DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII
AN APPROACH TOWARDS RURBANISATION
KHARACH Village
BHARUCH District

PREPARED BY

NAME	BRANCH NAME	ENROLLMENT NO
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Darshil S. Patel	Civil	180063106068

COLLEGE NAME : BHAGWAN MAHAVIR COLLGE OF ENGINERRING & TECHNOLOGY

Asst. Prof. Dixit Chauhan
Assistant Professor Civil Engineering Department BMCET,
Bharthana, Surat

YEAR:2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmadabad– 382424 Gujarat

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CERTIFICATE

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

Detail Project Report for,

VILLAGE : KHARACH
DISTRICT: BHARUCH

Under

Vishwakarma Yojana: Phase-VIII

In partial fulfillment of the project to fared by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

During the academic year 2020-21.

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

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
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Date of Report Submission:	
Principal Name and Signature:	**Dr. Vineet Goel**
VY-Nodal Officer Name and Signature:	**Asst. Prof. Dixit Chauhan**
Internal(Evaluator) Guide Name and Signature:	**Asst. Prof. Dixit Chauhan**
College Name:	**BHAGHWAN MAHAVIR COLLEGE OF ENGINEERING & TECHNOLOGY**
College Stamp:	

ABSTRACT

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

According to Census 2011 information the location code or village code of Kharach village is 522437. Kharach village is located in Hansot, Tehsil of Bharuch district in Gujarat, India. Hansot is nearest town to Kharach village.

About 75% of India's population, or 8000 million, live in its 600,000 villages. The average village has 200-250 households, and occupies an area of 5 sq. km. Most of this is farmland, and it is typical to find all the houses in one or two clusters. Villages are thus spaced 2-3 km apart, and spread out in all directions from the market towns. The market centers are typically spaced30-40 km apart. As the population and the economy grow, several large villages are continually morphing into towns and market centers. Around 65% of the State's population is living in rural areas. People in rural areas should have the same quality of life as is enjoyed by people living in sub urban and urban areas. Further there are cascading effects of poverty, unemployment, poor and inadequate infrastructure in rural areas on urban centers causing slums and consequential social and economic tensions manifesting in economic deprivation and urban poverty. Hence Rural Development which is concerned with economic growth and social justice, improvement in the living standard of the rural people by providing adequate and quality social services and minimum basic needs becomes essential. The present Project deals with the same.

"Developing village with a 'rural soul' but with all urban amenities that a city may have"

Vishwakarma Yojana is one of the approaches to reduce urban city Pressure and lower the migrationrate by developing village with a "rural soul" but with all urban amenities that a city may have.

The main objective of this Yojana is

"**Creation of infrastructure - connectivity, civil and social infrastructure along with provision of alternative Economy generation is the key pillars that the concept hinges on."**

Key word :Vishwakarma Yojana , urbanization, rurbanisation, village development, infrastructures, rural development, sustainable development.

ACKNOWLEDGEMENT

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

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

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

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

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

We are also thankful to our **Prof**.(**Dr.) Vineet Goel 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, **Asst. Prof. Dixit Chauhan from college and Asst. Prof. Dixit Chauhan** 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

GIS	Geographic information system
PMGSY	Pradhan mantri gram Sadak Yojna
VY	Vishwakarma Yojna
KM	Kilometer
SAGY	Sansad Adarsh Gram Yojna
DDO	District Development Officer
TDO	Taluka Development Officer
CAD/CAM	Computer aided design and computer aided manufacturing
BIM	Building information modeling
STP	Sewage Treatment Plan
COD	Chemical Oxygen demand
TSS	Total Suspended Solids
ASP	Activated Sludge Process
UASB	Up flow Anaerobic Sludge Blanket Reactor

Chapter 1

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

1. Ideal village visit from District of Gujarat State (Civil & Electrical Concept)

1.1 Background & Study Area Location:

Ena village which is located about 25 km from Surat city, typifies development. Here villagers enjoy all the facilities that one living in the city enjoys. The 11 km road from Bardoli to Ena. This Place is in the border of the Surat District and Navsari District. Navsari District Navsari is South towards this place . It is near to Arabian sea.

Ena is a large village located in Palsana Taluka of Surat district, Gujarat with total 888 families residing. The Ena village has population of 3777 of which 1895 are males while 1882 are females as per Population Census 2011.

In Ena village population of children with age 0-6 is 378 which makes up 10.01 % of total population of village. Average Sex Ratio of Ena village is 993 which is higher than Gujarat state average of 919. Child Sex Ratio for the Ena as per census is 871, lower than Gujarat average of 890.

Ena village has lower literacy rate compared to Gujarat. In 2011, literacy rate of Ena village was 74.43 % compared to 78.03 % of Gujarat. In Ena Male literacy stands at 76.43 % while female literacy rate was 72.45 %.

As per constitution of India and Panchyati Raaj Act, Ena village is administrated by Sarpanch (Head of Village) who is elected representative of village.

Fig.1 Map of Ena

KEY ELEMENTS OF IDEAL VILLAGE:

- For security purposes, not any unknown person is allowed to enter in the village without identity card.
- For any important announcement they uses speakers at different places of the village.
- There are two Sahakari Mandali for farmers which gives loan to the farmers at low interest.
- There are four puravatha mandali where different types of vegetables and crops are stored.
- There are 2 main gates to enter in the village.
- 60% people of the village depend on the business.
- All the people i.e. 100% people of village pay their tax to the Gram Panchayat.

1.2 CONCEPT OF IDEALVILLAGE:

1.2.1 Objectives of Ideal Village:

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 waterfacilityfordrinkingincludingwaterforirrigation,qualitybutaffordablehousings, school, medical facilities for human beings and animals, proper sanitation system, information center, bank, police station, retail outlet for household and agriculture needs, phone facility, connecting roads to nearby villages and towns, legal councilor.

Provide drinking water security through an integrated combination of pipe, local traditional water sources and multiple sources for alternative use. Conserve water through water resource management that includes rainwater harvesting and artificial recharge, conservation and renovation of traditional water sources Build effective community institutions at the local level by supporting capacity building and empowerment. Ensure that all community groups, including women, are able to participate in the decision-making processes and benefit from program improvements and Improve household and community environments with sanitation improvement and increased hygiene awareness in communities.

1.2.2 CASE STUDY OF IDEAL VILLAGE OFINDIA/GUJARAT:

Urban or municipal infrastructure refers to hard infrastructure systems generally owned and operated by municipalities, such as streets, water distribution, and sewers. It may also include some of the facilities associated with soft infrastructure, such as parks, public pools and libraries.

Green infrastructure is a concept that highlights the importance of the natural environment in decisions about land use planning. In particular there is an emphasis on the "life support" functions provided by a network of natural ecosystems, with an emphasis on interconnectivity to support long-term sustainability. Examples include clean water and healthy soils, as well as the more anthropocentric functions such as recreation and providing shade and shelter in and around towns and cities. The concept can be extended to apply to the management of storm water runoff at the local level through the use of natural systems, or engineered systems that mimic natural systems, to treat polluted runoff.

1.2.3 THE IDEA OF A MODEL:

1. Exposure visits are a very important training methodology as it enables the participants from a different setting to interact with and learn from each other, allowing them to view practical/real life situations of successful integration of sustainable practices in the said filed.
2. During this meeting broader information exchanges took place between the two groups, beyond the core topic. It was observed that all the participants were enthusiastic for learning and implementing their learning's in their own village.
3. This visit was a step forward in the project as it was a real time experience for the participants on the struggle and hard work that goes into building a remarkable ideal village.

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

- **PUNSARI VILLAGE:**

Punsari village is situated in sabarkantha Gujarat, Punsari is India's smartest village. The village is located 18km away from the Gandhinagar Punsari village has followed Panchyati raj system. The villagers used new and advanced technology in education. The panchayat provided Wi-Fi system for all people of the village. Punsari panchayat provided the facilities of local mineral water supply, sewer and drainage project, Health care center, Banking facilities, toll free complaint reception service

The village received award being the best gram panchayat of Gujarat. The village model has been appreciated by delegates from Nairobi and they are coming to replicate in the village of Kenya.

1.3 DETAIL STUDY:

Socio economic:

In Ena village out of total population, 1940 were engaged in work activities. 91.60 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 8.40 % were involved in Marginal activity providing livelihood for less than 6 months. Of 1940 workers engaged in Main Work, 242 were cultivators (owner or co-owner) while 1211 were Agricultural laborer.

Physical, Demographic and infrastructures detail of ideal village:

Treated Tap Water Supply all round the year and in summer also available. Covered Well, Uncovered Well, Hand Pump and Tube Wells/Boreholes are other Drinking Water sources.

Open Drainage System Available in this Village. This Village Covered Under Total Sanitation. Community Toilet Complex Available in this village. House to House waste Collection available. There is system to Collect garbage on street. Drain water is discharged directly into water bodies.

Ena, which has bituminous and block roads, a water purification plant, a cricket ground and a school. All this has been possible because of remittances in dollars and sterling pounds by people of Ena settled abroad to their dependants in the village.

Fig.2 bituminous road of Ena village

Demographical Detail:

Table No. 1 Population Detail

Particulars	Total	Male	Female
Total No. of houses	**888**	-	-
Population	**3777**	1895	1882
Child(0-6)	**378**	202	176
Schedule Caste	**260**	126	134
Schedule Tribe	**2006**	1022	984
Literacy	**74.43%**	76.43%	72.45%
Total workers	**1940**	1191	749
Main workers	**1777**	-	-
Marginal workers	**163**	73	90

Fig. 3 panchayat building of Ena

Fig. 4 entry gate of Ena

Fig. 5 Water Tank of Ena

Fig. 6 primary school of Ena

1.4 SWOT ANALYSIS OF IDEALVILLAGE:

SWOT Analysis is a useful technique for understanding your Strengths and Weaknesses, and for identifying both the Opportunities open to you and the Threats you face.

- **Strengths:**
  - Sidewalks
  - Local businesses
  - School
  - Religious places(temples/masjid)
  - Excellent water quality
  - Easy access to highway
  - Parking facilities
- **Weaknesses:**
  - No facility of clubs for adults and seniors
- **Opportunities:**
  - Opportunity for more events in parks, ponds and open space
  - Construction of public library
  - Construction of movie theatre
  - Opportunities for local business

- Redevelopment of vacant land
- Entertainment parks
- Accidents due to rough driving by road users.
- High commercial rents

➢ **Threats:**

- Algae in ponds

1.5 FUTURE PROSPECTS OF THE IDEALVILLAGE:

Ena village can be developed as an educational and recreational hub due to development and other upcoming infrastructure projects near the village. Local business and employment opportunities can also be improved with regards to increase in the physical and social development of the village.

1.6 BENEFITS OF THE VISITS

Purpose:

To study about the development as well as the infrastructure facilities of the villages which is an ideal village and can be considered as Benchmark for the development and growth of other villages which are developing or which needs development.

By visiting such villages, we students of civil engineering can understand about the actual development that a rural area needs to satisfy its basic infrastructure facilities and to compete with urban area and can implement these techniques and facilities for the development of other villages which actually needs development and can implement the same for the development of the villages which are allotted to us in Vishwakarma Yojana Phase-VIII as our final year project. After visiting the village, we came to know about the various facilities that can be provided in a village for Rurbanisation of village and to reduce the migration of people from villages to city areas. We also came to know about the various methodologies and techniques that can be used for the development of the villages.

The Sarpanch of Ena gram panchayat gave us a brief idea about the methods, techniques, strategies that muse be used for the development of any village and what plays an important role for the development of any village. Ena can also be considered as bench mark for the development of other villages.

1.7 CIVIL CONCEPT / METHOD / USAGES IN THE IDEAL VILLAGE:

Civil engineering projects are increasingly complex and are associated with situations where robust decisions are required to be taken. These decisions are made in different stages of civil engineering projects. For example, decision making takes place during feasibility study stage prior to design, procurement, and construction stages in order to determine the viability of project undertaken by an investor.

With the help of an interdisciplinary approach to problem-solving, however, many innovations are being made in an effort to bring practical, repeatable implementation to construction. Although the learning curve may be steep, the potential benefits are considerable. All the work of the village development are carried by the gram panchayat are in their presence and efforts to make their village world class and people will visit their village for their well known facilities which are provided by gram panchayat.

Chapter 2
Literature Review

2.1 INTRODUCTION: URBAN &RURAL:

Urban:

Urban is that area where the population density is more and new facilities are provided to the people. Urban area is the region surrounding a city. Most of inhabitants of urban areas have non-agricultural jobs. Urban areas have municipality, corporation, cantonment board or notified town area committees. According to census 2011, there are 7,935 towns, 4,041 statutory town and 3,894 census towns.

Fig. 7 Urban and Rural area

Rural:

All the areas which are not characterized as urban area is called rural area. In which the populations very low compared to urban areas. Mainly they depend on agricultural activities. According to census 2011, there are 6, 40,867 villages in India. The area where more than 75% of male populations associated with agricultural activity is known as rural area.

2.2 DIFFERENT DEFINITIONS OF: RURAL AREA / VILLAGE :

Rural areas have low population density and large amount of undeveloped land. Agricultural activities are more in rural areas.

Census rural refers to individuals living in the countryside outside centers of 1000 or more population.

Rural and small town refers to individuals in towns or municipalities outside the commuting zone of larger urban centers. These individuals may disaggregated into zones according to the degree of larger urban center.

A rural area is an open swath of land that has few homes or other buildings and not many people.

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

Agenda of census of India is to release of provisional population totals-Rural urban distribution.

Population (in crore)

Table No.2: Population of Rural and Urban areas as per census 2001 and 2011

	2001	2011	Difference
India	102.9	121.0	18.1
Rural	73.4	83.3	9.0
Urban	28.6	37.7	9.1

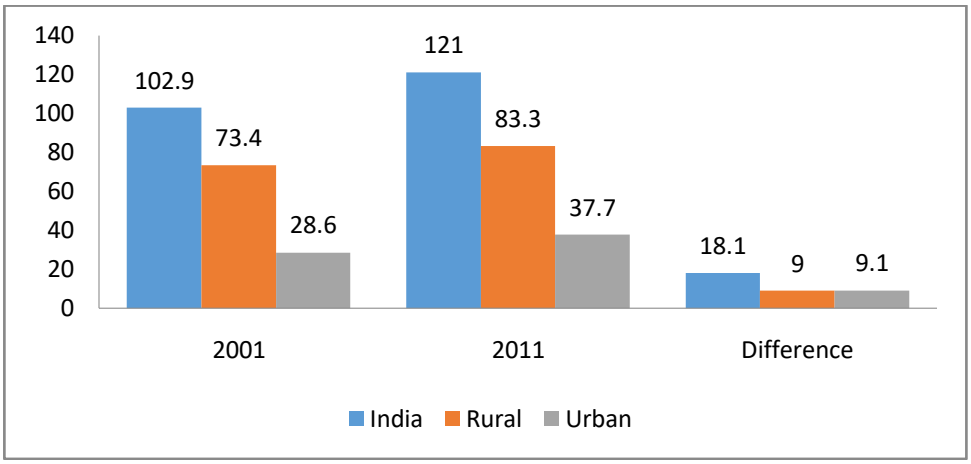


Fig. 8 Population chart of Rural and Urban areas as per census 2001 and 2011

For the first in since independence, the absolute increase in population is more in urban areas that in rural areas.

Rural-Urban Distribution: 68.84% & 31.16

Level of urbanization increased from 27.81% in 2001 census to 31.16% in 2011.Literacy rates (in %)

Table No. 3: Literacy Rates in Rural and Urban areas as per Census 2001 and 2011

	2001	2011	Difference
India	64.8	74.0	+9.2
Rural	58.7	68.9	+10.2
Urban	79.9	85.0	+5.1

The improvement in literacy rate in rural area is two times that in urban areas. The rural urban literacy gap which was 21.2% points in 2001, has come down to 16.1% points in 2011.

Literacy Rates (in %)

Table N O. 4: Literacy Rates in Rural and Urban area as per the males and females

	2001	2011	Difference
Male			
India	75.3	82.1	+6.8
Rural	70.7	78.6	+7.9
Urban	86.3	89.7	+3.4
Female			
India	53.7	65.5	+11.8
Rural	46.1	58.8	+12.7
Urban	72.9	79.9	+7.0

Gujarat Census :

Population of Gujarat:

Table No. 5: Population of Gujarat as per census 2001 and 2011

Population	2001	2011
Male	26,385,577	31,491,260
Female	24,285,440	28,498,432
Total	50,671,017	60,439,692

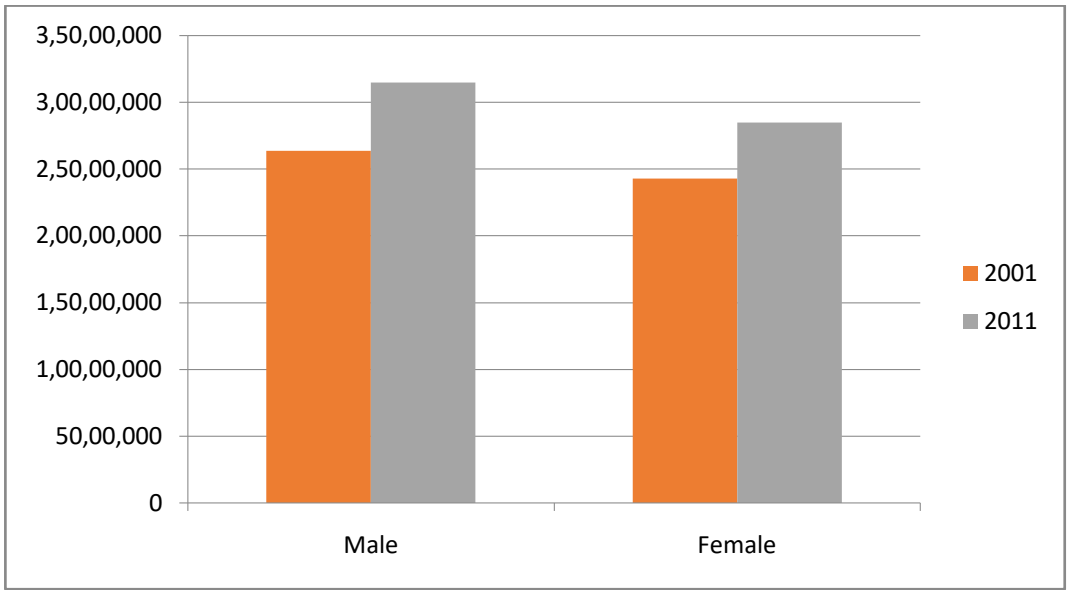


Fig. 9 Population chart of Gujarat as per census 2001 and 2011

2.4 RURAL ISSUES AND CONCERNS:

Following issues are concern with rural areas:

I. People are directly or indirectly dependent on agriculture and a large number of landowners have small and medium-sized landholding.
II. Economy of the people living in rural areas is low.
III. The price the farmers get for their produces is less in relation to the work they put in.
IV. People have to migrate to the urban areas due to unavailability of education.
V. The other rural problems are due to the fact that since the rural people do not live in concentrated masses, the availability of specialized service to them is minimum.

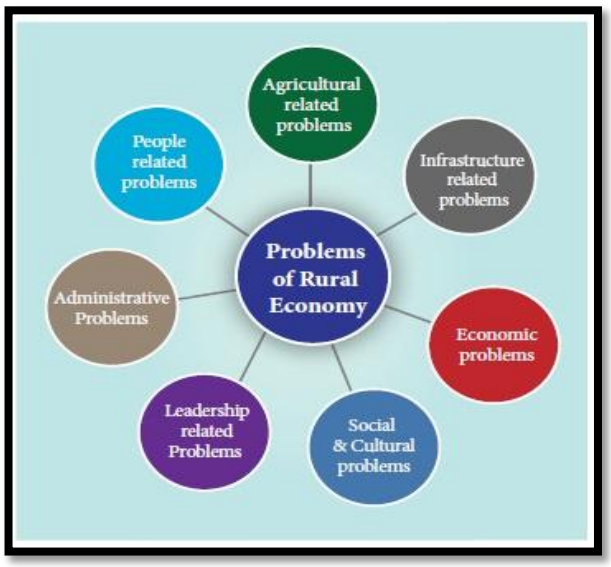


Fig. 10 Problems of rural economy

VI. Very less people are employed in the rural areas.
VII. Lack of physical facilities in rural areas.
VIII. Lack of recreation facilities.
IX. Farmers are not having market area for selling their goods directly to the market.

2.5 VARIOUS MEASURES FOR RURAL DEVELOPMENT:

Rural development is the national necessity and it has following measures:

1. To develop rural area as whole in terms of culture, society, economy, technology and health.
2. To develop living slandered of rural mass.
3. To develop rural youths, children and women.
4. To develop and empower human resource of rural area in terms of their psychology, skill, knowledge, attitude and other abilities.
5. To develop infrastructure facility of rural area.
6. To provide minimum facility to rural mass in terms of drinking water, education, transport, electricity and communication.

7. To develop rural institutions like Panchayat, cooperatives, post, banking and credit.
8. To provide financial assist to develop the artisans in the rural areas, farmers and agrarian unskilled labor, small and big rural entrepreneurs to improve their economy.
9. To develop rural industries through the development of handicrafts, small scaled industries, village industries, rural crafts, cottage industries and other related economic operations in the rural sector.
10. To develop agriculture, animal husbandry and other agricultural related areas.
11. To restore uncultivated land, provide irrigation facilities and motivate farmers to adopt improved seed, fertilizers, package of practices of crop cultivation and soil conservation methods.

2.6 PROJECTS / SCHEMES BY GOVERNMENT SECTOR:

Following are the projects/schemes by Govt. Sector:

i. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)
ii. Pradhan Mantri Gram Sadak Yojana (PMGSY)
iii. Indira Awas Yojana (IAY)

i.) Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA):

MGNREGA Launched on 2nd February 2006 as a momentous initiative towards pro-poor growth. For the first time, rural communities have been given not just a development programmed but also a regime of rights. The National Rural Employment Guarantee Act, 2005 (NREGA)guarantees 100 days of employment in a financial year to any rural household whose adult members are willing to do unskilled manual work.

This work guarantee also serve other objectives: generating productive assets and skills thereby boosting the rural economy, protecting the environment, empowering rural women, reducing rural urban migration and fostering social equity, among others. The Act offers an opportunity to strengthen our democratic processes by entrusting principle role to Panchayat at all levels in its implementation and promises transparency through involvement of community at planning and monitoring stages.

ii.) Pradhan Mantri Gram Sadak Yojana (PMGSY):

Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched on 25th December 2000 as a fully funded Centrally Sponsored Scheme to provide all weather road connectivity in rural areas of the country. The programmed envisages connecting all habitations with a population of 500 persons and above in the plain areas and 250 persons and above in hill States, the tribal and the desert areas.

According to latest figures made available by the State Governments under a survey to identify Core Network as part of the PMGSY programmed, about 1.67 lakh Unconnected Habitations are eligible for coverage under the programme. This involves construction of about 3.71 lakh km. of roads for New Connectivity and 3.68 lakh km. under up gradation.

The President of India, in his address to Parliament on 25thFebruary, 2005 announced a major business plan for rebuilding rural India called Bharat Nirman. The Finance Minister, in his Budget Speech of 28thFebruary,2005, identified Rural Roads as one of the six components of Bharat Nirman and has set a goal to provide connectivity to all habitations with a population of 1000 persons and above (500 persons and above in the case of hilly or tribal areas) with an all-weather road. A total of 59564 habitations are proposed to be provided new connectivity under Bharat Nirman. This would involve construction of 1, 46,185 kms of rural roads. In addition to new connectivity, Bharat Nirman envisages up gradation/renewal of 1, 94,130 kms of existing rural roads. This comprises 60% up gradation from Government of India and 40% renewal by the State Governments.

iii.) Indira Awas Yojana (IAY) :

Housing is one of the basic requirements for human survival. For a normal citizen

owning a house provides significant economic security and status in society. For a shelter less person, a house brings about a profound social change in his existence, endowing him with an identity, thus integrating him with his immediate social background.

Objective:

The objective of Indira Awaas Yojana is primarily to help construction of dwelling units by members of Scheduled Castes/ Schedule Tribes, freed bonded laborers and also non-SC/ST rural poor below the poverty line by providing them with grant-in-aid.

2.7 PROJECTS / SCHEMES BY PRIVATE SECTOR:

Following are the projects/schemes running by the private sector:

i) Non-Governmental Organizations (NGOs)

ii) Provision of Urban Amenities in Rural Areas (PURA)

i) Non-Governmental Organization (NGOs):

The NGOs became prominent after independence, especially after 1970s. Development parishioners, government officials and foreign donors consider that NGOs by virtue of being small scale, flexible, innovative and participatory, are more successful in reaching the poor and in poverty alleviation, NGOs involved in initiating and implementing rural development programme. At present30,000 NGOs working in India.

Definition of NGOs:

The term NGOs is used to denote / specify those organizations which undertake voluntary action and social movements.

A non-governmental organization (NGO) is a legally constituted organization created by legal persons that operates independently from any government and a term usually used by governments to refer to entities that have no government status. In the cases in which NGOs are funded totally or partially by governments, the NGO maintains its non-governmental status by excluding government representatives from membership in the organization. The term is usually applied only to organizations that pursue some wider social aim that has political aspects, but that are not overtly political organizations such as political parties.

ii) Provision of Urban Amenities in Rural Areas (PURA):

Objective of the Scheme:

The objective of the scheme is to provide urban amenities and livelihood opportunities in rural areas to bridge the rural-urban divide, thereby reducing migration from rural to urban areas.

PURA aims to achieve “holistic and accelerated development of compact areas around a potential growth centre in a Panchayat (or group of Panchayats) through PPP by providing livelihood opportunities and urban amenities to improve the quality of life in rural areas.”

The PURA Scheme (provision of Urban Amenities in Rural Areas) envisages rapid growth of rural India -- given enhanced connectivity and infrastructure, the rural population would be empowered and enabled to create opportunities and livelihoods for themselves on a sustainable and growing basis.

The key characteristics of the scheme are:

- Simultaneous delivery of key infrastructure in villages leading to optimal use of resources.
- Provision of funds for O&M of assets for 10 years post-construction, along with capital investment for creation of assets.
- Transformation of several schemes into a single project, to be implemented as per set standards in a defined timeframe, with the requirements of each scheme being kept intact.
- Combining livelihoods creation with infrastructure development.

- Enforcement of standards of service delivery in rural areas almost at par with those obtaining in urban areas.
- Enforcement of service standards through a legally binding arrangement.

2.8 OTHER PROJECTS OR SCHEMES:

In other projects for the development of the rural area is the Public Private Partnership (PPP).

Public-Private-Partnership-The Concept:

Public-Private-Partnership or PPP is a mode of implementing government programs/schemes in partnership with the private sector. The term private in PPP encompasses all non-government agencies such as the corporate sector, voluntary organizations, self-help groups, partnership firms, individuals and community based organizations, PPP, moreover, subsumes all the objectives of the service being provided earlier by the government, and is not intended to compromise on them. Essentially, the shift in emphasis is from delivering services directly, to service management and coordination. The roles and responsibilities of the partners may vary from sector to sector. While in some schemes/projects, the private provider may have significant involvement in regard to all aspects of implementation; in others s/he may have only minor role.

The potential benefits expected from PPP could be mentioned as below:

- Cost-effectiveness-since selection of the developer/ service provider depends on competition or some bench marking, the project is generally more cost effective than before.
- Higher Productivity-by linking payments to performance, productivity gains may be expected within the programs/project.
- Accelerated Delivery-since the contracts generally have incentive and penalty clauses vis-à-vis implementation of capital projects/programs this leads to accelerated delivery of projects.
- Clear Customer Focus- the shift in focus from service inputs to outputs create the scope for innovation in service delivery and enhances customer satisfaction
- Enhanced Social Service- social services to the mentally ill, disabled children and delinquents etc. require a great deal of commitment than sheer professionalism. In such cases it is Community/Voluntary Organizations (VOs) with dedicated volunteers who alone can provide the requisite relief.
- Recovery of User Charges-Innovative decisions can be taken with greater flexibility on account of decentralization. Wherever possibilities of recovering user charges exist, these can be imposed in harmony with local conditions.

2.9 CONCEPT: IDEAL VILLAGE:

2.9.1 EXAMPLES OR LIVE CASE STUDIES OF IDEAL VILLAGE OF INDIA / GUJARAT:

1) Punsari (Gujarat):

Punsari, located in Gujarat, puts most metros to shame. Funded by the Indian government and the village's own funding model, Punsari is no NRI-blessed zone. The village also boasts of a mini-bus commute system and various other facilities.

2) Dharnai (Bihar) First fully solar powered village :

Dharnai, a village in Bihar, beat 30 years of darkness by developing its own solar-powered system for electricity. With the aid of Greenpeace, Dharnai declared itself an energy-independent village in July. Students no long need to limit their studies to the day time, women no longer limit themselves to stepping out in the day in this village of 2400 residents.

2.10 THE IDEA OF MODEL OR SMART VILLAGE:

The idea of an "Adarsh Gram" or model village has been explored earlier as well, most not ably through the Pradhanmantri Adarsh Gram Yojana, launched by the Central Government in 2009-10. The scheme was implemented in pilot mode in 1000 villages of Assam, Bihar, HimachalPradesh, Rajasthan and Tamil Nadu, with an allocation of Rs 10 lakh per village. This limit was later raised to Rs 20 lakh per village. The target villages under the scheme were those with more than 50% of the population belonging to Scheduled Castes (SCs). Additionally, State governments have also taken steps in this direction. Himachal Pradesh launched a Mukhya Mantri Adarsh Gram Yojana along similar lines in 2011, with the allocation of Rs 10 lakh per village.

OBJECTIVES:

- Prevent distress migration from rural to urban areas, which is a common phenomenon in India's villages due to lack of opportunities and facilities that guarantee a decent standard of living.
- Make the model village a "hub" that could attract resources for the development of other villages in its vicinity.
- Provide easier, faster and cheaper access to urban markets for agricultural produce or other marketable commodities produced in such villages.
- Contribute towards social empowerment by engaging all sections of the community in the task of village development.
- Create and sustain a culture of cooperative living for inclusive and rapid development.

2.11 KEY ELEMENTS OF A MODEL VILLAGE:

A 21st century model village in India needs to incorporate certain key themes which would be essential for its success.

Key elements of a model village are given below:

i) Sustainable Development:

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

ii) Community Involvement:

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

iii) Technology:

- Delivery of government service
- ICT and space technology in the aid of farmers
- Remote sensing for resource mapping and better utilization of existing assets.
- Land records modernization
- Biometrics for better targeting of services such as PDS, insurance, pension

iv) Connectivity:

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

2.12 RESOURCES:

- Funds under existing schemes across different sectors such as health, education, skill development, livelihood etc. could be utilized, and based on the specific demands of the village, resources could be channelized into the development of the village. Some important Centrally Sponsored Schemes (CSS) which could be utilized are NRLM, NHM, SSA, NREGA, BRGF,RKVY and Mid-day Meal Scheme.
- MPLAD funds (Rs 5 crore per year) could be utilized for the construction of high quality, sustainable assets such as school buildings, hospitals, Aanganwadi Centres and school kitchens for Mid-Day meals. Funds could also be channelized into road construction, and the construction of toilets in schools and homes, particularly for girls.
- 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 the constituency.
- Self-help groups, who are eligible for subsidized loans under various Central and State government initiatives.
- Gram Panchayats could also raise loans, if legally permitted to do so under the State Panchyati Raj Acts like in the case of Kerala.

2.13 VARIOUS INFRASTRUCTURE FACILITIES, ITS TYPES, IMPORTANCE IN RURALCOTEXT:

An ideal village should have the following facilities:

A) Physical Facilities:

i) Road Facilities: An ideal village must have good road facilities that the people can easily move from one place to other. The roads linking with the other nearby village or town or city must be provided.

ii) Dwelling Houses: The dwelling-house in an ideal village are very neat and clean. The dwellers of these houses look to the house sanitation and house-drainage. The houses have sufficient windows to let in light and air. All the houses are roofed by good tiles at least.

iii) Electricity: The electricity should be supplied 24 hours. The village should have good facilities of electricity because most of the work now a day's depend on electricity.

B) Social Facilities:

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

ii) Food and fodder: The villagers grow food for themselves and fodder for their cattle. They eat fresh and healthy food. They grow good grass for fodder and also leave sufficient land for pasture.

iii) Drinking Water: An ideal village should have good supply of drinking water. There are enough tube-wells in an ideal village. There are separate ponds for men and cattle.

iv) Agriculture and Industry: People of an ideal village are good farmers and good artisans. They grow food crops, commercial crops and oil-seeds. They take up improved method of farming. They do all kinds of home-industry including spinning and weaving.

v) Educational Facilities: There are Primary schools, High schools and craft schools in an ideal village. Primary education is free and compulsory.

vi) Clinical Facilities: In an ideal village, there are clinical facilities for men and the domestic animals. Hence, there are dispensaries and veterinary dispensaries.

C) Socio-Cultural Facilities: These includes facilities like playgrounds, library, gardens, lake etc.

D) Sustainable Facilities: An ideal village should have facilities like biogas plant, solar systems, use of rain water harvesting system etc.

TABLE NO. 6: VARIOUS GUIDELINES / NORMS FOR VILLAGES FOR THE PROVISIONS OF DIFFERENTINFRASTRUCTURE FACILITIES :

Facilities	**Planning Commission/UDPFI Norms**	**Required as per Norms**
Education		
Aganwadi	Each Village	1
Primary School	Each Village	1
Secondary School	Per 7,500 Population	2
Higher Secondary School	Per 15,000 Population	0
College	Per 125,000 Population	0
Tech. Training Institute	Per 100,000 Population	0
Agriculture Research Centre	Per 100,000 Population	0
Medical Facility		
Gov./Panchayat Dispensary or Sub PHC or Health Centre	Each Village	1
PHC & CHC	Per 20,000 Population	0
Child Welfare and Maternity Home	Per 10,000 Population	1
Hospital	Per 100,000 Population	0
Transportation		
Pucca Village Approach Road	Each Village	
Bus/Auto Stand Provision	All Villages connected by PT (ST Bus or Auto)	1
Drinking Water		
Water Facilities		
Over Head Tank	1/3 of Total Demand	1.6 lac cap
U/G Sump	2/3 of Total Demand	3.2 lac cap
Public Latrines	Each Village	60
Cremation Ground	Per 20,000 Population	1
Post Office	Per 10,000 Population	1

2.14 CONCEPT: RURBAN TOWN AND ITS IMPORTANCE:

The word Rurban (rural + urban) refers to a geographic territory or landscape which possess the economic characteristics and lifestyles of an urban area while retaining its essential rural area features. Rurbanisation may be due to either urban expansion or rural migration. This change is made possible through urban–rural interactions, including accumulation of capital/remittances and exposure to western / modern ideas and lifestyles that eventually build new mindsets.

According to the 2011 census report, a huge chunk of migration is happening within rural areas. There port says that almost half of the rural population now lives in 1.2 lakh (120000) villages with a population ranging between 2000 to slightly more than 10,000 inhabitants. In the last 10 years the number of big villages (those with more than 10000 inhabitants) has increased by 670. In many parts of the developed as well as developing world even cities don't have this kind of population. Due to their organic and haphazard development these villages are raging hell in terms of hygiene and other facilities.

Rurban town is the town that includes rural and urban facilities both. The people of the rural area will get all the facilities in the town so that they do not have to migrate to the urban area. There should be soul of rural area with all the amenities as urban area.

Importance:

- The National Rurban Mission (NRuM) follows the vision of "Development of a cluster of villages that preserve and nurture the essence of rural community life with focus on equity and in collusiveness without compromising with the facilities perceived to be essentially urban in nature, thus creating a cluster of "Rurban Villages".
- The objective of the National Rurban Mission (NRuM) is to stimulate local economic development, enhance basic services, and create well planned Rurban clusters.
- Bridging the rural-urban divide-via: economic, technological and those related to facilities and services.
- Attracting investment in rural areas.
- Stimulating local economic development with emphasis on reduction of poverty and unemployment in rural areas.
- Spreading development in the region.

2.15 SUSTAINABLE DEVELOPMENT:

Sustainable development is the organizing principle for sustaining finite resources necessary to provide for the needs of future generations of life on the planet. It is a process that envisions a desirable future state for human societies in which living conditions and resource-use continue to meet human needs without undermining the "integrity, stability and beauty" of natural biotic systems. Sustainable development is a process for meeting human development goals while sustaining the ability of natural systems to continue to provide the natural resources and ecosystem services upon which the economy and society depend. While the modern concept of sustainable development is derived most strongly from the 1987 Brundtland Report, it is rooted in earlier ideas about sustainable forest management and twentieth century environmental concerns. As the concept developed, it has shifted to focus more on economic development, social development and environmental protection.

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

3.1 Introduction

3.1.1 Concept:

The concept of Smart City embraces several definitions depending on the meanings of the word "smart": intelligent city, knowledge city, ubiquitous city, sustainable city, digital city, etc. Many definitions of Smart City exist, but no one has been universally acknowledged yet. From literature analysis it emerges that Smart City and Digital City are the most used terminologies in literature to indicate the smartness of a city.

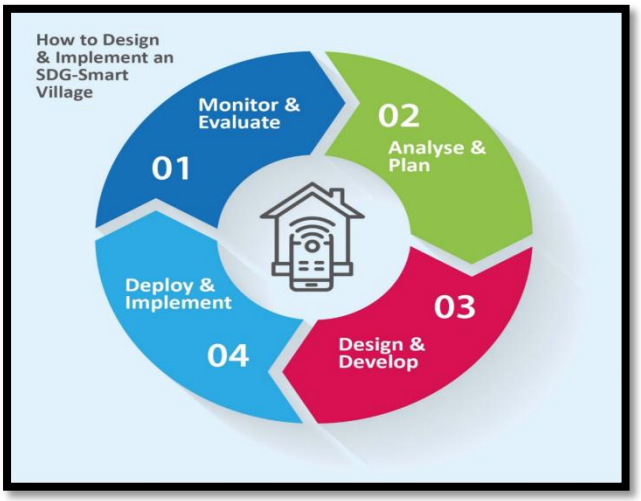


Fig. 11 concept to design and implement of smart village

3.1.2 Definitions and practices:

A city well performing in a forward-looking way in economy, people, governance, mobility, environment, and living, built on the smart combination of endowments and activities of self-decisive, independent and aware citizens.

A city "connecting the physical infrastructure, the IT infrastructure, the social infrastructure, and the business infrastructure to leverage the collective intelligence of the city"

A city that monitors and integrates conditions of all of its critical infrastructures, including roads, bridges, tunnels, rails, subways, airports, seaports, communications, water, power, even major buildings, can better optimize its resources, plan its preventive maintenance activities, and monitor security aspects while maximizing services to its citizens. "The use of Smart Computing technologies to make the critical infrastructure components and services of a city—which include city administration, education, healthcare, public safety, real estate, transportation, and utilities—more intelligent, interconnected, and efficient"

3.2 Bench Marks-Vision-Goals, Standards and performance Measurement Indicators :

The vision of smart cities is that the smart cities are the center of the future, secure environmentally green, made safe, efficient because of all structure- whether for water, power, Transportation. Are designed, constructed making use of integrated materials, sensors, and network which are interfaced computerized system of database, decision making algorithms.

Calculation of the 79 different Livability indicators prescribed in the 'Livability Standards in Cities' requires data on a large number of aspects of urban infrastructure, governance, municipal finances, social infrastructure, economic aspects etc. Wherever such

data is regularly compiled by the ULBs or other service providers such as DISCOMS, Water and Sewerage Utilities etc. it should be sourced from the records of such providers.

In some cases, the data may require on field through physical surveys. For certain indicators such as pollution, modal split of urban transport, water quality etc. data will have to be obtained from physical surveys as per standards and prescribed survey and sampling techniques. Some indicators such as per capita availability of open spaces will require map-based analysis, and necessary maps may need to be prepared for cities where such information or maps are not available.

3.3 Technological Options for Smart Cities:

Cities and communities across the Nation are today facing complex and persistent challenges stemming from changing populations and infrastructure. In particular, demands on city infrastructure, systems, and services are growing and changing, prompting important new needs, such as more effective use of limited space, greater walk ability, and ways to support residents across all socioeconomic statuses. The need for improved resilience in the face of natural and man-made disasters adds to the challenges that cities and communities are facing.

These challenges directly manifest for city residents as well. Being able to address these challenges is in and of itself difficult.

Ongoing city operations are often dependent upon the very infrastructure, services, and systems that could benefit from innovation and finding the time, energy, and resources to improve city capabilities without adversely affecting these ongoing operations is not trivial. Consider, for example, routine roadway construction projects; cities and communities must often conduct these projects during limited nighttime and weekend hours, so as to minimize disruptions for residents who rely upon the roadways to commute to and from work.

At the same time, advances in networking and information technology over the last several decades have transformed individuals' lives, rapidly altering how we live, work, and communicate. Integrating these digital technologies with physical infrastructure at the city level similarly enables innovative opportunities and solutions to the challenge's cities are facing. By working closely with cities to support this integration in ways described in this strategic plan, Federal agencies can help facilitate solutions to city challenges and catalyze the smart of the future

3.4 Road Map and Safe Guards :

- Roadmap Design Principles:
- Build a vision of where the public safety community wants to go, determine what technologies are needed to get there, and provide a route for achieving the vision.
- Make R&D decisions based on capability requirements and priorities set by the public safety community.
- Assume that public safety may have to adjust operations to fully realize the benefits of new technologies.
- Leverage ongoing efforts by other partners to develop and implement the roadmap. This approach will allow PSCR to focus resources to complement and not duplicate ongoing efforts.
- Enable public safety to meet generational and public expectations.
- Identify R&D project opportunities in light of the evolution of technology capabilities and gaps forecasted by working group participants.

3.5 Issues &Challenges:

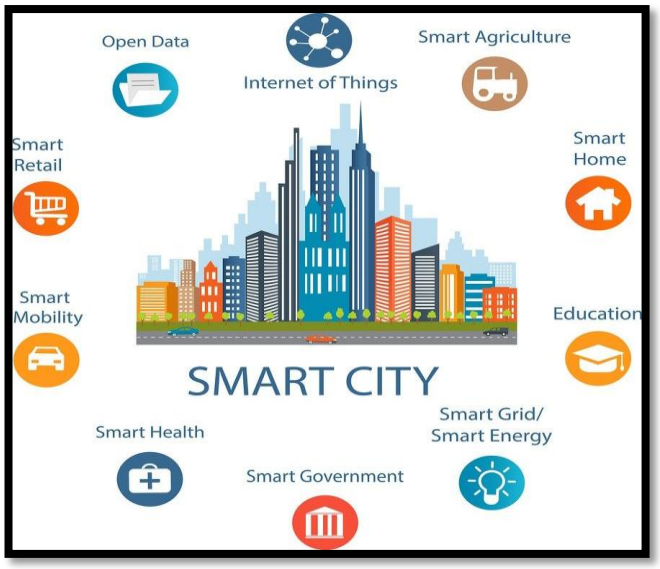


Fig. 12 issues & challenges for smart village

1. **Retrofitting existing legacy city:** infrastructure to make it smart, there are a number of issues to consider when reviewing a smart city concept. The most important is to determine the existing cities weak areas that need utmost consideration, e.g. 100-per-cent distribution of water supply and sanitation. The integration of formerly isolated legacy systems to achieve citywide efficiencies can be a significant challenge.

2. **Financings of smart cities:** The High-Power Expert Committee on Investment Estimates in Urban Infrastructure has assessed a per-capita investment cost of Rs 43,386 for a 20year period. Using an average figure of 1 million people in each of the 100 smart cities, the total estimate of investment requirements for the smart city comes to Rs 7 lakh crore over 20 years. This translates into an annual requirement of Rs 35,000 crore. One needs to see how these projects will be financed as the majority of project need would move through complete private investment or through PPPs (public-private partnership).

3. **Availability of city development plan**: Most of our cities don't have a city development plan, which is the key to smart city planning and encapsulates, and encapsulates all a city needs to improve and provide better opportunities to its citizens. Unfortunately, 70-80 % of Indian cities don't have.

4. **Financial sustainability of ULBS**: Most ULBS are not financially self-sustainable and tariff levels fixed by the ULBs for providing services often do not mirror the cost of supplying the same. Even if additional investments are recovered in a phased manner, inadequate cost recovery will lead to continued financial losses.

5. **Technical constraints of ULBS:** Most ULBS have limited technical capacity to ensure timely and cost-effective implementation and subsequent operations and maintenance owing to limited recruitment over a number of years along with inability of the ULBs to attract best of talent at market competitive compensation rates.

6. **Three-tier governance:** Successful implementation of smart city solutions needs effective horizontal and vertical coordination between various institutions providing various municipal amenities as well as effective coordination between local government, state government, central government, agencies on various issues related to financing and sharing of best practices and service delivery processes.

7. **Providing clearances in a timely manner:** For timely completion of the project, all clearances should use online processes and be cleared in a time-bound manner. A regulatory body should be set up for all utility services so that a level playing field is made available to the private sector and tariffs are set in a manner that balances financial sustainability with quality

8. **Dealing with a multivendor environment:** Another major challenge in the smart city space is that software infrastructure in cities contains components supplied by different vendors. Hence, the ability to handle complex combinations of smart city solutions developed by multiple technology vendors becomes very significant.

9. **Capacity building program:** Building capacity for 100 smart cities is not an easy task and most ambitious projects are delayed owing to lack of quality machinery and manpower, both at the center and state levels. In terms of funds, only around 5 per cent of the central allocation may be allocated for capacity building programs that focus on training, contextual research, knowledgeexchangeandarichdatabase.Investmentsincapacitybuildingprogramshavea multiplier effect as they help in time-bound completion of projects and in designing programs, developing faculty, building databases as well as designing tool kits and decision support systems. As all these have a lag time, capacity building needs to be strengthened right at the starting.

10. **Reliability of utility services**: For any smart city in the world, the focus is on reliability of utility services, whether it is water, telephone, electricity, broadband services. Smart cities should have to provide electricity 24Hours.

3.6 Smart Infrastructure:

Smart Information and Communications Technology has the potential to transform the way we plan and manage infrastructure. New developments in computer hardware, new applications and software are changing the face of the infrastructure sector, and society more generally; driving greater efficiency, increasing productivity, and greatly simplifying construction processes and life-of-asset maintenance.

Australia has generally been proactive in adopting these new technologies for the planning, design and ongoing maintenance of infrastructure, the fast pace of new developments means that there is much more that needs to be done.

3.7 Cyber Security:

Cyber security is the body of technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access. In a computing context, security includes both cyber security and physical security.

Fig. 13 Cyber Security

Ensuring cyber security requires coordinated efforts throughout an information system. Elements of cyber security include:

- Application security
- Network security
- Operational security
- Information security
- End-user education

3.8 District Cooling and Heating / Green building:

District cooling systems produce chilled water, steam or hot water at a central plant and then pipe that energy out (either underground or over rooftops) to buildings for air conditioning, space heating and water heating. As a result, these buildings don't require their own chillers, air conditioners, boilers or furnaces.

District cooling systems are a highly efficient way for many owners and manufacturers to effectively address each of these challenges while meeting their comfort and process cooling and heating needs.

Heat sources in use for various district heating systems include, power plants designed for combined heat and power including both combustion and nuclear power plants; and simple combustion of a fossil fuel or biomass; geothermal heat; solar heat; industrial heat pumps which extract heat from, river or lake water, seawater, sewage, and waste heat from industrial processes.

3.9 Strategic Option for Fast Development:

Smart Infrastructure involves applying this to economic infrastructure for the benefit of all stakeholders. It will allow owners and operators to get more out of what they already have, increasing capacity, efficiency and resilience and improving services.

It brings better performance at lower cost. Gaining more from existing assets is the key to enhancing service provision despite constrained finance and growing resource scarcity. It will often be more cost-effective to add to the overall value of mature infrastructure via digital enhancements than by physical enhancements – physical enhancements add `more of the same', whereas digital enhancements can transform the existing as well.

Smart Infrastructure will shape a better future. Greater understanding of the performance of our infrastructure will allow new infrastructure to be designed and delivered more efficiently and to provide better whole life value.

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

More than 90% of the urban population has access to drinking water, and more than 60% of the population has access to basic sanitation. However, access to reliable, sustainable, and affordable water supply and sanitation (WSS) service is lagging behind. Are the Services Reliable? No Indian city receives piped water 24 hours a day, 7 days a week. Piped water is never distributed for more than a few hours per day, regardless of the quantity available. Raw sewage often overflows into open drains. Are the Services Technically and Financially Sustainable? Less than 50% urban population has access to piped water. The Non-Revenue Water (NRW: due to leakages, unauthorized connections, billing and collection inefficiencies, etc.) is huge, estimated between 40-70% of the water distributed.

Operations and maintenance cost recovery through user charges is hardly 30-40%. Most urban operations survive on large operating subsidies and capital grants.

3.11 Initiatives in village development by local self-Government:

- **Rural Local Governments (or Panchayat Raj Institutions)**

- Zilla Panchayat
- Mandal or Taluka Panchayat
- Gram Panchayat

- **Initiation by Local People:-**

- Organizing programme for increase literacy for peoples of village.
- Providing enough information regarding to using of various facilities.
- Peoples have to learn various things regarding how to keep facilities in good condition.

3.12 Smart Initiatives by district Municipal corporation:

- Solid waste management.
- Selvedge water disposal.
- Effective road transportation.
- Maintained street light facilities.
- Agriculture awakening centre.

3.13 Any projects contributed working by government:

- The panchayat raj system is a three-tier system with elected bodies at the village, Taluka and district levels.
- The modern system is based in part on traditional panchayat governance, in part on the vision of Mahatma Gandhi and in part by the work of various committees to harmonize the highly centralized Indian governmental administration with a degree of local autonomy.
- The result was intended to create greater participation in local government by people and more effective implementation of rural development programs.
- Although, as of 2015, implementation in all of India is not complete the intention is for there to be a gram panchayat for each village or group of villages, a Tehsil level council, and a Zilla panchayat at the district level.

3.14 How to implement other countries smart villages project in Indian Village context:

Each village should have following 5 basic amenities in 5 year:

1. Roads
2. Schools
3. Electricity
4. Hospitals
5. Water

basic amenities of for smart village from other countries 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 healthcare.
3. Agriculture: provide information to farmers on the types of crop that can fetch them returns, by ensuring that there is no guilt of one product and shortage of another.

Chapter 4
Introduction of Kharach Village

4.1 Introduction :

4.1.1 Introduction About Kharach Village details :

The rurbanisation area selected for the study, planning, and designing is Kharach village, located in Hansot Taluka of Bharuch district in Gujarat, India. It is located 36 KM towards South from District head quarters Bharuch, 13 KM from Hansot.

The native language of Kharach is Gujarati and most of the village people speak Gujarati Kharach people use Gujarati language for communication.

4.1.2 Justification/ need of the study :

The Goal of research proposal is to present and justify the need to study a research problem and to present the practical ways in which this research should be conducted.

There are number of schemes of the Government which are being operated and run for rural development in the rural areas of the country. Evolution taken up so far for these schemes has been more or less in a piecemeal form, i.e. generally for each scheme separately. It has become difficult to get an overall picture of the development in totality in the rural areas and is difficult to assess the impact of any one particular scheme, since most of the schemes are complementary and supplementary and most of the time, they all are contributing to the impact. Hence a view has been formed to take up studies on trial basis to assess the impact of the important schemes as a whole in rural development in selected village.

4.1.3 Study Area :

Kharach is a village panchayat located in the Bharuch district of Gujarat state, India. The latitude 21.4440978 and longitude 72.9047135999999 are the geo co-ordinate of the Kharach. Gandhinagar is the state capital for Kharach village. It is located around 208.3 kilometer away from Kharach. The other nearest state capital from Kharach is Daman and its distance is 114.1 KM. The other surrounding state capitals are Daman 114.1 KM., Mumbai 276.4 KM., Bhopal 503.6 KM.

Kharach is a Census Town city in district of Bharuch, Gujarat. The Kharach Census Town has population of 5,436 of which 3,054 are males while 2,382 are females as per report released by Census India 2011.

The total area of the village is 746 hector.

4.1.4 Objectives of the study :

The main objective of the study undertaken is to utilize the results to provide true feedback of the present state of implementation of all development schemes in the rural areas. The observation made during the study are to inputs to help in bringing about changes in the formulation or reformulation.

- To assess problems, constrains in the effective implementation.
- To know the basic requirement of village.
- To provide the basic facilities in rural areas like Education, Health, irrigation, electric power etc.
- To suggest strategies and policies that would enable Government of India to increase the pace of rural development.

- To assess the adequacy of these schemes in solving and providing solution to problems of rural development.
- To provide the impact of these various Programmers.
- To gauge the general opinion of the people towards these schemes and programs of the government.

4.1.5 Scope of the Study :

The aim of project is to develop the village with job opportunity for villagers. A team of project is finding the problem or need of a village in terms of socio – cultural or physical or social infrastructure and to design that facility with efficient engineering solution which include the design proposal and estimate cost to facilitate the require facility for the future growth of village with urban facilities.

The study will focus the development trend, intensity of growth of the village, and find out the problems related to the socio-cultural or physical development of the area, social infrastructure services, and the administrative systems of the village. The study of village gives the reason where there is need of sustainable facilities like infrastructure facilities, community hall, primary health center, post office, general market, pure drinking water, road network, schools, electricity, sanitation, library, Aaganwadi, overhead tank, police station, fire station, etc. are available or not.

Rural settlement engulfed in urban limits during the process of development, and also those located in the fringe areas of large cities, can be termed as urban villages.

4.1.6 Methodology framework for development of your village:

To achieve the aim by passing through the objectives, the study will be done in the following Methodology, described as follows:

A) Literature study:

The various theories and case studies to be referred to the understanding of various issues related to the urban, to define the “Fringe villages”, to study the various issues of “Fringe villages”

B) Field Visit:

The field visit will be starts from collection of revenue maps and ‘gametal’ maps if possible, along with the map and other basic information of the study areas.

C) Primary Survey and Interview:

The primary surveys such as household surveys, questionnaire survey, to know the real status of the infrastructure services and quality of life they are living in the particular area and the major problems and issues they are facing, questionnaire survey of the real estate developers to know the scope and trend and scope of the development and status of the market and demand of that place.

D) Data Analysis:

An analysis form is used for finding a requirement of village as per government norms. A data collected during village survey is also used for an analysis government data on paper data.

E) Issues findings, development of Strategy:

From the above study in the detail of the literature review, situation analysis, study of the existing institutional framework, primary and secondary data analysis and mapping the best appropriate strategy to be formulated with possible recommendation, implementation strategy and allocating the roles and responsibilities of the different local bodies which give a scope for villagers to show their ability and chances of job opportunity.

F) Final Proposal:

Strategic theme-based proposal for Fringe villages from analysis in the form of R-Urban Town.

4.1.7 List of objects available related to civil methodology :

- Aanganwadi
- Panchayat office
- Overhead rectangular water tank
- Primary school
- Drainage system
- Underground water tank
- General store
- Sub centre
- lake

4.2 KHARACH VILLAGE STUDY AREAPROFILE :

4.2.1 Study area location :

Name of village: - Kharach
Name of Taluka: - Hansot
Name of District: - Bharuch

Kharach is a Village in Hansot Taluka in Bharuch District of Gujarat State, India. It is located 36 KM towards South from District head quarters Bharuch. 13 KM from Hansot.234 KM from State capital Gandhinagar.

- **Primary topographical and geographical details are described below.**

Table No. 7 Study area Location

1	Nearest town and its distance	Bharuch - 36 km
2	Temperature	29 C

4.2.2 Physical & Demographical Growth :

The facilities are essential for economic as well as social growth of any area. These facilities include proper road network, water supply, drainage, electricity etc. Any village which needs to be economically developed must contain the above-mentioned facilities .

- **Demographical growth :**

In kharach village, total population as per 2011was 5436, in their total male population was 3054 and total female population was 2382.

Table No 8 Demographical growth (2011)

Sr. no.	Population	Male	Female	Total house hold
1	5436	3054	2382	800

4.2.3 Brief History :

The village has no certain history, Kharach Village is the Village of Hansot Taluka of Surat District The Sarpanch of the Kharach village is Arjunbhai B. Rathod. Kharach Village got not any Awarded.

4.2.4 Economic Profile / Bank :

The economic status of Kharach gram panchayat is not well as compared the ideal village like Ena. Kharach panchayat collects various taxes and funds from the various sources of income are housing tax, income tax, water tax, electricity bills, cleaning charges, taxes from the House hold. And the other development work is done in village by the Grant Which is given by the Stat government or Central Government.

There is one Bank in Kharach Village.

4.2.5 Social scenario :

Stringent rules must be passed to ensure that corrupt practices do not hamper and harass the bank loan seekers, old age and handicapped pensioners and other recipients of bank assistance for small enterprises or other beneficiaries for other interventions.

4.2.6 Base Location Map:

Kharach is a Village in Hansot Taluka in Bharuch District of Gujarat State, India. It is located 36 KM towards South from District head quarters Bharuch.

In Kharach Village people are migrate because of better opportunity for jobs, Business, High living standard. People are migrate to Surat because ,Surat is the biggest economic hub of Gujarat. People earn more in the city rather than village that's why people migrate from village to city.

Fig. 14 Base Location Map of Kharach

4.2.7 Study area land use detail:

The Total area of Kharach village is 746 Hectors, in which the total residential Area is 17 Hectors. Total Agricultural area 331 Hectors and total Forest Area 95Hectors .

4.3 Data Collection kharach village :

4.3.1 Methods for Data collection :

- By filling of survey forms
- By interaction with the villagers
- By interaction with the Sarpanch/panchayat members
- By observing the current condition of the village
- Visiting different locations of the village

4.3.2 Primary Survey Details :

Primary survey details are collected by interacting with the village dwellers and questioning them about the facilities available and require. They were asked to give suggestions about the works required to be carried out for the development of the village and to promote Rurbanisation

4.3.3 Average size of the House :

The village has no specified size of house, but the Financially Capable villagers have good constructed House and poor villagers have small size or medium size house.

4.3.4 Which Martial Use locally :

The village has no specific material. All the martial which is required which has been Transported to village from the nearest town like Surat/Bharuch.

4.3.5 Out sourced material :

The Out sourced materials are sand Aggregates, Cement, Blocks, Steels and bitumen which is used for the construction of road and building

4.3.6 labor work doing :

Labor works in the Farm

4.3.7 Any costing :

Costing is Low compared to city

4.3.8 Geographical Details :

In kharach village, total land area of village was 746 hectors, in their forest area was 95 hectors, residential area was 17 hectors and other was 245 hectors. There is no railway station in the village so, villagers are move to Kosamba village for rail transportation.

Table no. 9 Geographical Detail

Sr. no.	Description	Information details
1)	Area of Village	746 Hectors
2)	Forest area	95 Hectors
3)	Residential area	17 Hectors
4)	Other area	254 Hectors
5)	New area	-
6)	Distance from Nearest railway station	4 KM Kosamba
7)	Nearest town with distance	34 Km Bharuch

4.3.9 Demographical Details :

In kharach village, total population as per 2011was 5436, in their total male population was 3054 and total female population was 2382.

Table No. 10 Demographical Detail

Sr. no.	Population	Male	Female	Total house hold
1	5436	3054	2382	800

4.3.10 Occupational Details :

In kharach village, villagers are connected with agriculture activities, about 70% peoples are connect with agriculture activities, 20% peoples are connect with labour work in farm and 10% peoples are connect with job work.

Table No. 11 Occupational Detail

Percentage of worker	Occupation
70 %	Farming
20 %	Work in farm as labor
10 %	Jobs

4.3.11 Agricultural details :

About 70% crops, major crops taken by farmer was rice and sugar.

Table No. 12 Agricultural Detail

Sr. No.	Crops name
1	rice
2	sugar

4.3.12 Manufacturing Hub / Warehouse :

In kharach village there is one Glass Manufacturing Hub is there.

4.3.13 Tourism cluster :

No tourism Site of village, they need development for tourism to increase the income of villagers.

4.3.14 Service cluster :

Village has no service cluster.

4.3.15 Male Female Details

Table No. 13 Male female Detail

Total Population	Male	Female
5436	3054	2382

4.3.16 Occupational Detail Wise / Majority Business :

In kharach village, villagers are connected with agriculture activities, about 70% peoples are connect with agriculture activities, 20% peoples are connect with labour work in farm and 10% peoples are connect with job work.

Table No. 14 Occupational Detail Wise / Majority Business

Percentage of worker	Occupation
70 %	Farming
20 %	Work in farm as labor
10 %	Jobs

4.3.17 Physical Infrastructure :

There is no physical infrastructure facilities.

4.4 Infrastructures Details :

4.4.1 Drinking water / Water management facilities

The Kharach village has two Overhead water tanks by the village has provided the water for drinking.

Fig. 15 Overhead water Tank of Kharach

4.4.2 Drainage network / Sanitation Facilities :

Kharach village Has Under Ground drainage system And all the house hold has provided Drainage system. Village has no public Toilet.

4.4.3 Transportation and road network :

Usually the Villager use their own vehicle and Gujarat Government provide G.S.R.T.C. Bus service for transportation. The Village has no Bus station Facilities. The village has Bituminous and block road network.

Fig.16 block Road of Kharach

4.4.4 Housing condition :

Village house hold has not in good Condition, almost villagers has good Kuccha Makan (House) .

Fig. 17 Kuccha / pucca House of Kharach

4.4.5 Social Infrastructure facilities Health, Education, Community Hall, Library :

Kharach village Has one sub care center and one community hall and no library. but the condition of sub care center was very poor, the construction of building was old.

Fig. 18 Sub-centre of Kharach

Education Facilities:

Kharach village has 2 Aanganwadi and 1 Primary school.

Fig.19 Primary School of Kharach

The condition of primary school was not so good. Also, need improvement of primary school.

4.4.6 Technology/ Mobile/ Wi-Fi / internet uses detail in percentage :

Table No. 15 Technology/ Mobile/ Wi-Fi / internet uses detail in percentage

Technology	Percentage of uses
Mobile	70 %
Wi-Fi	0 %
Internet	10 %

4.4.7 Sport Activities in gram area :

There are no any facilities like cricket ground and volleyball ground for villagers for sports activity.

4.4.8 Socio cultural facilities/ Public Garden / Parks / Playground / Ponds / other recreation facilities :

In Kharach village has no public garden no parks. Village has undeveloped pond .

Fig.20 village Pond of Kharach

4.4.9 other facilities :

No Other Facilities

4.4.10 Sustainable Infrastructure Facilities & Repair &Maintenance :

Village have To repair or Re-modified their primary school, sub-centre, Aanganwadi and one overhead water tank.

4.4.11 Existing condition of public Building & Maintenance of existing public infrastructure

Some of public buildings are in good condition like panchayat office and some public building like Aanganwadi require maintenance of redesign.

4.4.12 Any other details :

4.6Existing Institutions like – Village Administration – Detail profile :

Village has one-gram panchayat office which is use as Administration office.

4.6.1 Bachat Mandali :

No Bachat mandali

4.6.2 Dudh Mandali :

1 no. Dudh Mandali

4.6.3 Mahila Mandal :

1 no. Mahila Forum

4.6.4 Plantation for air pollution :

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

4.6.5 Rain water Harvesting :

No use of rain water Harvesting methods in village.

4.6.6 Agriculture Development :

Kharach Villagers are use advanced technology for irrigation and plantation of crop and advanced machinery for framing.

4.6.7 Any Other : -

Chapter 5
Sustainable Technical Options with Case Studies of the Existing Village

5.1 Concept(Civil):

5.1.1 Advance construction techniques :

The construction industry is repeatedly criticized for being inefficient and slow to innovate. The basic method of construction, techniques and technologies have changed little since roman times.

Every construction project is different, every site is a singular prototype, construction works are located in different places, and involve the constant movement of personnel and machinery. The term 'advanced construction technology' covers a wide range of modern techniques and practices that encompass the latest development in materials technology, design procedures, quantity surveying, facilities management, services, structural analysis and design, and management studies.

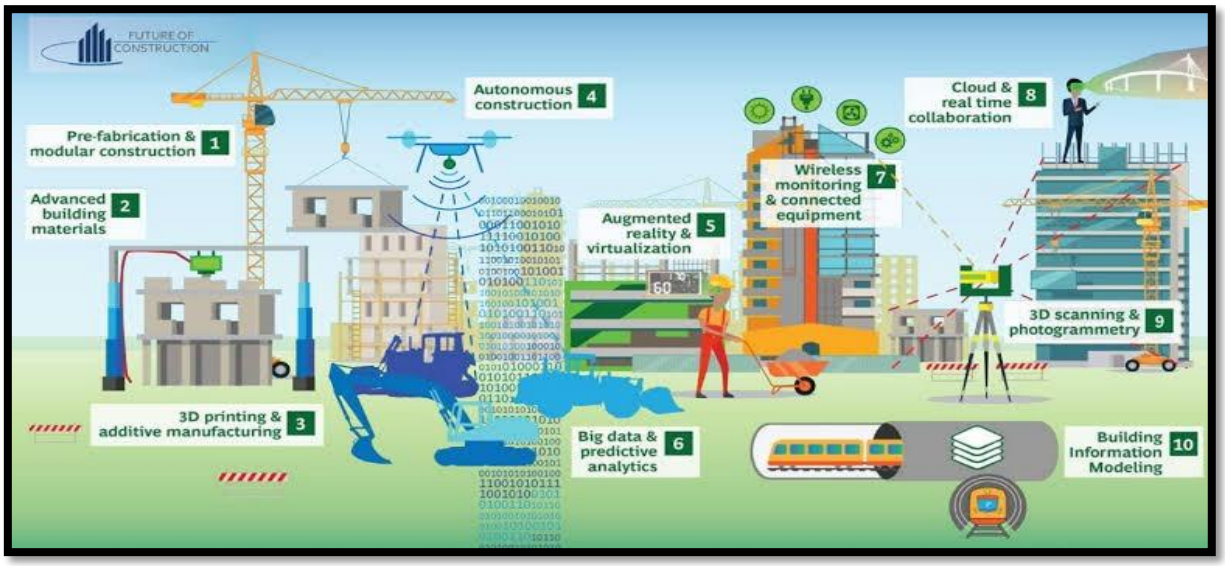


Fig. 21: Advance construction techniques

The adoption of advanced construction technology requires an appropriate design, commitment from the whole project team, suitable procurement strategies, good quality control, appropriate training and careful commissioning. Incorporating advanced construction technology into practice can increase levels of quality, efficiency, safety, sustainability and value for money.

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

- Computer aided design and computer aided manufacturing (CAD/CAM).
- Building information modeling (BIM)
- 3D printing
- Prefabrication and preassembly.
- GPS controlled equipment.

5.1.2 Soil Liquefaction :

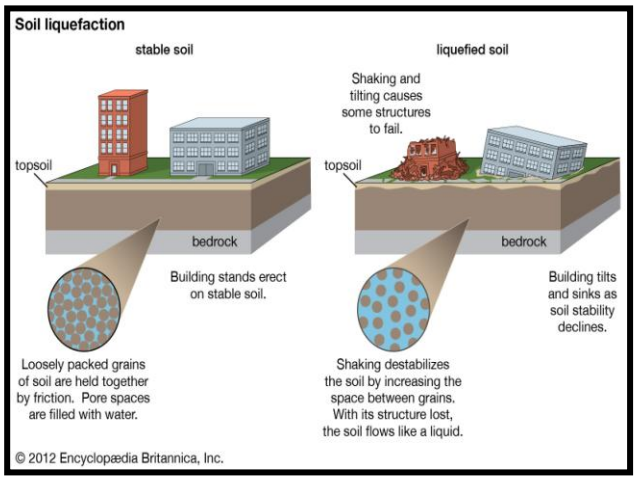


Fig. 22: soil liquefaction

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. Type of soil causes liquefaction: Poorly drained fine-grained soils such as sandy, silty, and gravelly soils are the most susceptible to liquefaction.

5.1.3 Sustainable Sanitation :

Fig.23 : Sustainable sanitation

The first principle of Sustainable Sanitation is to recognize that excreta and wastewater are not wastes, but resources that are valuable and can be reused and recycled. The main objective of sanitation is to provide a healthy and clean environment and breaking the cycle of disease.

Now-a-days sustainable sanitation is identified as a key-driver for economic development and sustainable development in general. Recently this has become more and more popular around the globe and had led the UN General Assembly to declare the year 2008 as the “International Year of Sanitation (IYS)”

5.1.4 Transport Infrastructure / system :

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

A mode of transport is a solution that makes use of a particular type of vehicle, infrastructure, and operation. The transport of a person or of cargo may involve one mode or several of the modes, with the latter case being called inter-modal or multi-modal transport. Each mode has its own advantages and disadvantages, and will be chosen on the basis of cost, capability, and route.

5.1.5 Vertical Farming :

India is one of the largest producers of vegetables, fruits, and many other agricultural commodities. In India, vertical farming has been introduced in 2019. ICAR experts are working on the concept of 'vertical farming' in soil-less conditions, in which food crops can be grown even on multi-storied buildings in metros like New Delhi, Mumbai, Kolkata, and Chennai without using soil or pesticides.

Fig. 24 : Vertical farming

The most special feature of Vertical Farming is that its goal is to supply optimal growing conditions throughout the whole life of the plants. The closed environment gives protection from outdoor influences and provides more ways to regulate the various uncertainties that can't be controlled when growing crops outdoor. Modern vertical farming facilities can regulate lighting, humidity, temperature, and nutrients with sophisticated sensors and climate control systems.

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

Corrosion Mechanism, Prevention & Repair Measures of RCC Structure Though concrete is quite strong mechanically, it is highly susceptible to chemical attack and thus structure gets damaged and even fail unless some preventive measures are adopted to counteract this and thereby increasing the durability of structure. In the case of Reinforced concrete structure, the ingress of moisture or air may lead to corrosion of steel, cracking and spelling of concrete cover thereby reducing durability of concrete structure. Repair has been suggested as the protective solution for damaged structure due to corrosion.

Overall, there is very little published empirical evidence that provides insight into the durability of silence treatments and their long-term residual protection (i.e. following at least 10 years of service). Such a gap in knowledge is undesirable given the scale of infrastructure treated with hydrophobic treatments such as silences.

- **Causes Prevention and Repair of Cracks in Building / rectification of building tilt / rehabilitation technique :**

  - **Causes of cracks:**

- Versatile deformation
- Warm movement
- Substance Reaction
- Shrinkage
- Establishment Movement and Settlement of soil
- Earthquake
- Vegetation
- Poor construction homes

  - **Preventive Measures:**

- Create slip joints under the support of concrete slab on walls. Provide horizontal movement joints between the top of brick panel and reinforced cement concrete beam/slab.
- Joints should be constructed like construction joints, expansion joints, control joints and slip joints.
- The design of foundation should be based on sound engineering principles and good practice.
- Construct the foundation of buildings on firm ground while doing construction. Tie up the building with connecting beams at foundation level, door level and roof level.

➢ **Rehabilitation techniques:**

- **Epoxy injection :**

Epoxy injection is an economical method of repairing non-moving cracks in concrete walls, slabs, columns and piers as it is capable of restoring the concrete to its pre-cracked strength. The technique generally consists of establishing entry and venting ports at close intervals along the cracks, sealing the crack on exposed surfaces, and injecting the epoxy under pressure.

- **Routing and sealing :**

In this method, the crack is made wider at the surface with a saw or grinder, and then the groove is filled with a flexible sealant. This is a common technique for crack treatment and it is relatively simple in comparison to the procedures and the training required for epoxy injection. It can be done on vertical surfaces and curved surface.

- **Stitching :**

This method is done to provide a permanent structural repairs solution for masonry repairs and cracked wall reinforcement. It is done by drilling holes on both sides of the crack, cleaning the holes and anchoring the legs of the staples in the holes with a non-shrink grout.

5.1.7 Sewage Treatment Plant:

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

Sewage treatment may also be referred to as wastewater treatment. However, the latter is a broader term that can also refer to industrial wastewater. For most cities, the sewer system will also carry a proportion of industrial effluent to the sewage treatment plant that has usually received pre-treatment at the factories to reduce the pollutant load. If the sewer system is a combined sewer, then it will also carry urban runoff (storm water) to the sewage treatment plant. Sewage is conveyed in sewerage which comprises the drains, pipe work and pumps to convey the sewage to the treatment works inlet.

➢ **Components of Sewage Treatment Plant:**

- Pumping of Sewage
- Primary Treatment
- Secondary treatment
- Tertiary Treatment

➢ **Pollutants in sewage:**

- BOD(Bio Chemical Oxygen demand)
- COD(Chemical Oxygen demand)
- TSS(Total Suspended Solids)
- PH

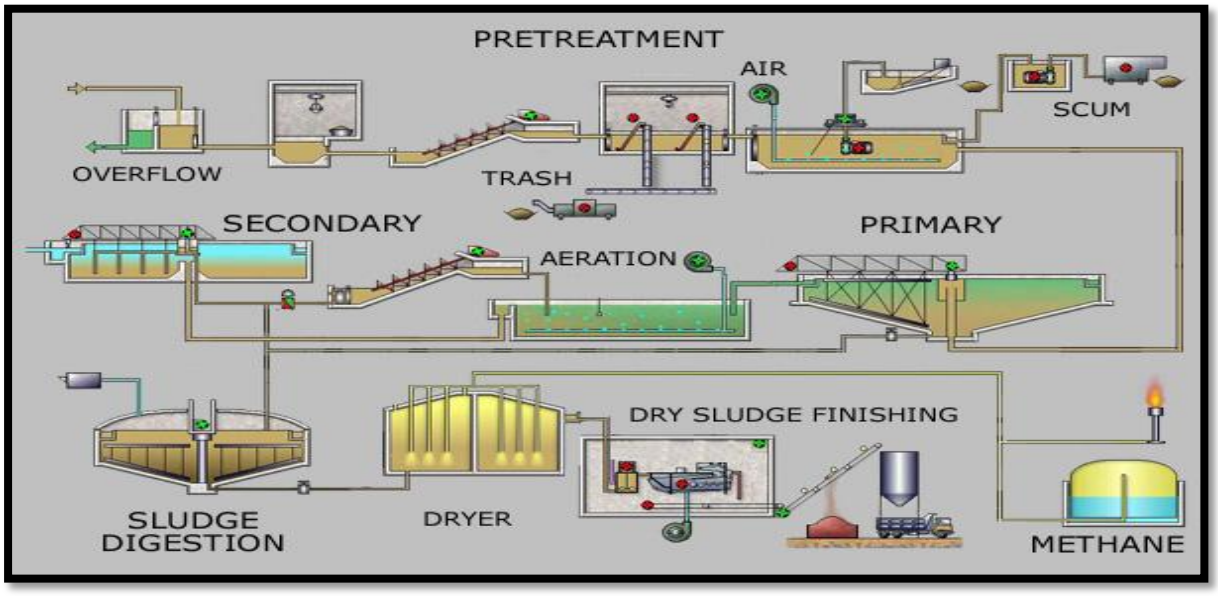


Fig. 25 : Process of sewage treatment plan

➢ **Primary Treatment:**

Primary treatment removes material that will either float or readily settle out by gravity. It includes the physical processes of screening, comminuting, grit removal, and sedimentation. Screens are made of long, closely spaced, narrow metal bars. They block floating debris such as wood, rags, and other bulky objects that could clog pipes or pumps. In modern plants the screens are cleaned mechanically, and the material is promptly disposed of by burial on the plant grounds. A comminatory may be used to grind and shred debris that passes through the screens. The shredded material is removed later by sedimentation or flotation processes.

Grit chambers are long narrow tanks that are designed to slow down the flow so that solids such as sand, coffee grounds, and eggshells will settle out of the water. Grit causes excessive wear and tear on pumps and other plant equipment. Its removal is particularly important in cities with combined sewer systems, which carry a good deal of silt, sand, and gravel that wash off streets or land during a storm.

Fig. 26 : screening

Suspended solids that pass through screens and grit chambers are removed from the sewage in sedimentation tanks. These tanks, also called primary clarifiers, provide about two hours of detention time for gravity settling to take place. As the sewage flows through them slowly, the solids gradually sink to the bottom. The settled solids known as raw or primary sludge are moved along the tank bottom by mechanical scrapers. Sludge is collected in a hopper, where it is pumped out for removal. Mechanical surface-skimming devices remove grease and other floating materials.

- **secondary Treatment:**

Secondary treatment removes the soluble organic matter that escapes primary treatment. It also removes more of the suspended solids. Removal is usually accomplished by biological processes in which microbes consume the organic impurities as food, converting them into carbon dioxide, water, and energy for their own growth and reproduction. The sewage treatment plant provides a suitable environment, albeit of steel and concrete, for this natural biological process. Removal of soluble organic matter at the treatment plant helps to protect the dissolved oxygen balance of a receiving stream, river, or lake.

There are three basic biological treatment methods: the trickling filter, the activated sludge process, and the oxidation pond. A fourth, less common method is the rotating biological contactor.

- **Tertiary Treatment:**

When the intended receiving water is very vulnerable to the effects of pollution, secondary effluent may be treated further by several tertiary processes.

Method of Treatment - Aerobic, Anaerobic:

- Aerobic-Sewage treatment in the presence of Oxygen-MBBR, SBR-where aerators/blowers aerators / blowers are installed-generally no smell during treatment.
- Anaerobic-Sewage treatment in the absence of Oxygen – UASB-No aerators/blowers are required-foul melt during treatment.

- **Various Sewage Treatment Technologies:**
  - Activated Sludge Process (ASP)
  - Up flow Anaerobic Sludge Blanket Reactor (UASB)
  - Moving Bed Bio film Reactor (MBBR)
  - Sequential Batch Reactor (SBR)

- **Activated Sludge Process – ASP:**

Activated sludge process is a process for treating sewage and waste water commonly referred as effluent using bacteria (to degrade the biodegradable organics) and air (Oxygen for respiration). Activated sludge refers to a mixture of microorganisms and suspended solids.

- **Activated Sludge Process (ASP) Technology:**

  - An activated sludge plant essentially consists of the following:

1) Aeration tank containing micro-organisms in suspension in which reaction takes place.

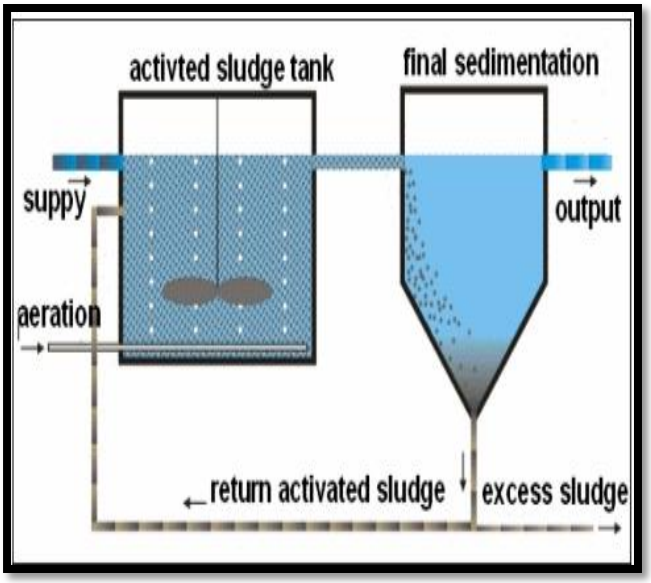


Fig. 27 : activated sludge process

2) Activated sludge recirculation system.

3) Excess sludge wasting and disposal facilities.

4) Aeration systems to transfer oxygen

5) Secondary sedimentation tank to separate and thicken activated sludge.

- **Sewage treatment plant (STP): A case study of tiruchirappalli city, Tamil nadu, India**

Tiruchirappalli drainage scheme has been designed to collect the sullage part of storm water (conveyed by open drain) and sewage conveyed by closed conduit, and then to treat and dispose of this in a satisfactory manner to the approved standard. The old Tiruchirappalli town has been provided with an underground drainage system covering 77% of the old town. The sewerage system has a network of sewage collecting systems, sub pumping stations, a main pumping station and a sewage treatment plant. The newly added areas like Golden Rock municipality and Sri Rangam Municipalities are completely unsewered areas and the wastewater generated in this area is ultimately mixing into the river Cauvery through surface channels and polluting the river.

- **Methods to treat the waste water:**

1. Collection of sewage:
The STP of tiruchirappalli consist inlet section, which is common for both phase of STP. The raw sewage first collects here.

2. Screening:
After commencement of water in inlet section it is screened through automated screens. Screens are inclined at an angle of 45 degree.

3. Grit separator:
After removing the solid waste from water, it transfers to grit chamber for removing the grit; the grit obtained from this chamber is highly nutritious for crops. The chamber is in shape for easy collection of grit. The whole process is fully automatic.

I. Primary Clarifier:

In primary clarifier, the sludge removes through gravity separation method. Then it transfers to secondary clarifier passing via aeration tank for activated sludge process.

II. Aeration Tank:

In aeration tank, oxygen is providing with the help of blower for survival of bacteria. A small quantity of sludge returned from secondary clarifier to aeration tank for activated sludge process. Air blowers are being operated with variable frequency drive (VFD). Man Machine Interface (MMI) is provided through programmable logic control system (PLC) for handling anaerobic sludge digester.

III. Sludge digester:

The sludge collected at different steps of process sent to the sump and then to the digester dome. The sludge is dewatered by using centrifugal pumps and the thickened sludge is sent to dome for anaerobic digestion. This process gives biogas and digested sludge, which use as manure by local farmers. The gas produce is using for revenue collection. The gas sent to CNG bottling plant, which gives them cost price of 6.50 RSPNm3. For smooth running of plant and follow the BIS standards for treated water, lab is setup on the STP site. The laboratory is fully furnished and all necessary equipment's for testing water is available here. In this laboratory, the water is testing at every stage for ensuring the health of the STP.

- **Objective of the study:**

The objective of municipal and industrial waste water treatment is to extract pollutants, remove toxicants, neutralize coarse particles, kill pathogens so that quality of discharged water is improved to reach the permissible level of water to be discharged into water bodies or for agricultural land.

Treatment of water thus aims at reduction of BOD, COD, eutrophication etc. of receiving water bodies and prevention of bio-magnification of toxic substances in food chain.

Study Area:

Tiruchirappalli city is an important region in the state and has been a centre of activities for many historical events from the days of the early Cholas. Rockfort, Pillaiyar temple, Sri rangam temple Upper Anicut and Grand Anicut are some of the important monuments and temples reflecting the history, culture and traditions of the city. Tiruchirappalli city is located at the Central part of Tamil Nadu. It lies between 10°10' and 11°20' of the northern latitude and 78°10' and 29°0' of eastern latitude and is the centre part of the Tamil Nadu.

Tiruchirappalli city is divided into four zones namely Golden rock, Ariyamangalam, K. Abisekapuram and Srirangam. Each zone consists of 15 wards. Thus a total of 60 wards are in Tiruchirappalli city. It is the fourth largest city in Tamil Nadu. The climate is Tropical and temperature ranges from 18°C to 45°C. The Cauvery river is the most important river in the city and the tributaries of Cauvery i.e., Coleroon river, Koriyar river, Malattar Channel, Uyyakondan Channel also drain in the city. In Trichirappalli city the river splits into two branches, the northern branch being called the Coleroon (Kolidam) and the Southern branch is called river cauvery.

Chapter 6
Swatchh Bharat Abhiyan (Clean India)

6.1 Swachhta needed in allocated village -Existing Situation:

Swachh Bharat Mission is a massive mass movement that seeks to create a Clean India by 2019. The father of our nation Mr. Mahatma Gandhi always puts the emphasis on swachhta as swachhta leads to healthy and prosperous life. Keeping this in mind, the Indian government has decided to launch the swachh bharat mission on October 2, 2014.The mission will cover all rural and urban areas. The urban component of the mission will be implemented by the Ministry of Urban Development, and the rural component by the Ministry of Drinking Water and Sanitation.

Village requires solid waste disposal, sanitation, liquid waste management etc.

6.2 Guidelines for the process of the implementation in allocated village :

- To facilitate participation of local communities in improving water and sanitation management.
- By ensuring safe sanitation in all households, public, offices, institutions and places
- By educating communities about safe usage of water, prevent of contamination and about hygienic habits.

Fig. 28 : swachhta abhiyan

- Identification of Household without toilets corrective action.
- To promotes modern agriculture and water use technologies to conserve water.
- By proper plan and implementation of water supply schemes
- To establish local environmental safe guard measures.

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

Activities will be done by students in next phase follows:

- Students acting as the real ambassadors of cleanliness and motivate others to keep their homes, schools, and surrounding clean.
- Initiate cleanliness in our surrounding areas and make the drive a successful campaign.
- Students take initiative by making people aware about waste, waste segregation and its importance.
- They will also place dustbins at junction and created awareness among the patrons and slum dwellers.

Chapter 7

Village condition due to Covid-19

India has overtaken Brazil and become the second-worst affected country in the world by the corona virus pandemic, with more than 4 million cases. COVID-19 had mostly remained in India's cities, but the disease is now spreading to rural India – an area with over 850 million people and far worse healthcare.

Fig. 29 : covid-19 guide line

7.1 Taken steps in allocated village related to existing situation:

In kharach village, due to covid-19 total corona patients are 29. Villagers were follow the covid-19 rules and regulation with good manners.

Table No. 16:covid-19 cases in Kharach village

village name	District name	Total Covid cases
Kharach	bharuch	29

7.2 Activities Done by Students for allocated village:

Due to restriction of people gathering we were not done any activity with villagers to fight against covid-19.

Chapter 8
Sustainable Design Proposals

8.1 Design Proposals:

In Tachometric survey done by us, we observed that the basic facilities required in a village are Physical infrastructure, Social infrastructure, Socio-cultural infrastructure. Physical infrastructure includes sources of drinking water, Water Tanks, Drainage systems, Road networks, Electricity distribution, Sanitation facilities and irrigation system. Social infrastructure includes Schools, colleges, Aanganwadi, Hospitals, sub centers, Clinics. Sociocultural facilities include Community halls, public library, public garden, pond, recreation center, cinema hall, Assembly polling station, Birth and death registration office, etc.

Various infrastructure facilities we observed in kharach village are as follows:

- Houses
- Drainage line
- Road network
- Water supply system
- Primary school
- Water tank, etc.

8.2 Recommendations of the Design:

From the survey we concluded the following recommendations for kharach village:

- There is primary school in the village in poor condition; therefore, re-design of school is required.
- In agricultural area earthen roads are available therefore in monsoon it is difficult to walk as well as for transportation.
- There is no library for keeping the books; therefore, library is required

8.3 Social Design:

Build a well-developed and arranged primary school building.

In the Kharach village the current condition of primary school building is not well and the building is closed at all time and not in used because of the re-develop

A Building means all types of permanent building, but structure of temporary nature like tents, hutment as well as shamanist erected for temporary purposes or ceremonial occasions, shall not be considered to be "buildings".

A new building are facilities with proper sitting with chair and table. There are separate rooms for staff's member. There are also providing the meeting room for the communication with staff. Also provides the toilets attach for students.

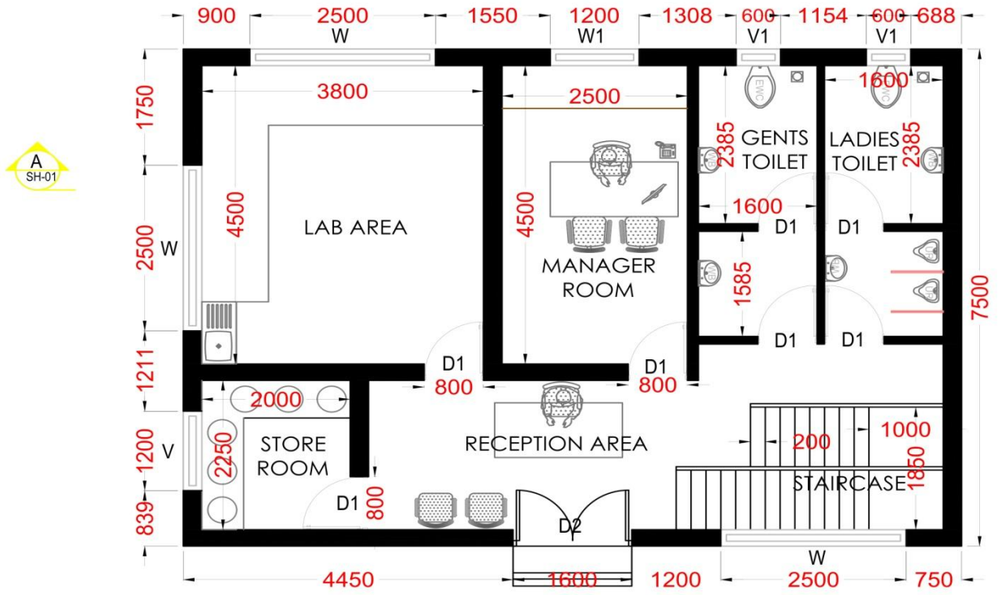
Development Requirements:

Development Requirements of the following aspects shall be mandatory and may be examined by the Competent Authority for ensuring compliance of the development to these Regulations:

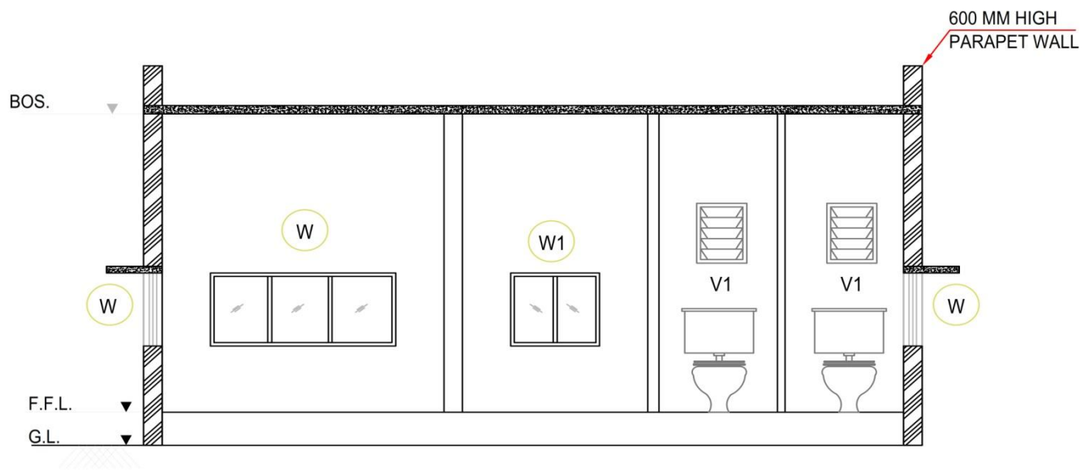
- Permissible Ground Coverage
- Permissible Height and the various floors
- Permissible Open Spaces enforced under these Regulations - Common Plot, Marginal Open
- Spaces, Setbacks and other open spaces.
- Permissible Uses of Land and Buildings
- Arrangements of stairs, lifts, corridors and parking
- Minimum requirement of sanitary facility
- Minimum Common Facility
- Required light and ventilation

Table 17: Design proposals for Part-I

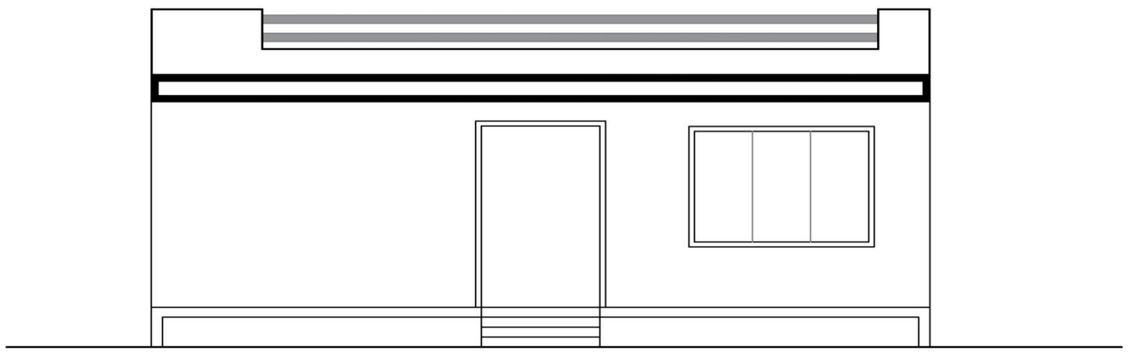
Sr. No	Design
1	Milk Collecting and Distributing Unit
2	design of library
3	Design of Clinic
4	Design of over head water tank
5	Design of Road
6	Design of Mahila Mandal



GROUND FLOOR PLAN



SECTION A-A



1 ELEVATION 1
1:75

NOTES:
1. ALL DIMENSIONS ARE IN MM INTIL STATED.
2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED.
4. ALL LOAD BEARING BRICK MASONARY WALL IN CEMENT MORTAR IN PROPORTION OF 1:6.
5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DOOR WINDOW OPENING SCHEDULE

SN.	SYMBOL	OPENING		REMARK
		WIDTH	HEIGHT	
1	D	1200	2100	SINGLE SHUTTER DOOR
2	D1	800	2100	SINGLE SHUTTER DOOR
3	D2	1600	2100	DOUBLE SHUTTER DOOR
4	W	2500	2100	FIXED ALUMINUM WINDOW
5	W1	1200	2100	FIXED ALUMINUM WINDOW

DESIGN OF:	MILK COLLECTION AND DISTRIBUTION UNIT	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 01
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

Estimation sheet for Milk collecting and Distributing Unit:

Table 18: Estimation sheet of Milk collecting and Distributing Unit

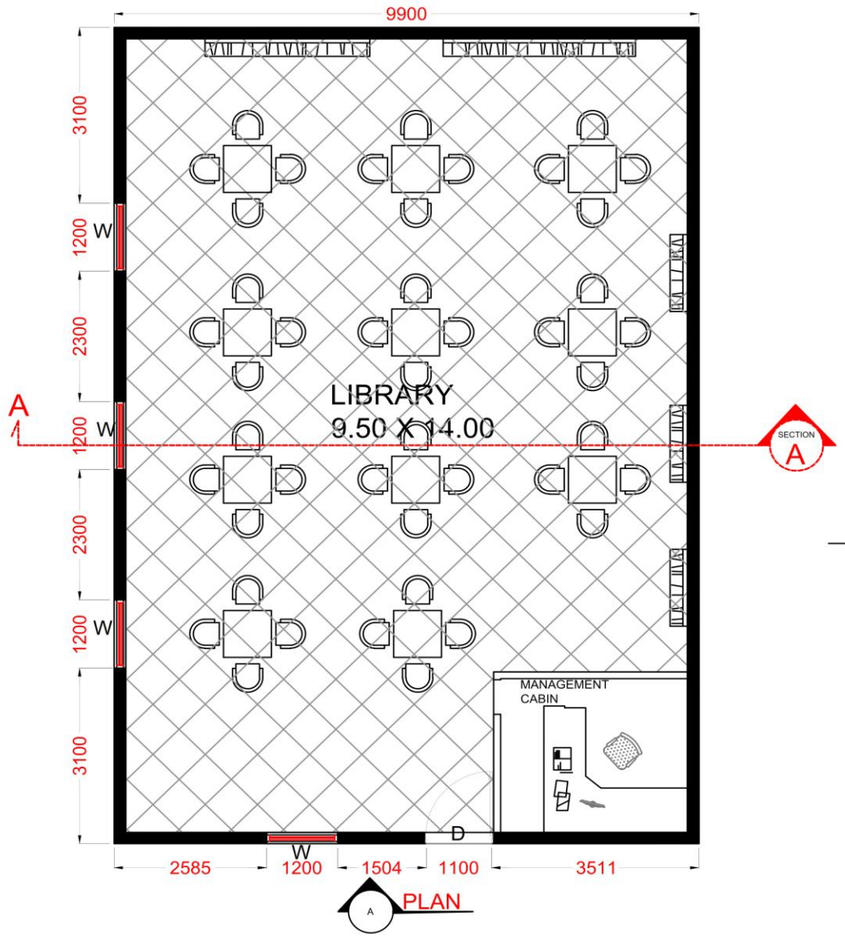
Sr. No.	Item Description	No.	Length (m)	Width / Breadth (m)	Height/ Depth (m)	Quantity (CU M)
1	Earthwork in Excavation in Foundation:					
	L1 =11.1	3	11.1	1	1	33.30
	L2 =3.9	1	3.9	1	1	3.90
	S1 =8.1	3	8.1	1	1	24.30
	S2 =5.9	2	5.9	1	1	11.80
	S3 =3.5	1	3.5	1	1	3.50
				TOTAL QTY.		73.30
2	pad footing up to plinth Foundation:					
	L1 =10.6	3	10.6	1	0.3	9.54
	L1 =10.3	3	10.3	1	0.3	9.27
	L2 =3.4	1	3.4	1	0.3	1.02
	L2 =3.1	1	3.1	1	0.3	0.93
	S1 =7.6	3	7.6	1	0.3	6.84
	S1 =7.3	3	7.3	1	0.3	6.57
	S2 =5.4	2	5.4	1	0.3	3.24
	S2 =5.1	2	5.1	1	0.3	3.06
	S3 =3.0	1	3	1	1.5	4.50
	S3 =2.7	1	2.7	1	1.5	4.05
				TOTAL QTY.		49.02
3	P.C.C Foundation:					
	L1 =11.1	3	11.1	1	1.5	49.95
	L2 =3.9	1	3.9	1	1.5	5.85
	S1 =8.1	3	8.1	1	1.5	36.45
	S2 =5.9	2	5.9	1	1.5	17.70
	S3 =3.5	1	3.5	1	1.5	5.25
				TOTAL QTY.		109.95
3	B.B.C.C Foundation:					

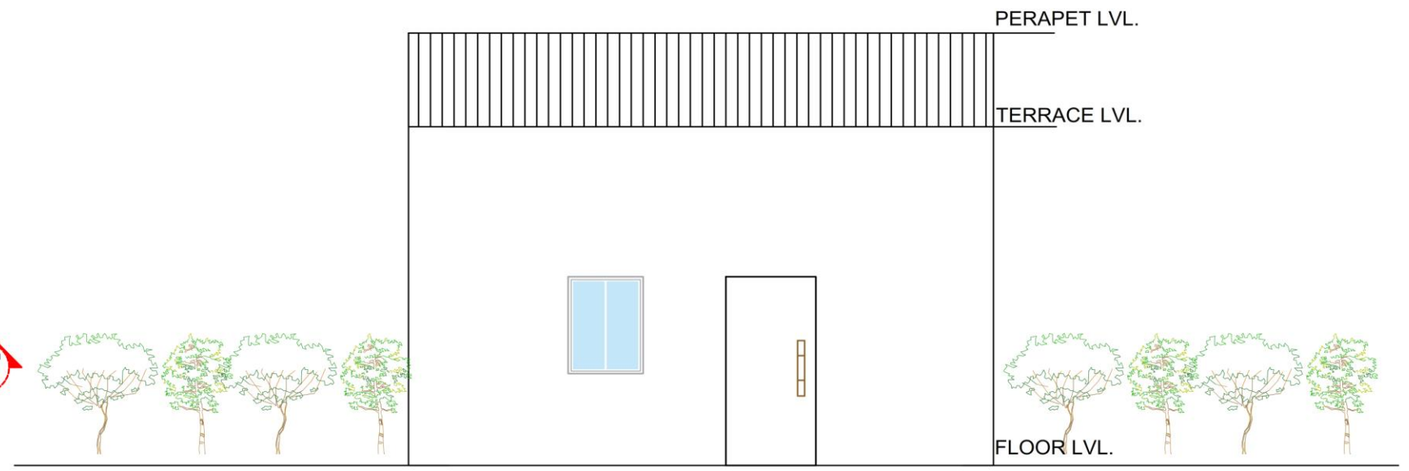
	L1 =11.1	3	11.1	1	0.2	6.66
	L2 =3.9	1	3.9	1	0.2	0.78
	S1 =8.1	3	8.1	1	0.2	4.86
	S2 =5.9	2	5.9	1	0.2	2.36
	S3 =3.5	1	3.5	1	0.2	0.70
				TOTAL QTY.		14.66
3	Brick masonry up to plinth in CM (1:6)					
	L1 =11.1	3	11.1	0.2	3.5	23.31
	L2 =3.9	1	3.9	0.2	3.5	2.73
	S1 =8.1	3	8.1	0.2	3.5	17.01
	S2 =5.9	2	5.9	0.2	3.5	8.26
	S3 =3.5	1	3.5	0.2	3.5	2.45
				TOTAL QTY.		51.31
5	Deduction for Door and Window					
	D1	1	1.5	0.2	3.2	0.96
	D2	7	1.2	0.2	3.2	5.38
	W1	2	1.2	0.2	1.4	0.67
	W2	2	0.9	0.2	1.4	0.50
				NET QTY.(m2)		43.12
6	Brick work for parapet wall	2	10.5	0.2	1.5	6.30
		2	7.5	0.2	1.5	4.50
				TOTAL QTY.		10.80

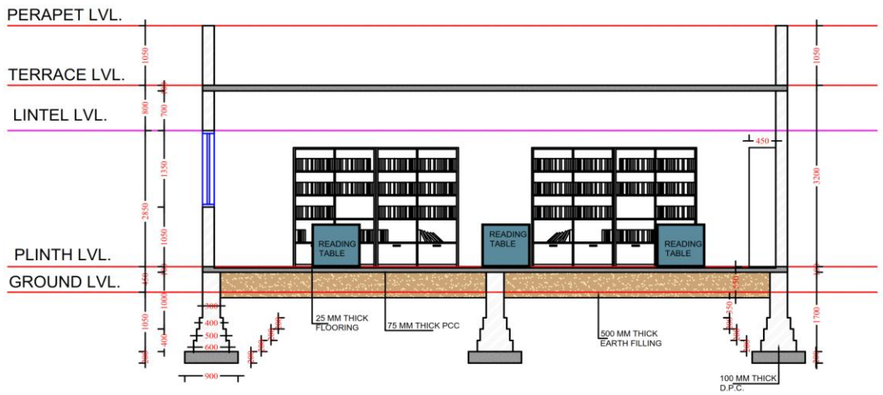
Abstract sheet for Milk Collecting and Distributing Unit:

Table 19: Abstract sheet of Milk Collecting and Distributing Unit

Sr. no	item Description	QTY	Rate	Per	Amount (Rs.)
1	Earthwork in excavation in foundation	73.6 CUM	90	CUM	6624
2	Earth filling in plinth	50.0 CUM	2700	CUM	135000
3	Brick masonry up to plinth in CM (1:6)	49.1 CUM	3500	CUM	171850
4	smooth plaster inside rooms & ceiling	212.5 SQ.M	150	SQ.M	31875
5	smooth plaster on outer wall	126.0 SQ.M	150	SQ.M	18900
6	paint work (white wash)	150.0 SQ.M	5	SQ.M	750
7	paint work on outer wall	43.0 SQ.M	5	SQ.M	215
8	Brick work for parapet wall	10.8 CUM	3500	CUM	37800
		Total Rs.			403014
		Add 1.5% Water Charge			6045
		Add 10% con. Charge			4030.14
		Total Estimate Cost in Rs.			413089







DOOR WINDOW OPENING SCHEDULE				
SN.	SYMBOL	OPENING		REMARK
		LENGTH	HEIGHT	
1	D	1200	2100	SINGLE SHUTTER DOOR
2	W	1200	1400	FIXED ALUMINUM WINDOW

NOTES:
1. ALL DIMENSIONS ARE IN MM INTIL STATED.
2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED.
4. ALL LOAD BEARING BRICK MASONARY WALL IN CEMENT MORTAR IN PROPORTION OF 1:6.
5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DESIGN OF:	LIBRARY BUILDING	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 02
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

DESIGN OF LIBRARY :

The importance of library cannot be over emphasized. A library is an important source of knowledge to young minds. It develops the important habit of reading among the students.

A library can be considered a store – house of knowledge.

In dictionaries the word "library" has been defined as "a building or room containing a collection of books". A library renders a great service to the society.

A library plays a very important role in promoting the progress of knowledge. There are many people who love reading. But they can't afford to buy books because the prices of books are very high. So when one becomes a member of a library, he can borrow valuable books. A member can borrow two books at a time and he can keep it with him for two weeks.

Libraries are particularly useful for poor children. Even those who are better off can't afford to buy all the books they require for their studies.

A public library is a place that is open to poor and rich alike. They are allowed to enter the section free of charge. They can takedown notes from the books.

Estimation of Library Quantity:

Table 20: Estimation sheet of Library

Sr. no	Descriptions	No	Length (m)	Width (m)	Height (m)	Quantity	Total Quantity
1	Earthwork in excavation in Foundation						
`	L=14+0.2+(2*0.45)=15.1m	2	15.1	0.9	1.1	29.90	
	S=9.50+0.2-(2*0.45)=8.8m	2	8.8	0.9	1.1	17.424	
						Total =	$47.324m^3$
2	Brick Bat Cement Concrete(1:4:8) for foundation						
	L = 15.1m	2	15.1	0.9	0.2	5.436	
	S = 8.8m	2	8.8	0.9	0.2	3.168	
						Total =	$8.604\ m^3$
3	Brick Masonry up to plinth in CM (1:6)						

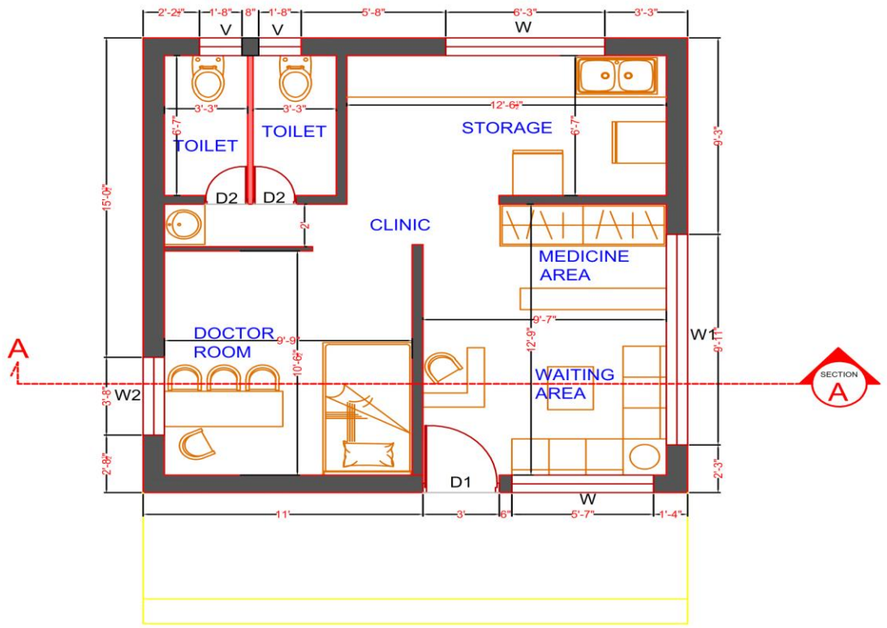
	L = 15.1-0.4 = 14.7m	2	14.7	0.5	0.3	4.41	
	L = 14.7-0.1 = 14.6m	2	14.6	0.4	0.3	3.504	
	L = 14.6-0.1 = 14.5m	2	14.5	0.3	0.85	7.395	
	S = 8.8+0.4 = 9.2m	2	9.2	0.5	0.3	2.76	
	S = 9.2+0.1 = 9.3m	2	9.3	0.4	0.3	2.232	
	S = 9.3+0.1 = 9.4m	2	9.4	0.3	0.85	4.794	
	Steps:						
	1st	1	1.1	0.9	0.15	0.15	
	2nd	1	1.1	0.6	0.15	0.10	
	3rd	1	1.1	0.3	0.15	0.05	
						Total =	25.39 m^3
4	Brick Masonry above plinth to slab in CM (1:6)						
	L = 14.5-0.1 = 14.4m	2	14.4	0.2	3.0	17.28	
	S = 9.4+0.1 = 9.5m	2	9.5	0.2	3.0	11.4	
						Total =	28.68 m^3
	Deduction For Door/Window:						
	D1	1	1.1	0.2	2.1	0.462	
	W1	4	1.2	0.2	1.4	1.344	
					(-)	Total =	1.806 m^3
	Deduction for lintels above door & windows						
	D1	1	1.4	0.2	0.15	0.042	
	W1	4	1.5	0.2	0.15	0.18	
						Total =	0.222 m^3
	Net Quantity = 28.68- 1.806- 0.222						=26.652 m^3

5	Smooth plaster inside Rooms & Ceiling						
	Plaster For Wall	2	14		3	84	
		2	9.50		3	57	
	Ceiling	1	14	9.50		133	
						Total =	$274m^2$
	Deduction:						
	D1	1/2	1.1		2.1	1.155	
	W1	4/2	1.2		1.4	3.36	
					(-)	Total =	$4.515\ m^2$
	Net Quantity = 274-4.515						$=269.48\ m^2$
6	Smooth plaster on outer wall	2	14.4		3		86.4
		2	9.9		3		59.4
	Deduction for door & windows:						$4.515\ m^2$
	Net quantity						$=141.28m^2$
7	White wash (inside)						
	Walls	2	14		3		84
		2		9.50	3		57
	Ceiling	1	14	9.50			133
	Deduction						$4.515\ m^2$
	Net quantity						$269.485m^2$
8	White wash (outside)	2	14.4		3		86.4
		2	9.9		3		59.4
	Deduction for door & windows:						$4.515\ m^2$
	Net quantity						$=141.28m^2$
9	Earth Filling in plinth	1	14	9.50	0.45	59.85	
						Total =	$59.85\ m^3$
10	Brick work for Parapet wall						
	L = 23.9m	1	23.9	0.3	1.0	7.17	
						Total =	$7.17\ m^3$

Abstract Sheet of Library:

Table 21: Abstract sheet of Library

Sr. no	Item Description	Quantity	Rate	Per	Amount (R)
1	Earthwork in excavation in foundation	47.324 m^3	90	m^3	4259.16
2	Brick Bat Cement Concrete(1:4:8) for foundation	8.604 m^3	2700	m^3	23230.8
3	Earth Filling in plinth	59.85 m^3	50	m^3	2992.5
4	Brick Masonry up to plinth in CM (1:6)	25.39 m^3	3200	m^3	81248
5	Brick Masonry above plinth to slab in CM (1:6)	26.652 m^3	3500	m^3	93282
6	Smooth plaster inside Rooms & Ceiling	269.485 m^2	150	m^2	40422.75
7	Smooth plaster on outer wall	141.285 m^2	150	m^2	21193
8	White wash (inside)	269.485 m^2	5	m^2	1347.5
9	White wash (outside)	141.285 m^2	5	m^2	706.5
10	Brick work for Parapet wall	7.17 m^3	3500	m^3	25095
				Total Rs =	293777
		Add 1.5% Water Charge			4407
		Add 10% Contractor Profit			29378
		Total Estimation cost in R			327562



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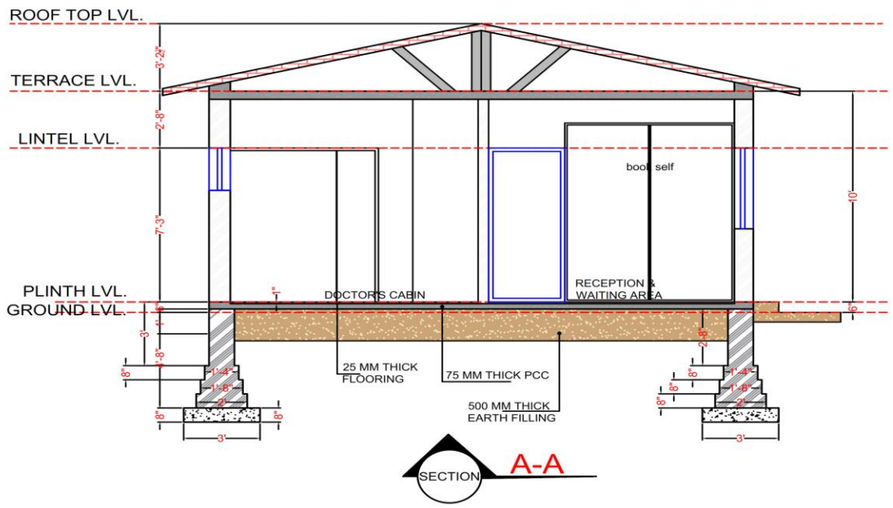

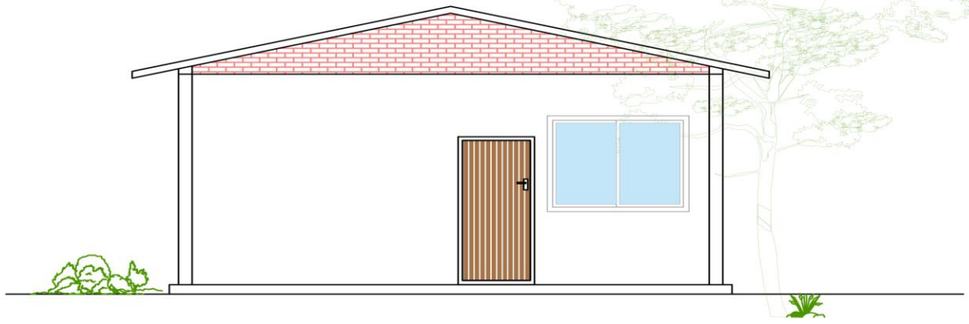

ELEVATION

DOOR WINDOW OPENING SCHEDULE

SN.	SYMBOL	OPENING		REMARK
		LENGTH	HEIGHT	
1	D1	1100	2100	SINGLE SHUTTER DOOR
2	D2	900	2100	SINGLE SHUTTER DOOR
3	W1	2500	1400	FIXED ALUMINUM WINDOW
4	W2	1200	1400	FIXED ALUMINUM WINDOW
5	V	600	600	FIXED ALUMINUM VENTILATION

NOTES:
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4. ALL LOAD BEARING BRICK MASONARY WALL IN CEMENT MORTAR IN PROPORTION OF 1:6.
5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DESIGN OF:	CLINIC BUILDING	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 03
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

Design of Clinic:

The primary function of the Medical Centre is to provide medical services to Public. They are very convenient as they are often situated in rural areas where hospitals are not close by.

Most community clinics tend to offer cereal over costs than hospitals or other facilities. However, if you need a specialist clinic it may cost you more. It is important to know what type of service, care, or doctor you need. You don't want to waste time or money going from one to the other until you and the right one.

These clinics are cheaper to visit for basic treatments like colds and flu. The services and treatments available at these clinics are limited. Nurse practitioners generally work at these clinics. Most of these nurses are not specialists but have general knowledge and training to deal with a large, but limited spectrum of issues.

Services like vaccinations, preventative care, and physical exams are offered. You can also have your blood pressure taken and do tests for HIV, insulin, cholesterol, and other such conditions. There are over a thousand of these clinics across the nation. They are very convenient to visit as they are in the center of where you would buy groceries or go for other errands. If you are given a prescription, it is very easy to just walk around the corner and buy your meds from the pharmacy.

Estimation of clinic:

Table 22: Estimation sheet of Clinic

Sr. no	Description	No.	Length (m)	Width (m)	Height (m)	Quantity	Total quantity
1	Earthwork in excavation in foundation						
	Net C.L. length= 32.1 - (0.5*0.9*3) = 30.75 m	1	30.75	0.9	1.10	30.44	
						Total =	$30.44m^3$
2	Brick Bat Cement Concrete(1:4:8) for Foundation	1	30.75	0.9	0.2	5.54	
						Total =	$5.54m^3$
3	Brick Masonry up to plinth in CM (1:6)						
	L= 30.75-(0.5*0.5*3) =30m	1	30	0.5	0.3	4.5	
	L= 30.75-(0.5*0.4*3) =30.15m	1	30.15	0.4	0.3	3.62	
	L= 30.75-(0.5*0.3*3) =30.3m	1	30.3	0.3	0.85	7.73	
						Total =	$15.85m^3$
4	Earth Filling in plinth						
	Toilet	1	2.0	1.9	0.45	1.71	
	Storage	1	3.7	1.9	0.45	3.16	
	Doctor Room	1	3.0	3.8	0.45	5.13	

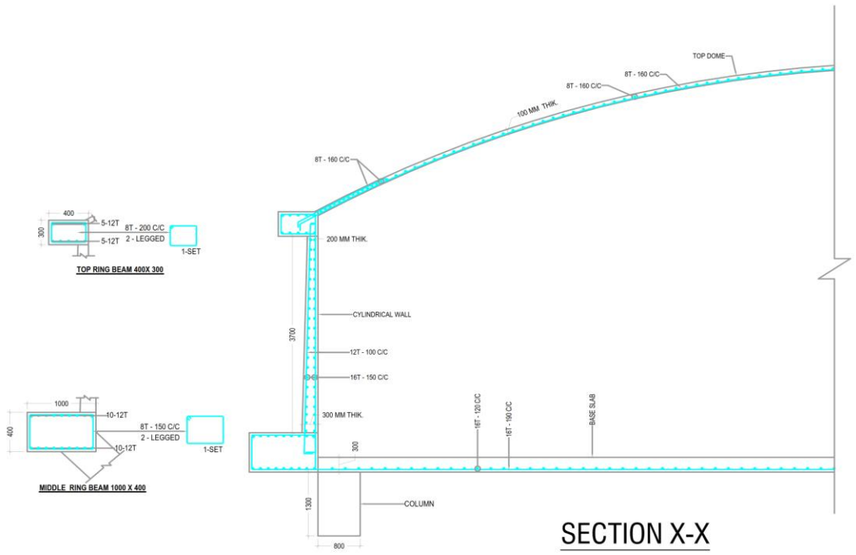
	Sitting Room	1	2.8	3.8	0.45	4.79	
						Total =	14.79m^3
5	Brick Masonry above plinth to slab in CM (1:6)						
	L= 30.45m	1	30.45	0.2	3.0	18.27	
						Total =	18.27m^3
	Deduction of Door/Window						
	D1	1	1.1	0.2	2.1	0.46	
	D2	1	0.9	0.2	2.1	0.38	
	W1	1	2.5	0.2	1.4	0.7	
	W2	2	1.2	0.2	1.4	0.67	
	V	1	0.6	0.2	0.6	0.07	
					(-)	Total =	2.28m^2
	Net Quantity = 18.27-2.28 = 15.99m^3						
6	Smooth plaster inside Rooms & Ceiling						
	-Plaster For Wall:						
	Toilet	2	2.1		3	12.6	
		2	2.0		3	12	
	Storage	2	3.8		3	23	
		2	2.0		3	12	
	Doctor Room	2	3.1		3	19	
		2	3.9		3	23.4	
	Sitting Room	2	2.9		3	17.4	
		2	3.9		3	23.4	
						Total =	143 m^2
	Deduction of Door/Window						
	D1	1/2	1.1		2.1	1.16	
	D2	2/2	0.9		2.1	1.89	
	W1	1/2	2.5		1.4	1.75	
	W2	2/2	1.2		1.4	1.68	
	V	1/2	0.6		0.6	0.18	
					(-)	Total =	6.66m^2
	Net Quantity= 143-6.66 = 136.4 m^2						
7	Smooth plaster on outer wall						
	L = 86.1m	1	86.1		3	245	
						Total =	245m^2
	Deduction of door/window = 6.66 m^2						
	Net Quantity = 246-6.66 = 238.4 m^2						

8	Paint Work (White Wash)						
	-For Inside Wall:						
	Toilet	2	2.1		0.3	1.26	
		2	2.0		0.3	1.2	
	Storage	2	3.8		0.3	2.28	
		2	2.0		0.3	1.2	
	Doctor Room	2	3.1		0.3	1.86	
		2	3.9		0.3	2.34	
	Sitting Room	2	2.9		0.3	1.74	
		2	3.9		0.3	2.34	
						Total =	$14.22m^2$
	Deduction of Door/Window						
	D1	1/2	1.1		2.1	1.16	
	D2	2/2	0.9		2.1	1.89	
	W1	1/2	2.5		1.4	1.75	
	W2	2/2	1.2		1.4	1.68	
	V	1/2	0.6		0.6	0.18	
					(-)	Total =	$6.66m^2$
	Net Quantity= 14.22-6.66 = 7.56 m^2						
9	Paint Work on outer wall						
	L = 86.1m	1	86.1		3	245	
						Total =	$245m^2$
	Deduction of door/window = 6.66 m^2						
	Net Quantity = 246-6.66 = 238.4 m^2						

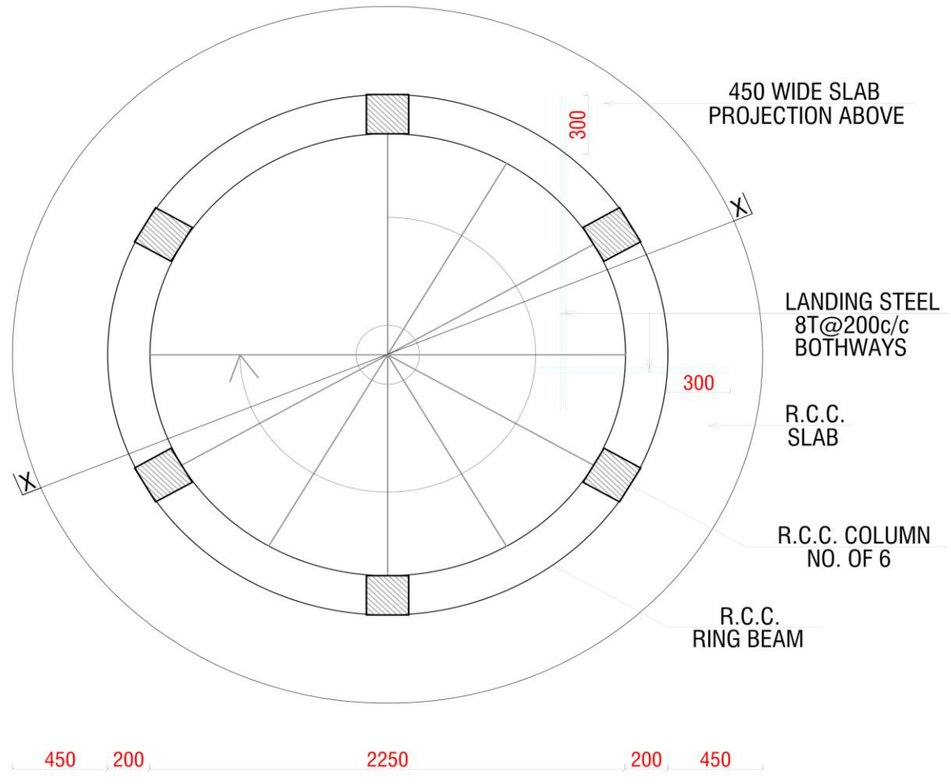
Abstract Sheet of Clinic:

Table 23: Abstract sheet of Clinic

Sr. no	Item Description	Quantity	Rate	Per	Amount (Rs.)
1	Earth work in excavation in foundation	30.44m^3	90	m^3	2740
2	Brick Bat Cement Concrete (1:4:8)for Foundation	5.54 m^3	2700	m^3	14958
3	Earth Filling in plinth	14.79 m^3	50	m^3	740
4	Brick Masonry up to plinth in CM (1:6)	15.85 m^3	3200	m^3	50720
5	Brick Masonry above plinth to slab in CM (1:6)	15.99 m^3	3500	m^3	55965
6	Smooth plaster inside Rooms & Ceiling	7.56m^2	150	m^2	1134
7	Smooth plaster on outer wall	238.4 m^2	150	m^2	35760
8	Paint Work (White Wash)	136.4 m^2	5	m^2	682
9	Paint Work on outer wall	238.4 m^2	5	m^2	1192
				Total Rs. =	163891
		Add 1.5% Water Charge			2458.4
		Add 10% Contractor Profit			16389.1
		Total Estimation cost in Rs.			182739



SECTION X-X



PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MM INTIL STATED.
2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED.
4. ALL LOAD BEARING BRICK MASONARY WALL IN CEMENT MORTAR IN PROPORTION OF 1:6.
5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DESIGN OF:	OVERHEAD WATER TANK	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 04
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

Design of over headwater tank:

Estimate of over head water tank:

Table 24: Estimation sheet of over head Water Tank

Sr. No.	Item Description	No.	Length (m)	Width/ Breadth (m)	Height/ Depth (m)	Quantity (CU M)
1	Quantity of steel bar (i) 12mm dia. Bar top ring beam					(KG)
	L= 10 M	10	6	0.88	@	52.80
A.	8 mm dia. Stirrups					(KG)
	L= 1.39 M	20	1.39	0.39	@	10.84
				TOTAL	QTY.	63.64
2	Quantity of steel bar (i) 12mm dia. Bar middle ring beam					(KG)
	L= 10 M	20	6	0.88	@	105.60
A.	8 mm dia. Stirrups					(KG)
	L= 2.8 M	20	2.8	0.39	@	21.84
				TOTAL	QTY.	127.44
3	Quantity of steel bar8 mm dia. Bar top dome slab					(KG)
	L=7.5 M	35	7.5	0.39	@	102.38
4	Quantity of steel bar 8 mm dia. Bar CY. wall					(KG)
A.	Horizontal steel					
	L= 14.6 M	25	14.6	0.89	@	324.85
B.	Vertical steel					
	L= 14.6 M	37	14.6	1.58	@	853.52
				TOTAL	QTY.	1178.37
5	Quantity of steel bar on base slab					(KG)
A.	Horizontal steel					
	L= 10 M	52	10	0.39	@	202.80
B.	Vertical steel					
	L= 10 M	83	10	0.39	@	323.70
				TOTAL	QTY.	526.50
6	top dome vol.					(CU.M)
	L= 8 M	1	8	8	0.01	0.64

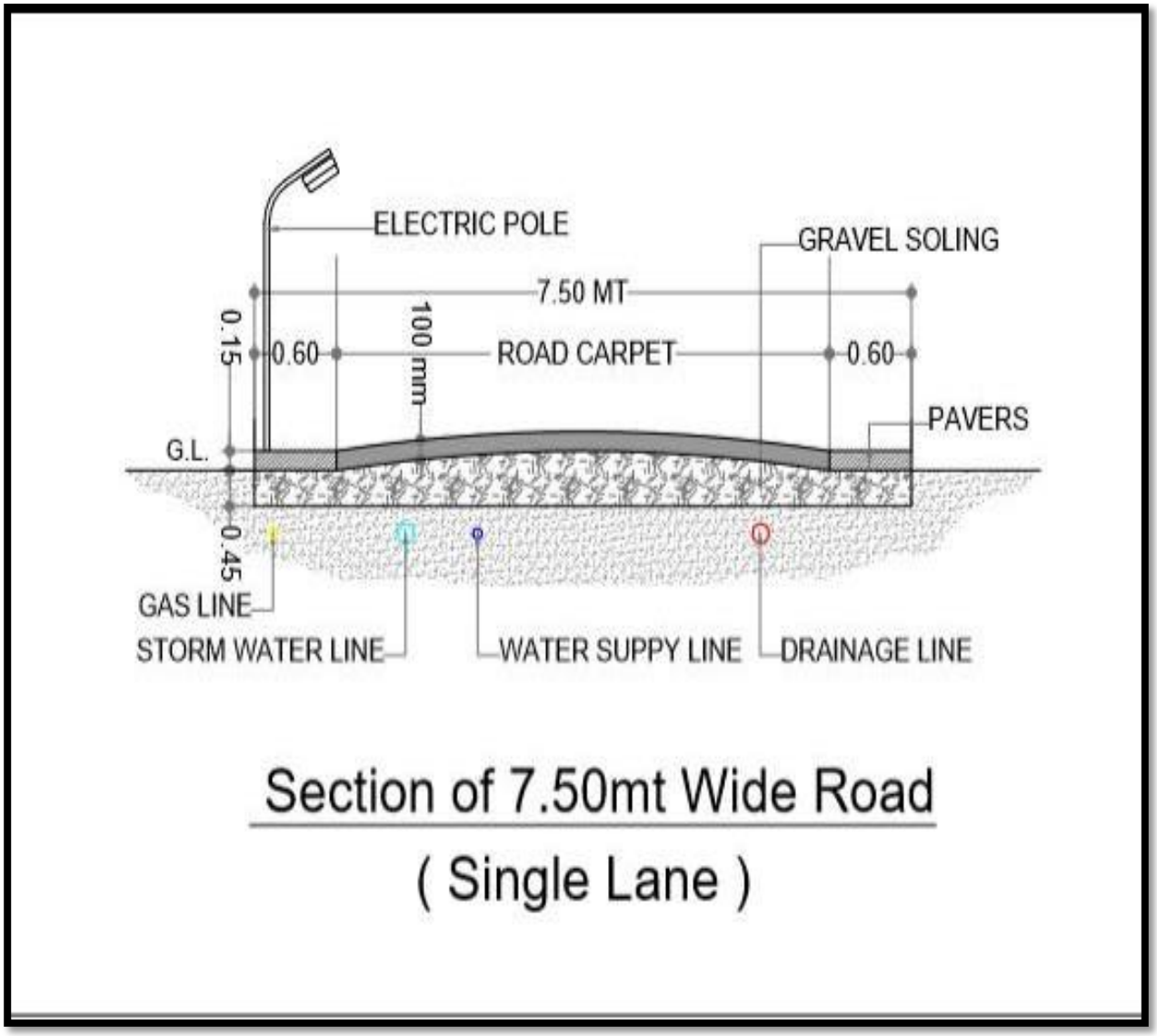
	CY.wall					(CU.M)
	L= 3.7 M	1	97	11.6	0.03	33.76
	base slab					(CU.M)
	L= 5.8 M	1	26.4	11.6	0.03	9.19
	top ring beam					(CU.M)
	B=0.3 M , H=0.4 M	1	11.6	0.3	0.4	1.39
	Middle ring beam					(CU.M)
	B=1 M , H=0.4 M	1	11.6	1	0.4	4.64
				TOTAL	QTY.	49.62

Abstract sheet of over head water tank:

Table 25: Abstract sheet of over head Water Tank

Sr. no	Item Description	QTY	Rate	Per	Amount (Rs.)
1	Quantity of steel bar 12mm dia. Bar top ring beam	63.6 KG	400	TONNE	25456
2	Quantity of steel bar 12mm dia. Bar middle ring beam	127.4 KG	400	TONNE	50976
3	Quantity of steel bar 8 mm dia. Bar top dome slab	1178.4 KG	400	TONNE	471348
4	Quantity of steel bar 8 mm dia. Bar CY. wall	526.5 KG	400	TONNE	210600
5	Quantity of steel bar on base slab	49.6 KG	400	CUM	19848
			Total Rs.		778228
		Add 1.5% Water Charge			11673
		Add 10% con. Charge			7782.28
		Total Estimate Cost in Rs.			797684

Design of Road :



Estimate of road :

Table 26: Estimation sheet of Road

Sr. No.	Item Description	No.	Length (m)	Width/ Breadth (m)	Height/ Depth (m)	Quantity (CU M)
1	150 mm size boulders for soiling					(CU.M)
	B=7.5+0.6+0.6 = 8.7 m	1	1000	8.7	0.15	1305.00
2	50 mm size stone ballast for inner coat					(CU M)
	thickness of loose layer	1	1000	8.7	0.12	1044.00
	8 x 1.5 = 12 cm					
	20 mm size stone grit for first painting coat					(CU M)
	(1.35 m3 per 100 m2)	1	1000	8.7	0.0135	117.45
	road tar for first painting coat					(KG)
	(220 KG per 100 m2)	1	1000	8.7	2.2	19140.00
3	40 mm size stone ballast for inner coat					(CU M)
	thickness of loose layer	1	1000	8.7	0.12	1044.00
	8 x 1.5 = 12 cm					
	12 mm size stone grit for first painting coat					(CU M)
	(0.75 m3 per 100 m2)	1	1000	8.7	0.075	652.50
	road tar for first painting coat					(KG)
	(120 KG per 100 m2)	1	1000	8.7	0.12	1044.00

Abstract sheet:

Table 27: Abstract sheet of Road

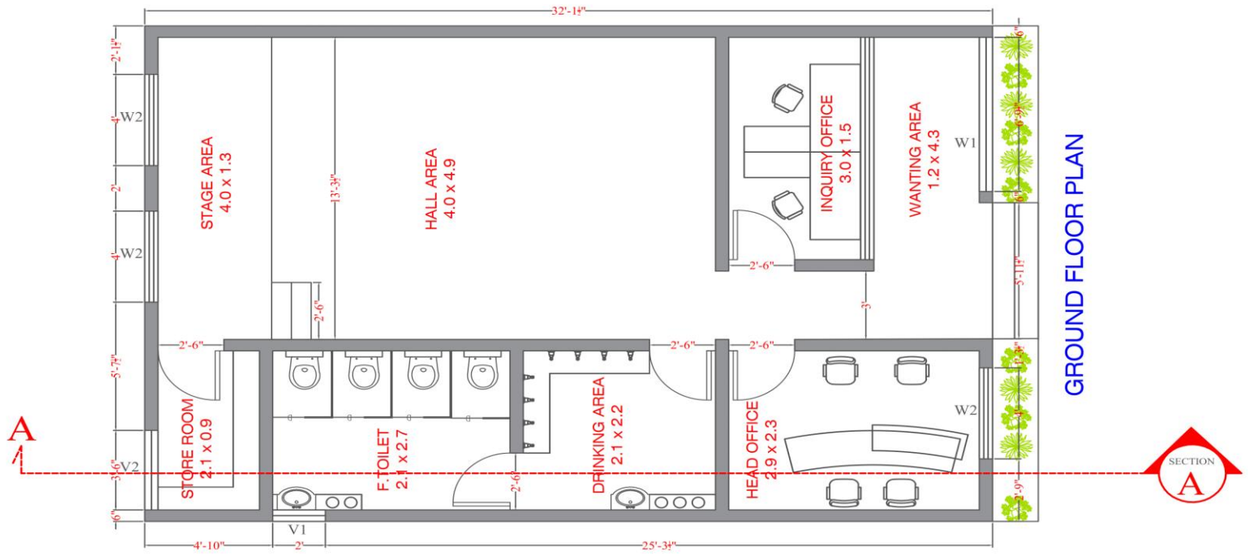
Sr. no	item Description	QTY	Rate	Per	Amount (Rs.)
1	150 mm size boulders for soiling	1305.0 CUM	100	CUM	130500
2	50 mm size stone ballast for inner coat	50.0 CUM	2700	CUM	1044
	20 mm size stone grit for first painting coat	49.1 CUM	3500	CUM	117.45
	road tar for first painting coat	212.5 SQ.M	150	TON	19140
3	40 mm size stone ballast for inner coat	126.0 SQ.M	150	CUM	1044
	12 mm size stone grit for first painting coat	150.0 SQ.M	5	CUM	625.5
	road tar for first painting coat	43.0 SQ.M	5	TON	1044
			Total Rs.		153514.95
		Add 1.5% Water Charge			2303
		Add 10% con. Charge			1535.1495
		Total Estimate Cost in Rs.			157353

Design of Mahila Mandal:

Quantity sheet for Mahila Mandal:

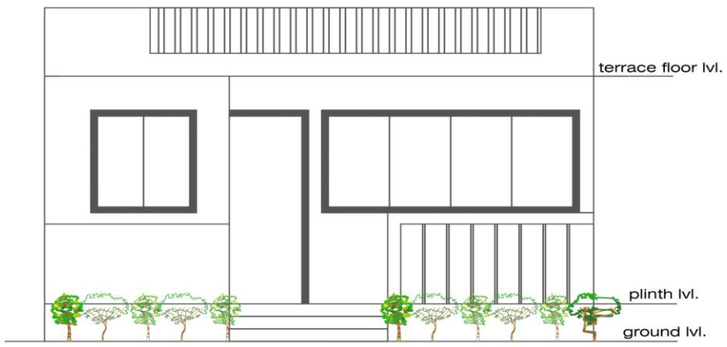
Table 28: Quantity sheet of Mahila Mandal

Item Description	No.	Length (m)	Width/ Breadth (m)	Height/ Depth (m)	Quantity (CU M)
Earthwork in Excavation in Foundation :					
L1 =10.60	3	10.6	1	1.5	47.70
S1 =5.4	3	5.4	1	1.5	24.30
S2 =1.20	1	1.2	1	1.5	1.80
S3 =2.10	1	2.1	1	1.5	3.15
			TOTAL QTY.		76.95
P.C.C Foundation:					

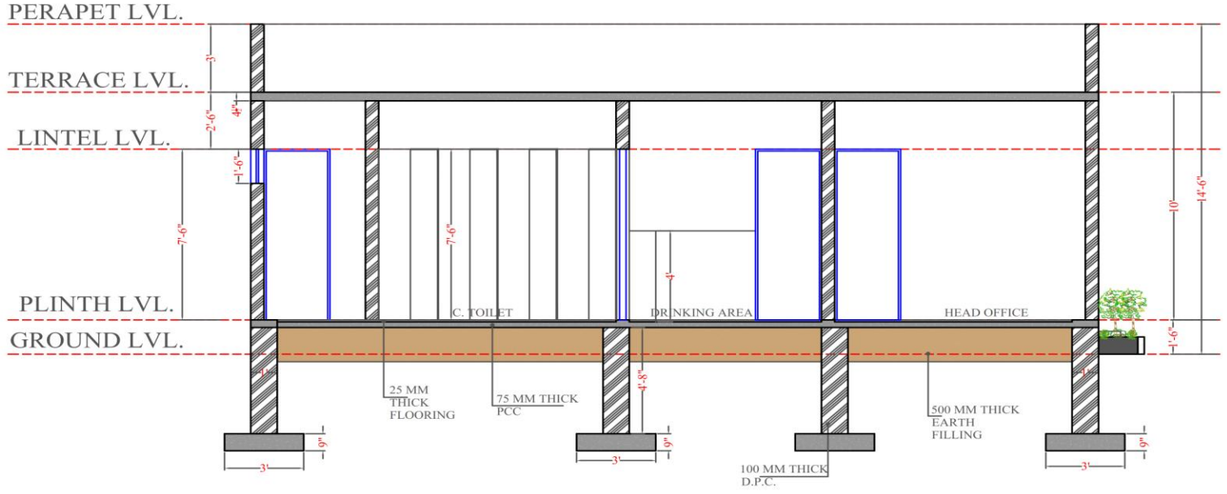


PLAN

GROUND FLOOR PLAN



ELEVATION



SECTION A-A

NOTES:
1. ALL DIMENSIONS ARE IN MM INTIL STATED.
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5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DOOR WINDOW OPENING SCHEDULE

SN.	SYMBOL	OPENING		REMARK
		LENGTH	HEIGHT	
1	D1	1100	2100	SINGLE SHUTTER DOOR
2	W1	2900	1200	FIXED ALUMINUM WINDOW
3	W2	1200	1200	FIXED ALUMINUM WINDOW
4	V1	600	600	FIXED ALUMINUM VENTILATION
5	V1	1000	600	FIXED ALUMINUM VENTILATION

DESIGN OF:	MAHILA MANDAL	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 06
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

L1 =10.60	3	10.6	1	0.3	9.54
S1 =5.4	3	5.4	1	0.3	4.86
S2 =1.20	1	1.2	1	0.3	0.36
S3 =2.10	1	2.1	1	0.3	0.63
			TOTAL QTY.		15.39
Pad footing in Foundation					
L1 =10.20	3	10.2	0.7	0.3	6.43
L1 =9.95	3	9.95	0.15	1.6	7.16
S1 =5.00	3	5	0.7	0.3	3.15
S1 =4.35	3	4.35	0.15	1.6	3.13
S2 =0.80	1	0.8	0.7	0.3	0.17
S2 =0.55	1	0.55	0.15	1.6	0.13
S3 =1.70	1	1.7	0.7	0.3	0.36
S3 =1.45	1	1.45	0.15	1.6	0.35
			TOTAL QTY.		20.88
Brickwork in S.S					
L1 =10.60	3	10.6	0.15	3.2	15.26
S1 =5.4	3	5.4	0.15	3.2	7.78
S2 =1.20	1	1.2	0.15	3.2	0.58
S3 =2.10	1	2.1	0.15	3.2	1.01
			TOTAL QTY.		24.62
Staircase Quantity					
L1 =1.80	1	1.8	0.6	0.15	0.16
L1 =14.50	1	14.5	0.3	0.15	0.65
STAGE STAIRCASE					
L1 =0.76	1	0.76	0.6	0.15	0.07
L1 =0.76	1	0.76	0.3	0.15	0.03
			TOTAL QTY.		0.92
Deduction for D & W					
W1	1	2.9	0.15	1.2	0.52
W2	3	1.2	0.15	1.2	0.65
V1	1	0.6	0.15	0.15	0.01
V2	1	1	0.15	0.15	0.02
			TOTAL QTY.		1.21
Deduction for D & W					
W1	1	3.2	0.15	0.12	0.06
W2	3	1.5	0.15	0.12	0.08
V1	1	0.9	0.15	0.12	0.02

V2	1	1.3	0.15	0.12	0.02
			TOTAL QTY.		0.18
			NET QTY.		23.23
R.C.C Slab &Chhajja					
L=6.40	1	6.4	9.6	0.12	7.37
B=9.60					
R.C.C Chhajja					
W1	1	3.2	0.6	0.1	0.19
W2	3	1.5	0.6	0.1	0.27
V1	1	0.9	0.6	0.1	0.05
V2	1	1.3	0.6	0.1	0.08
			Total qty.		0.59
Plaster inside					
Waiting area	2	1.2		3.5	8.40
	2	4.3		3.5	30.10
Inquiry office	2	3		3.5	21.00
	2	1.5		3.5	10.50
Head office	2	2.9		3.5	20.30
	2	2.3		3.5	16.10
Hall area	2	6.5		3.5	45.50
	2	4		3.5	28.00
Drinking area	2	2.1		3.5	14.70
	2	2.2		3.5	15.40
F. toilet	2	2.1		3.5	14.70
	2	2.7		3.5	18.90
Store room	2	2.1		3.5	14.70
	2	0.9		3.5	6.30
			Total qty.		264.60
Ceiling Plaster					
Waiting area	2	1.2		4.3	10.32
Inquiry office	2	3		1.5	9.00
Head office	2	2.9		2.3	13.34
Hall area	2	6.5		4	52.00
Drinking area	2	2.1		2.2	9.24
F. toilet	2	2.1		2.7	11.34
Store room	2	2.1		0.9	3.78
			Total qty.		109.02

Abstract sheet for Mahila Mandal:

Table 29: Abstract sheet of Mahila Mandal

Sr. no	Item Description	Quantity	Rate	Per	Amount (Rs.)
1	Earthwork in excavation in foundation	77.0 CUM	90	CUM	6925.5
2	P.C.C foundation	15.4 CUM	2700	CUM	41553
3	Pad Footing Up to Plinth	20.9 CUM	3500	CUM	73080
4	Brick work for S.S	24.4 SQ.M	150	SQ.M	3663
5	R.C.C Slab &Chhajja	0.6 CUM	150	SQ.M	88.5
6	Staircase Qty	0.9 CUM	5	SQ.M	4.6
7	smooth plaster on inter wall	370.6 SQ.M	5	SQ.M	1853.1
8	Brick work for parapet wall	10.0 CUM	5	CUM	50
			Total Rs.		127217.7
			Add 1.5% water charge		1908
			Add 10% con. Charge		1272.177
			Total Estimate Cost in Rs.		130398

Chapter 9

Future Development of Village

- The study is aimed to know the basic scenario of village through techno economic survey and gap analysis done.
- Through our study we will try to make a master development plan of the village.
- Our master development plan might be including provisions of all the facilities suggest by us, then we focus on the improvement in the existing facilities.
- Since Kharach village is not much developed as other villages we got an opportunity to perform and to give suggestions for development.
- People are well known about the development but they don't put it in their life and also in their village.
- Following table shows the designs for the Part-II

Table 30: Design proposals for Part-II

Sr. No	Design
1	Development of Lake
2	Primary school
3	Video Hall
4	Medical Store
5	Youth Club
6	Public garden

These projects will provide employment to villagers and increases wealth of people and improve living standards.

Chapter 10
Conclusion

From the above study and visits done in the villages we came to a conclusion that these villages need up gradation to new technologies and basic requirements like smart and ideal village.

For this process of converting an ordinary village into a smart or ideal village we gave the following design proposals of Clinic, Library, Panchayat office, Temple, Bituminous road, Circular Water Tank, Development of Lake, Mahila Mandal, Video hall, Youth Club, Medical Store and Milk Collecting and Distributing Unit.

All the design prototypes and Measurement sheets are included in the report for the better understanding of the design concepts.

Vishwakarma Yojana aims to procure development in villages without losing essence. After all the way to uplift our country is through developing the villages. The scheme would reinforce wellbeing of people and further quality of living standard.

From above design villagers and Sarpanch are happy from us, they are also want to develop their village more and more for increasing in living standard and tourist development also.

Benefits of all the facilities should be given to all the people of village equally. There should not be any partiality or injustice to anyone. This will eliminate social discrimination of caste, religion, class and leads to prosperity of village

Chapter 11
References

- Census of India(2011)
- Google Maps
- IS 456:2000 (Reinforced Concrete Structure)
- IS 875: 1987 (Load Calculation for Slab)
- National Institute of Urban Affairs(www.niug.org)
- www.censusindia.gov.in
- www.sagy.gov.in
- www.gujaratgov.in
- www.gujarattourism.in

- books refer for planning, estimating and quantity of design :

1. B.N. DATTA (2017) Estimation publisher “Estimation and costing book”
2. G.B. Deshpandey, J.P. Nayak (2014) Nirali prakasan “Quantity surveying book”
3. National Building Code of India (2016)
4. S.S. Bhavikatt, M.V. Chltawadagi (2014) I.K. International Pvt. Ltd. “Building planning and drawing”
5. The Hindu news (15 October 2013) “The 15 must have basic amenities in Villages.”

Chapter 12

Annexure

12.1 ENA village Survey Form :

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

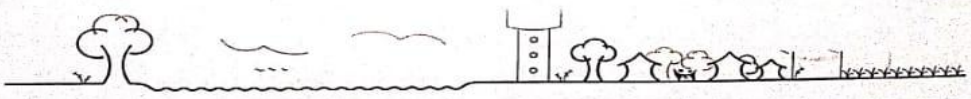
Name of Village:	ENA
Name of Taluka:	Palsana
Name of District:	Surat
Name of Institute:	Bhagwan mhuvir college of engineering and technology.
Nodal Officer Name & Contact Detail:	
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Rajnaben Ahir. સરપંચ એના-ગોડીયા ગૃપ ગ્રામ પંચાયત તા. પલસાણા, જિ. સુરત N.P. Ahir
Date of Survey:	02-11-2020

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001				
ii)	2011	3771	1895	1882	888

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	621.93 hector.
	Forest Area (In hect.)	
	Agricultural Land Area (In hect.)	
	Residential Area (In hect.)	
	Other Area (In hect.)	
	Water bodies	
	Nearest Town with Distance:	Bardoli 19 km.



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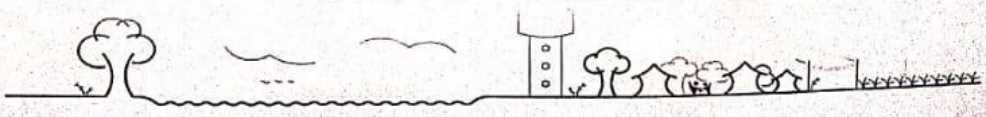
Vishwakarma Yojana: Phase VIII
Techno Economic Survey

3. Occupational Details:

Name of Three Major Occupation groups in Village	1. Farmer 2. Job 3. Business.

4. Physical Infrastructure Facilities:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated)	yes			over head
	• RO Water	yes.			
	• Well (Covered/ Uncovered)	no			
	• Hand pumps	yes.			
	• Tube well/ Borehole	yes			Borehole
	• River/ Canal/ Spring/ Lake/ Pond	yes			canal.
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			closed
	If Open than Pucca / Kutchcha	no			
	Whether drain water is discharged directly in to Water bodies/ Sewer plants	yes			water bodies.
Suggestions if any:					



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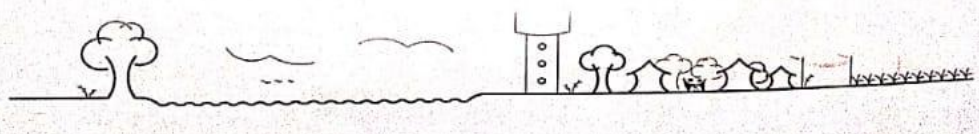
E.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	All weather.			
	Main road				
	Internal streets				
	Nearest NH/SH/MDR/ODR Dist. in kms.	yes.			SH 53
Suggestions if any:					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	no			5 km gangadhara.
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	yes.			
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	yes.			all.
Suggestions if any:					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	yes.			DGVCL. 24 hrs.
	Power supply for Domestic Use	yes.			24 hrs.
	Power supply for Agricultural Use	yes.			12 hrs.
	Power supply for Commercial Use	yes			24 hrs.
	Road/ Street Lights	yes			



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Vishwakarma Yojana: Phase VIII
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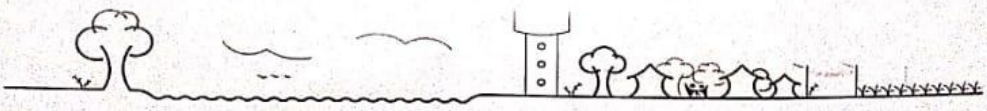
	Electrification in Government Buildings/ Schools/ Hospitals	yes.			
	Renewable Energy Source Facilities (Y/ N)	yes.			Sloar Street light
	LED Facilities	yes.			Street light.
Suggestions if any:					
H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	yes.			2 nos.
	Location Condition	good.			
	Community Toilet (With bath/ without bath facilities)	yes			without bath.
	Solid & liquid waste Disposal system available	no			
	Any facility for Waste collection from road	yes			Door to Door.
Suggestions if any:					
I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	yes.			canal & borehole.
Suggestions if any:					
J.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Pucca.			major house has Pucca.

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks



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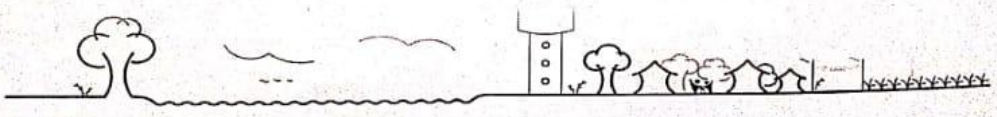
K.	Health Facilities:				
	Sub center/ PHC/ CHC /Government Hospital/ Child welfare & Maternity Homes (If Yes than specify No. of Beds) Condition:	yes.			Sub Center
	Private Clinic/Private Hospital/ Nursing Home	yes.			Private clinic.
	If any of the above Facility is not available in village than approx.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

L.	Education Facilities:				
	Aaganwadi/ Play group	yes.			
	Primary School	yes.			
	Secondary school	yes			
	Higher sec. School	yes.			
	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: ....9....kms. (Bardoli)				
Suggestions if any:					

M.	Socio- Culture Facilities				
	Community Hall (With or without TV) Location:	yes.			



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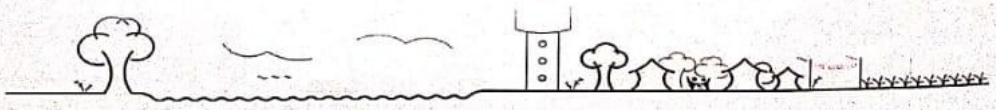
Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

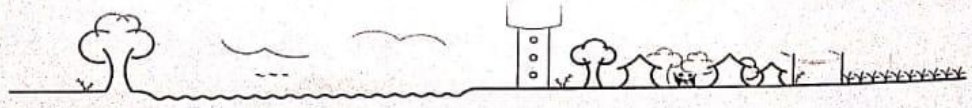
	General Market	yes.			
	Shops (Public Distribution System)	yes			
	Panchayat Building	yes.			
	Pharmacy/Medical Shop	NO			
	Bank & ATM Facility	yes.			
	Agriculture Co-operative Society	yes.			
	Milk Co-operative Soc.	yes.			
	Small Scale Industries	yes			Hardware assesories production.
	Internet Cafes/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

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

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

7. **Data Collection From Village**

Village Base Map Available: Hard Copy/Soft Copy	



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Vishwakarma Yojana: Phase VI
Techno Economic Survey

Recent Projects going on for Development of Village	Patidar samaj trust Hall.
Any NGO working for village development	yes (2).

8. **Additional Information/ Requirement:**

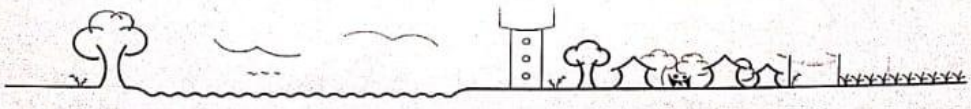
Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities(School Building, Health Center, Panchayat Building, Public Toilets & any other)		
2.	Additional Information/ Requirement		

9. **Smart Village Proposal Design**

Sr. No.	Descriptions	Information/ Detail	Remarks
1.			

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

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



12.2 BABEN village Survey Form :

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

SMART VILLAGE SURVEY

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

Name of District:	Baben
Name of Taluka:	Bardoli
Name of Village:	Surat
Name of Institute:	Bhagwan Mahavir college of engineering and technology
Nodal Officer Name & Contact Detail:	
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Falguniben b. Patel. સરપંચ ગ્રામ પંચાયત બાબેન તા. બારડોલી, જી. સુરત.
Date of Survey:	02/11/2020.

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	8377	4576	3801	1599
2.	2011	15610	8642	6968	5278.

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	600 hectar.
2.	Forest Area (In hect.)	—
3.	Agricultural Land Area (In hect.)	300 hector.
4.	Residential Area (In hect.)	200 hector
5.	Other Area (In hect.)	5 hector (Recreational)
6.	Distance to the nearest railway station (in kilometers):	Bardoli railway station (1 km)

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Farmer 2. Business 3. Job.
Major crops grown in the village:	1. Suger. 2. Cotton. 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	yes			bore well.
2.	**DUG WELL** Protected Well Un Protected Well				
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring	yes.			Protected spring.
	Rainwater Tanker Truck Cart With Small Tank				
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump Other(Specify)**Lake/ Pond**	yes.			

21

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank 7.	Capacity: (125000 - 300000 lit.)	yes		
	Underground Sump	Capacity:	yes		80 ft (drinking)
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	Black topped pucca	yes		
	Main road	BTP	yes		
	Internal streets	All weather	yes		
	Nearest NH/SH/MDR/ODR Dist. in kms.	SH 165 (0 km) NH 6 (3.2km)			
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	no			(1 km).
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	yes.			(maintained)
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	yes			all.
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	yes			DGVCL (24 hrs.)

3

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	7 nos.	yes		
	Sub-Centre	2 nos.	yes		
	PHC	i) Umrakh			
	BLOCK PHC	Bardoli			1 km.
	CHC/RH	Bardoli			
	District/ Govt. Hospital	Bardoli			
	Govt. Dispensary				
	Private Clinic	app. 5 nos	yes		
	Private Hospital/ Nursing Home	(Umrakh/ Bardoli)	yes		
	AYUSH Health Facility		no		
	sonography /ultrasound facility	Bardoli	no		
	If any of the above Facility is not available in village than approx. distance from village: ...1...kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	7 nos	yes		
	Primary School	3 nos.	yes		
	Secondary school	2 nos	yes		
	Higher sec. School	2 nos.	yes		
	ITI college/ vocational Training Center	1 nos	yes		(Ten village).
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	1 nos.	yes.		
	If any of the above Facility is not available in village than approx. distance from village: ...2...kms.				

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Suggestions if any:

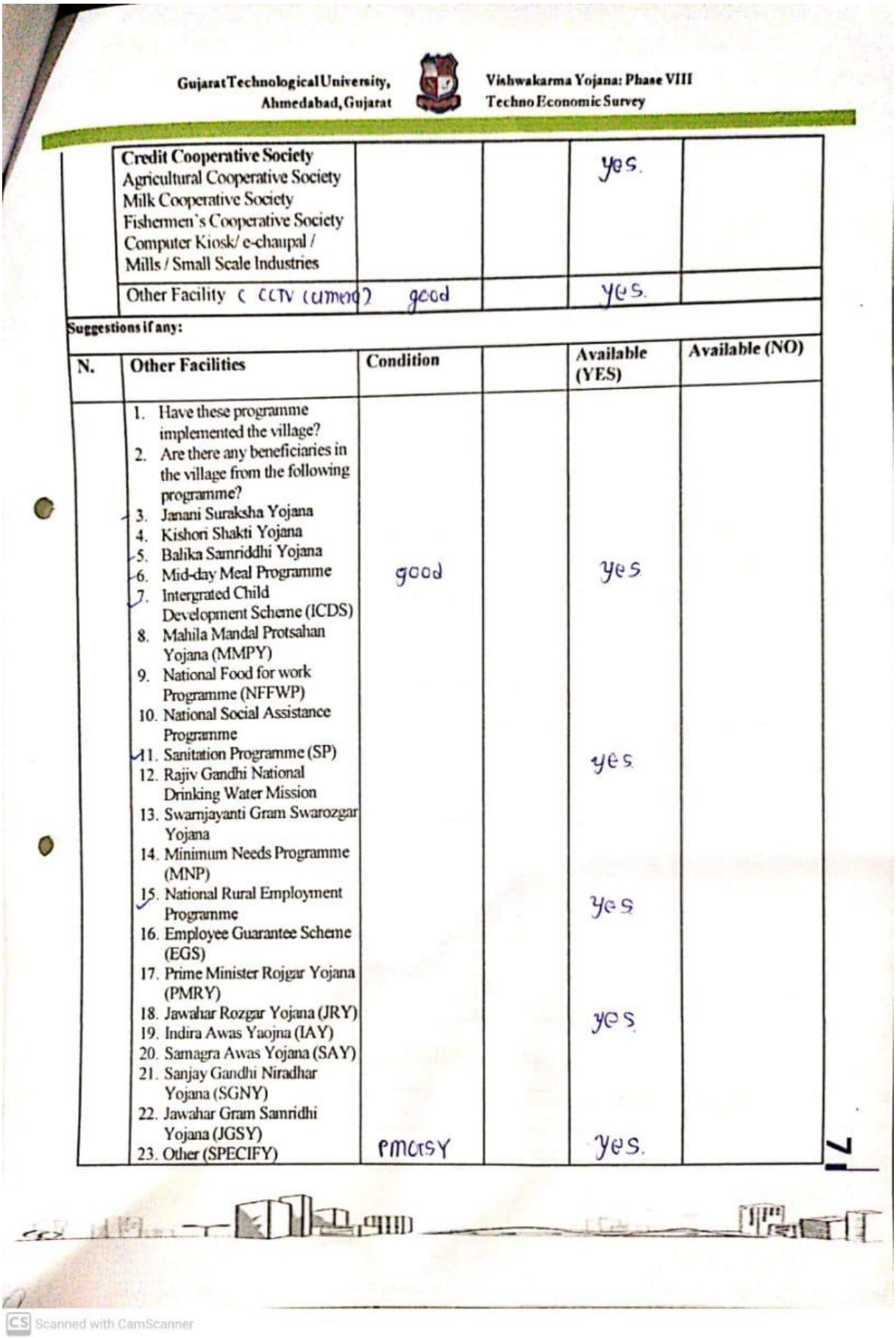
L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)		Ulan, Bardoli		NO
	Public Library (With daily newspaper supply: Y/N)				no
	Public Garden			yes	
	Village Pond			yes	
	Recreation Center				no
	Cinema/ Video Hall				no
	Assembly Polling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

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

Suggestions if any:

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

19



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Credit Cooperative Society Agricultural Cooperative Society Milk Cooperative Society Fishermen's Cooperative Society Computer Kiosk/ e-chaupal / Mills / Small Scale Industries			yes.	
Other Facility (CCTV camera)	good		yes.	

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	good		yes	
	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)			yes	
	12. Rajiv Gandhi National Drinking Water Mission				
	13. Swarnjayanti Gram Swarozgar Yojana				
	14. Minimum Needs Programme (MNP)				
	15. National Rural Employment Programme			yes	
	16. Employee Guarantee Scheme (EGS)				
	17. Prime Minister Rojgar Yojana (PMRY)				
	18. Jawahar Rozgar Yojana (JRY)			yes	
	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)	PMGSY		yes.	

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

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

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks

8

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

IX. Smart Village / Heritage Details

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

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

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

12.3 KHARACH village Survey Form :

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

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

Name of District:	Bharuch
Name of Taluka:	Hansot
Name of Village:	Kharach
Name of Institute:	Bhagwan Mahavir college of engineering and technology
Nodal Officer Name & Contact Detail:	
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Arjunbhai B Rathod., dharmendrasingh Barotariya. સરપંચ ગ્રામ પંચાયત ખરચ તા.હાંસોટ, જી.ભરૂચ.
Date of Survey:	11-11-2020.

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	5436	3054	2382	800

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	740 hector.
2.	Forest Area (In hect.)	95 hector.
3.	Agricultural Land Area (In hect.)	331 hector.
4.	Residential Area (In hect.)	17 hector.
5.	Other Area (In hect.)	254 hector.
6.	Distance to the nearest railway station (in kilometers):	4 km, kosamba.

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

7.	Name of Nearest Town with Distance:	38 km, Bharuch.
8.	Distance to the nearest bus station (in kilometers):	4 km. kosambu.
9.	Whether village is connected to all road for the any facility or town or City?	yes, all weather.

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Business 2. Job. 3. farmer.

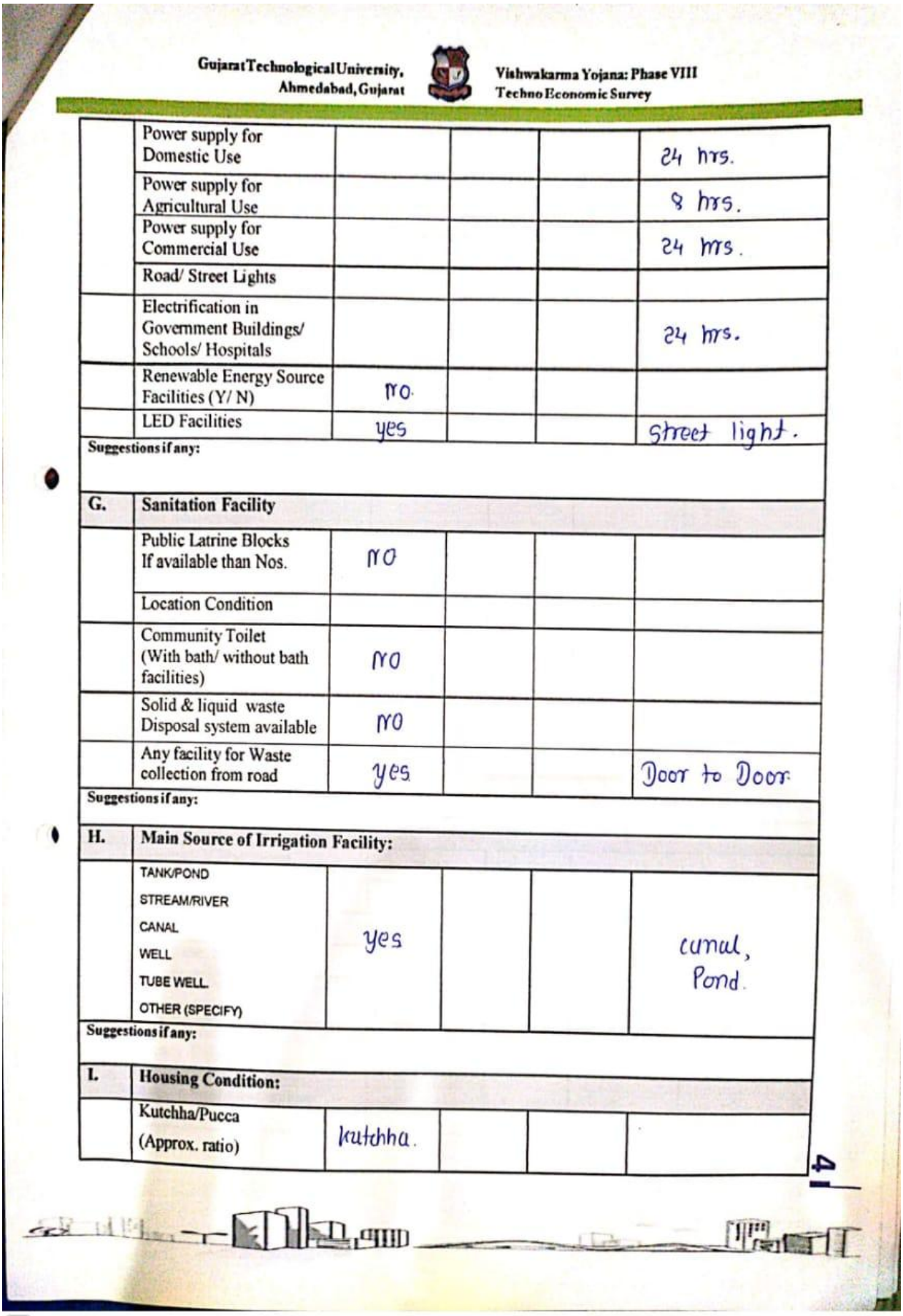
Major crops grown in the village:	1. Rice 2. Suger. 3.

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

21

	Other(Specify)Lake/ Pond	Lake.			un developed.
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 10,000			2 nos.
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1				
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road				
	Main road	yes.			
	Internal streets				
	Nearest NH/SH/MDR/ODR Dist. in kms.				
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	no			4 km Kosamba.
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	no			4 km Kosamba.
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	yes.			All.
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	yes			Govt.



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

	Power supply for Domestic Use				24 hrs.
	Power supply for Agricultural Use				8 hrs.
	Power supply for Commercial Use				24 hrs.
	Road/ Street Lights				
	Electrification in Government Buildings/ Schools/ Hospitals				24 hrs.
	Renewable Energy Source Facilities (Y/ N)	no			
	LED Facilities	yes			street light.

Suggestions if any:

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

Suggestions if any:

H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL OTHER (SPECIFY)	yes			canal, Pond.

Suggestions if any:

I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	kutchha.			

4

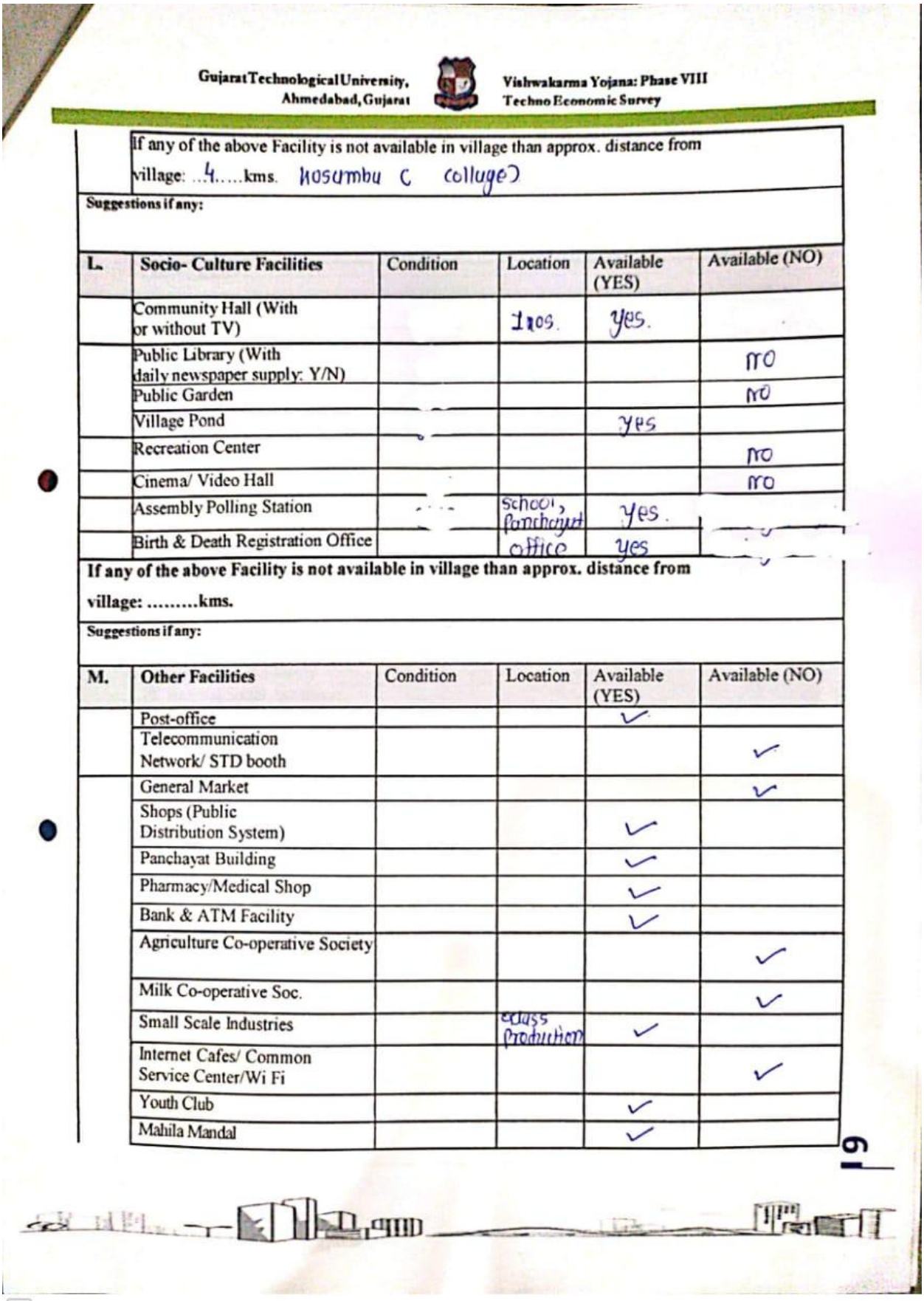
Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	yes			2 nos.
	Sub-Centre	yes.			1 nos.
	PHC				
	BLOCK PHC				
	CHC/RH				
	District/ Govt. Hospital				
	Govt. Dispensary				
	Private Clinic	yes			2 nos.
	Private Hospital/ Nursing Home	yes			Birla township
	AYUSH Health Facility				
	sonography /ultrasound facility				
	If any of the above Facility is not available in village than approx. distance from village: ...12...kms. Gov. hospital (Ilav).				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	yes.			2 nos.
	Primary School	yes.			1 no.
	Secondary school	yes			Birla township
	Higher sec. School	yes			1 nos.
	ITI college/ vocational Training Center	no.			
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	no			

5



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

If any of the above Facility is not available in village than approx. distance from village: ...4.....kms. Nosumbu C college)

Suggestions if any:

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

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

Suggestions if any:

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

19

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

Suggestions if any:

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

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

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

8

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	yes	Panchayat building
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	yes	cleaning every two day.

IX. Smart Village / Heritage Details

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

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

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

16

12.4 Gap Analysis:

VILLAGE GAP Analysis

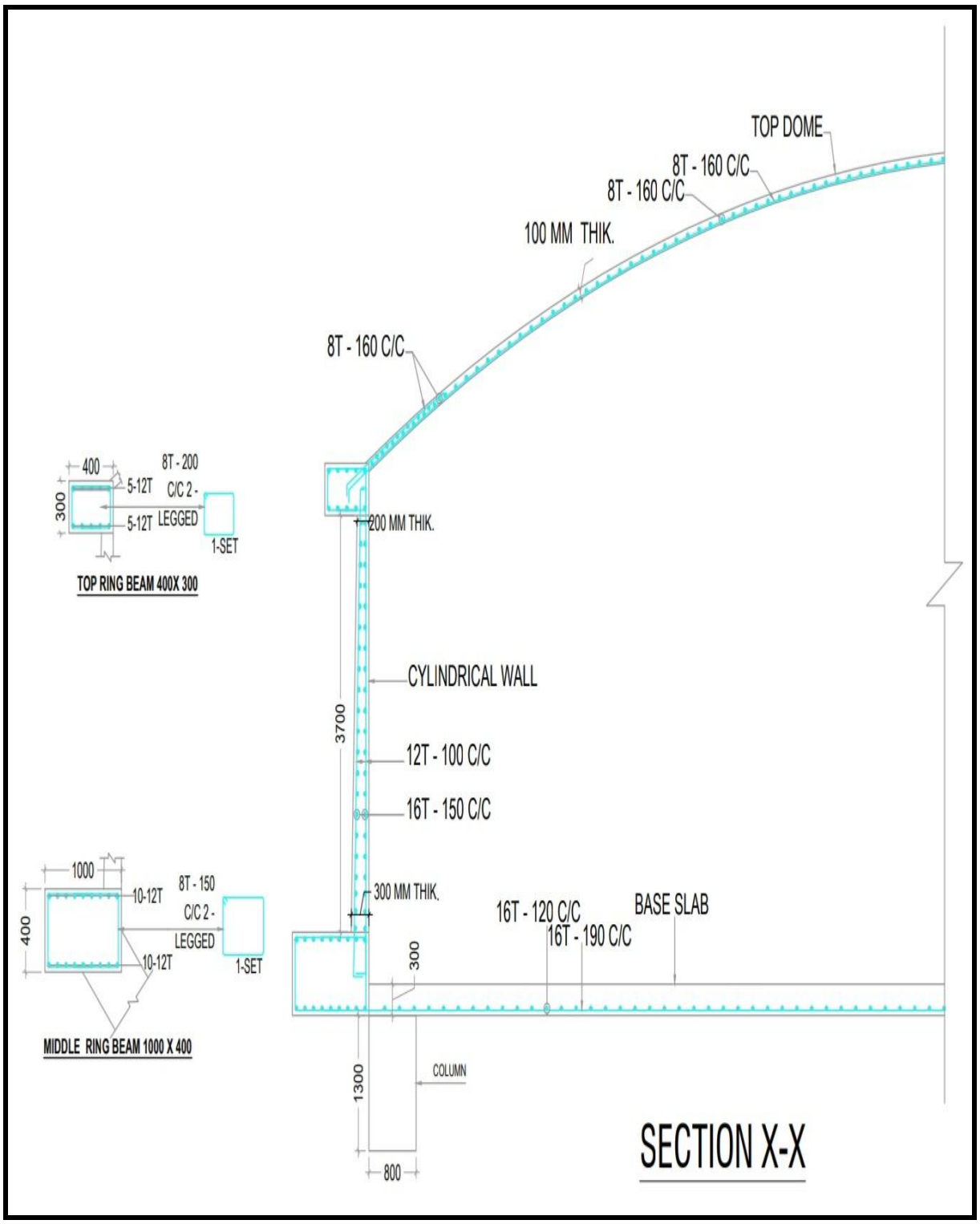
Village Facilities	Planning Commission/UDPFI Norms	Village Name: kharuch Population: (as per 2011) 5436 Existing	Required as per Norms	Smart Vilage / Cities / Heritage Future Projection Design	Gap
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	2	4		2
Primary School	Each Per 2500 population	1	4		3
Secondary School	Per 7,500 population	1	2		1
Higher Secondary School	Per 15,000 Population	1	1		0
College	Per 125,000 Population				
Tech. Training Institute	Per 100000 Population				
Agriculture Research Centre	Per 100000 Population				
Skill Development Center	Per 100000 Population				
Health Facility					
Govt/Panchyat Dispensary or Sub PHC or Health Centre	Each Village	1	1		
Primary Health & Child Health Center	Per 20,000 population				
Child Welfare and Maternity Home	Per 10,000 population				
Multispeciality Hospital	Per 100000 Population				
Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum pockets & kutcha house)	-	1		1
Physical Infrastructure Facilities					
Transportation		Adequate / Inadequate			
Pucca Village Approach Road	Each village	Inadequate			
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	Inadequate			
Drinking Water (Minimum 70 lpcd)		Adequate / Inadequate			
Over Head Tank	1/3 of Total Demand	Inadequate			
U/G Sump	2/3 of Total Demand	Inadequate			
Drainage Network - Open		Adequate / Inadequate			
Drainage Network - Cover		Adequate			
Waste Management System		Adequate / Inadequate			
Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	0	1		1
community hall and Public Library	Per 15000 Population	0	1		1
Cremation Ground	Per 20,000 population				
Post Office	Per 10,000 population	1	1		0
Gram Panchayat Building	Each individual/group panchayat				
APMC	Per 100000 Population				
Fire Station	Per 100000 Population				
Public Garden	Per village	0	1		1
Police post	Per 40,000Population				
Shopping Mall					
Electrical Design					
Electricity Network		Adequate / Inadequate			
Any Smart Village Facility					
Technology					
		ESR cap	0		
		Sump cap	0		
		Lat	0		

12.5 Summary of All Village Designs as Part-II :

Sr No.	Village	Description	Part 1	Part 2
1	Kharach	Civil	Milk Collecting and Distributing Unit	Post office
			design of library	Primary school
			Design of Clinic	Video Hall
			Design of over head water tank	Medical Store
			Design of Road	Youth Club
			Design of Mahila Mandal	Public garden
2	Ilav	Civil	Design of Aanganwadi	Design of public garden
			Design of girl's primary school	Community hall
			Design of agro storage unit	Public library
			Design if milk dairy unit	Post office
			Design of animal shelter	Agro-water plant
			Design of public toilet	Mahila Mandal
3	Vav	Civil	Police station	Bio gas plant
			Public garden	Maintenance of PHC
			Water harvesting system	Sewage treatment plant
			Community hall	Library
			Skill development center	Road (internal road)
4	Palod	Civil	Bio gas plant	Post office
			Rain water harvesting	Public garden
			Library	over head water tank
			Community hall	Low cost house
			Skill development center	Primary health center
			Village gate	chabutara
5	Ten	Civil	Bio gas plant	Internal street road
			Primary health center	Primary school
			Post office	Public toilet
			Public library	Community hall

			Agriculture research center	Maintenance of overhead water tank
			Village gate	Maintenance of village pond
6	Madhi	Civil	Library	Maintenance of police station
			Hospital	Public garden
			Riverfront	Waste water treatment
			Fire station	Solid waste treatment
			Village gate	Medical shop
			Community hall	Pucca vegetable market
7	Naninaroli	Civil	Biogas plant	Tank design for water harvesting
			High school	Road section
			Public toilet	Child welfare and maternity home
			Community hall	Public garden
			Bank	Common service centre
			Village gate	chabutara
8	Vankaner	Civil	library	Lake garden
			Skill development center	Science department
			Community hall	Cyber cafe
			Aanganwadi	Child-welfare & maternity home
			Public toilet	Overhead tank
			Village gate	Super market

12.6 drawing of A3/A4 if not visible:



section of over head water tank

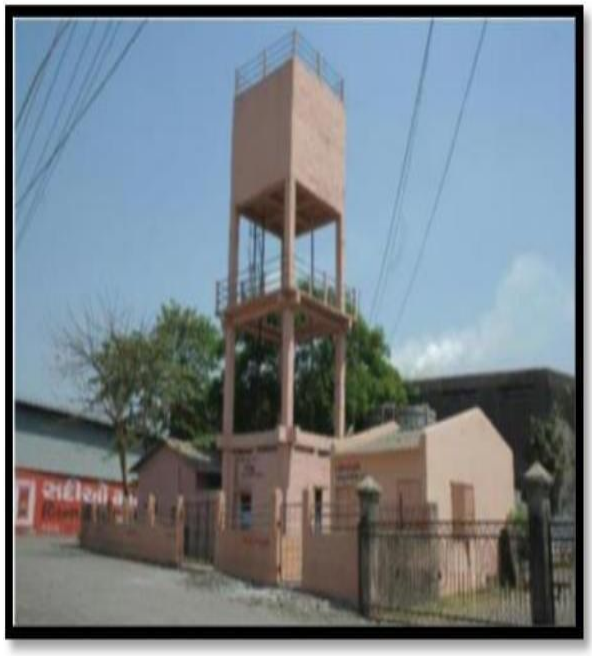
12.7 Summary of Good Photographs in Table format :

Map of Baben

Sugar Factory of Baben

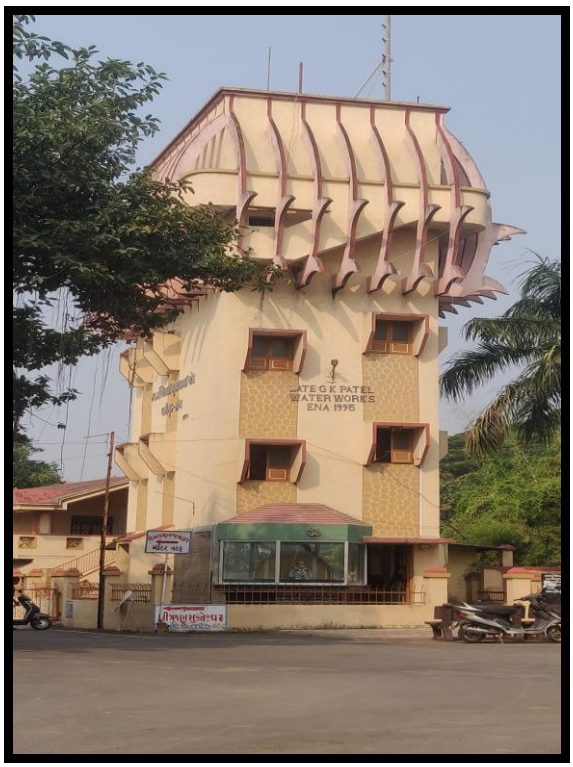
Solid waste disposal of Baben Village

Primary School & group photo with Sarpanch of Baben



Overhead water tank of Baben

Panchayat building of Ena Village



Overhead water tank of Ena

Map of Ena village

Meeting with Sarpanch of Ena village

School of Ena village

Entrance gate of Ena village

Industries near Kharach village

Bank in Kharach village

Map of Kharach village

School of Kharach village

House condition of Kharach village

Panchayat building and sub center of Kharach village

12.8 Village Interaction Report :

VILLAGE INTERACTION REPORT

11 nov. 2020: We have first visited at kharach village and first interacted with the Sarpanch (Arjunbhai Rathod) and dharmendra Singh boratara. They have discussed with us the requirements in the village like, primary school, road near lake area, Mahila Mandal, milk collecting and distributing unit, library, and so on.

Then we visited the village where we saw that the primary school in poor condition, also the condition of house was very poor.

Then we have seen the agricultural roads and street which are not even constructed properly. Transportation facility is very poor; villagers need to rush to nearby village to get transport facility.

The villagers shared the problem of not having a community hall and small market. The villagers were in serious need of some development.

We have discussed and give all this design proposal.

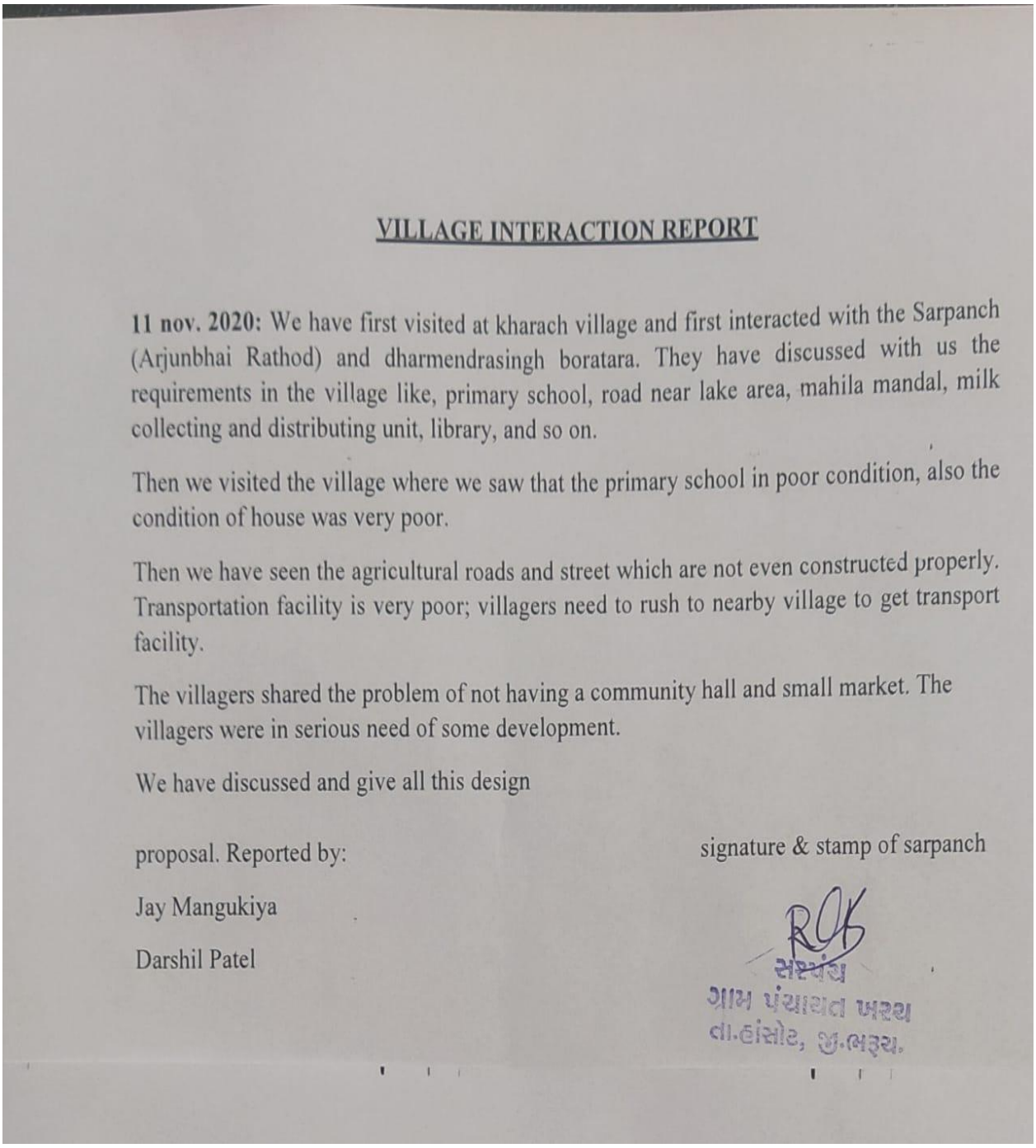
Reported by:

Jay Mangukiya

Darshil Patel

Meeting with Sarpanch of Kharach village

12.9 Sarpanch Letter (Village design proposals shown to the Sarpanch interaction report) :



VILLAGE INTERACTION REPORT

11 nov. 2020: We have first visited at kharach village and first interacted with the Sarpanch (Arjunbhai Rathod) and dharmendrasingh boratara. They have discussed with us the requirements in the village like, primary school, road near lake area, mahila mandal, milk collecting and distributing unit, library, and so on.

Then we visited the village where we saw that the primary school in poor condition, also the condition of house was very poor.

Then we have seen the agricultural roads and street which are not even constructed properly. Transportation facility is very poor; villagers need to rush to nearby village to get transport facility.

The villagers shared the problem of not having a community hall and small market. The villagers were in serious need of some development.

We have discussed and give all this design

proposal. Reported by:

Jay Mangukiya

Darshil Patel

signature & stamp of sarpanch

ROK

સરપંચ
ગ્રામ પંચાયત ખરચ
તા.હાંસોટ, જી.ભરૂચ.

Chapter 13

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

13.1 Design Proposals:

In 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:

- Post office
- Primary school
- Video hall
- Medical store
- Youth club
- Public garden

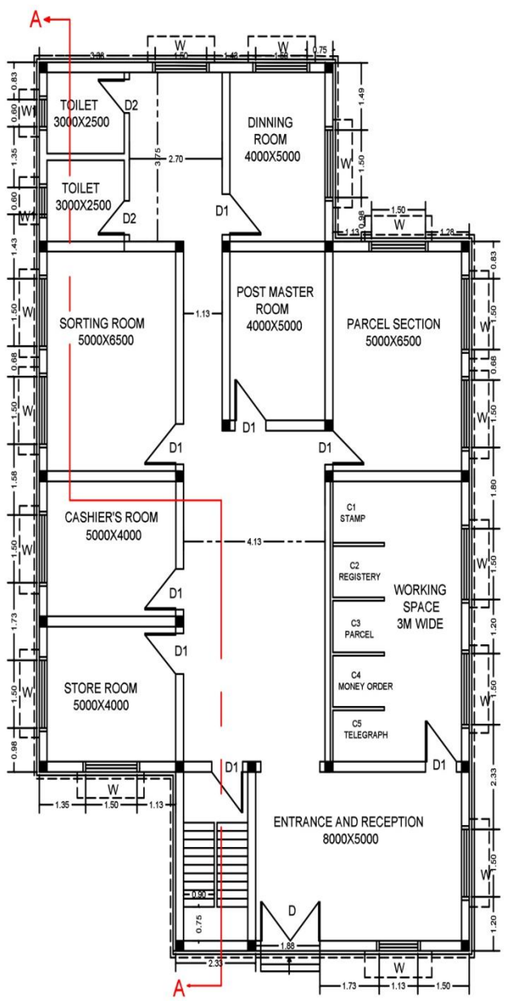
13.2 Reasons for Students Recommending this Design:

- As by gap analysis done by as we found the requirement of proposed designs.
- Primary school for better education facility.
- Medical store for better health of villages.
- Post Office is to Provide risk free transaction and saving a money of village people.

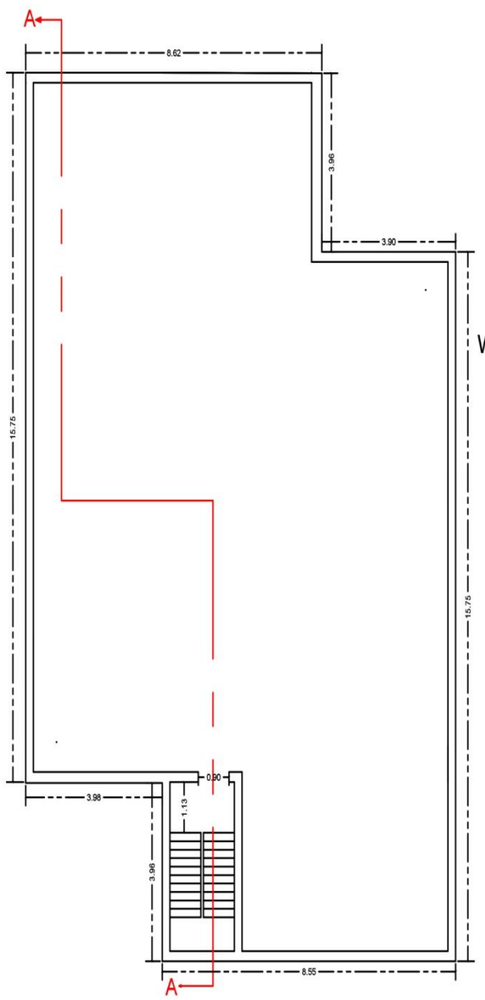
13.3 About designs Suggestions/ Benefit of the villagers

- Public Garden for children to play in Garden. And for provide refreshment to the village peoples.
- Students can get better education facilities in village.
- Good Road will provide good connectivity from village to S.H

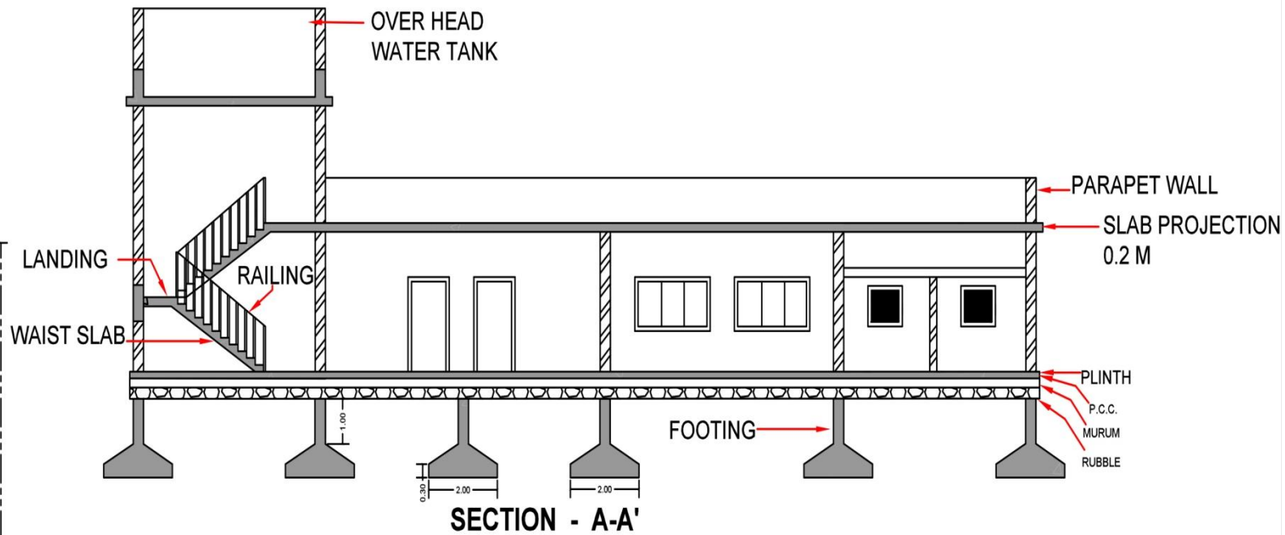
13.1.1 Post office:



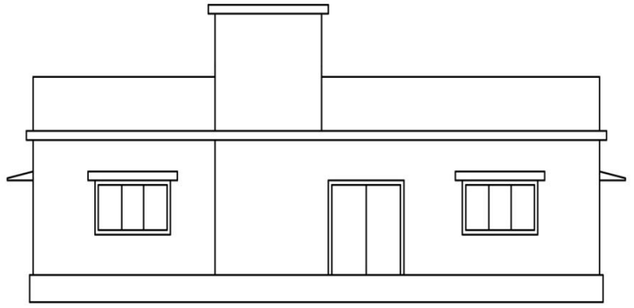
GROUND FLOOR PLAN



TERRACE FLOOR PLAN



SECTION - A-A'



ELEVATION

NOTES:

1. ALL DIMENSIONS ARE IN MM INTIL STATED.
2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED.
4. ALL LOAD BEARING BRICK MASONARY WALL IN CEMENT MORTAR IN PROPORTION OF 1:6.
5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DESIGN OF:	POST OFFICE	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 7
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

Estimation sheet for Post Office:

Table 31: Estimation sheet of Post Office

	Item description	no.	width/ breadth (m)	length (m)	height/ depth (m)	Quantity	
1	Excavation for footing	2.2	2.2	2.4	23	267.168	M3
2	pcc below footing	2.2	2.2	0.15	1	0.726	M3
3	rubble work below plinth						
	A1	11	19	0.15	1	31.35	
	A2	10	5	0.15	1	7.5	
	A3	5	12.5	0.15	1	9.375	
						48.225	M3
4	murum						
	A1	11	19	0.15	1	31.35	
	A2	10	5	0.15	1	7.5	
	A3	5	12.5	0.15	1	9.375	
						48.225	M3
4	p.c.c						
	A1	11	19	0.15	1	31.35	
	A2	10	5	0.15	1	7.5	
	A3	5	12.5	0.15	1	9.375	
						48.225	M3
5	brick work upto plinth (outer wall)						
	L1=11m	11	0.23	0.75	1	1.8975	
	L2=19m	19	0.23	0.75	1	3.2775	
	L3=5m	5	0.23	0.75	1	0.8625	
	L4=5m	5	0.23	0.75	1	0.8625	
	L5=10m	10	0.23	0.75	1	1.725	
	L6=17.5m	17.5	0.23	0.75	1	3.01875	
	L7=5m	5	0.23	0.75	1	0.8625	
	L8=5m	5	0.23	0.75	1	0.8625	
						13.36875	M3
6	brick work upto terrace						
	outer wall of 230mm thickness						
	L1=11m	11	0.23	3.6	1	9.108	
	L2=19m	19	0.23	3.6	1	15.732	
	L3=5m	5	0.23	3.6	1	4.14	
	L4=5m	5	0.23	3.6	1	4.14	
	L5=10m	10	0.23	3.6	1	8.28	
	L6=17.5m	17.5	0.23	3.6	1	14.49	
	L7=5m	5	0.23	3.6	1	4.14	

	L8=5m	5	0.23	3.6	1	4.14	
						64.17	M3
	deduction of door and window						
	W	2.2	0.23	1.2	15	9.108	
	W1	1	0.23	0.6	2	0.276	
	D	1.5	0.23	2.1	1	0.7245	
						10.1085	
	deduction of window						
	W	2.2	0.23	0.15	15	1.1385	
	W1	1	0.23	0.15	2	0.069	
	D	1.5	0.23	0.15	1	0.05175	
						1.25925	
						52.80225	M3
7	inner wall of 150mm thickness						
	horizontal wall						
	L1	3	0.15	3.6	1	1.62	
	L2	5	0.15	3.6	1	2.7	
	L3	5	0.15	3.6	1	2.7	
	L4	5	0.15	3.6	1	2.7	
	L5	4	0.15	3.6	1	2.16	
	L6	4	0.15	3.6	1	2.16	
	L7	5	0.15	3.6	1	2.7	
	L8	2	0.15	3.6	1	1.08	
						17.82	
	deduction of door and window						
	D1	1	0.15	2.1	8	2.52	
	D2	0.6	0.15	2.1	2	0.378	
						2.898	
	deduction of window						
	D	1	0.15	0.15	1	0.0225	
	D2	0.6	0.15	0.15	2	0.027	
						0.0495	
						14.8725	M3
8	plaster on outer wall						
	outer wall of 230mm thickness						
	L1=11m	11		3.6	1	39.6	
	L2=19m	19		3.6	1	68.4	
	L3=5m	5		3.6	1	18	
	L4=5m	5		3.6	1	18	
	L5=10m	10		3.6	1	36	
	L6=17.5m	17.5		3.6	1	63	

	L7=5m	5		3.6	1	18	
	L8=5m	5		3.6	1	18	
						279	M2
	deduction of door and window						
	W	2.2		1.2	15	39.6	
	W1	1		0.6	2	1.2	
	D	1.5		2.1	1	3.15	
						43.95	M2
	deduction of lintel						
	W	2.2		0.15	15	4.95	
	W1	1		0.15	2	0	
	D	1.5		0.15	1	0	
						4.95	M2
						230.1	M2
9	plaster on inner wall						
	toilet	3		3.6	2	21.6	
		2.5		3.6	2	18	
	dining room	4		3.6	2	28.8	
		5		3.6	2	36	
	sorting room	5		3.6	2	36	
		6.5		3.6	2	46.8	
	post master	4		3.6	2	28.8	
		5		3.6	2	36	
	parcel section	5		3.6	2	36	
		6.5		3.6	2	46.8	
	cashiers room	5		3.6	2	36	
		4		3.6	2	28.8	
	store room	5		3.6	2	36	
		4		3.6	2	28.8	
	reception	8		3.6	2	57.6	
		5		3.6	2	36	
	working space	5		3.6	2	36	
		8		3.6	2	57.6	
	deduction of window and door					651.6	
	W	2.2		1.2	15	39.6	
	W1	1		0.6	2	1.2	
	D	1.5		2.1	1	3.15	
						43.95	
						607.65	M2
10	plaster on passage wall						

	passage 1	4		3.6	2	28.8	
		2.5		3.6	2	18	
	passage 2	1		3.6	2	7.2	
		6.5		3.6	2	46.8	
	passage 3	5		3.6	2	36	
		9		3.6	2	64.8	
	deduction of door					201.6	M2
	D1	1		2.1	8	16.8	
	D2	0.6		2.1	2	2.52	
						19.32	M2
						182.28	M2
11	white wash on outer wall						
	outer wall of 230mm thickness						
	L1=11m	11		3.6	1	39.6	
	L2=19m	19		3.6	1	68.4	
	L3=5m	5		3.6	1	18	
	L4=5m	5		3.6	1	18	
	L5=10m	10		3.6	1	36	
	L6=17.5m	17.5		3.6	1	63	
	L7=5m	5		3.6	1	18	
	L8=5m	5		3.6	1	18	
						279	M2
	deduction of door and window						
	W	2.2		1.2	15	39.6	
	W1	1		0.6	2	1.2	
	D	1.5		2.1	1	3.15	
						43.95	M2
	deduction of lintel						
	W	2.2		0.15	15	4.95	
	W1	1		0.15	2	0	
	D	1.5		0.15	1	0	
						4.95	M2
						230.1	M2
12	white wash on inner wall						
	toilet	3		3.6	2	21.6	
		2.5		3.6	2	18	
	dining room	4		3.6	2	28.8	
		5		3.6	2	36	
	sorting room	5		3.6	2	36	
		6.5		3.6	2	46.8	

	post master	4		3.6	2	28.8	
		5		3.6	2	36	
	parcel section	5		3.6	2	36	
		6.5		3.6	2	46.8	
	cashiers room	5		3.6	2	36	
		4		3.6	2	28.8	
	store room	5		3.6	2	36	
		4		3.6	2	28.8	
	reception	8		3.6	2	57.6	
		5		3.6	2	36	
	working space	5		3.6	2	36	
		8		3.6	2	57.6	
	deduction of window and door					651.6	
	W	2.2		1.2	15	39.6	
	W1	1		0.6	2	1.2	
	D	1.5		2.1	1	3.15	
						43.95	
						607.65	M2
13	white wash on passage wall						
	passage 1	4		3.6	2	28.8	
		2.5		3.6	2	18	
	passage 2	1		3.6	2	7.2	
		6.5		3.6	2	46.8	
	passage 3	5		3.6	2	36	
		9		3.6	2	64.8	
	deduction of door					201.6	M2
	D1	1		2.1	8	16.8	
	D2	0.6		2.1	2	2.52	
						19.32	M2
						182.28	M2
14	paint on outer wall						
	outer wall of 230mm thickness						
	L1=11m	11		3.6	1	39.6	
	L2=19m	19		3.6	1	68.4	
	L3=5m	5		3.6	1	18	
	L4=5m	5		3.6	1	18	
	L5=10m	10		3.6	1	36	
	L6=17.5m	17.5		3.6	1	63	
	L7=5m	5		3.6	1	18	
	L8=5m	5		3.6	1	18	
						279	M2

	deduction of door and window						
	W	2.2		1.2	15	39.6	
	W1	1		0.6	2	1.2	
	D	1.5		2.1	1	3.15	
						43.95	M2
	deduction of lintel						
	W	2.2		0.15	15	4.95	
	W1	1		0.15	2	0	
	D	1.5		0.15	1	0	
						4.95	M2
						230.1	M2
15	paint on inner wall						
	toilet	3		3.6	2	21.6	
		2.5		3.6	2	18	
	dining room	4		3.6	2	28.8	
		5		3.6	2	36	
	sorting room	5		3.6	2	36	
		6.5		3.6	2	46.8	
	post master	4		3.6	2	28.8	
		5		3.6	2	36	
	parcel section	5		3.6	2	36	
		6.5		3.6	2	46.8	
	cashiers room	5		3.6	2	36	
		4		3.6	2	28.8	
	store room	5		3.6	2	36	
		4		3.6	2	28.8	
	reception	8		3.6	2	57.6	
		5		3.6	2	36	
	working space	5		3.6	2	36	
		8		3.6	2	57.6	
	deduction of window and door					651.6	
	W	2.2		1.2	15	39.6	
	W1	1		0.6	2	1.2	
	D	1.5		2.1	1	3.15	
						43.95	
						607.65	M2
16	paint on passage wall						
	passage 1	4		3.6	2	28.8	
		2.5		3.6	2	18	

	passage 2	1		3.6	2	7.2	
		6.5		3.6	2	46.8	
	passage 3	5		3.6	2	36	
		9		3.6	2	64.8	
	deduction of door					201.6	M2
	D1	1		2.1	8	16.8	
	D2	0.6		2.1	2	2.52	
						19.32	M2
						182.28	M2
17	brick work of parapet on terrace and overhead water tank						
	L1=11m	11	0.23	0.9	1	2.277	
	L2=19m	19	0.23	0.9	1	3.933	
	L3=5m	5	0.23	0.9	1	1.035	
	L4=5m	5	0.23	0.9	1	1.035	
	L5=10m	10	0.23	0.9	1	2.07	
	L6=17.5m	17.5	0.23	0.9	1	3.6225	
	L7=5m	5	0.23	0.9	1	1.035	
	L8=5m	5	0.23	0.9	1	1.035	
						16.0425	M3
18	plaster of parapet on terrace and overhead water tank						
	L1=11m	11		0.9		9.9	
	L2=19m	19		0.9		17.1	
	L3=5m	5		0.9		4.5	
	L4=5m	5		0.9		4.5	
	L5=10m	10		0.9		9	
	L6=17.5m	17.5		0.9		15.75	
	L7=5m	5		0.9		4.5	
	L8=5m	5		0.9		4.5	
						69.75	M2
19	white wash of parapet on terrace and overhead water tank						
	L1=11m	11		0.9		9.9	
	L2=19m	19		0.9		17.1	
	L3=5m	5		0.9		4.5	
	L4=5m	5		0.9		4.5	
	L5=10m	10		0.9		9	
	L6=17.5m	17.5		0.9		15.75	
	L7=5m	5		0.9		4.5	
	L8=5m	5		0.9		4.5	
						69.75	M2

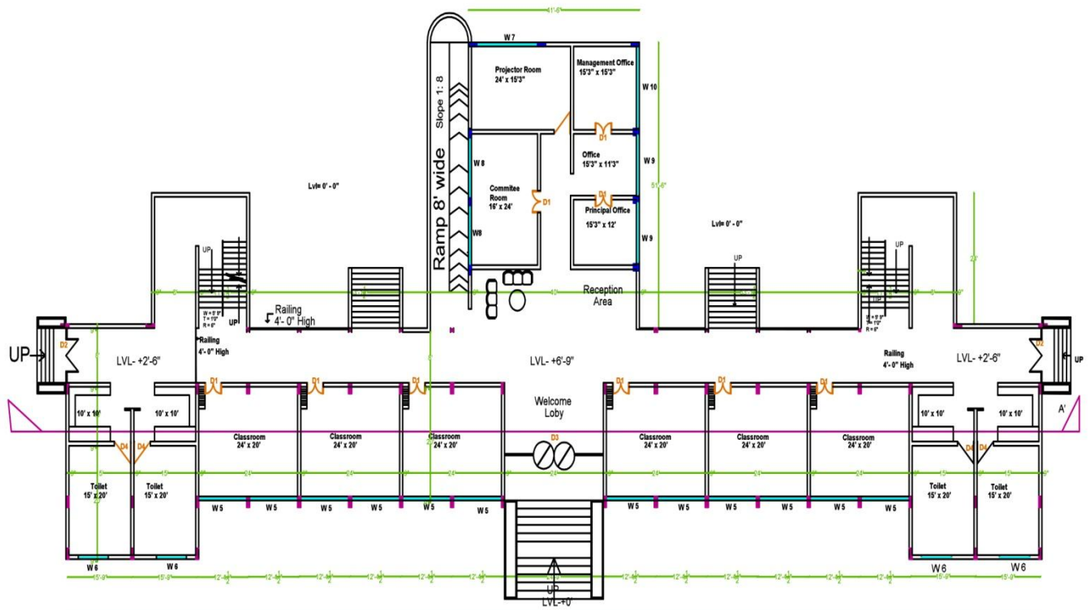
20	paint of parapet on terrace and overhead water tank						
	L1=11m	11		0.9		9.9	
	L2=19m	19		0.9		17.1	
	L3=5m	5		0.9		4.5	
	L4=5m	5		0.9		4.5	
	L5=10m	10		0.9		9	
	L6=17.5m	17.5		0.9		15.75	
	L7=5m	5		0.9		4.5	
	L8=5m	5		0.9		4.5	
						69.75	M2

Abstract sheet for Post Office:

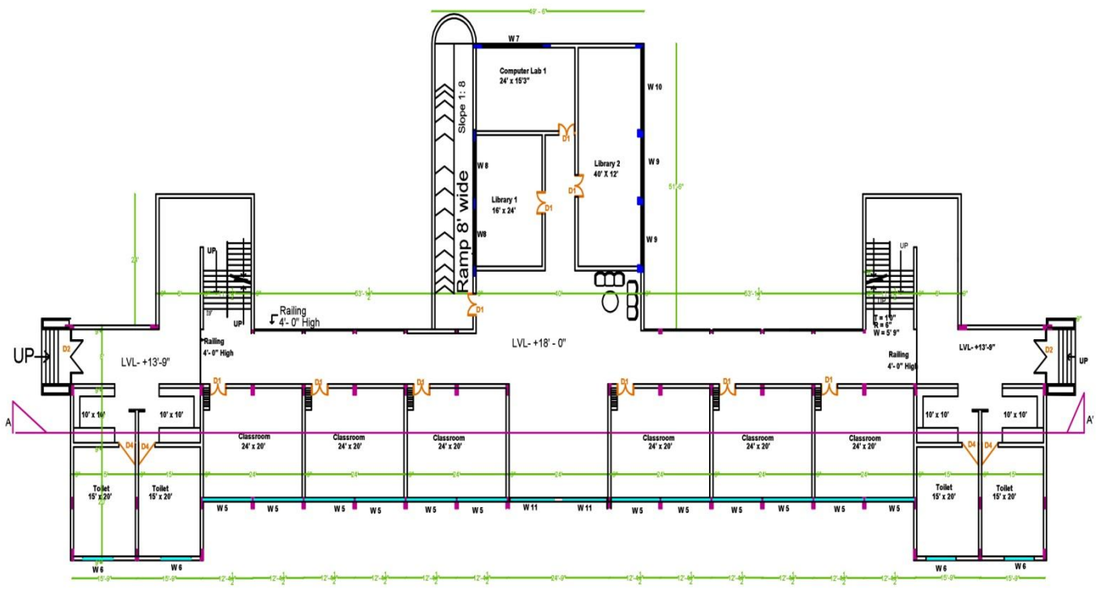
Table 32: Abstract sheet of Post Office

ITEM	QTY	PER	RATE	AMOUNT
earthwork excavation of foundation	267.168	M3	900	240451.2
rcc work of foundation	78	M3	500	39000
pcc work of foundation	0.726	M3	100	72.6
rcc work of column	7.452	M3	475	3539.7
rcc work of beam	54.59625	M3	450	24568.31
rcc work of slab	48.225	M3	230	11091.75
rcc work of chajja	6.3	M3	50	315
brickwork	81.0435	M3	200	16208.7
outer plaster	230.1	M2	90	20709
inner plaster	607.65	M2	80	48612
outer colour	230.1	M2	30	6903
inner colour	607.65	M2	30	18229.5
work of widow and door	607.65	M2	250	151912.5
	total rupees			581613.3
	add 1.5% water charges			610693.9
	add 10% con.charges			95440
	total estimate charges			706133.9

13.1.2 Primary School:

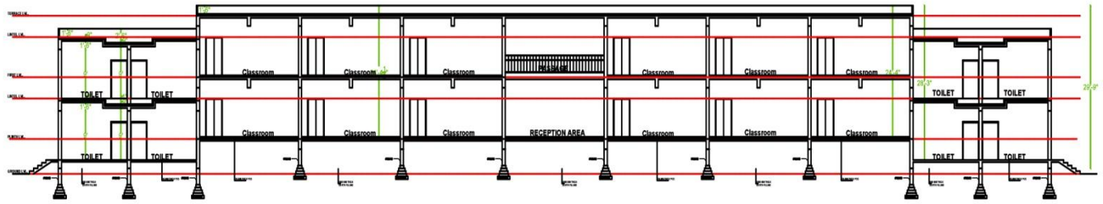


Ground Floor Plan



First Floor Plan

Front Elevation



SECTION AA'

NOTES:

1. ALL DIMENSIONS ARE IN MM INTIL STATED.
2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED.
4. ALL LOAD BEARING BRICK MASONARY WALL IN CEMENT MORTAR IN PROPORTION OF 1:6.
5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DESIGN OF:	PRIMARY SCHOOL	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 8
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

Estimation sheet for Primary School:

Table 33: Estimation sheet of Primary School

	Item description	no.	width/ breadth(m)	length(m)	height/ depth(m)	Quantity	
1							
	excavation						
	footing type 1						
	footing type 2	9	0.91	0.91	3	22.36	
	footing type 3	10	1.22	1.22	3	44.65	
		44	1.52	1.52	3	304.97	
						371.98	m3
2	**pcc**						
	A1						
	A2	2.0	6.7	7.3	0.15	14.72	
	A3	1	12.8	15.9	0.15	30.45	
	A4	1	70.7	2.7	0.15	29.11	
	A5	1.0	70.7	6.1	0.15	64.69	
		4.0	3.0	4.6	0.15	8.37	
						147.35	m3
3	**RUBBLE**						
	A1						
	A2	2.0	6.7	7.3	0.15	14.72	
	A3	1	12.8	15.9	0.15	30.45	
	A4	1	70.7	2.7	0.15	29.11	
	A5	1.0	70.7	6.1	0.15	64.69	
		4.0	3.0	4.6	0.15	8.37	
						147.35	m3
4	**BRICK WORK OF OUTER WALL**						
	L1=9m						
	L2=3.05	1	9.15	0.23	8.1	17.04	
	L3=52.44m	1	3.05	0.23	8.1	5.68	
	L4=3.05	1	52.44	0.23	8.1	97.69	
	L5=9.15m	1	3.05	0.23	8.1	5.68	
	L6=11.89m	1	9.15	0.23	8.1	17.04	
	L7=6.4m	1	11.89	0.23	8.1	22.15	
	L8=7.32m	1	6.40	0.23	8.1	11.93	
	L9=6.71	1	7.32	0.23	8.1	13.63	
	L107.32m	1	6.71	0.23	8.1	12.50	
	L11=15.85m	1	7.32	0.23	8.1	13.63	
	L12=15.85m	1	15.85	0.23	8.1	29.54	
	L13=12.8m	1	15.85	0.23	8.1	29.54	

	L14=15.85m	1	12.80	0.23	8.1	23.86	
	L15=15.85m	1	15.85	0.23	8.1	29.54	
	L16=7.32m	1	15.85	0.23	8.1	29.54	
	L17=7.32m	1	7.32	0.23	8.1	13.63	
	L18=6.71m	1	7.32	0.23	8.1	13.63	
	L19=6.4m	1	6.71	0.23	8.1	12.50	
	L20=11.89m	1	6.40	0.23	8.1	11.93	
		1	11.89	0.23	8.1	22.15	
						432.81	M3
	DEDUCTION OF LINTEL						
	L1=9m						
	L2=3.05	1	9.15	0.23	0.15	0.32	
	L3=52.44m	1	3.05	0.23	0.15	0.11	
	L4=3.05	1	52.44	0.23	0.15	1.81	
	L5=9.15m	1	3.05	0.23	0.15	0.11	
	L6=11.89m	1	9.15	0.23	0.15	0.32	
	L7=6.4m	1	11.89	0.23	0.15	0.41	
	L8=7.32m	1	6.40	0.23	0.15	0.22	
	L9=6.71	1	7.32	0.23	0.15	0.25	
	L107.32m	1	6.71	0.23	0.15	0.23	
	L11=15.85m	1	7.32	0.23	0.15	0.25	
	L12=15.85m	1	15.85	0.23	0.15	0.55	
	L13=12.8m	1	15.85	0.23	0.15	0.55	
	L14=15.85m	1	12.80	0.23	0.15	0.44	
	L15=15.85m	1	15.85	0.23	0.15	0.55	
	L16=7.32m	1	15.85	0.23	0.15	0.55	
	L17=7.32m	1	7.32	0.23	0.15	0.25	
	L18=6.71m	1	7.32	0.23	0.15	0.25	
	L19=6.4m	1	6.71	0.23	0.15	0.23	
	L20=11.89m	1	6.40	0.23	0.15	0.22	
		1	11.89	0.23	0.15	0.41	
						8.01	M3
	deduction of winodws	34	7.32	0.23	1.52	86.97	M3
5	**BRICK WORK OF INNER WALL**					337.82	m3
	L1=6.1m						
	L2=9.5m	12	6.10	0.23	4.05	68.16	
	L3=4.57m	8	9.15	0.23	4.05	68.16	
	L4=7.32m	10	4.57	0.23	4.05	42.60	
	L5=10.67m	2	7.32	0.23	4.05	13.63	
	L6=7.32m	2	10.67	0.23	4.05	19.88	
	L7=9.15m	12	7.32	0.23	4.05	81.79	
		4	9.15	0.23	4.05	34.08	

						328.30	M3
	deduction of doors						
	D1						
	D2	20	1.2	0.23	2.7	14.90	
	D3	4	1.8	0.23	2.7	4.47	
	D4	1	7.3	0.23	2.7	4.53	
		8	1.2	0.23	2.7	5.96	
						29.87	M3
	DEDUCTION OF LINTEL						
	D1						
	D2	20	1.2	0.23	0.15	0.83	
	D3	4	1.8	0.23	0.15	0.25	
	D4	1	7.3	0.23	0.15	0.25	
		8	1.2	0.23	0.15	0.33	
						1.66	
6	**INNER PLASTER**					296.77	M3
	toilet	4.0	4.6	6.1		111.54	
	wash area	4.0	3.0	3.0		37.18	
	class	24.0	7.3	6.1		1070.79	
	committee room	2.0	4.9	7.3		71.39	
	projection room	2.0	7.3	4.6		66.92	
	management room	2.0	4.6	4.6		41.83	
	office	2.0	4.6	3.4		30.67	
	principal office	2.0	4.6	3.7		33.46	
	passage					1463.79	M2
	deduction of doors						
	D1						
	D2	20	1.2	2.7		64.80	
	D3	4	1.8	2.7		19.44	
	D4	1	7.3	2.7		19.71	
		8	1.2	2.7		25.92	
						129.87	M2
7	**OUTER WALL PLASTER**					1333.92	M2
	L1=9m						
	L2=3.05	1	9.15	8.1		74.09	
	L3=52.44m	1	3.05	8.1		24.70	
	L4=3.05	1	52.44	8.1		424.76	
	L5=9.15m	1	3.05	8.1		24.70	
	L6=11.89m	1	9.15	8.1		74.09	
	L7=6.4m	1	11.89	8.1		96.31	
	L8=7.32m	1	6.40	8.1		51.86	
	L9=6.71	1	7.32	8.1		59.27	
	L107.32m	1	6.71	8.1		54.33	

	L11=15.85m	1	7.32	8.1		59.27	
	L12=15.85m	1	15.85	8.1		128.41	
	L13=12.8m	1	15.85	8.1		128.41	
	L14=15.85m	1	12.80	8.1		103.72	
	L15=15.85m	1	15.85	8.1		128.41	
	L16=7.32m	1	15.85	8.1		128.41	
	L17=7.32m	1	7.32	8.1		59.27	
	L18=6.71m	1	7.32	8.1		59.27	
	L19=6.4m	1	6.71	8.1		54.33	
	L20=11.89m	1	6.40	8.1		51.86	
		1	11.89	8.1		96.31	
						1881.77	M2
	deduction of winodws	34	7.32	1.52		378.15	M2
						1503.62	M2
8	**WHITE WASH OF OUTER WALL**						
	L1=9m						
	L2=3.05	1	9.15	8.1		74.09	
	L3=52.44m	1	3.05	8.1		24.70	
	L4=3.05	1	52.44	8.1		424.76	
	L5=9.15m	1	3.05	8.1		24.70	
	L6=11.89m	1	9.15	8.1		74.09	
	L7=6.4m	1	11.89	8.1		96.31	
	L8=7.32m	1	6.40	8.1		51.86	
	L9=6.71	1	7.32	8.1		59.27	
	L107.32m	1	6.71	8.1		54.33	
	L11=15.85m	1	7.32	8.1		59.27	
	L12=15.85m	1	15.85	8.1		128.41	
	L13=12.8m	1	15.85	8.1		128.41	
	L14=15.85m	1	12.80	8.1		103.72	
	L15=15.85m	1	15.85	8.1		128.41	
	L16=7.32m	1	15.85	8.1		128.41	
	L17=7.32m	1	7.32	8.1		59.27	
	L18=6.71m	1	7.32	8.1		59.27	
	L19=6.4m	1	6.71	8.1		54.33	
	L20=11.89m	1	6.40	8.1		51.86	
		1	11.89	8.1		96.31	
						1881.77	M2
	deduction of winodws	34	7.32	1.52		378.15	M2
						1503.62	M2
9	**PAINT ON OUTER WALL**						
	L1=9m						
	L2=3.05	1	9.15	8.1		74.09	

	L3=52.44m	1	3.05	8.1		24.70	
	L4=3.05	1	52.44	8.1		424.76	
	L5=9.15m	1	3.05	8.1		24.70	
	L6=11.89m	1	9.15	8.1		74.09	
	L7=6.4m	1	11.89	8.1		96.31	
	L8=7.32m	1	6.40	8.1		51.86	
	L9=6.71	1	7.32	8.1		59.27	
	L107.32m	1	6.71	8.1		54.33	
	L11=15.85m	1	7.32	8.1		59.27	
	L12=15.85m	1	15.85	8.1		128.41	
	L13=12.8m	1	15.85	8.1		128.41	
	L14=15.85m	1	12.80	8.1		103.72	
	L15=15.85m	1	15.85	8.1		128.41	
	L16=7.32m	1	15.85	8.1		128.41	
	L17=7.32m	1	7.32	8.1		59.27	
	L18=6.71m	1	7.32	8.1		59.27	
	L19=6.4m	1	6.71	8.1		54.33	
	L20=11.89m	1	6.40	8.1		51.86	
		1	11.89	8.1		96.31	
						1881.77	M2
	deduction of winodws	34	7.32	1.52		378.15	M2
						1503.62	M2
10	**WHITE WASH ON INNER WALL**						
	toilet						
	wash area	4.0	4.6	6.1		111.54	
	class	4.0	3.0	3.0		37.18	
	committee room	24.0	7.3	6.1		1070.79	
	projection room	2.0	4.9	7.3		71.39	
	management room	2.0	7.3	4.6		66.92	
	office	2.0	4.6	4.6		41.83	
	principal office	2.0	4.6	3.4		30.67	
		2.0	4.6	3.7		33.46	
						1463.79	M2
	deduction of doors						
	D1						
	D2	20	1.2	2.7		64.80	
	D3	4	1.8	2.7		19.44	
	D4	1	7.3	2.7		19.71	
		8	1.2	2.7		25.92	
						129.87	M2
						1333.92	M2
11	**PAINT ON INNER WALL**						

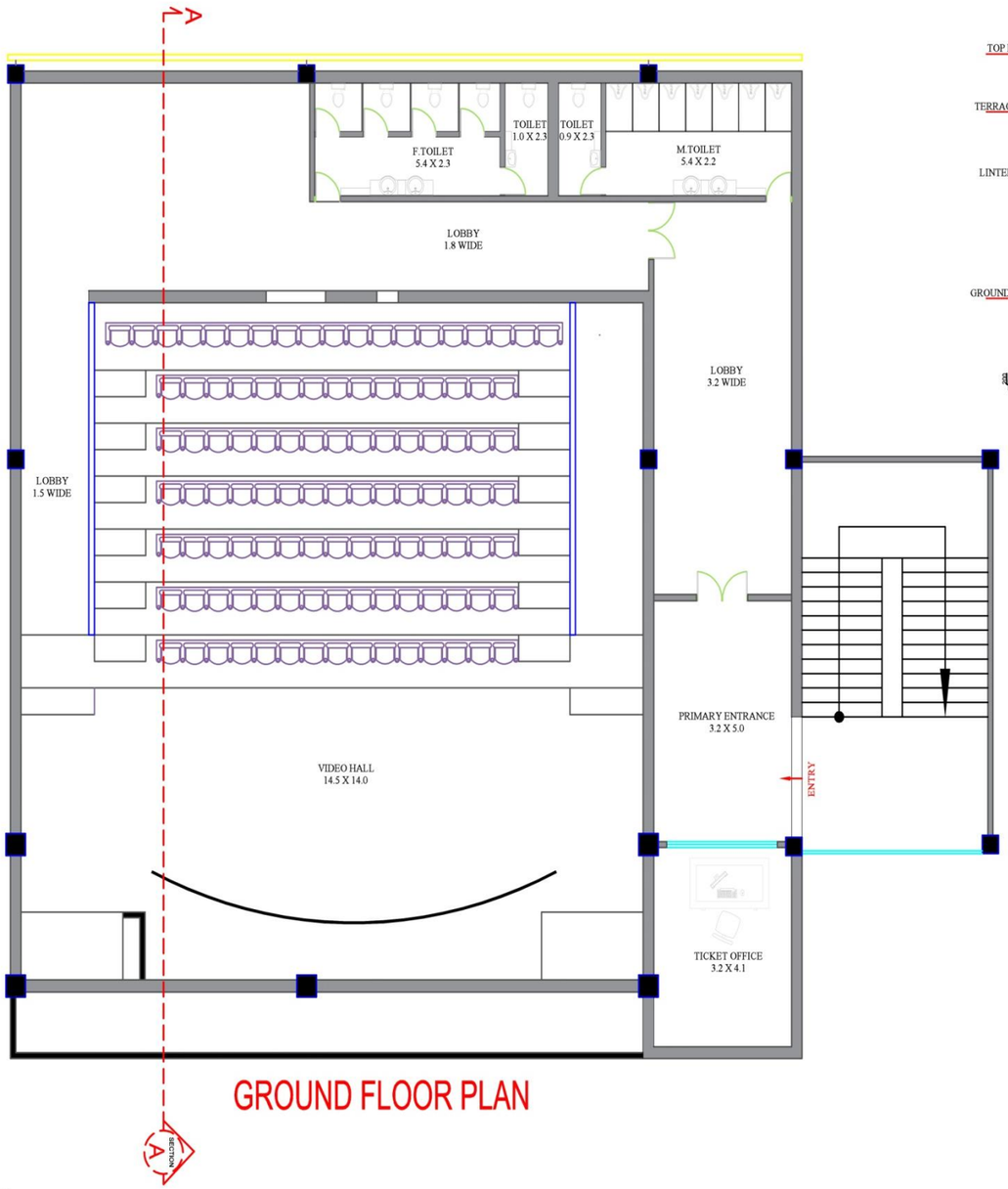
	toilet						
	wash area	4.0	4.6	6.1		111.54	
	class	4.0	3.0	3.0		37.18	
	committee room	24.0	7.3	6.1		1070.79	
	projection room	2.0	4.9	7.3		71.39	
	management room	2.0	7.3	4.6		66.92	
	office	2.0	4.6	4.6		41.83	
	principal office	2.0	4.6	3.4		30.67	
		2.0	4.6	3.7		33.46	
						1463.79	M2
	deduction of doors						
	D1						
	D2	20	1.2	2.7		64.80	
	D3	4	1.8	2.7		19.44	
	D4	1	7.3	2.7		19.71	
		8	1.2	2.7		25.92	
						129.87	M2
						1333.92	M2

Abstract sheet for Primary School:

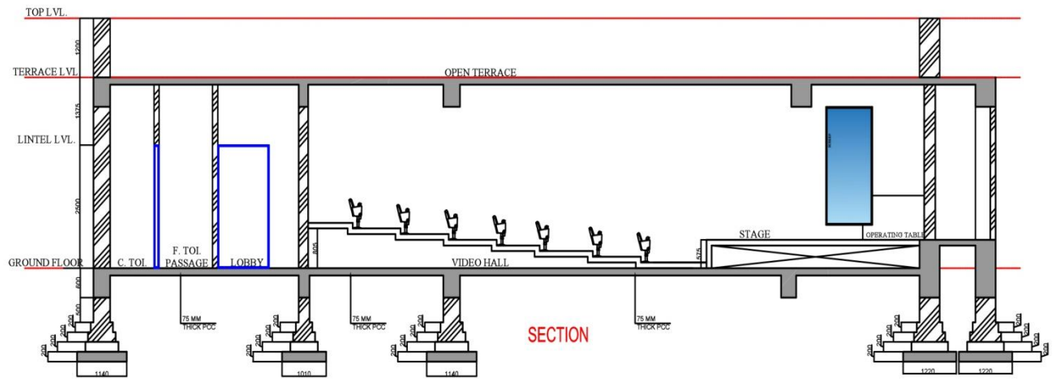
Table 34: Abstract sheet of Primary School

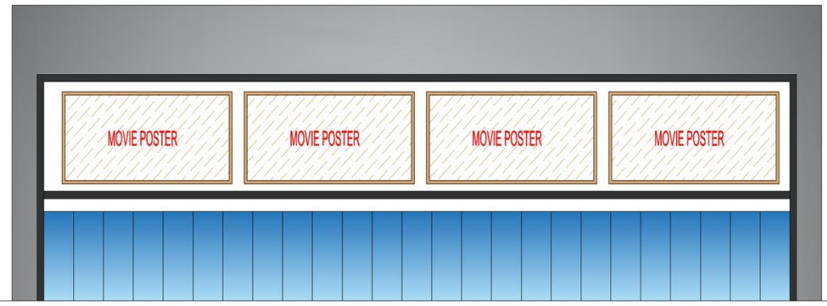
ITEM	QTY	PER	RATE	AMOUNT
earthwork excavation of foundation	371.00	M3	400	148400
pcc work of footing	147.00	M3	90	13230
rcc work of footing	78.55	M3	500	39275
rcc work of column	64.00	M3	475	30400
rcc work of beam	272.06	M3	450	122428.3324
rcc work of slab	147.35	M3	230	33889.42594
rcc work of chajja	31.36	M3	50	1568.140244
brickwork	666.12	M3	200	133223.0122
outer plaster	1503.62	M2	90	135325.9756
inner plaster	1338.12	M2	80	107049.6
outer colour	1503.62	M2	30	45108.65854
inner colour	1338.12	M2	30	40143.6
wood work of door and winodw	508.02	M2	250	127004.0854
	total rupees			977124.3772
	add 1.5% water charges			1025980.596
	add 10% con.charges			95440
	total estimate charges			1121420.596

13.1.3 Video Hall:



GROUND FLOOR PLAN





ELEVATIONS

NOTES:

1. ALL DIMENSIONS ARE IN MM INTIL STATED.
2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED.
4. ALL LOAD BEARING BRICK MASONARY WALL IN CEMENT MORTAR IN PROPORTION OF 1:6.
5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DESIGN OF:	VIDEO HALL	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 9
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

Estimation sheet for video hall:

Table 35: Estimation sheet of Video Hall

Item Description	No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity (CU M)
Earthwork in Excavation in Foundation:					
L1 =19.80	3	19.8	1	1.5	89.10
L2 =19.27	2	19.27	1	1.5	57.81
S1 =10.3	2	10.3	1	1.5	30.90
S2 =12.00	1	12	1	1.5	18.00
			TOTAL QTY.		195.81
P.C.C Foundation:					
L1 =19.80	3	19.8	1.5	0.3	26.73
L2 =19.27	2	19.27	1.5	0.3	17.34
S1 =10.3	2	10.3	1.5	0.3	9.27
S2 =12.00	1	12	1.5	0.3	
			TOTAL QTY.		53.34
Pad footing up to plinth Foundation:					
L1 =19.50	3	19.5	0.6	0.3	10.53
L1 =19.20	3	19.2	0.15	1.2	10.37
L2 =18.97	2	18.97	0.6	0.3	6.83
L2 =18.67	2	18.67	0.15	1.2	6.72
S1 =10.0	2	10	0.6	0.3	3.60
S1 =9.7	2	9.7	0.15	1.2	3.49
S2 =11.70	1	11.7	0.6	0.3	2.11
S2 =11.40	1	11.4	0.15	1.2	2.05
			TOTAL QTY.		11.25
Brick Work S.S					
L1 =19.80	3	19.8	0.25	4	59.40
L2 =19.27	2	19.27	0.25	4	38.54
S1 =10.3	2	10.3	0.25	4	20.60
S2 =12.00	1	12	0.25	4	
			TOTAL		118.54

Staircase Quantity					
L1 =0.70	2	0.7	0.3	0.15	0.06
L1 =14.15	4	14.15	0.6	0.15	5.09
L1 =14.50	1	14.5	0.9	0.15	1.96
L1 =1.20	1	1.2	2.1	0.3	0.76
L1 =1.20	1	1.2	1.8	0.3	0.65
L1 =1.20	1	1.2	1.5	0.3	0.54
L1 =1.20	1	1.2	1.2	0.3	0.43
L1 =1.20	1	1.2	0.9	0.3	0.32
L1 =1.20	1	1.2	0.6	0.3	0.22
			TOTAL QTY.		10.03
Deducation for Door & W					
D1	1	2.5	0.25	2.1	1.31
D2	2	1.6	0.25	2.1	1.68
D3	8	0.6	0.25	1.2	1.44
W1	2	2.5	0.25	1.2	1.50
V1	1	0.6	0.25	0.45	0.07
			Total qty.		6.00
Deducation for lintel					
D1	1	2.8	0.25	0.15	0.11
D2	2	1.9	0.25	0.15	0.14
D3	8	0.9	0.25	0.15	0.27
W1	2	2.8	0.25	0.15	0.21
V1	1	0.9	0.25	0.15	0.03
			Total qty.		0.76
			Net qty.(m^2)		3.27
R.c.c slab					
L=11.12	1	11.12	1.1	2.4	29.36
B=1.10	1				
L=11.12	1	11.12	1.1	2.1	25.69
B=1.10	1				
L=11.12	1	11.12	1.1	1.5	18.35
B=1.10	1				
L=11.12	1	11.12	1.1	1.2	14.68

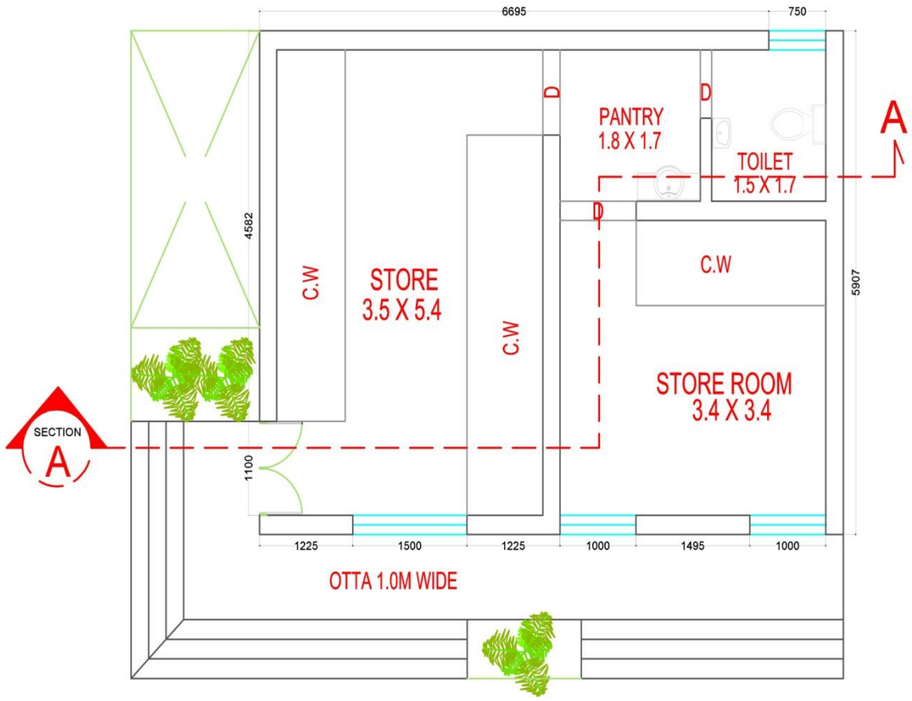
B=1.10	1				
L=11.12	1	11.12	1.1	0.9	11.01
B=1.10	1				
L=11.12	1	11.12	1.1	0.6	7.34
B=1.10	1				
L=11.12	1	11.12	1.1	0.3	3.67
B=1.10	1				
			Total qty.		80.73
Plaster inside					
Ticket office	2	3.2		3	19.20
	2	4.1		3	24.60
P.e	2	3.2		3	19.20
	2	5		3	30.00
Lobby	2	3.2		3	19.20
Lobby_1	2	1.8		3	10.80
F.toilet	2	5.4		3	32.40
	2	2.3		3	13.80
Toilet	2	1		3	6.00
	2	2.3		3	13.80
M.toilet	2	5.4		3	32.40
	2	2.2		3	13.20

Abstract sheet for video hall:

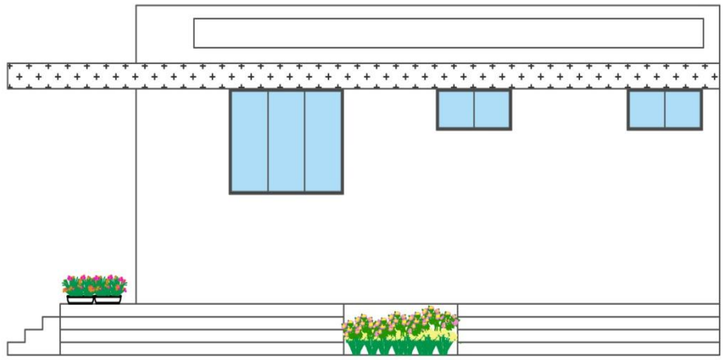
Table 36: Abstract sheet of Video Hall

Sr. no	Item Description	QTY	Rate	Per	Amount (Rs.)
1	Earthwork in excavation in foundation	195.9 CUM	90	CUM	17626.5
2	P.C.C foundation	53.3 CUM	2700	CUM	144018
3	Pad Footing Upto Plinth	11.3 CUM	3500	CUM	39375
4	Brick work for S.S	118.3 SQ.M	500	SQ.M	59125
5	R.C.C Slab	80.7 CUM	150	SQ.M	12109.5
6	Staircase Qty	10.0 CUM	100	SQ.M	1003
7	smooth plaster on inter wall	757.6 SQ.M	50	SQ.M	37878
8	Brick work for parapet wall	12.0 CUM	70	CUM	840
		Total Rs.			311975
		Add 1.5% Water Charge			4680
		Add 10% con.Charge			3119.75
		Total Estimate Cost in Rs.			319774

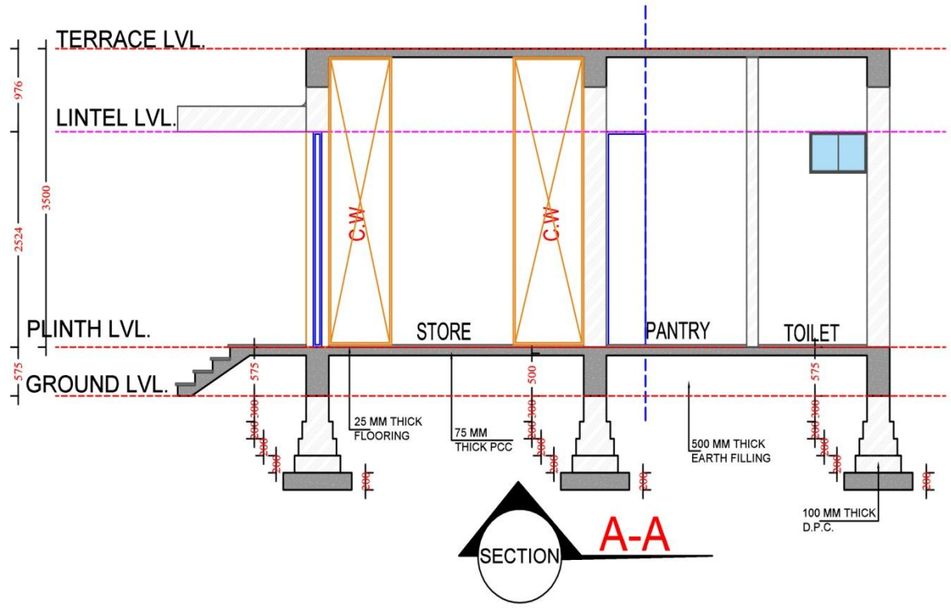
13.1.4 Medical Store:



GROUND FLOOR PLAN



ELEVATION



NOTES:
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2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.
3. ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED.
4. ALL LOAD BEARING BRICK MASONARY WALL IN CEMENT MORTAR IN PROPORTION OF 1:6.
5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DESIGN OF:	MEDICAL STORE	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 10
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

Estimation sheet for Medical Store:

Table 37: Estimation sheet of Medical Store

Item Description	No.	Length (m)	Width/ Breadth (m)	Height/ Depth (m)	Quantity (CU M)
Earthwork in Excavation in Foundation:					
L1 =12.17	2	7.45	1	1.1	16.39
S1 =5.4	3	5.4	1	1.1	17.82
S2 =2.70	1	2.7	1	1.1	2.97
			TOTAL QTY.		37.18
pad footing upto plinth Foundation:					
L1 =11.87	2	7.26	1	0.3	4.36
L1 =11.57	2	7.26	1	1.5	21.78
S1 =5.7	3	5.7	1	0.3	5.13
S1 =6.0	3	6	1	1.5	27
S2 =3.00	1	3	1	0.3	0.90
S2 =3.30	1	3.3	1	1.5	4.95
			TOTAL QTY.		64.12
P.C.C Foundation:					
L1 =12.17	2	7.45	1	0.3	7.30
S1 =5.4	3	5.4	1	0.3	6.48
S2 =2.70	1	2.7	1	0.3	0.81
			TOTAL QTY.		14.59
Brick Work S.S					
L1 =12.17	2	7.45	0.225	3.5	19.17
S1 =5.4	3	5.4	0.225	3.5	17.01
S2 =2.70	1	2.7	0.225	3.5	2.13
			TOTAL QTY.		38.30
Staircase Quantity					
L1 =8.87	1	14.5	0.9	0.15	1.96
L1 =8.87	3	14.5	0.6	0.15	5.22
L1 =8.87	1	2.7	0.3	0.15	0.12
			TOTAL QTY.		7.30
Deduction for Door & W					
D1	1	1.1	0.225	2.1	0.52
D2	2	1	0.225	2.1	1.42
D3	1	2	0.225	0.3	0.14
W1	1	1.5	0.225	1.2	0.81
W2	2	0.9	0.225	0.45	0.18

V1	1	0.5	0.225	0.45	0.05
			TOTAL QTY.		3.12
Deduction for Lintel					
D1	1	1.4	0.225	0.12	0.04
D2	2	1.3	0.225	0.12	0.11
D3	1	2.3	0.225	0.12	0.06
W1	1	1.8	0.225	0.12	0.10
W2	2	1.2	0.225	0.12	0.06
V1	1	0.8	0.225	0.12	0.02
			TOTAL QTY.		0.38
			NET QTY.(m^2)		34.80
R.C.C Slab & Chaaja					
L=11.40	1	11.4	5.8	0.12	7.93
B=5.80					
R.C.C Chaaja					
D1	1	1.4	0.6	0.1	0.08
D2	2	1.3	0.6	0.1	0.23
D3	1	2.3	0.6	0.1	0.14
W1	1	1.8	0.6	0.1	0.22
W2	2	1.2	0.6	0.1	0.14
V1	1	0.8	0.6	0.1	0.05
V2	1	1.6	0.6	0.1	0.10
			TOTAL QTY.		8.89
Plaster inside					
Store_1	2	3.5		3.5	24.50
	2	5.4		3.5	37.80
Store room	4	3.4		3.5	47.60
Pantry	2	1.8		3.5	12.60
	2	1.7		3.5	11.90
Toliet	2	1.5		3.5	10.50
	2	1.7		3.5	11.90
			TOTAL QTY.		156.80
Celling Plaster					
Store_1	1	3.5		5.4	18.90
Store room	1	3.4		3.4	11.56
Pantry	1	1.8		1.7	3.06
Toliet	1	1.5		1.7	2.55
			TOTAL QTY.		36.07
Deduction for D & W					
D1	1	1.1		2.1	2.31

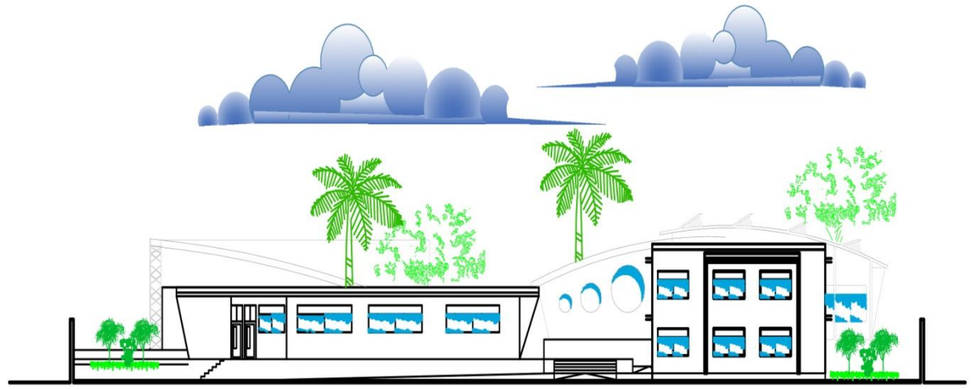
D2	2	1		2.1	5.25
D3	2	2		0.3	1.20
W1	1	1.5		1.2	2.16
W2	1.7	0.9		0.45	0.69
V1	1	0.5		0.45	0.23
			TOTAL QTY.		11.83
			NET QTY.(m2)		108.90

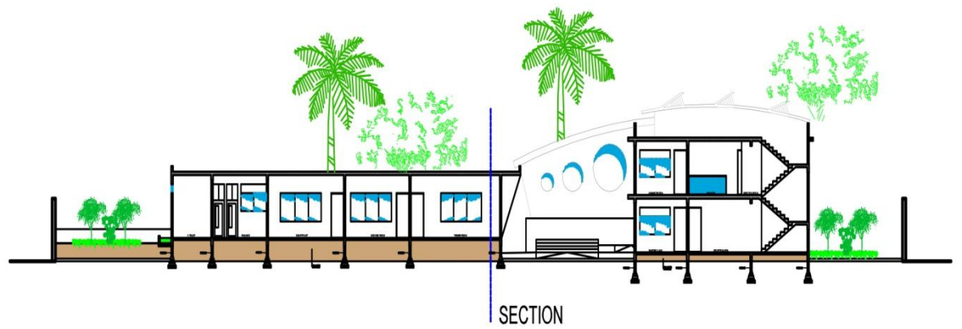
Abstract sheet for Medical Store:

Table 38: Abstract sheet of Medical Store

Sr. no	ltem Description	QTY	Rate	Per	Amount (Rs.)
1	Earthwork in excavation in foundation	37.18 CUM	90	CUM	17802.9
2	P.C.C foundation	91.4 CUM	2700	CUM	246834
3	Pad Footing Upto Plinth	64.12 CUM	3500	CUM	51065
4	Brick work for S.S	38.3 SQ.M	150	SQ.M	5745
5	R.C.C Slab & Chajja	8.8 CUM	150	SQ.M	1320
6	Staircase Qty	7.3 CUM	5	SQ.M	36.5
7	smooth plaster on inter wall	108.0 SQ.M	5	SQ.M	540
8	Brick work for parapet wall	5.1 CUM	5	CUM	25.5
		Total Rs.			323368.9
		Add 1.5% Water Charge			4851
		Add 10% con. Charge			3233.689
		Total Estimate Cost in Rs.			413089

13.1.5 Youth Club:





NOTES:

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3. ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED.
4. ALL LOAD BEARING BRICK MASONARY WALL IN CEMENT MORTAR IN PROPORTION OF 1:6.
5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DESIGN OF:	YOUTH CLUB	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 11
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

Estimation sheet for Youth Club:

Table 39: Estimation sheet of Youth Club

Sr. No.	Item Description	No.	Length (m)	Widht/ Breadth (m)	Height/ Depth (m)	Quantity (CU M)
1	Earthwork in Excavation in Foundation:					
	L1 =48.95	3	48.95	1	1.5	220.28
	L2 =21.69	2	21.69	1	1.5	65.07
	S1 =5.3	2	5.29	1	1.5	15.87
	S2 =6.50	1	6.5	1	1.5	9.75
	S3 =7.15	3	7.15	1	1.5	32.18
	S4 =5.00	1	5	1	1.5	7.50
	S5 =9.12	2	9.12	1	1.5	27.36
	S6 =5.00	1	5	1	1.5	7.50
	S7 =15.52	2	15.52	1	1.5	46.56
	S8 =6.32	1	6.32	1	1.5	9.48
	S9 =8.29	2	8.29	1	1.5	24.87
		1	3.3	1	1.5	4.95
				TOTAL QTY.		471.36
2	P.C.C Foundation:					
	L1 =48.95	3	48.95	1	0.3	44.06
	L2 =21.69	2	21.69	1	0.3	13.01
	S1 =5.3	2	5.29	1	0.3	3.17
	S2 =6.50	1	6.5	1	0.3	1.95
	S3 =7.15	3	7.15	1	0.3	6.44
	S4 =5.00	1	5	1	0.3	1.50
	S5 =9.12	2	9.12	1	0.3	5.47
	S6 =5.00	1	5	1	0.3	1.50
	S7 =15.52	2	15.52	1	0.3	9.31
	S8 =6.32	1	6.32	1	0.3	1.90
	S9 =8.29	2	8.29	1	0.3	4.97
		1	3.3	1	0.3	0.99
				TOTAL QTY.		94.27
3	pad footing upto plinth Foundation:					
STEP:1	L1 =11.57	3	11.57	0.6	0.3	6.25
STEP:2	L1 =11.27	3	11.27	0.15	1.2	6.09
STEP:1	L2 =21.39	2	21.39	0.6	0.3	7.70
STEP:2	L2 =21.09	2	21.09	0.15	1.2	7.59
STEP:1	S1 =5.6	2	5.59	0.6	0.3	2.01
STEP:2	S1 =5.9	2	5.9	0.15	1.2	2.12

STEP:1	S2 =6.80	1	6.8	0.6	0.3	1.22
STEP:2	S2 =7.10	1	7.1	0.15	1.2	1.28
STEP:1	S3 =7.45	3	7.45	0.6	0.3	4.02
STEP:2	S3 =7.75	3	7.75	0.15	1.2	4.19
STEP:1	S4 =5.30	1	5.3	0.6	0.3	0.95
STEP:2	S4 =5.60	1	5.6	0.15	1.2	1.01
STEP:1	S5 =9.42	2	9.42	0.6	0.3	3.39
STEP:2	S5 =9.72	2	9.72	0.15	1.2	3.50
STEP:1	S6 =5.30	1	5.3	0.6	0.3	0.95
STEP:2	S6 =5.60	1	5.6	0.15	1.2	1.01
STEP:1	S7 =15.83	1	15.83	0.6	0.3	2.85
STEP:2	S7 =16.12	1	16.12	0.15	1.2	2.90
STEP:1	S8 =15.83	1	15.83	0.6	0.3	2.85
STEP:2	S8 =15.83	1	15.83	0.15	1.2	2.85
STEP:1	S9 =8.59	1	8.59	0.6	0.3	1.55
STEP:2	S9=8.89	1	8.89	0.15	1.2	1.60
				TOTAL QTY.		67.89
4	Staircase Qty					
STEP:1	L1 =14.50	1	14.5	0.9	0.15	1.96
STEP:2	L1 =14.50	4	14.5	0.6	0.15	5.22
STEP:3	L1 =14.50	1	14.5	0.3	0.15	0.65
	Second S.T					
STEP:1	L1 =1.91	1	1.91	0.9	0.15	0.26
STEP:2	L1 =1.91	4	1.91	0.6	0.15	0.69
STEP:3	L1 =1.91	1	1.91	0.3	0.15	0.09
				TOTAL QTY.		8.86
5	Brick Work S.S					
	L1 =48.95	3	48.95	0.15	3	66.08
	L2 =21.69	2	21.69	0.15	3	19.52
	S1 =5.3	2	5.29	0.15	3	4.76
	S2 =6.50	1	6.5	0.15	3	2.93
	S3 =7.15	3	7.15	0.15	3	9.65
	S4 =5.00	1	5	0.15	3	2.25
	S5 =9.12	2	9.12	0.15	3	8.21
	S6 =5.00	1	5	0.15	3	2.25
	S7 =15.52	2	15.52	0.15	3	13.97
	S8 =6.32	1	6.32	0.15	3	2.84
	S9 =8.29	2	8.29	0.15	3	7.46
		1	3.3	0.15	3	1.49
				TOTAL QTY.		141.41
6	Deduction for D & W					

	W1	2	2.4	0.15	1	0.72
	W2	2	1.55	0.15	1	0.47
	W3	2	1	0.15	1	0.30
	W4	2	1.4	0.15	1	0.42
	W5	3	2.4	0.15	1	1.08
	W6	3	2	0.15	1	0.90
	W7	2	4.4	0.15	3	3.96
	W8	2	1	0.15	1	0.30
	W9	3	4.2	0.15	1	1.89
	W10	3	3.2	0.15	1	1.44
	W11	1	2.38	0.15	1	0.36
	W12	6	1.4	0.15	1	1.26
	V1	3	1.4	0.15	1	0.63
	D1	16	1	0.15	1	2.40
	D2	1	2	0.15	1	0.30
				TOTAL QTY.		16.42

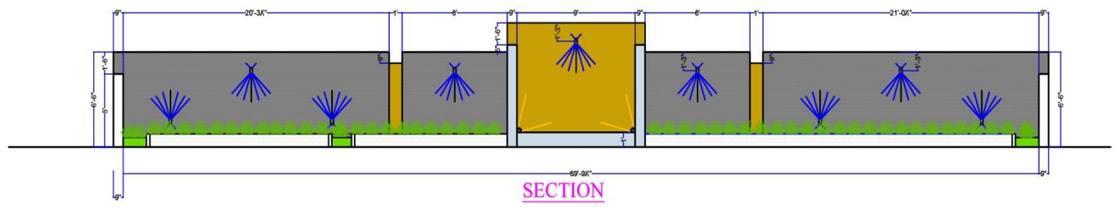
Abstract sheet for Youth Club:

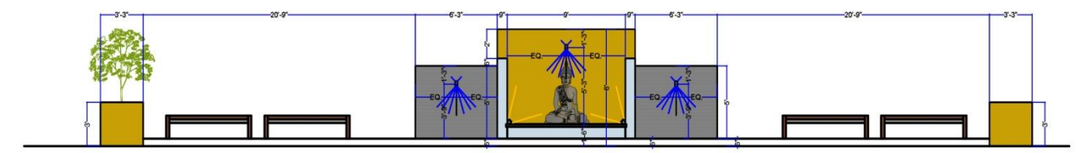
Table 40: Abstract sheet of Youth Club

Sr. no	Item Description	QTY	Rate	Per	Amount (Rs.)
1	Earthwork in excavation in foundation	417.1 CUM	90	CUM	37541.34
2	P.C.C foundation	94.3 CUM	2700	CUM	254529
3	Pad Footing Upto Plinth	67.9 CUM	3500	CUM	237615
4	Brick work for S.S	123.1 SQ.M	500	SQ.M	61530
5	R.C.C Slab	286.2 CUM	150	SQ.M	42928.5
6	Staircase Qty	8.8 CUM	100	SQ.M	880
7	smooth plaster on inter wall	917.8 SQ.M	50	SQ.M	45891
8	Brick work for parapet wall	12.0 CUM	70	CUM	840
		Total Rs.			681754.84
		Add 1.5% Water Charge			10226
		Add 10% con.Charge			6817.5484
		Total Estimate Cost in Rs.			698799

13.1.6 Public Garden:

PLAN





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5. DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE, CORRECTED ALL DATA MUST BE CHECK BEFORE USE.

DESIGN OF:	PUBLIC GARDEN	
PREPARED BY:	Jay Mangukiya Darshil Patel	SHEET NO: 12
PROJECT NAME:	Vishwakarma Yojana Phase-VIII	
INSTITUTE NAME:	Bhagwan Mahavir Collage Of Engineernig And Technology	
UNIVERSITY NAME:	Gujarat Technological University	

Estimation sheet and Abstract sheet for Public Garden:

Table 41: Estimation sheet and Abstract sheet for Public Garden

Sr. No.	Description of Item	Quantity	Unit	Rate (Rs)	Per Unit	Estimated Value
1	Excavation for Foundation of Column	191	m^3	120	m^3	22,920
2	Concreting in Foundation	17	m^3	3400	m^3	57,800
3	Masonry in Foundation	95	m^3	1000	m^3	95,000
4	Earth Filling	79	m^3	40	m^3	3,160
5	Super Structure Masonry work	111	m^3	1500	m^3	1,66,500
6	Plaster work	229	m^3	193	m^3	44,197
7	Colouring	198	m3	14	m3	2,772
8	Block	100	No.	14	No.	1,400
9	Fountain	1	Nos.	14	Nos.	10,000.00
10	Tree plantation	55	Nos.	50	Nos.	2750
11	Light pole with light	25	Nos.	5000	Nos.	125000
12	Slides & Swings	4	Nos.	7000	Nos.	28000
13	Benches	10	Nos.	4500	Nos.	45000
					Total cost	5,76,499
				10% Construction Profit		57649
				Estimated value		**6,34,149**

Chapter 14

Technical Options with Case Studies

14.1 Civil Engineering:

14.1.1 Advance Earthquake Resistant:

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

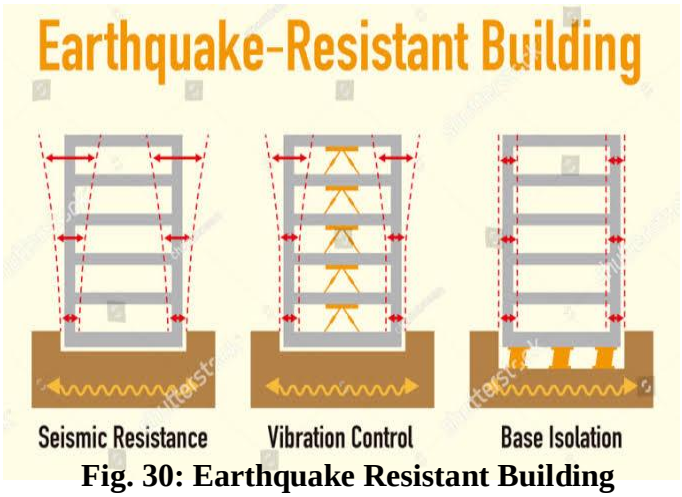


Fig. 30: Earthquake Resistant Building

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

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

- Base Isolation
- Energy Dissipation Devices

- **Base Isolation Method of Earthquake Resistant Design:**

A base isolated structure is supported by a series of bearing pads which are placed between the building and the building's foundation. A variety of different types of base isolation bearing pads have now been developed. the bearing is very stiff and strong in the vertical direction, but flexible in the horizontal direction. To get a basic idea of how base isolation works, examine Figure. This shows an earthquake acting on both a base isolated building and a conventional, fixed-base, building. As a result of an earthquake, the ground beneath each building begins to move. In Figure, it is shown moving to the left. Each building responds with movement which tends toward the right. The building undergoes displacement towards the right. The building's displacement in the direction opposite the ground motion is actually due to inertia. The inertial forces acting on a building are the most important of all

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

- **Energy Dissipation Devices:**

The second of the major new techniques for improving the earthquake resistance of buildings also relies upon damping and energy dissipation, but it greatly extends the damping and energy dissipation provided by lead-rubber bearings. As we've said, a certain amount of vibration energy is transferred to the building by earthquake ground motion. Buildings themselves do possess an inherent ability to dissipate, or damp, this energy. However, the capacity of buildings to dissipate energy before they begin to suffer deformation and damage is quite limited. The building will dissipate energy either by undergoing large scale movement or sustaining increased internal strains in elements such as the building's columns and beams. Both of these eventually result in varying degrees of damage. So, by equipping a building with additional devices which have high damping capacity, we can greatly decrease the seismic energy entering the building, and thus decrease building damage. Accordingly, a wide range of energy dissipation devices have been developed and are now being installed in real buildings. Energy dissipation devices are also often called damping devices. The large number of damping devices that have been developed can be grouped into three broad categories: Friction Dampers: these utilize frictional forces to dissipate energy Metallic Dampers: utilize the deformation of metal elements within the damper Viscoelastic Dampers: utilize the controlled shearing of solids Viscous Dampers: utilized the forced movement (orificing) of fluids within the dampe.

- **Construction Methods:**

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

- **GUIDELINES FOR EARTHQUAKE RESISTANT CONSTRUCTION:**

In addition to the main earthquake design code 1893 the BIS (Bureau of Indian Standards) has published other relevant earthquake design codes for earthquake resistant construction Masonry structures (IS-13828 1993) Horizontal bands should be provided at plinth, lintel and roof levels as per code Providing vertical reinforcement at important locations such as corners, internal and external wall junctions as per code. Grade of mortar should be as per codes specified for different earthquake zones. Irregular shapes should be

avoided both in plan and vertical configuration. Quality assurance and proper workmanship must be ensured at all cost without any compromise. In RCC framed structures (IS-13920). In RCC framed structures the spacing of lateral ties should be kept closer as per the code. The hook in the ties should be at 135 degrees instead of 90 degrees for better anchoragement. The arrangement of lateral ties in the columns should be as per code and must be continued through the joint as well.

14.1.2 Seismic Retrofitting of Buildings:

- **Introduction:**

The aftermath of an earthquake manifests great devastation due to unpredicted seismic motion striking extensive damage to innumerable buildings of varying degree i.e., either full or partial or slight. This damage to structures in its turn causes irreparable loss of life with a large number of casualties. As a result, frightened occupants may refuse to enter the building unless assured of the safety of building from future earthquakes. It has been observed that majority of such earthquake damaged buildings may be safely reused if they are converted into seismically resistant structures by employing a few retrofitting measures. This proves to be a better option catering to the economic considerations and immediate shelter problems rather than replacement of buildings. Moreover, it has often been seen that retrofitting of buildings is generally more economical as compared to demolition and reconstruction even in the case of severe structural damage. Therefore, seismic retrofitting of building structures is one of the most important aspects for mitigating seismic hazards especially in earthquake prone countries. Various terms are associated to retrofitting with a marginal difference like repair, strengthening, retrofitting, remoulding, rehabilitation, reconstruction etc. but there is no consensus on them. The most common definition of these terms may be summarized.

- **Consideration in Retrofitting of Structures:**

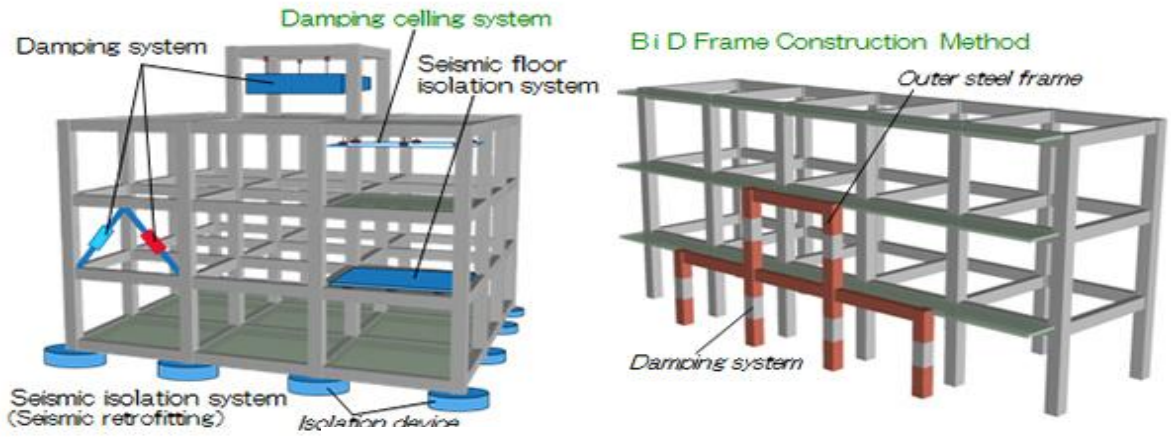


Fig. 31: Seismic Retrofitting Of Building

The method of retrofitting principally depends on the horizontal and vertical load resisting system of the structure and the type of materials used for parent construction. It also relies on the technology that is feasible and economical. The understanding of mode of failure, structural behavior and weak and strong design aspects as derived from the earthquake damage surveys exercise considerable influence on selection of retrofitting methods of buildings. Usually, the retrofitting method is aimed at increasing the lateral resistance of the structure. The lateral resistance includes the lateral strength or stiffness and

lateral displacement or ductility of the structures. The lateral resistance is often provided through modification or addition of retrofitting elements of an existing structure in certain areas only. The remaining elements in the structure are usually not strengthened and are assumed to carry vertical load only, but in an earthquake, all components at each floor, retrofitted or not, will undergo essentially the same lateral displacements. While modified or added elements can be designed to sustain these lateral deformations, the remaining no strengthened elements could still suffer substantial damage unless lateral drifts are controlled. Therefore, caution must be taken to avoid an irregular stiffness distribution in the strengthened structure. Thus, the ability to predict initial and final stiffness of the retrofitted structure need clarification and quantification. Consequently, it is suggested that the design of retrofitted schemes should be based on drift control rather than on strength consideration alone. The use of three-dimensional analysis is recommended to identify and locate the potential weakness of the retrofitted building.

- **Source of Weakness in RC Frame Building:**

Earthquake engineering is not a pure science; rather it has been developed through the observation of failure of structure during earthquake (Otani, 2004). Damage survey reports of past earthquakes reveal the following main source of weakness in reinforced concrete moment resisting frame buildings.

(a) Discontinuous load path/ interrupted load path/irregular load path
(b) Lack of deformation compatibility of structural members
(c) Quality of workmanship and poor quality of material.

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

- **Procurement:**

The procurement practice involves:

- Selecting Appropriate Method for Construction Management
- Selection of Best team for the design
- Selection of best team to deliver
- Select best team to Operate the facility

- **Partnering:**

When compared to the traditional approach of working, the partnering is an different working style. This takes a collaborative approach in working. It has been proved through great projects that working through partnering helps in achieving

- Greater value of money
- Higher Profits for the company
- Quality Improvement
- Prediction of project completion

- **Risk Management:**

Risk in projected are always expected and it is necessary to maintain a "risk register". This will help to enter all the risk faced from the starting of the project to its end. Along the risk encountered, the method used to manage is also recorded. This helps to be applied in other projects. Risk assessing and analyzing will help to assign appropriate actions to different project team. The risk assessment is an activity that have to be performed in a regular basis and in no case be ignored. For all risk residual items, it is necessary to have some financial allowance. The cost of this item can be avoided by selecting a best solution for the problem faced

- **Value Management:**

This key practice takes into account time, cost and risk constraints, in order to meet the client's business needs. The method of value management will involve complete collaboration with the team. The team is in charge of design and delivery of the project. This team will also include the end-users and the stake holders. The steps in value management are:

- Identify the need of client in terms of benefits and their priorities
- Different options to satisfy the needs are identified and evaluated
- Options assessed in terms of risk, cost, and satisfaction.

- **Supply Chain Management in Construction:**

In construction, this term is new. Here, all the operations of the organizations are integrated that is associated with the delivery of a product or a service. Hence, from the primary producer till the end user this is analyzed. Supply chain management in construction will involve analyzing from:

- Material
- Suppliers
- Manufacturer
- Distributors
- Installation
- Contractors Designers
- Client organization

14.1.4 Engineering Aspects of Soil mechanics- Environmental Impact Assessment:

Soil mechanics is a discipline of civil engineering that predicts the soil performance characteristics utilizing the engineering techniques of dynamics, fluid mechanics, and other technologies. Soil mechanics includes the study of soil composition, strength, consolidation, and the use of hydraulic principles to deal with issues concerning sediments and other deposits. Soil mechanics is one of the major sciences for resolving problems related to geology and geophysical engineering. Soil mechanics studies are very important for civil engineers because based on the findings of soil mechanics studies, engineering structures are constructed. The type of construction, type of equipment to be used, type of foundation, support material, and many other aspects of construction works are largely affected by the soil mechanics studies. Basically, we study about soil formation modes, physical and chemical properties of soil, dynamic loading of soils, permeability, consolidation, etc. In the subsequent sections of this article, we will discuss in detail about major aspects of soil mechanics studies.

- In view of the colossal damage to the environment, there is a felt need for assessing the environmental impacts of developmental activities. EIA is a tool to anticipate the possible damage to the environment caused by developmental projects and schemes, and propose mitigation measures and strategies.

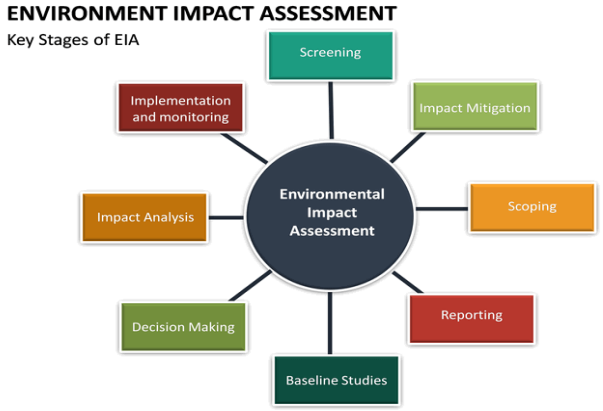


Fig. 32: Environmental Impact Assessment

- EIA exerts to declare a national policy to encourage productive and enjoyable harmony between man and environment. It promotes efforts to prevent or eliminate damage to the environment and the biosphere, and stimulate the health and welfare of man.
- It seeks to increase the understanding of ecological system and nature resources important to the nation and to provide for appropriate institutional structure to carry out the objectives
- It provides a broad, integrated perspective of a region about to undergo or undergoing developments. EIA ascertains the cumulative impacts from the multiple development in the region. It establishes priorities for environmental protection. It also identifies the positive and negative aspects of any project as well as assesses the policy options and analyses the impact on the environment therein.

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

Water was an important factor in the location of the earliest settled communities, and the evolution of public water supply systems is tied directly to the growth of cities. In the development of water resources beyond their natural condition in rivers, lakes, and springs, the digging of shallow wells was probably the earliest innovation. As the need for water increased and tools were developed, wells were made deeper. Brick-lined wells were built by city dwellers in the Indus River basin as early as 2500 BCE, and wells almost 500 meters (more than 1,600 feet) deep are known to have been used in ancient China.

The need to channel water supplies from distant sources was an outcome of the growth of urban communities. Among the most notable of ancient water conveyance systems are the aqueducts built between 312 BCE and 455 CE throughout the Roman Empire. Some of these impressive works are still in existence. The writings of Sextos Julius Frontinus (who was appointed superintendent of Roman aqueducts in 97 CE) provide information about the design and construction of the 11 major aqueducts that supplied Rome itself. Extending from a distant spring-fed area, a lake, or a river, a typical Roman aqueduct included a series of underground and aboveground channels. The longest was the Aqua Marcia, built in 144 BCE. Its source was about 37 km (23 miles) from Rome. The aqueduct itself was 92 km (57 miles) long, however, because it had to meander along land contours in order to maintain a steady flow of water. For about 80 km (50 miles) the aqueduct was underground in a covered trench, and only for the last 11 km (7 miles) was it carried aboveground on an arcade. In fact, most of the combined length of the aqueducts supplying Rome (about 420 km [260 miles]) was built as covered trenches or tunnels. When crossing a valley, aqueducts were supported by arcades comprising one or more levels of massive granite piers and impressive arches.

Chapter 15

Smart and/or Sustainable features of Chapter 8 & 13 designs, Impact on society. with doing small changes, Period, Amount Expenditure and Benefit – (a) Immediately b) Within 1 year c) Long term (3-5 years) along with cost estimation. (b) If possible, List the sources of the funding available with the Village gram panchayat

Table 15.1 Design Benefits and Period

Sr. No.	Design	Period	Amount Expenditure	Benefits
1	Milk collection and distribution unit	Long Term(3-5 Years)	413089 Rs.	To get the proper money without transporting
2	Design of library	Within 1 Year	327562 Rs.	For EducationalFacilities. Newspaper section is also available in Library.
3	Design of clinic	Long Term(3-5 Years)	182739 Rs.	To maintain proper health care of villagers.
4	Design of water tank	Within 1 Year	797684 Rs.	To supply good quality of water and to overcome shortage of water supply
5	Design of road	Within 1 Year	157353 Rs.	To provide good connectivity for vehicles.
6	Mahila mandal	Within 1 Year	130398 Rs.	To help women empowerment
7	Post office	7-8 Months	706133 Rs.	Provide risk free transaction and saving a money of village people.

8	Primary school	Immediately	1121420 Rs.	Primary education increases the knowledge of children which increase social and emotional development.
9	Video hall	Long Term(3-5 Years)	319774 Rs.	For entertainment purpose
10	Medical store	Long Term(3-5 Years)	319774 Rs.	To get medicines in their own village
11	Youth club	Long Term(3-5 Years)	698799 Rs.	For overall development of youngsters.
12	Public garden	Immediately	6,34,149 Rs.	For children to play in Garden. And for provide refreshment to the village peoples.

List the sources of the funding available with the Village Authority:

- Taluka Panchayat
- Fund Collected by panchayat for development of village
- State Government
- Central Government
- Donation of any private organizations
- MLA(Member of Legislative Assembly) Grant
- Jilla Panchayat Sadasya Grant
- MGNREGA(Mahatma Gandhi National Rural Employment Act) Grant
- ATVT(Apno Taluko Vibrant Taluko) Grant

Above are available sources are available with sarpanch and authority. other sources are available but not exact information are available.

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

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

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

સરપંચ
ગ્રામ પંચાયત ખરચ
તા.હાંસોટ, જી.ભરૂચ.

Chapter 17

Irrigation / Agriculture Activities And Agro Industry, Alternate Techniques And Solution

Fig. 33: Alternate Technique of Irrigation

Technological change has been the major driving force for increasing agricultural productivity and promoting agriculture development in all OECD countries. In the past, the choice of technologies and their adoption was to increase production, productivity and farm incomes. Over many decades, policies for agriculture, trade, research and development, education, training and advice have been strong influences on the choice of technology, the level of agricultural production and farm practices.

Agriculture is becoming more integrated in the ago-food chain and the global market, while environmental, food safety and quality, and animal welfare regulations are also increasingly impacting on the sector. It is faced with new challenges to meet growing demands for food, to be internationally competitive and to produce agricultural products of high quality. At the same time, it must meet sustainability goals in the context of ongoing agricultural policy reform, further trade liberalization and the implementation of multilateral environmental agreements as agreed to by OECD Ministers.

Today, farmers, advisors and policy makers are faced with complex choices. They are faced with a wide range of technologies that are either available or under development; they must deal with the uncertainties of both the effects these new technologies will have throughout the agri-food chain and the impact that a whole range of policies will have on the sustainability of farming systems. In addition, there is increasing pressure on agricultural research and advisory budgets that must be accommodated.

The focus of the workshop was the adoption of technologies that have the potential to contribute to sustainable farming systems. Technology adoption, however, is a broad concept. It is affected by the development, dissemination and application at the farm level of existing and new biological, chemical and mechanical techniques, all of which are encompassed in farm capital and other inputs; it is also affected by education, training, advice and

information which form the basis of farmers' knowledge. It also includes technologies and practices in the whole agri-food sector that have an impact at the farm level. Finally, it should be borne in mind that most of these new technologies originate outside the farm sector.

The concept of a sustainable farming system refers to the capacity of agriculture over time to contribute to overall welfare by providing sufficient food and other goods and services in ways that are economically efficient and profitable, socially responsible, while also improving environmental quality. It is a concept that can have different implications in terms of appropriate technologies whether it is viewed at the farm level, at the agri-food sector level, or in the context of the overall domestic or global economy.

One of the key policy conclusions of the workshop was that technologies for sustainable agriculture cover the whole spectrum of farming systems. All farming systems, from intensive conventional farming to organic farming, have the potential to be locally sustainable. Whether they are in practice depends on farmers adopting the appropriate technology and management practices in the specific ago-ecological environment within the right policy framework. There is no unique system that can be identified as sustainable, and no single path to sustainability. There can be a co-existence of more intensive farming system with more-extensive systems that overall provide environmental benefits, while meeting demands for food. However, it is important to recognize that most sustainable farming systems-even extensive systems-require a high level of farmer skills and management to operate.

Fig. 34: Agriculture Activity

Chapter-18

Social Activities – Any Activates Planned By Students

Respected ma'am

We hereby Mangukiya Jay and Patel Darshil mark and apology for not visiting kharach village for social activities in current project work DPR, Part-II Due to Covid-19. As the second wave of novel corona virus was more fatal, we couldn't make it to visit the village. We tried many times to contest the village authority but the second wave of covid-19 spread in village much more times as expected. Due to this the gram panchayat decided to not let outsider enter in the village.

We also planned to went school and do some kind of interaction but due to COVID 19, schools was shut downed And they also didn't allow us to meet any body and social gatherings in village. Though, hope you understand our situation. We thank you for your invaluable support.

Chapter-19

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

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Khurach Gram Panchayat: Khurach Ward No. —

Block: Hansot District: Bharuch

State: Gujarat L S Constituency: Bharuch.

1. Family Identity and Size

Name of Head of Household	Dharmendra singh bavdava							Male/ Female	m
SECC Survey ID:		Family Size	10	Over 18	6	6 to 18	3	Under 6	1

2. Category & Entitlement Details (Tick as appropriate)

Social Category[1]	general	Life Insurance ✓	1. All Adults 2. Some Adults 3. None	AABY	1. Yes 2. No	Kisan Credit Card	Yes / No
Poverty Status Year[2]:	1. BPL 2. APL	Health Insurance ✓	1. All Adults 2. Some Adults 3. None	RSBY	1. Yes 2. No	MGNREGS Job Card Number	no
PDS (If NFSA is not implemented)	Annapurna	Antyodaya	BPL	APL	Is any woman in the family		
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]
Ratvan singh	70	m	n		3	y	y	-
Hansaben	65	F	n		8	y	y	-
Hetalben	42	F	n		6	y	y	-
Dilipsingh.	40	m	n		9	y	y	-
Dimple ben	35	F	n		8	y	y	-

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
Rajvir	13	m	n		6	y	✓	x
Amiben	7	F	n		2	y	✓	x
Utsavben	6	F	n		1	y	✓	x

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
Jaydutt	3	m	n	n				32

[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	N	N

9. House & Homestead Data

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

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

Source of Water		Distance
Piped Water at Home	Yes / No	0
Community Water Tap	Yes / No	0
Hand Pump (Public / Private)	Yes / No	0
Open Well(Public / Private)	Yes / No	0
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	17	2. Cultivable Area	13
3. Irrigated Area	351	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
Rice	-	-
Shuger	-	-

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

⇒ School activity games like kho-kho, kabuddi, cricket, etc.

19. Do children play musical instrument (mention)

no

Schedule Filled By: Jay, Darshil

Principal Respondent: Arjunbhai

Date of Survey: 15-07-21

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

I. Basic Information

a. Gram Panchayat: Khuruch.

b. Block: Hansot

c. District: Bharuch

d. State: Gujarat

e. Lok Sabha Constituency: Bharuch

f. Number of Wards in the Gram Panchayat: -

g. Number of Villages in the Gram Panchayat: 1

h. Names of Villages:
Khuruch.

Demographic Information

Number of Households 800 Total Population 5436 Male 3054 Female 2382

SC HHs 60 ST HHs 70 OBC HHs 40 Other HHs 526

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

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

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

IV. Sports Facilities in the Gram Panchayat

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

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

V. Education, ICDS

a. Number of Angan Wadi Centres: 1

b. Number of villages without Angan Wadi Centres –

Names of such villages: –

c. Schools (Number)

Primary Private: – Primary Govt.: 1

Middle Private: – Middle Govt.: –

Secondary Private: – Secondary Govt.: 1

Higher Secondary Private: 1 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)	shop in village		Ration gov.				4 km kosamba
b.	Kerosene			Ration gov.				4 km kosamba.
c.	Other (mention)							

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

VII. Coverage of Villages under different Facilities & Services

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

VIII. Land and Irrigation

	Private Land	Area in Acres		Common Land	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	746	d.	Pasture / Grazing Land	–	g.	Check Dam	1
b.	Irrigated Land	331	e.	Forests/ Plantations	95	h.	Wells/Bore Wells	1
c.	Un-irrigated Land	-	f.	Other Common Land	254	i	Tanks /Ponds	2

[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)	4
b)	Number of Households receiving pension (old age, widow, disability)	4
c)	Number of eligible Households who are not receiving pension	
d)	Number of Households eligible for Ration Card	183
e)	Number of eligible HHs having ration cards	183
f)	Number of households covered under RSBY (Rashtriya Swasthya Bima Yojana)	0
g)	Number of HHs covered under AABY (Aam Aadmi Bima Yojana)	0
h)	Number of active Job Card holders under MGNREGA	7
i)	Number of Job Card holders who completed 100 days of work during 2013-14	0
j)	Number of shops selling alcohol	–
k)	Number of BPL families	77
l)	Number of landless households	45
m)	Number of IAY beneficiaries	0
n)	Number of FRA[2] beneficiaries	0
o)	Number of Community Sanitary Complexes	0
p)	Number of Households headed by single women	3
q)	Number of Households headed by physically handicapped persons	0
r)	Total number of Persons with Disability in the village	0
s)	Number of SHGs	0
t)	Number of active SHGs	0
u)	Number of SHG Federations	0
v)	Number of Youth Clubs	0
w)	Number of Bharat Nirman Volunteers	0

Name and Signature of Surveyor and Respondent'

Surveyor	PRI Respondent (Preferably Gram Panchayat Chairperson)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey: 15-07-2021

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

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

I. Basic Information

a. Village: khoruch

b. Ward Number: –

c. Gram Panchayat: kharuch

d. Block: Hansot

e. District: Bharuch

f. State: gujarat

g. Lok Sabha Constituency: Bharuch

h. Number of Habitations / Hamlets in the Gram Panchayat: 3

i. Names of Habitations / Hamlets:

Business, Job, farmer.

Demographic Information

Number of Households 800 Total Population 5436 Male 3054 Female 2382

SC HHs 60 ST HHs 70 OBC HHs 40 Other HHs 526

II. Access to Infrastructure/Amenities etc.

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
a.	Nearest Primary School	y	–
b.	Nearest Middle School	y	–
c.	Nearest Secondary School	y	–
d.	Kisan Seva Kendra	n	4km, kosumba
e.	Milk Cooperative /Collection Centre	n	4km, kosumba
g.	Health Sub Centre	n	4km, kosumba
h.	Bank	y	–
i.	ATM	y	–
j.	Bus Stop	y	–
k.	Railway Station	n	4km, kosumba

[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	Bharuch
m	Common Service Centre	N	Bharuch
n	Veterinary Care Centre	N	Bharuch

ii. Road Connectivity

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

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

iii. Drinking Water Facilities

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

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

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

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

iv. Coverage of Habitations under Waste Management System

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

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

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

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

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

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

v. Coverage of Habitations under Electrification

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

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

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

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

vi. Sports Facilities in the Village

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

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

vii. Education, ICDS

a. Number of Anganwadi Centres: 2

c. Schools (Number)

Primary Private: - Primary Govt.: 1

Middle Private: - Middle Govt.: 1

Secondary Private: - Secondary Govt.: 1

Higher Secondary Private: - Higher Secondary Govt: 1

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	746	d.	Pasture / Grazing Land	–	g.	Check Dam	1
b.	Irrigated Land	331	e.	Forests/ Plnatations	95	h.	Wells/Bore Wells	1
c.	Un-irrigated Land	–	f.	Other Common Land	254	I	Tanks /Ponds	2

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	7
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	77
5	Number of landless households	45
6	Number of IAY beneficiaries	–
7	Number of FRA beneficiaries	–
8	Number of common sanitation complexes	–
9	Number of SHGs	–
10	Number of active SHGs	–
11	Existence of SHG Federation in the Village (Yes / No)	–
12	Number of Youth Clubs	–
13	Number of Bharat Nirman Volunteers	–

Name and Signature of Surveyor and Respondent'

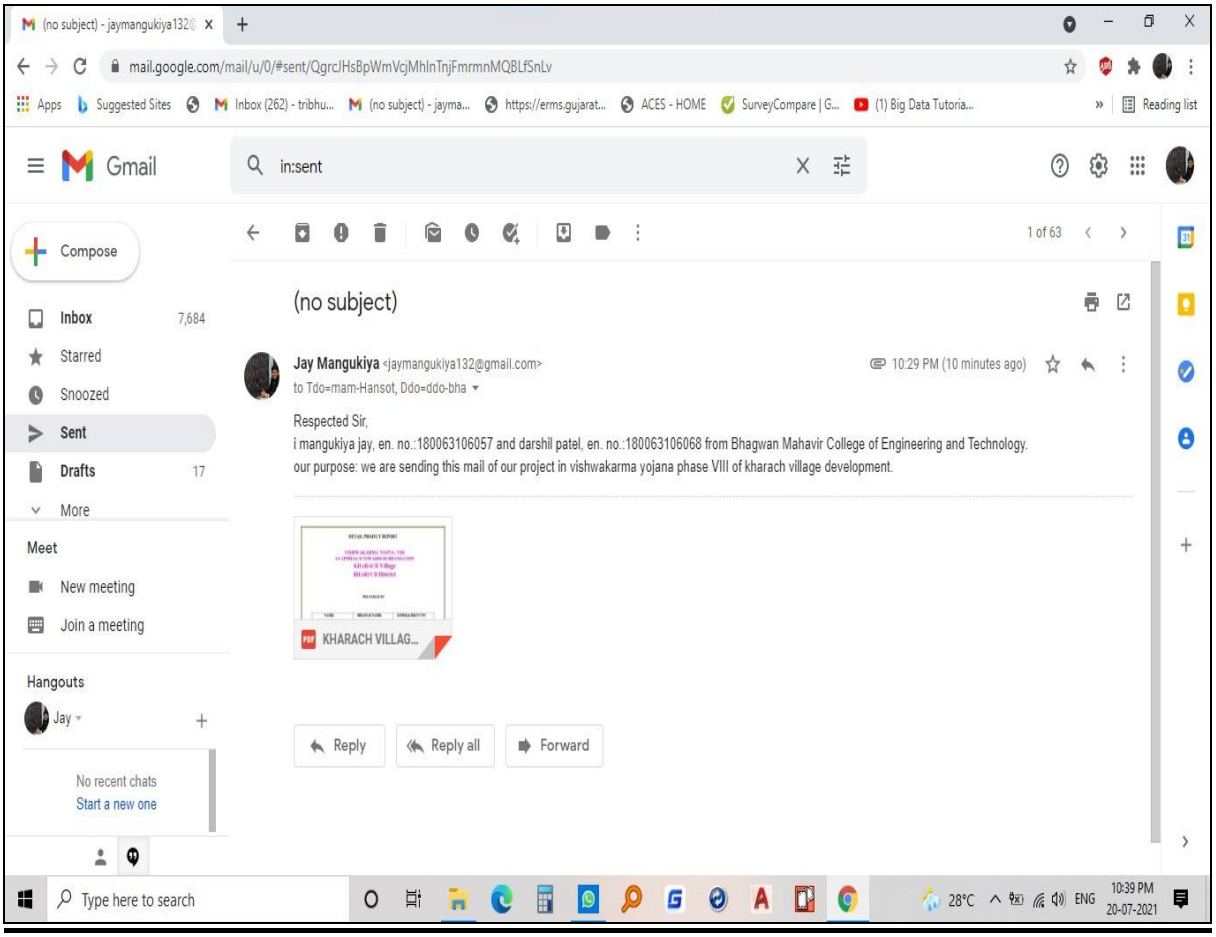
Surveyor	PRI Respondent (Preferably a ward member from a ward that is fully or partially covered under the Village)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey

સરપંચ
ગ્રામ પંચાયત ખરચ
તા.હાંસોટ, જી.ભરૂચ.

15-07-21.

Chapter-20

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



Chapter-21

Comprehensive report for the entire village

Villages and small towns play an important role as a "rural incubator" in the process of rural development and provide services in areas of marketing, providing agricultural inputs such as fertilizer and agricultural machinery, municipal services such as educational facilities, health care and so on for their rural domains.

After visiting of Ideal Village Baben and Smart Village Ena, we get the idea and scenario of a model village. Up till now in our mind we think the meaning of ‘village’ as low class people, leaving with ordinary life and with old mindset and old technologies. But now a day scenario is totally changed, Indian villages growing out now. With smart cities, Smart Village concept is also introduced and we are proudly say that, we are one of its part. Because through Vishwakarma Yojana we connect with the rural development concepts.

As from Ideal village visit we saw that all the success of village depend on the Sarpanch of village. A Sarpanch is the only person who can increase the level of village in all aspects. There are so many Govt. scheme for villages and for villagers, but the Sarpanch is the only a Link between this two phase. With some little awareness and group work can achieve anything, which Baben village has proved.

Likewise Ena is also a village which is role model of Award winning gram Panchayats. It is known for its 100% cleanliness. It is a Smart Village of Gujarat.

After visiting this two villages, we visit our Kharach Village. We saw the huge difference between the local bodies (Gram Panchayat) and villagers. Major issue for rural development particularly in India is the Political issue. All are working for themselves. They only want to develop them self instead of village. Villages need long term planning proposals in terms of master plan.

From our study we conclude that providing a facilities is not only the solution of rural development. All villages in Gujarat are now become very well compare to past. But we should focus on improvement on existing facilities. Villagers and also gram Panchayat is not focusing on the existing facilities. Due to this villagers try to discarding for its use. Also villagers are not aware about new technologies, which make them a better one. We should try to aware them.