Earthquake: In majority of cases, it was observed that structures were neither designed by following seismic provisions of code nor the construction was completely carried out accordingly. . Size of structural members, especially columns in one direction, was much less than what is recommended by IS-1893. In some cases the least lateral dimension of column was 114 mm giving slender column behavior. Materials used for concrete construction and their were well below the required standards. Other construction faults were improper placement of reinforcement, unequal & insufficient concrete cover in same members, poor concrete compaction and substandard form work etc. Based on all this information, it is concluded that

major reason of structural collapse and damage of residential and institutional buildings during earthquake was the insufficient strength of vertical supporting members including columns, masonry walls, un-reinforced concrete walls and bonded or un-bonded rubble masonry walls.

(1) RESISTANCE AGAINST EARTHQUAKE:

Resistance against earthquake is the primary requirement for any structure. This house is modeled using Staad-Pro, software based on finite element method, and its response under the seismic activity of zone four is checked. Pseudostatic analysis is carried out with earthquake forces applied along both the principal directions. Building connections are considered as hinges at support and fixed at eave and ridge.CFS member is defined as column and rafter in StaadPro. Final Stresses in software especially at joints, displacement and sway due to earthquake are carefully noted for various load combinations. Some of the important Information related to analysis and design is presented below.

- **GEOMETRY OF BUILDING:**

A architectural plan of 2BHK is prepared in such a way that to fulfill the functional requirement of building such as Bedroom, Kitchen, toilet and bathroom (Fig. Architectural Plan Size of House =7.0mx7.0m). The orientation of column is select in such a way that it does not interfere with functional requirement of building (Fig. Location of Steel Column).

- **LOADING PARAMETER FOR ANALYSIS OF BUILDING:**

Dead Load =0.15 kN/m2 , Live Load =0.57 kN/m2

Wind Speed = 44 m/sec. (Nagpur) , Wind Pressure =0.84 kN/m2 , Earthquake Zone = IV

Building Condition: Building Design as Enclosed = +/- 0.25 (As per MBMA)

Deflection Limit of Building: Sway of Frame = H/100, Vertical Deflection of Frame =L/180 Loading Combinations: (1.) DL+LL (2.) DL+WL (3.) DL+EQ

Eave Height of House =3.0m

Roof Slope = 1:10

Sidewall Bay Spacing = 2 @ 3.5m

Endwall Bay Spacing = 2 @ 3.5m

- **ANALYSIS OUTPUT:**

Following results are the maximum out of all combinations.

Dead Load Reaction = 2.34kN

Live Load Reaction = 7.22kN

Maximum Bending Moment =8.31kN-m

Maximum Shear Force =9.03kN

Sway under Earthquake = 25.0mm < 35.0mm (OK)

Critical Stresses envelopes in frame are well below than strength of CFS member. Further, the deflection under gravity loads and sway under earthquake are also working.

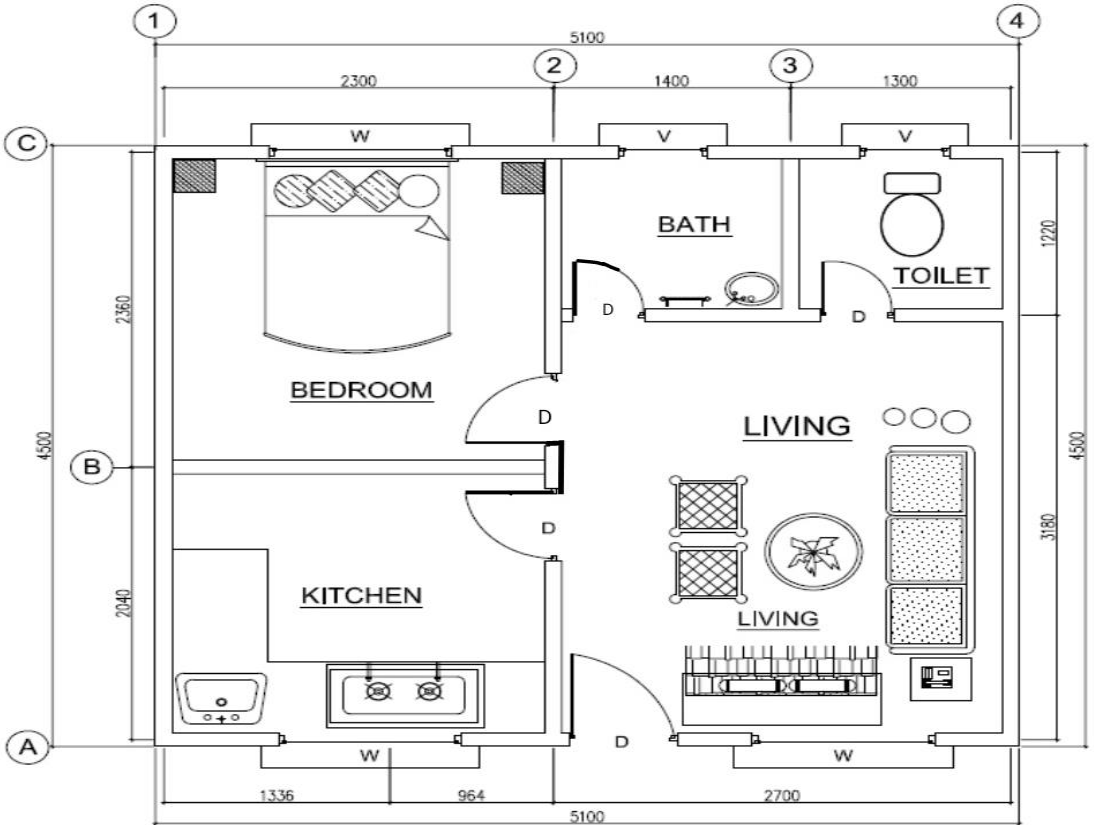


Fig.53 Architectural Plan Size of House =7.0mx7.0m

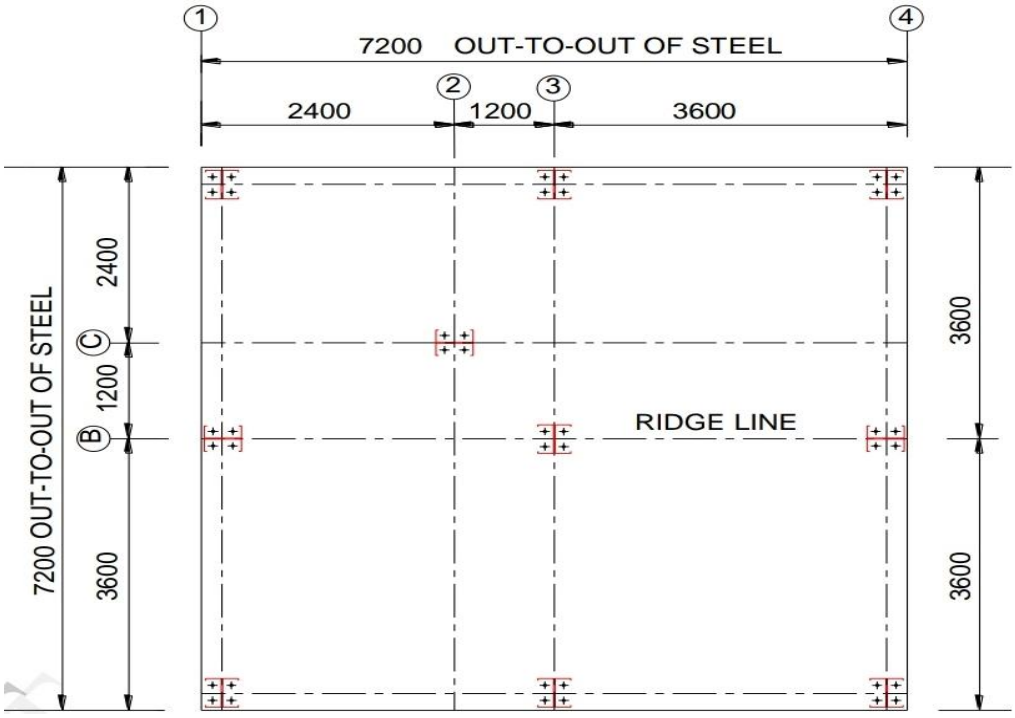


Fig.54 Location of Steel Column

(2) FLEXIBILITY OF EXTENSION: Flexibility of extension and ease of alteration are two of the important features. Although this house is proposed as a 2BHK room but the design has flexibility to add row houses etc. Adding more and more frames at the suitable location makes the extension very simple. This small unit can be extended to build a field hospital, combined residence, messing facility and a warehouse etc.

(3) LIGHT ROOFING SYSTEM: One of the major causes of damage during earthquake was heavy roofs. During earthquake the weak vertical supports could not survive and came down with thick layer of mud, burying everything under it. Lightweight roofs are better than heavier ones because they: Generate lesser forces, Cause less damage if they fall.

The roof system of this proposed house consists of GI corrugated sheets with member of cold formed rafter & purlin. Every CFS member is strongly coupled with panels by bolted steel fixtures. Bracing connect to rafter and column member. Wooden trusses, which have been in common use, are deliberately avoided as they are comparatively heavier and cause more damage to life and property in case of collapse.

(4) FOUNDATIONS: Total service load reaction is 9.56kN which yields a foundation size of 650mm x 650mm for a net allowable bearing capacity of two tons/ft2[200 kPa]. Column is proposed as 230mm x 230mm RCC block with 250mm total depth. Total foundation depth is proposed as 450mm. The connection between foundation blocks and column is developed by anchor bolt of 16mm diameter with 230mmx230mm base plate section.

(5) OPENINGS: Doors can be located at any desired position. It is just a matter of removing panel and fit the door jamb and header with connection bolt and the door opening is ready. Panels with windows and ventilators can also be cast but it is recommended to have ventilators in roof.

(6) TENTATIVE COST: It can be confidently said that cost will not cross rupees 181474/-, which means it is rupees 345/- per square foot. The cost can also be quoted as rupees 7910/- per foot length with a width of 22′-11″ [7.0m]. As stated previously, this structure can be easily extended so the approximate cost for any size can be easily calculated.

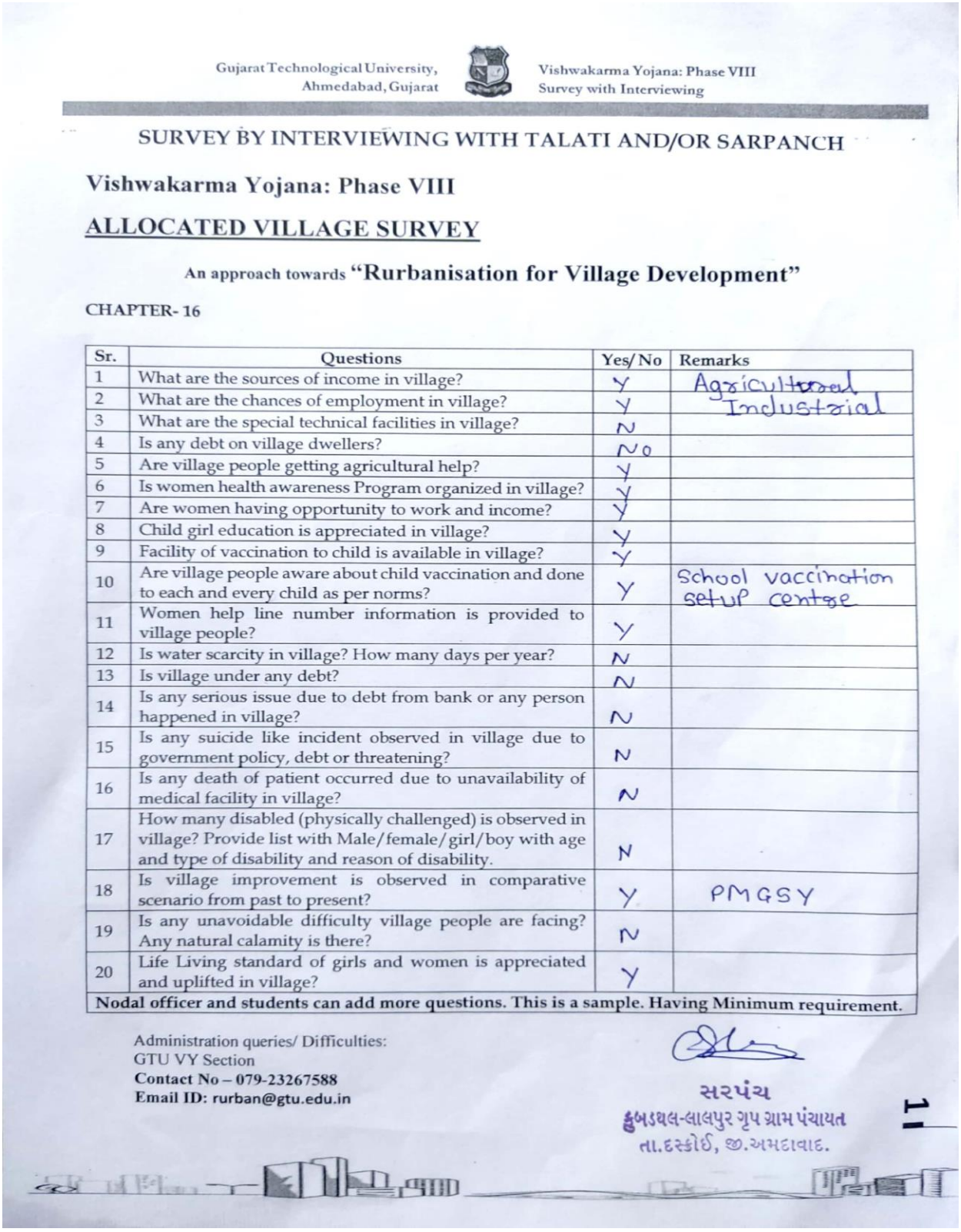
(7) CONCLUSION: The main objective of this research work is that it its behavior under a major seismic activity is satisfactory. It can bear the shock with little or no damage. Catastrophic failure will be avoided in any case thus minimizing the loss of life and property.

This structure is not only be suitable for temporary use but for permanent construction as well. Multiple or repetitive uses makes the structures viable with unmatched saving from conventional or classical structure .For such pre-fabricated CFS members even erection shall be done manually without using cranes and other machineries. Time required to construct such buildings shall be a distinct advantage in case of calamities shelters specially and other structures also. Most important advantage of the designed structure is that it shall be 100% salvaged or reused because of its ease of dismantling.

CHAPTER 15. Smart and/or Sustainable features of Chapter 8 & 13 designs, Impact on society. With the Smart village development Concept As Per Your Idea And Village Visit, modern technology with innovation with doing small changes, Period, Amount Expenditure and Benefit:

SR NO.	Proposed Design Name	Period	Amount Expenditure	Benefit
1.	Prathmik Arogya Kendra	Immediately	8,03,567 Rs.	Improve a health conscious and reduce a chance of emergency death ratio.
2.	Anganwadi	Within 1 year	2,50,000 Rs.	Child and mother care and better future of kids.
3.	Bank	Immediately	8,30,285 Rs.	Bank accounts can help for access credit.
4.	Cyber Cafe	Within 1 Year	2,39,371 Rs.	For students and for villagers there online work are done by cyber café and is less expensive than owning a home computer.
5.	Skill Development Class	6-8 month	6,46,762 Rs.	It builds self-esteem, confidence and leadership skills. It teaches children to collaborate.
6.	Post Office	3 months	8,07,332 Rs.	Helpful for sending letters.
7.	Community Hall	Within 1 Year	14,20,058 Rs.	For Community Gathering
8.	Public library	Within 1 Year	6,20,956 Rs.	Helpful for learning
9.	Gram Panchayat	4-5 months	6,42,650 Rs.	Village panchayats are playing very important role in providing the social welfare facilities to the village people.
10.	Grocery Shop	3 months	6,08,297 Rs.	Availability of all the Goods of Daily Need.
11.	Public toilet	Immediately	4,58,262 Rs.	More access to toilet for urination and defecation.
12.	Roads	Immediately	9,70,672 Rs.	Roads serve a very important means for vehicles and people to travel from one place to another.

CHAPTER 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?	Y	Agricultural Industrial
2	What are the chances of employment in village?	Y	
3	What are the special technical facilities in village?	N	
4	Is any debt on village dwellers?	No	
5	Are village people getting agricultural help?	Y	
6	Is women health awareness Program organized in village?	Y	
7	Are women having opportunity to work and income?	Y	
8	Child girl education is appreciated in village?	Y	
9	Facility of vaccination to child is available in village?	Y	
10	Are village people aware about child vaccination and done to each and every child as per norms?	Y	School vaccination setup centre
11	Women help line number information is provided to village people?	Y	
12	Is water scarcity in village? How many days per year?	N	
13	Is village under any debt?	N	
14	Is any serious issue due to debt from bank or any person happened in village?	N	
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	N	
16	Is any death of patient occurred due to unavailability of medical facility in village?	N	
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.	N	
18	Is village improvement is observed in comparative scenario from past to present?	Y	PMGSY
19	Is any unavoidable difficulty village people are facing? Any natural calamity is there?	N	
20	Life Living standard of girls and women is appreciated and uplifted in village?	Y	

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

સરપંચ
કુબડથલ-લાલપુર ગૃપ ગ્રામ પંચાયત
તા.દસ્ક્રોઈ, જી.અમદાવાદ.

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

17.1 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. Water is an essential element for survival. About seventy per cent of the human body consists of water while plants contain almost 90% of water. Still, we have to depend on some outside sources to fulfil the water requirements of our body. Similarly, crops require water for their growth and development. The process of supplying water to the crops is known as irrigation.

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:

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

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

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

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.

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

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

Manual Irrigation:

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

Methods of Irrigation

Irrigation can be carried out by two different methods:

- Traditional Methods
- Modern Methods

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.

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.

Fig.55 Sprinkler Irrigation

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 less. Drip irrigation is the most efficient water and nutrient delivery system for growing crops. It delivers water and nutrients directly to the plant's roots zone, in the right amounts, at the right time, so each plant gets exactly what it needs, when it needs it, to grow optimally.

Fig.56 Drip System

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.

Irrigation should be optimum because even over-irrigation can spoil the crop production. Excess water leads to waterlogging, hinder germination, increased salt concentration and uprooting because roots can’t withstand standing water. Thus the proper method is to be used for the best cultivation.

CHAPTER 18. Social Activities-Any Activates Planned by Students

1. Beti bachao beti padhao :

Beti Bachao, Beti Padhao (Save the daughter, educate the daughter) is a campaign of the Government of India that aims to generate awareness and improve the efficiency of welfare services intended for girls in India. The scheme was launched with an initial funding of ₹100 crore. The Beti Bachao, Beti Padhao (BBBP) scheme was launched on 22 January 2015 by PM Narendra Modi. It aims to address the issue of the declining child sex ratio image (CSR) and is a national initiative jointly run by the Ministry of Women and Child Development, the Ministry of Health and Family Welfare and the Ministry of Human Resource Development. It initially focused multi-sector action in 100 districts throughout the country where there was a low CSR.

So to support this step in our village's small drawing competition and seminar were held to eradicate girl child death and give them education.

2. Digital India:

Digital India is a campaign launched by the Government of India in order to ensure the Government's services are made available to citizens electronically by improved online infrastructure and by increasing Internet connectivity or making the country digitally empowered in the field of technology. The initiative includes plans to connect rural areas with high-speed internet networks. Digital India consists of three core components: the development of secure and stable digital infrastructure, delivering government services digitally, and universal digital literacy. In our village there are now many houses having mobile network all over the year. There are few houses where the too possess wifi connections also.

3. Entrepreneurship:

Entrepreneurship is the creation or extraction of value. With this definition, entrepreneurship is viewed as change, which may include other values than simply economic ones. The people who create these businesses are often referred to as entrepreneurs.
For this no steps are taken yet.

4. One day Health Awareness / Education Camp:

A health awareness program was conducted for students from a school in our village. Authorities of the Health department organized an awareness camp for the students. The students were made aware of the importance of hand washing prior and after eating and exercising each day and of the importance of sports and other healthy habits in order to prevent sickness. The students were asked to share their day-to-day routines and their daily hygiene measures. The students learned a lot in the session and promised to follow all their good habits. They advised students to take precautionary measures against stomach ailments and asked them to drink water only after boiling, so as to ensure personal hygiene and family hygiene, particularly in the food process.
Basic information of safety precaution and use of safety kits were inform to Sarpanch and basic sanitization steps to be taken were informed.

Fig.57 Conscious from Heatwaves in summer

Fig.58 Awareness for handwashing in covid

5. Women Empowerment and her Rights:

Women's empowerment is the process of empowering women. Empowerment can be defined in many ways; however, when talking about women's empowerment, empowerment means accepting and allowing people who are on the outside of the decision-making process into it.

Women empowerment is the most crucial point to be noted for the overall development of a country. Many people think that the days of woman fighting for rights are over but those people are wrong because 1 out of every 3 women has been sexually harassed or cat called in public by random men they don't know.

"This puts a strong emphasis on participation in political structures and formal decision-making and, in the economic sphere, on the ability to obtain an income that enables participation in economic decision-making." Empowerment is the process that creates power in individuals over their own lives, society, and in their communities.

Empowerment includes the action of raising the status of women through education, raising awareness, literacy, and training. Women's empowerment is all about equipping and allowing women to make life-determining decisions through the different problems in society.

Alternatively, it is the process for women to redefine gender roles that allows them to acquire the ability to choose between known alternatives that have otherwise been restricted from such ability.

Nowadays also, in villages this things are not changed and thus I will tell government to take few more steps at village level for the same.

CHAPTER 19.<<ALLOCATED VILLAGE>>SAGY Questionnaire Survey form with the Sarpanch Signature

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Kubadthal Gram Panchayat: _____ Ward No. _____

Block: _____ District: Ahmedabad

State: Gujarat L S Constituency: _____

1. Family Identity and Size

Name of Head of Household	Vinodbhai Parmar							Male/ Female	M
SECC Survey ID:		Family Size	4	Over 18	4	6 to 18	–	Under 6	–

2. Category & Entitlement Details (Tick as appropriate)

Social Category[1]	SC	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		
PDS (If NFSA is implemented)	Annapurna	Antyodaya	Priority	Other	member of an SHG? Yes / No		

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]
Vinodbhai Parmar	50	M	N	2	5	Y	Y	
Hetal ben Parmar	46	F	N	2	5	Y	Y	
Harsh Vinodbhai Parmar	24	M	N	1	6	Y	Y	
SHRUTI Vinodbhai Parmar	21	F	N	1	8	Y	N	

3. Children from 6 years and up to 18 years

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

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	N	N
Children	–	–

9. House & Homestead Data

Own House: Yes / No ✓	No. of Rooms: 2
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 ✓		20 m
Open Well(Public / Private) Yes / No ✓		–
Other (mention):		

11. Source of Lighting and Power

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

12. Landholding (Acres)

1. Total	–	2. Cultivable Area	–
3. Irrigated Area	–	4. Uncultivable Area	–

13. Principal Occupations in the Household

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

14. Migration Status
Does any member of the household migrate for Work: Yes / No. If Yes Entire Year / Seasonal
Does anyone below 18 years migrate for work: Y/N ✓

15. Agriculture Inputs

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

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

Name	Unit	Quantity
–		
–		
–		

17. Livestock Numbers

Cows: –	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
- Volley ball - Cricket
- Badminton - Kabaddi

19. Do children play musical instrument (mention)

Schedule Filled By:
Principal Respondent:
Date of Survey: 29/5/2021

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: Kubadthal

b. Block: Gram Area

c. District: Ahmedabad

d. State: Gujarat

e. Lok Sabha Constituency: _____

f. Number of Wards in the Gram Panchayat: _____

g. Number of Villages in the Gram Panchayat: _____

h. Names of Villages: Kubadthal

Demographic Information

Number of Households 750 Total Population 3691 Male 1928 Female 1763

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	YES	2
b.	Nearest Primary Health Centre (PHC)	YES	2
c.	Nearest Community Health Centre (CHC)	NO	-
d.	Nearest Post Office	NO	-
e.	Nearest Bank Branch (Any)	YES	4
f.	Nearest Bank with CBS Facility	NO	-
g.	Nearest ATM	NO	-
h.	Nearest Primary School	YES	1
i.	Nearest Middle School	YES	3
j.	Nearest Secondary School	YES	3
k.	Nearest Higher Secondary School / +2 College	YES	4
l.	Nearest Graduate College	NO	-
m	Nearest ITI / Polytechnic Centre	NO	-
n	Kisan Seva Kendra	NO	-

1

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

	Infrastructure Facilities / Services	Located within the GP Yes (Y)/No (N)	If located elsewhere (N), distance from the GP office
o	Agriculture Credit Cooperative Society	No	–
p	Nearest Agro Service Centre	No	–
p	MSP based Government Procurement Centre	No	–
q	Milk Cooperative /Collection Centre	YES	4
r	Veterinary Care Centre	No	–
s	Ayurveda Centre	No	–
t	E – Seva Kendra	No	–
u	Bus Stop	YES	2
v	Railway Station	No	–
w	Library	No	–
x	Common Service Centre	No	–

IV. Sports Facilities in the Gram Panchayat

a. Number of Play Grounds in the GP: Total ___1___ Public___1___ Private_____

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

V. Education, ICDS

a. Number of Angan Wadi Centres:___2___

b. Number of villages without Angan Wadi Centres___–___

Names of such villages: ___–___

c. Schools (Number)

Primary Private: ___1___ Primary Govt.:___1___

Middle Private:___–___ Middle Govt.:___1___

Secondary Private:___–___ Secondary Govt.:___1___

Higher Secondary Private: _____ Higher Secondary Govt: _____

VI. Public Distribution System

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

2

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

VII. Coverage of Villages under different Facilities & Services

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

VIII. Land and Irrigation

	Private Land	Area in Acres		Common Land	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	–	d.	Pasture / Grazing Land	–	g.	Check Dam	-
b.	Irrigated Land	560	e.	Forests/ Plantations	30Y.	h.	Wells/Bore Wells	1
c.	Un-irrigated Land	–	f.	Other Common Land	–	i	Tanks /Ponds	3

[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)	50
b)	Number of Households receiving pension (old age, widow, disability)	50
c)	Number of eligible Households who are not receiving pension	–
d)	Number of Households eligible for Ration Card	750
e)	Number of eligible HHs having ration cards	680
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	300
l)	Number of landless households	–
m)	Number of IAY beneficiaries	–
n)	Number of FRA[2] beneficiaries	–
o)	Number of Community Sanitary Complexes	–
p)	Number of Households headed by single women	–
q)	Number of Households headed by physically handicapped persons	–
r)	Total number of Persons with Disability in the village	30
s)	Number of SHGs	–
t)	Number of active SHGs	–
u)	Number of SHG Federations	–
v)	Number of Youth Clubs	0
w)	Number of Bharat Nirman Volunteers	0

Name and Signature of Surveyor and Respondent'

1) Joshi Rutvik Vijay 2) Sunil kumar Prajapat Surveyor	PRI Respondent (Preferably Gram Panchayat Chairperson)	સરપંચ કબુડથલ-લાલપુર ગ્રુપ ગ્રામ પંચાયત Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	29/5/2021 Date of Survey

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

4

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: Kubadthal

b. Ward Number: _____

c. Gram Panchayat: kubadthal

d. Block: _____

e. District: Ahmedabad

f. State: Gujarat

g. Lok Sabha Constituency: _____

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

i. Names of Habitations / Hamlets:

Demographic Information

Number of Households 750 Total Population 3691 Male 1928 Female 1763

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	1
b.	Nearest Middle School	YES	3
c.	Nearest Secondary School	YES	3
d.	Kisan Seva Kendra	NO	–
e.	Milk Cooperative /Collection Centre	YES	4
g.	Health Sub Centre	YES	2
h.	Bank	YES	4
i.	ATM	NO	–
j.	Bus Stop	YES	2
k.	Railway Station	NO	–

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

1

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

ii. Road Connectivity

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

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

iii. Drinking Water Facilities

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

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

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

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

iv. Coverage of Habitations under Waste Management System

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

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

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

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

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

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

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: All

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

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

vi. Sports Facilities in the Village

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

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

vii. Education, ICDS

a. Number of Anganwadi Centres: 2

c. Schools (Number)

Primary Private: 1 Primary Govt.: 1

Middle Private: - Middle Govt.: 1

Secondary Private: — Secondary Govt.: 1

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	–	d.	Pasture / Grazing Land	–	g.	Check Dam	-
b.	Irrigated Land	560	e.	Forests/ Plnatations	30%	h.	Wells/Bore Wells	1
c.	Un-irrigated Land	–	f.	Other Common Land	–	I	Tanks /Ponds	3

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	–
2	Number of active Job Card holders who have completed 100 days of work	–
3	Number of shops selling alcohol	–
4	Number of BPL families	300
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)	NO
12	Number of Youth Clubs	0
13	Number of Bharat Nirman Volunteers	0

Name and Signature of Surveyor and Respondent'

Joshi Rutvik Vijay, Sunil kumar Prajapat			29/5/2021
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

સરપંચ
કુબડથલ-લાલપુર ગૃપ ગ્રામ પંચાયત
તા.દસ્ક્રોઈ, જી.અમદાવાદ.

3

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

Gmail

Rutvik Joshi <rutvikjoshi12345@gmail.com>

Existing and development scenario of Kubadthal village daskroi ahemedabad

2 messages

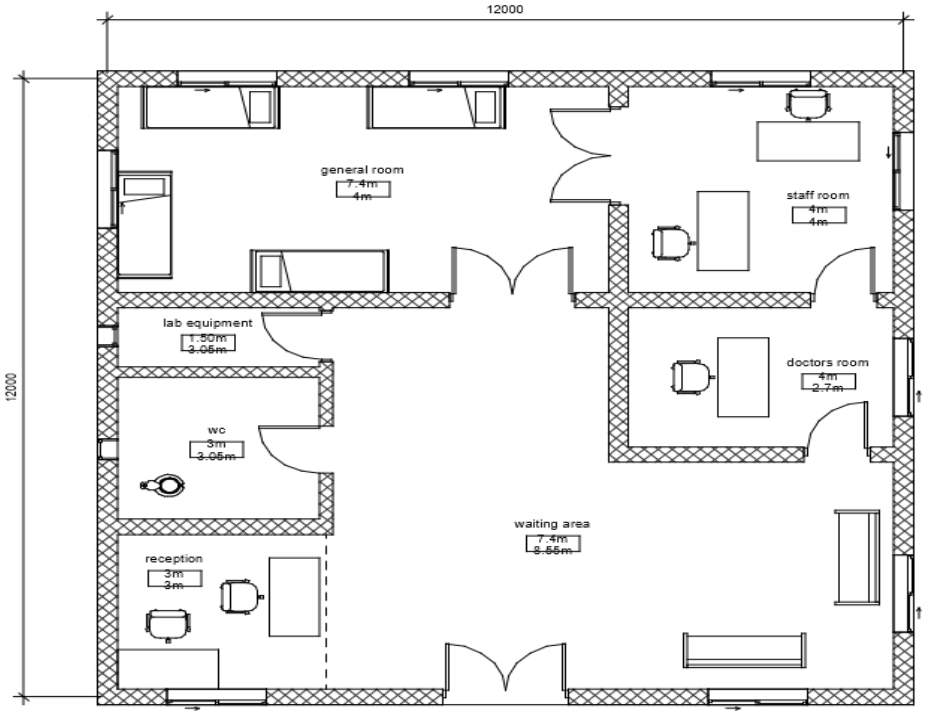
Rutvik Joshi <rutvikjoshi12345@gmail.com> 25 June 2021 at 13:52
To: kubadthalpanchayat@gmail.com

Respected sir/mam
We are the student of Hasmukh Goswami College of Engineering Vahelal Ahmedabad affiliated to Gujarat technical university GTU, GTU has been assigned to Vishwakarma Yojana -VY in which student survey various village and design various amenities to deliver it to them making the ideal for living better life as per requirement and village problem statement.
As a part of a Vishwakarma Yojana guidelines we have been asked to inform all the respected officers about to our project in which we will shortly notice about Kubadthal Village profile and our design work for them which is as below

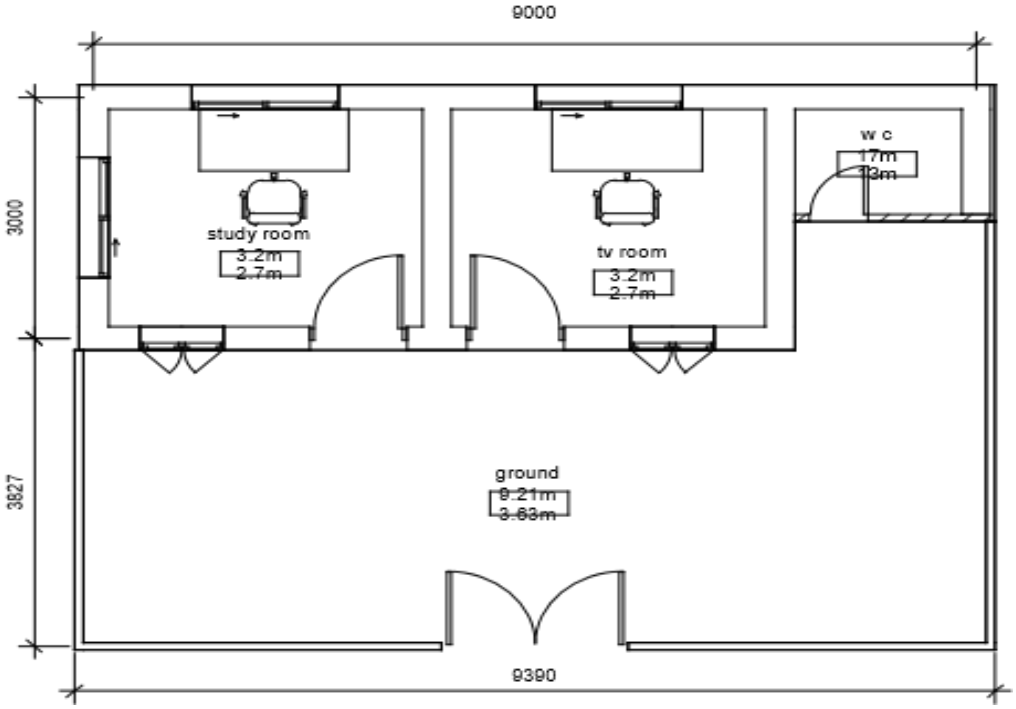
SR NO.	Proposed Design Name	Period	Amount Expenditure	Benefit
1.	Prathmik Arogya Kendra	Immediately	8,03,567 Rs.	Improve a health conscious and reduce a chance of emergency death ratio.
2.	Anganwadi	Within 1 year	2,50,000 Rs.	Child and mother care and better future of kids.
3.	Bank	Immediately	8,30,285 Rs.	Bank accounts can help for access credit.
4.	Cyber Cafe	Within 1 Year	2,39,371 Rs.	For students and for villagers there online work are done by cyber café and is less expensive than owning a home computer.
5.	Skill Development Class	6-8 month	6,46,762 Rs.	It builds self-esteem, confidence and leadership skills. It teaches children to collaborate.
6.	Post Office	3 months	8,07,332 Rs.	Helpful for sending letters.
7.	Community Hall	Within 1 Year	14,20,058 Rs.	For Community Gathering
8.	Public library	Within 1 Year	6,20,956 Rs.	Helpful for learning
9.	Gram Panchayat	4-5 months	6,42,650 Rs.	Village panchayats are playing very important role in providing the social welfare facilities to the village people.
10.	Grocery Shop	3 months	6,08,297 Rs.	Availability of all the Goods of Daily Need.
11.	Public toilet	Immediately	4,58,262 Rs.	More access to toilet for urination and defecation.
12.	Roads	Immediately	9,70,672 Rs.	Roads serve a very important means for vehicles and people to travel from one place to another.

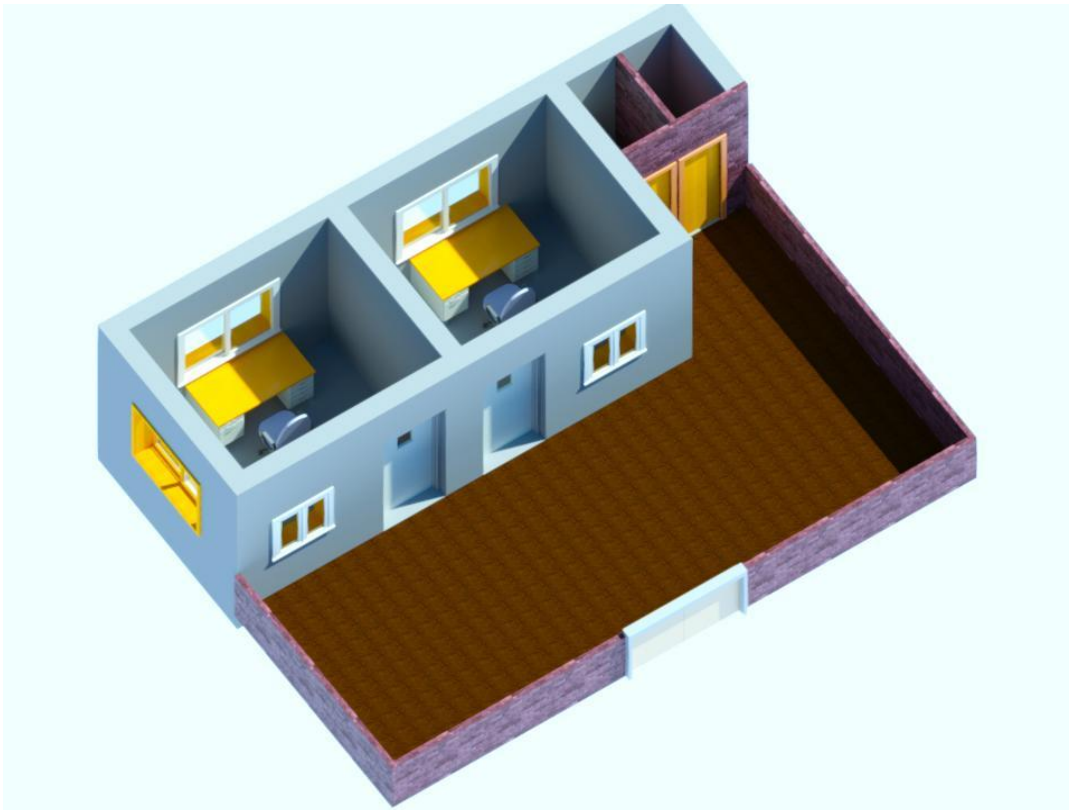
CHAPTER 21. Comprehensive report for the entire village

Vishwakarma Yojana is provides special scheme for development of village by GTU and Government of Gujarat in which students work together and collect data and information regards village development with the help of gram panchayat and stake holders. Village have some basic facilities likes drinking water, drainage system, pucca road, and other facilities like primary school, primary health center, community hall, library, public latrine block, are sufficient so that village can develop. So, we will give proposal regarding sustainable energy sources and solution related to infrastructure problems. Efforts have been made in this project work to identify and plan some of the below facilities for sustainable development of village and to meet need of future population. Vishwakarma Yojana is one of the initiatives towards Rurbanization that is village development by the government of Gujarat, which was allotted as a real time situation type project provides to GTU. It is one of the strategies to reduce urban city pressure and lower the migration rate by developing village with a ―rural soul‖ but with all urban amenities that a city may have. In this project the students meet the relevant citizens of village and survey the existing facilities. Then design of the sustainable infrastructure which is to be modified is carried out for the village. This includes implementation of engineering skills to prepare detailed project reports for village as a part of the final year project work. By this project certain experiences recreates a real work and need of application of an individual technical knowledge on any existing problems. Based on survey we tried to give design of basic facilities to fulfill their needs. By providing these basic facilities to village for reduce urban city pressure and decrease migration rate, which is ultimate aim of Vishwakarma Yojana.

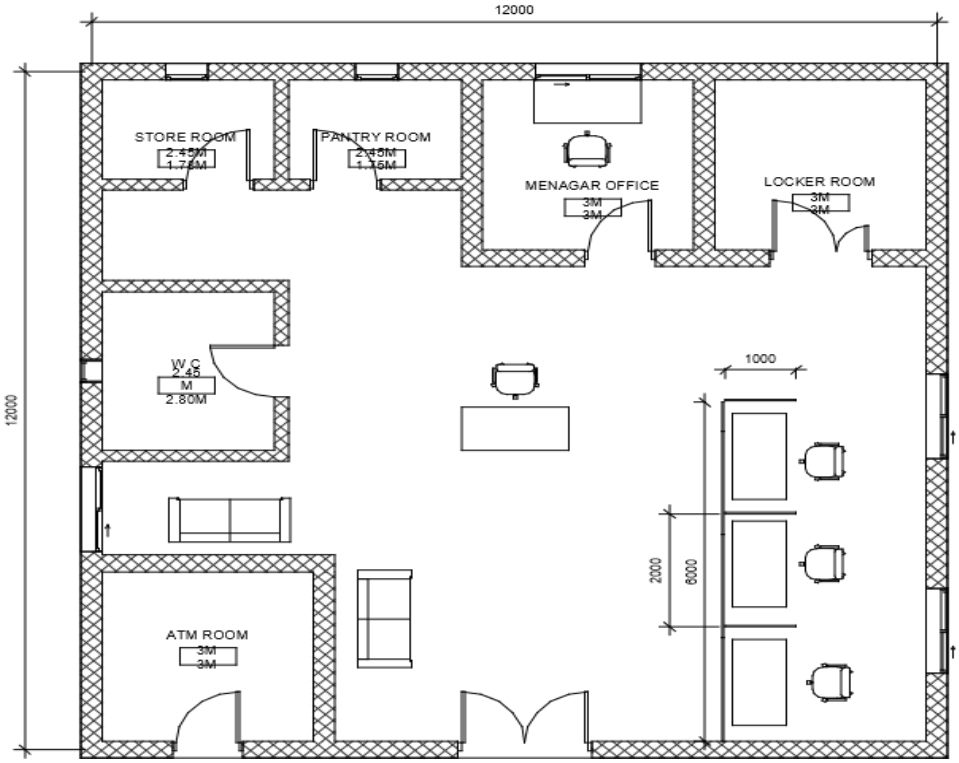


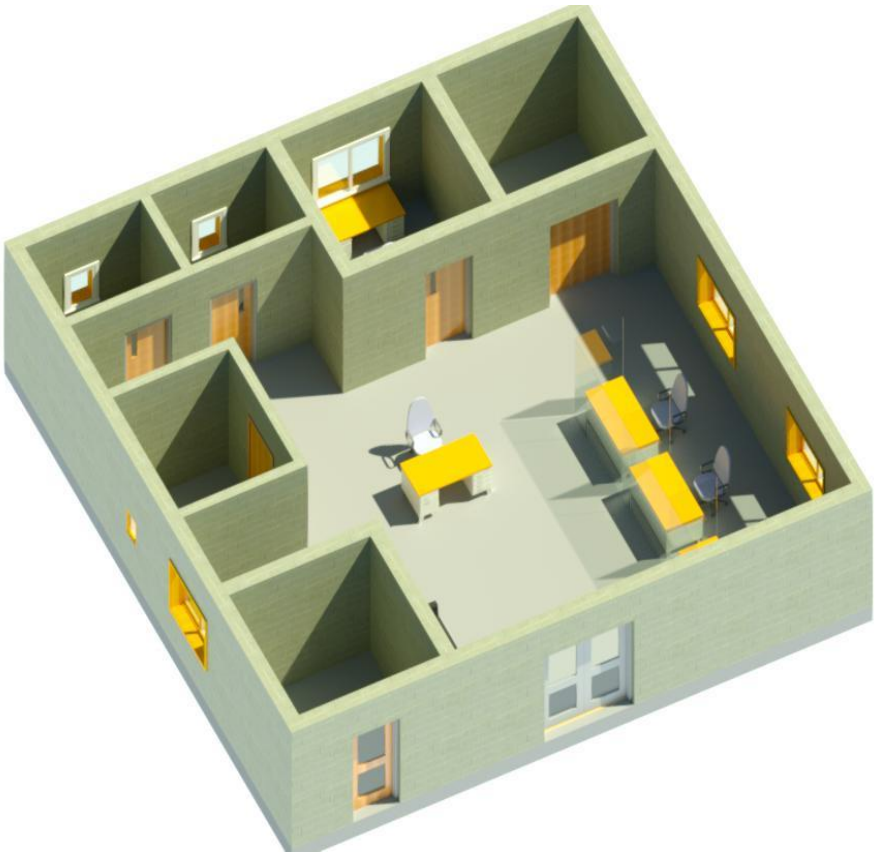
Design Infrastructure: Prathmik Arogya Kendra : Kubadthal District: Ahmedabad



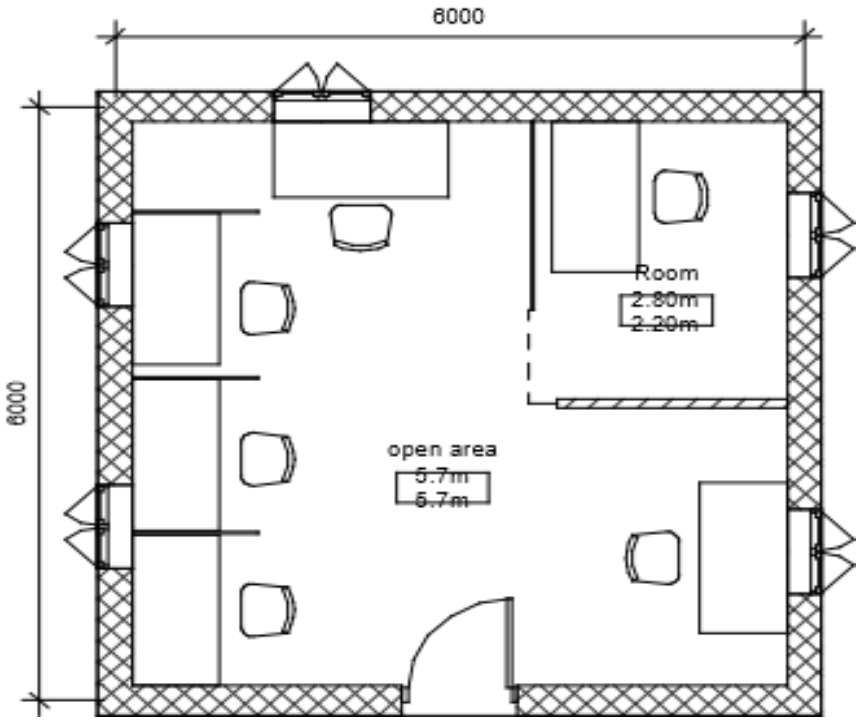


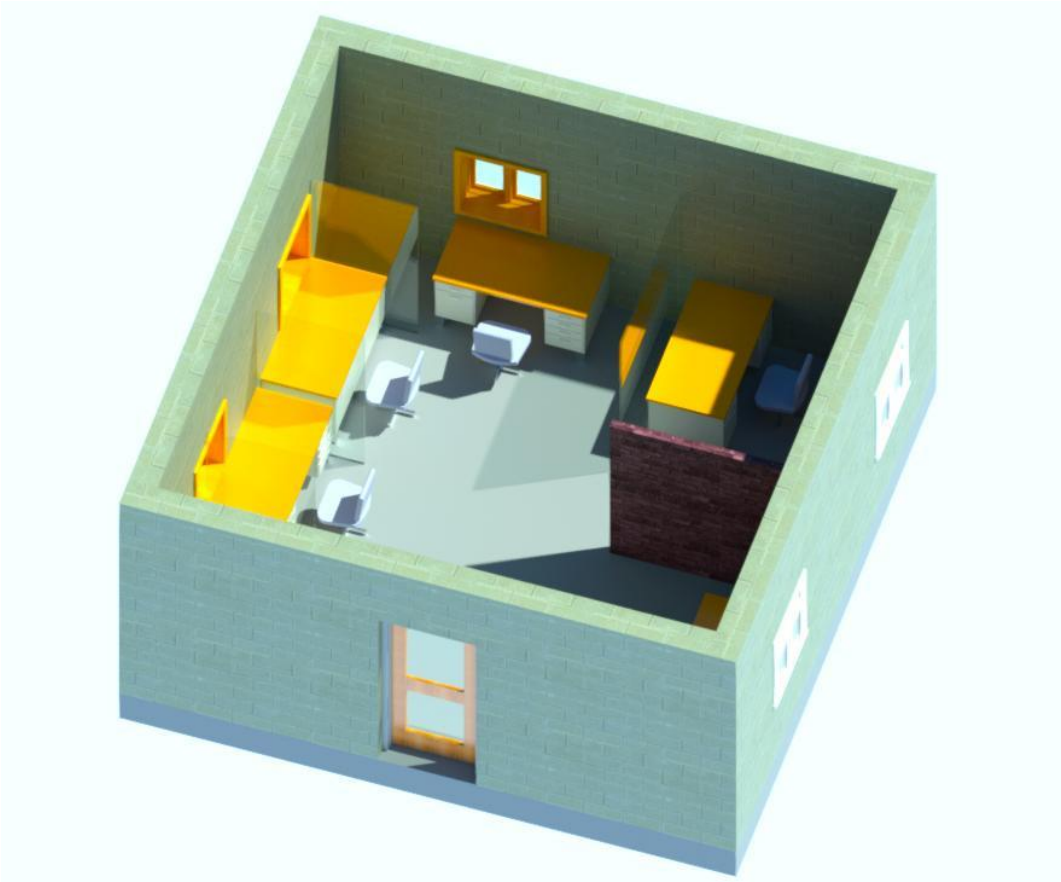
Design Infrastructure: Anganwadi -Village: Kubadthal District: Ahmedabad



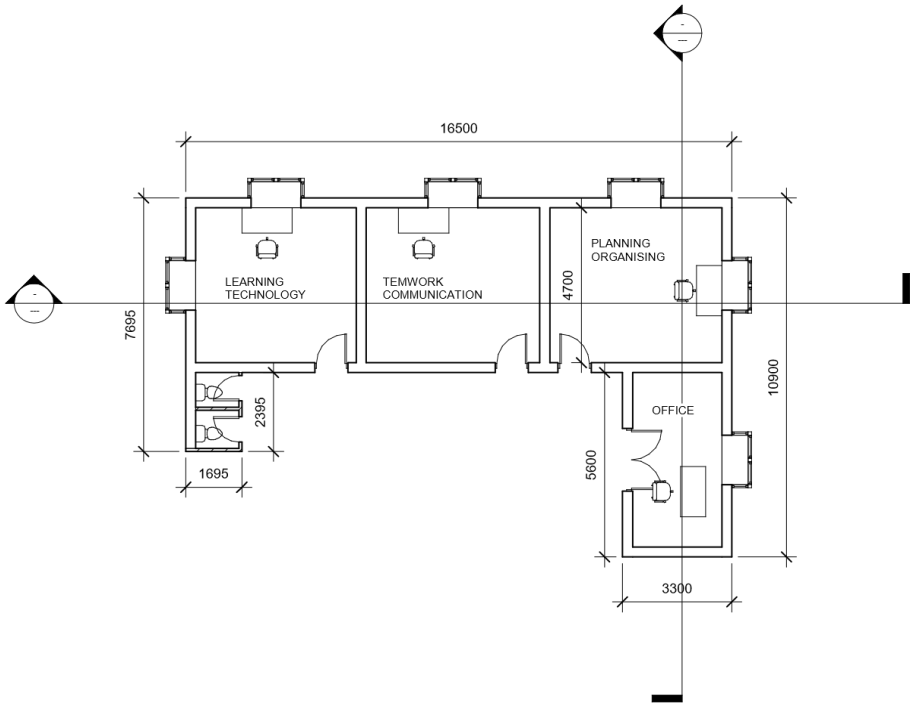


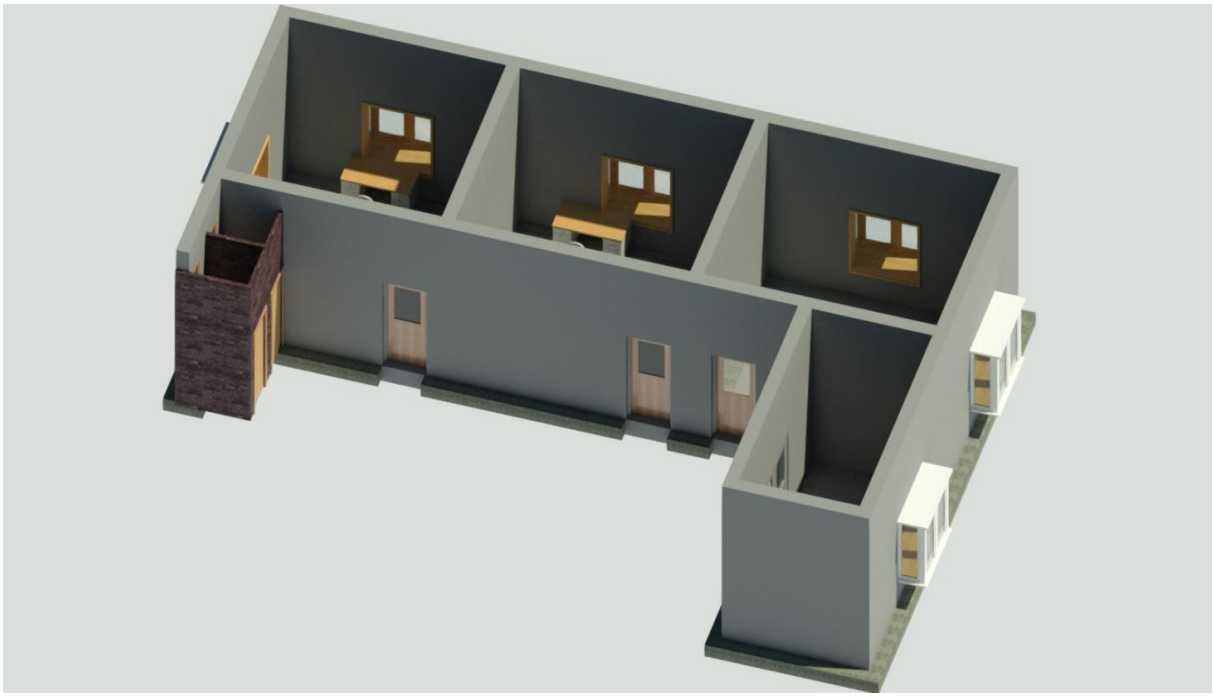
Design Infrastructure: Bank -Village : Kubadthal District: Ahmedabad



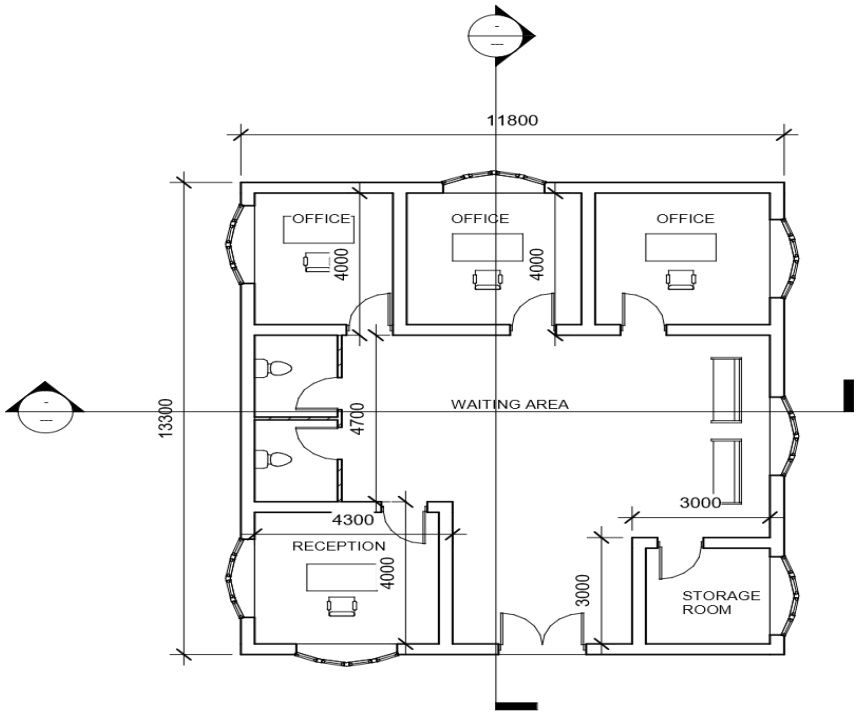


Design Infrastructure :Cyber Cafe -Village : Kubadthal District: Ahmedabad

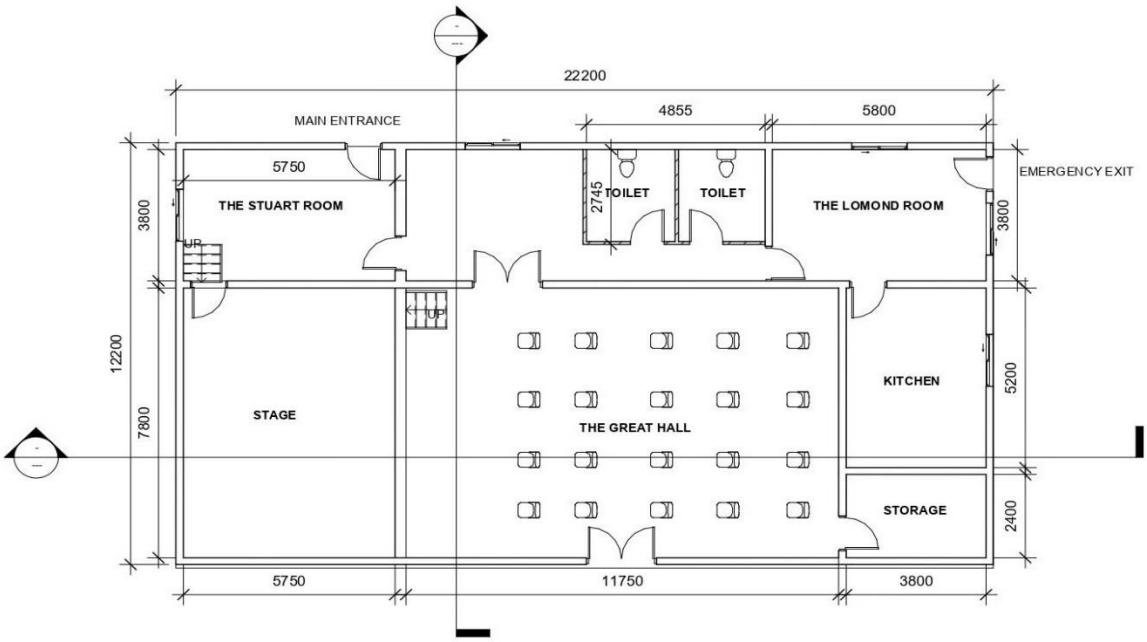


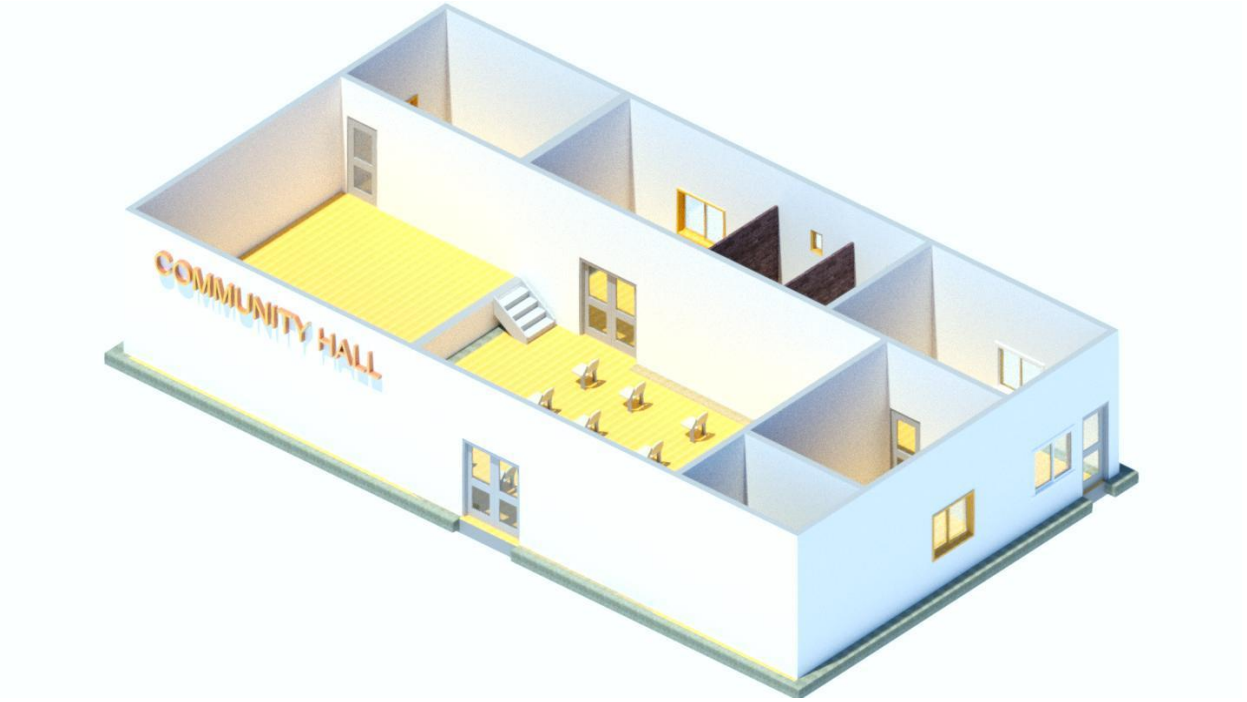


Design Infrastructure: Skill Development Class -Village: Kubadthal District:Ahmedabad

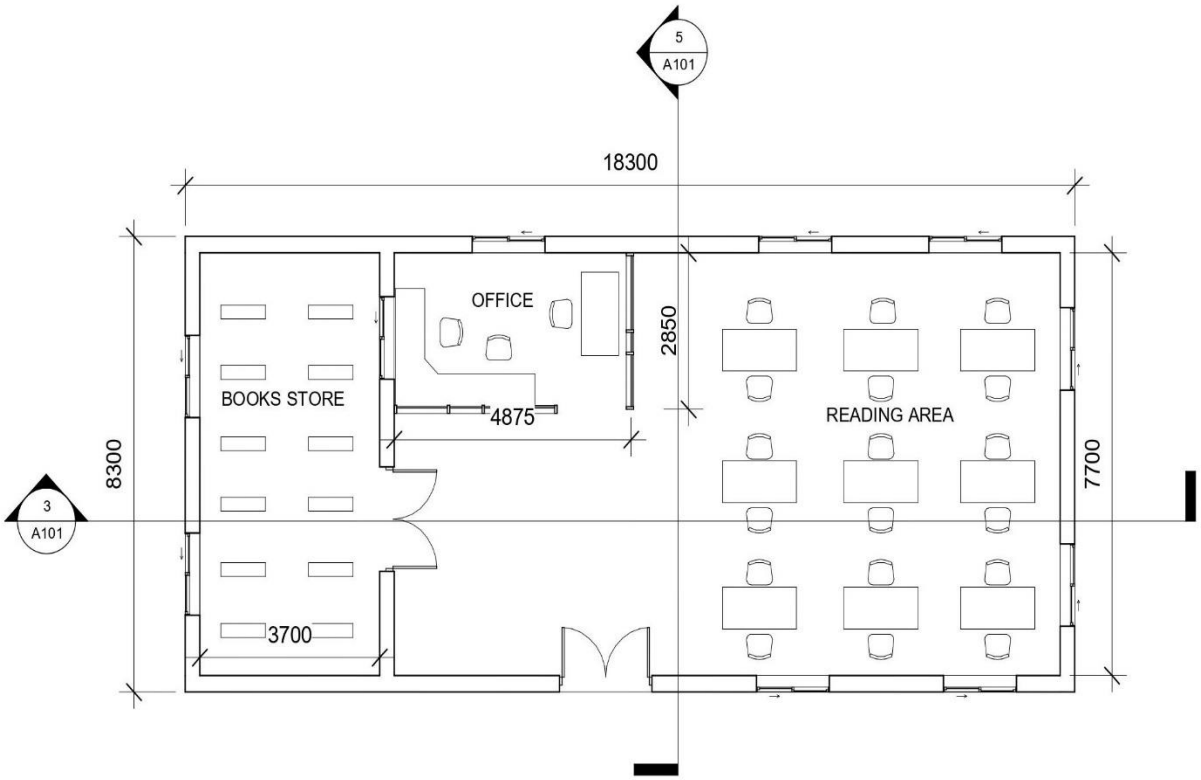


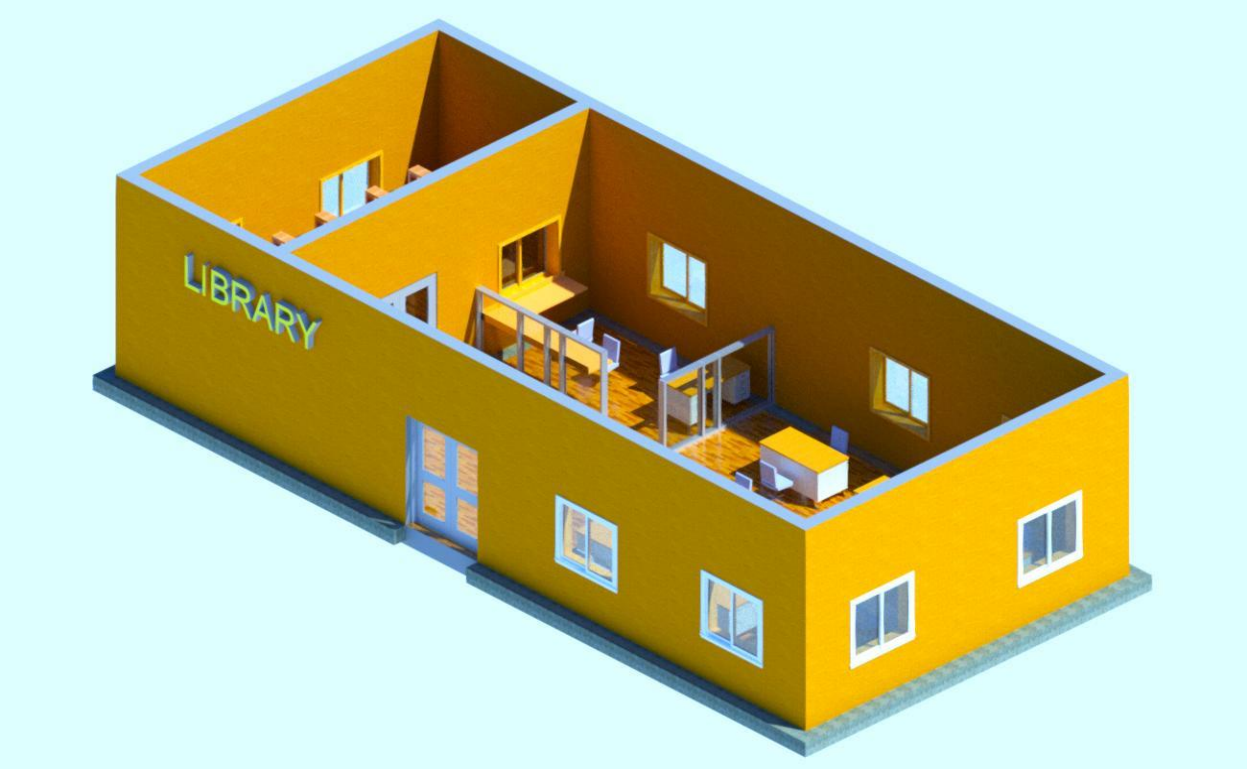
Design Infrastructure: Post office -Village: Kubadthal District: Ahmedabad



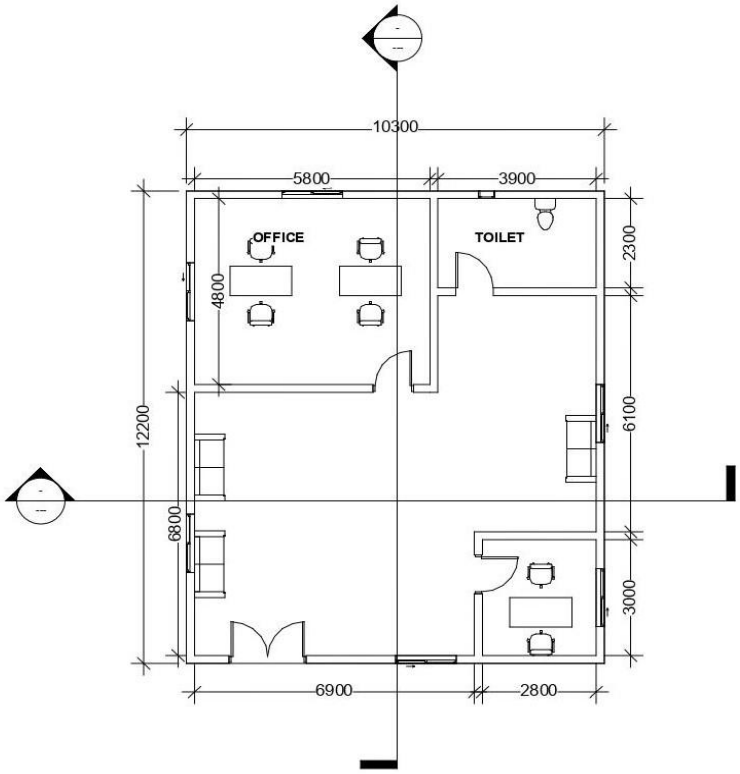


Design Infrastructure: Community Hall -Village: Kubadthal District: Ahmedabad

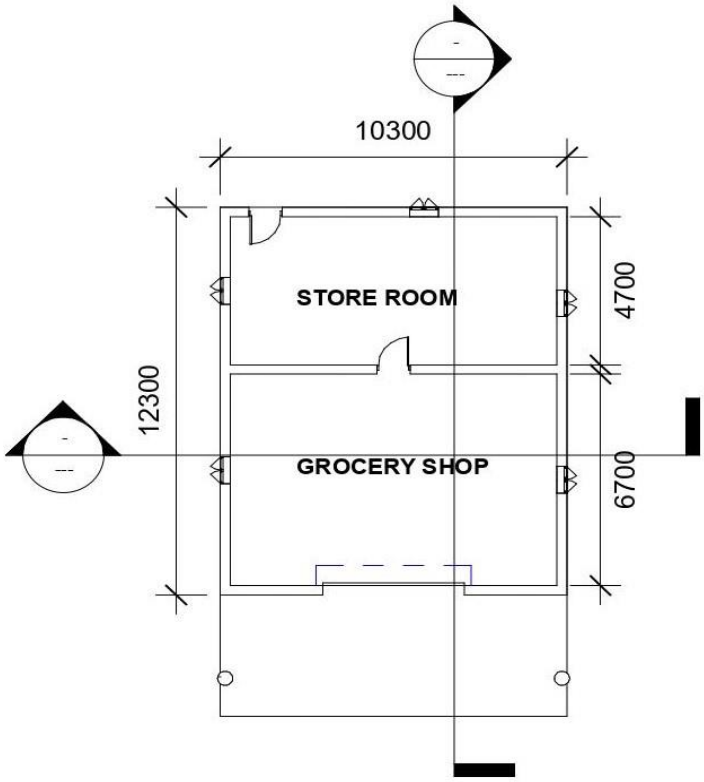


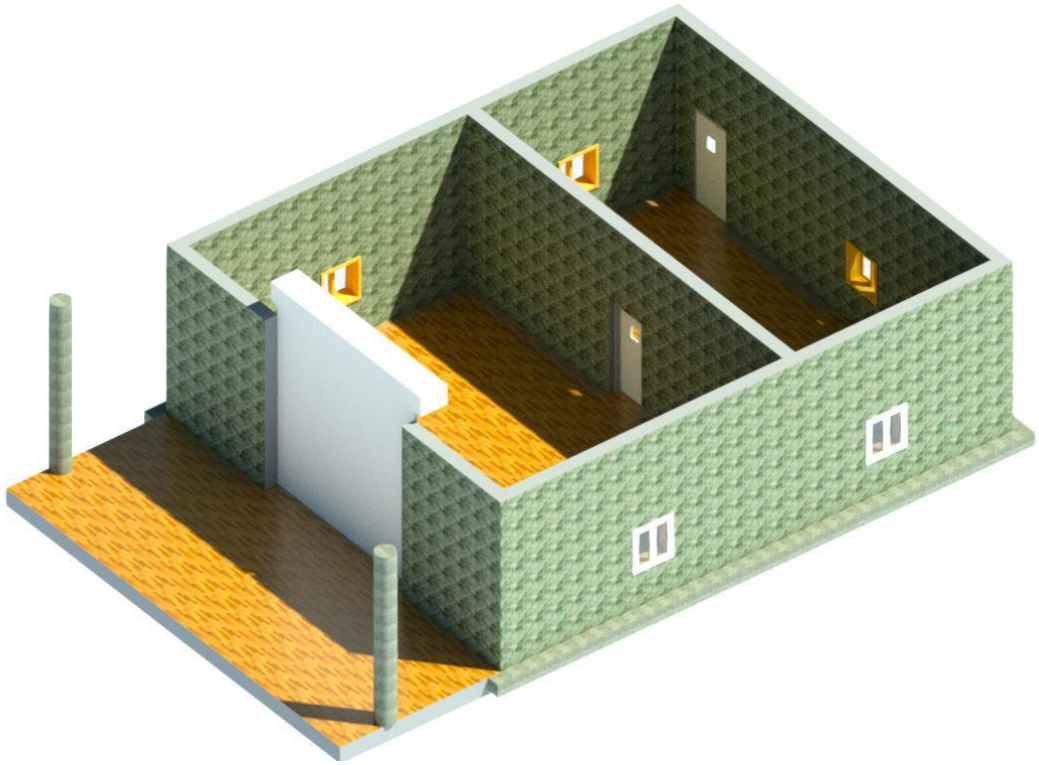


Design Infrastructure: Public Library -Village: Kubadthal District: Ahmedabad

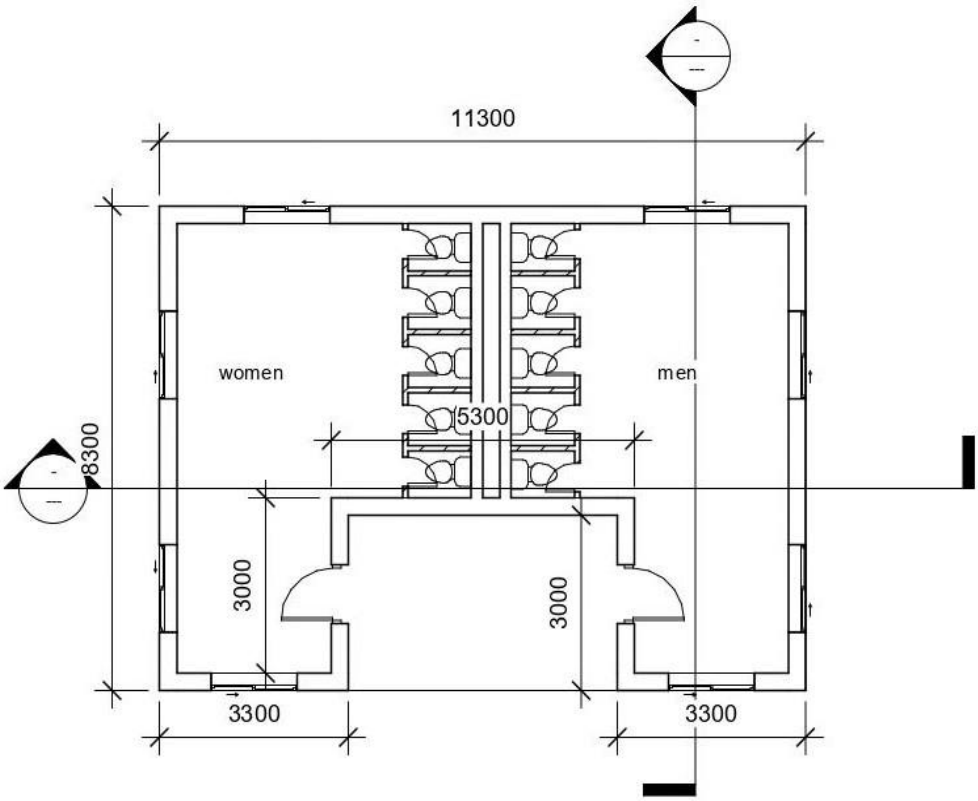


Design Infrastructure: Gram Panchayat -Village: Kubadthal District: Ahmedabad





Design Infrastructure: Grocery Shop -Village: Kubadthal District: Ahmedabad



Design Infrastructure: Public toilet -Village: Kubadthal District: Ahmedabad