DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII
AN APPROACH TOWARDS RURBANISATION
BILASIYA Village

AHMEDABAD District

PREPARED BY

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
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HASMUKH GOSWAMI
COLLEGE OF ENGINEERING

PROF. SRINATH KARLI
NODAL OFFICER

YEAR: 2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmedabad– 382424 Gujarat

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Gujarat Technological University,
Chandkheda, Ahmedabad– 382424 Gujarat

CERTIFICATE

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

Detail Project Report For,

VILLAGE: BILASIYA

DISTRICT: AHMEDABAD

Under

Vishwakarma Yojana: Phase-VIII

In partial fulfillment of the project offered by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

During The Academic Year 2020-21.

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

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
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Date of Report Submission:	
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Internal(Evaluator) Guide Name and Signature:	PROF. SRINATH KARLI
College Name:	HASMUKH GOSWAMI COLLEGE OF ENGINEERING
College Stamp:	

ABSTRACT

Vishwakarma Yojana is one among the initiative towards the Rurbanisation by Government of Gujarat, which was assigned as real time resolution kind project and enforced by "Gujarat Technological University". Vishwakarma Yojana would offer "Design to Delivery" resolution for development of villages. During this project, we tend to describe the scheme for a village then design an integrated style procedure for building a perfect village. We tend to outline a perfect village as a bundle of services that square measure delivered to its residents and businesses in economical a good and efficient manner. The scholars use their engineering skills to arranged careful project reports for the infrastructure as a part of their final year project work. The chosen village is surveyed, knowledge has been analysed for the village and an infrastructure facility has been recognized by this Yojana with the assistance of UDPFI tips.

Bilasiya village is found at 23.08˚ N, 72.69° E Bilasiya is at and Eastern aspect of Metro City Ahmedabad District at a distance of 21 Km via Naroda – Dahegam Road. It is at 26 Km from Gandhinagar City. The closest terminus to Bilasiya is Naroda that is found at 11 Km distance. Bilasiya nearest landing field settled at 13 Km distance Ahmedabad landing field & nearest district is Ahmedabad. Bilasiya is encircled by Daskroi taluka. The bulk of people's square measure related to agricultural activities and the opposite occupation is animal husbandry.

For the education Bilasiya have 1 Primary and secondary school. The colleges measuring nearby is Apollo Institute & Monark Education Trust. Bilasiya village has lower acquisition rate compared to Gujarat.In 2011, acquisition rate of Bilasiya village was 71.47% compared to 78.03% capitalize on Gujarat. Thanks to "JYOTI GRAM YOJANA" 24 hour of electricity is out there in village. Kucca – pucca house magnitude relation is regarding 75:25 Village have one main village road that is in shape. Internal streets of village square measure in poor condition. Solely sub centre is out there in village. For attention facilities villagers ought to travel 9 Km.

For the event of village we offer style that square measure as Bus Stand, Low Cost house, biogas plant, Underground sump, post office with gram Panchayat and General market. The chose village is surveyed, knowledge has been analysed for the village and an infrastructure facility has been recognized by this Yojana with the assistance of UDPFI tips.

By providing Prayer hall semen meditation hall could also be scale back stress, anxiety,
Depression and pain and low value house style can increase the living commonplace of the villagers. And with the assistance of biogas plant the waste is employed in such how that to supply the gas that is employed for change of state and electricity functions. Offer Underground Sump for storing water principally helpful in summer season additionally enlarging the gram council with post workplace for higher operation of labour. We tend to are style general market in village for simply convenience of contemporary vegetables and fruits.

Keywords: Physical infrastructure, Social infrastructure, Socio cultural infrastructure, Smart Village, Green village.

ACKNOWLEDGEMENT

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

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

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CHAPTER 1

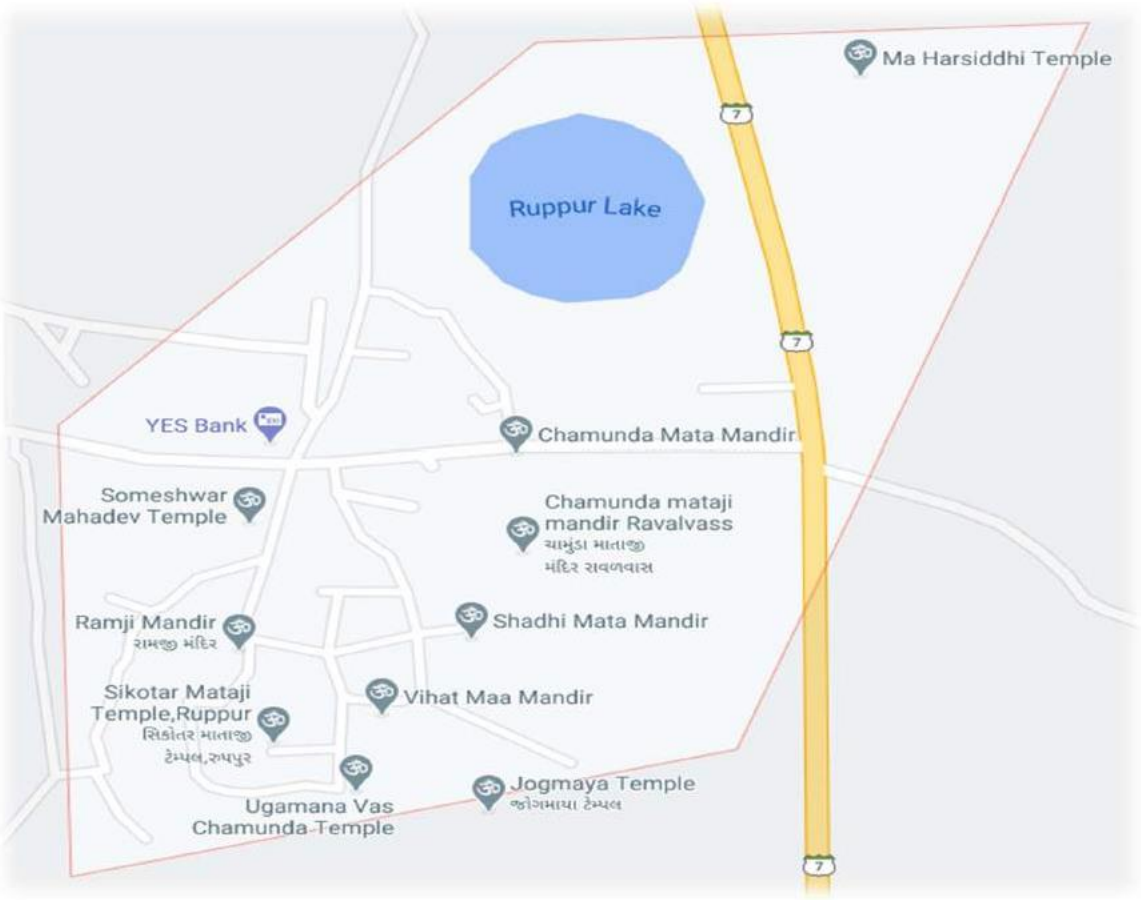
IDEALVILLAGE VISIT FROM AHMEDABAD DISTRICT OF GUJARAT STATE

1.1 Background & Study Area Location

RUPPUR is located at 15 km from Patan District. The quote “Self Independent Village” which is motto of Vishwakarma Yojana Project is given by Ruppur village and it also complete by them. It involve public partnership to fulfil basic amenities like health, electricity, solid liquid waste management, public meeting, provision of clean imbibing water and fulfil the dream of villages to become swarnim.

[Table 1 Study Area Location of Ruppur Village]

Village Name :	Ruppur
Taluka Name :	Chanasma
District :	Patan
State :	Gujarat
Language :	Gujarati
Elevation / altitude :	30 metres above sea level
Telephone code / STD code :	384220
Assembly Constituency :	Chanasma
Latitude :	23.08˚ N
Longitude :	72.69° E



[Figure 1 Positioning Map of Ruppur Village]

1.2 Concept: Ideal Village

1.2.1 Objectives:

A Model / Smart village project has the following important 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.

1.2.2 Example / Live Case Studies of Ideal Village of India / Gujarat:

It will have cottages with sufficient light and ventilation built of a material obtainable within a radius of five miles of it. The cottages will have courtyards enabling householders to plant vegetables for domestic use and to house their cattle.

The village lane and steers will be free of avoidable dust. It will have wells according to its needs and accessible to all.

It will have houses of worship for all, also a common meeting place, a village common for grazing its cattle, a co-operative dairy, primary & secondary schools in which industrial education will be the central fact, and it will have panchayats for setting disputes.

It will produce its own grains & vegetables and fruits.

For example – RUPPUR Village

[Figure 2 Infrastructure of Ruppur Village]

1.2.3 The Idea Of A Model / Smart Village:

- In India 68.9% of population lives in rural area. Though number is expected to fall in the coming years, it is still estimated that more than half of our population would be rural even in 2050. Despite there being several past initiatives by governments at all levels –Central, State and Local in the past, the level of improvement has not kept place with the rising aspirations among Indians. On most development parameters, there is still a significant gap between rural and urban India.
- The "Model Village" concept could address these challenges comprehensively. It can address resource deficits in each of these sectors, with adequate focus on the special needs of every village.
- The proposed **—Sansad Adarsh Gram Yojana** of the Central Government aims to involve MPs more directly in the development of model villages. By adopting a village(s) under this initiative, an MP has the opportunity to directly benefit all sections of a village community in an integrated, efficient and participatory fashion.

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

- The various infrastructure facilities such as houses, schools, hospitals etc are available in the village.
- Agricultural as well as milk cooperative society are also provided in the village.
- Overhead Water Tank, Refreshing Garden Pond, Sump, PHCEtc.

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

- **Physical & demographic growth:**

The village is developed and well oriented very efficiently. The village has basic physical& social amenities such as:

- Education
- Water Supply System
- Sanitation & Drainage System
- Rigid, Flexible, Paver Block, Cement Concrete Roads Are Built.
- At The Edges Of Every Roads Street Lights & Footpath Are Build.
- Gram Panchayat Office
- 1st Aid Hospital

[Figure 3 Educational Facilities of Ruppur Village]

[Figure 4 PHC Facilities of Ruppur Village]

[Figure 5 Infrastructure Facilities of Ruppur Village]

1.4 (SWOT) Analysis of Ideal Village / Smart Village:

- **Strength:**
  - Land: 846.32 hectare
  - Forest &Handicraft: NIL
  - Agricultural land area: 478 hectare.
  - Other area**:** 15 hectare With Road Network.

- Education With Modern Teaching.
- All Are Rigid Pavement With Footpath & Streetlight.

➢ **Opportunity:**

- To Make Digitally Connected Village With **WIFI – CCTV** Connected.
- **Demand of agriculture**: Production of crop and grain nearby village is adequate and thecash crop sugar cane is also adequate and demanded for sugar industry.
- **Market:** Local vegetable hut is available in village for nearby distance.
- **Utilization of renewable energy resources** like rain water harvesting, bio gas plant, solar street light.

➢ **Weakness &Threat:**

- Lack Of Development Body
- No Water Treatment Plant

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

- In Ruppur Village, They are going to build Hybrid Solar System in village for domestic use.
- They are also going to make to input modern technologies such as automatic water sprinkler, A hybrid canal, Rain Water Harvesting Technique, etc.
- They are internally approaching each other for the water treatment plant for the villagers.
- There also might be available college in the village.
- This Village is one of the cleanest village among all the villages in Gujarat, Due to the old retired people team formed for the Cleanliness& Wellness of the village, So as to make village waste free forever there might be road cleaning machine & Waste collecting robot door to door.

1.6 Benefits of the visits of Ideal village / Smart Village:

- To know the physical development of village.
- To know the physical availability of the amenities in the village.
- We realize some different type of little requirements of village.
- We saw all type of basic and primary facility available in the village.
- There are proper planning of main road, division of verandas and construction work.
- To know the Health, Social, Financial Services in the village.

1.7 Electrical / Civil aspects required in Ideal village / Smart Village

- There is a requirement of aesthetical view change of present infrastructure to make a modern and smart village.
- There is an requirement of an new modern education development, To make the bright future and vision of students of living in village.
- There is also a need of fund to make the suitable changes in the village.

CHAPTER 2

BILASIYA VILLAGE LITERATURE REVIEW

2.1 Introduction: Urban & Rural Village Concept:

- **Urban:** An urban conclave is a human settlement with high population density & infrastructure of built environment. Which are made through urbanization and are categorized by urban morphology as cities, towns, conurbation or suburbs.

- **Rural:** Rural areas have a low population density and small settlements agricultural areas are commonlyrural though so are others such as forests.

- In urbanism, the term Contrasts to rural areas such as villages and hamlets and in urban sociology or anthropology It contrasts with natural environment. The creation of early predecessor of urban areas during the Urban rebellion led to the creation of human civilization with modern urban planning, which along With other human activities such as exploitation of natural resources leads to human impact on the atmosphere.

2.2 Importance of the Rural Development:

In India, majority of the population, resides in rural communities. The development of all aspects within rural communities is vital for the effective development of the country. These include, education, employment opportunities, infrastructure, housing, civic amenities and the environmental conditions. Furthermore, rural individuals need to be aware of all modern and innovative methods and techniques that are vital to augment productivity. Within the country, the rural communities are still in an underdeveloped state. The individuals are residing in the conditions of poverty, they are illiterate and unemployed. Due to these factors, they are unable to sustain their living conditions in an appropriate manner. It is essential to formulate programs, schemes and measures that have the main objective of bringing about improvements in rural communities. The main areas that have been taken into account in this research paper include, concept of rural development, approaches to rural development, problems experienced by rural individuals, programs initiated by the Government for rural development.

2.3 Ancient Villages / Different Definition of: Rural Urban Villages

Rural areas are also known as the 'countryside' or a 'village' in India. It has a very low population density. In rural areas, agriculture is the chief source of livelihood along with fishing, cottage industries, pottery etc.

The quest to discover the real rural India still continues in great earnest. Almost every economic agency today has a definition of rural India. Here are a few definitions: According to the Planning Commission, a town with a maximum population of 15,000 is considered rural in nature. In these areas

the Panchayat makes all the decisions. There are five people in the Panchayat. The National Sample Survey Organisation (NSSO) defines 'rural' as follows:

- An area with a population density of up to 400 per square kilometer,
- Villages with clear surveyed boundaries but no municipal board,
- A minimum of 75% of male working population involved in agriculture and allied activities.

RBI defines rural areas as those areas with a population of less than 49,000 (tier -3 to tier-6 cities).

It is generally said that the rural areas house up to 70% of India's population. Rural India contributes a large chunk to India's GDP by way of agriculture, self-employment, services, construction etc. As per a strict measure used by the National Sample Survey in its 63rd round, called monthly per capita expenditure, rural expenditure accounts for 55% of total national monthly expenditure. The rural population currently accounts for one-third of the total Indian FMCG sales.

2.4 Scenario: Rural / Urban village of India population Growth

&

2.5 Scenario: Rural / Urban village of Gujarat As Per Census 2011 And Latest

- According to the census of India 2011, these are a few of trends of urban and rural population of India.
- For the first time after independence the increasing population is more in urban area that in rural area.

[Table 2 Gujarat Population Growth As Per Census 2011]

POPULATION	RURAL	URBAN	TOTAL
PERSON	833087662	377105760	**1210193422**
MALE	427917052	195807196	**623724248**
FEMALE	405170610	181298564	**586469174**

[Table 3 Indian Population Growth As Per Census 2011]

	2001	2011	DIFFERENCE
INDIA	**102.9**	**121.0**	**18.1**
RURAL	**74.3**	**83.3**	**9.0**
URBAN	**28.6**	**37.7**	**9.1**

2.6 Rural Development Issues - Concerns – Measures

- The process of change in rural area is very slow & the problems are more or less age old in recent years the process of change has been accelerated and so new problems are also cropping up.
- The major problems consists of the agriculture, the ownership of the land, the lake of
- Cottage industries, lake of education social evils, death of animals, wealth, bad wealth and so on.
- These problems are the results of traditional and conservationism of the rural society.

- Some Of Few Rural Development Issues - Concerns – Measures are:
  - Market Unavailability
  - Lake Of Education & Awareness
  - Improper Road Network & Transportation Facility
  - Migration To Urban Area
  - Insufficient & Improper Electricity Supply
  - Less Income Opportunity

2.7 Various Infrastructure Guidelines with the Norms for Villages for the Provisions of Different Infrastructure Facilities:

- In spite of the prevailing dominance of the urban orthodoxy in public policy, even today a vast majority of the Indians live in rural areas. According to the Census of India, nearly 70 per cent population of India still lives in rural areas. Clearly the Ministry of Rural Development is aware of this fact and continuously makes policy efforts for planning and development of rural areas. For example, apart from the flagship policy of the Shyama Prasad Mukherjee Rurban Mission (SPMRM), which was launched in 2016, the Ministry of Rural Development has been continuously formulating and implementing various policies like Saansad Adarsh Gram Yojana, 2014 and the National Rural Employment Guarantee Act, 2005 for promoting rural development. However, it is for the first time that a major policy initiative - the Shyama Prasad Mukherjee Rurban Mission - with appropriate financial support has been undertaken by the Ministry of Rural Development, which further shows keenness of government to plan and develop rural areas.

- For effective planning and development of rural areas, efficient use of rural land and investment for various activities like housing, physical and social infrastructure, transportation, etc. has to be made. This warrants that natural resources particularly rural land is used in an efficient and equitable manner. For the promotion of integrated and inclusive rural development, spatial planning becomes imperative. While for urban areas development controls and other norms and standards have existed for several decades in India, for rural areas development norms and benchmarks are largely non-existent. State governments even do not have organizational appropriate machinery for preparing and implementing integrated development plans in rural areas (Ministry of Rural Development, 2016).

- One of the important reasons for not being able to devise organizational arrangements for the preparation and implementation of rural development plans and formulation of development controls, and benchmarks

for rural areas is the manner in which 73rd and 74th amendments to the Constitution of India are implemented throughout the country. Although the constitutional amendments provided for the preparation and implementation of various kinds of development plans such as village development plan, block development plan, and district development plan, state governments – when legislating local government acts – did not spatialise these plans with the exception of the state of Kerala (Chettiparamb, 2007; also see Mathew, 1995). Similarly the constitutional amendments provided for elected bodies like village Panchayat, block samities and zilla parishads, which have historically acted as development agencies rather than planning agencies for rural areas. As far as village Panchayat, block samities and zilla parishads are concerned they have been preparing and implementing development plans, which are sectorial in nature. The plans being prepared and implemented by the existing organizational set up are social and economic plans and not spatial plans. This means that these plans are not integrated plans.

- Two separate reports were submitted to the Ministry of Rural Development by the School of Planning and Architecture, New Delhi and the CEPT University, Ahmedabad, Gujarat on 23 October 2018. This present report is prepared after summarizing the main aspects of these two reports. Some aspects of both the reports have been left out for the purposes brevity and conciseness.

- Norms and Standards: The extent and the nature of problems related to social infrastructure vary by size, geographical conditions, and local natural resources, state/ regional differentials in the resource availability and the policies, resource base of the local authorities and several such factors which directly or indirectly affecting the population of the cities/towns. 105 Keeping in mind the differentials of size of population and their need norms and standards for different components of infrastructure with respect to their hierarchy, location and spatial attributes, affordability, socio-economic compatibility and manageability has been set up. Many national and international organizations related to each infrastructure at various times has prescribed various norms and standards for these services some are related to the size of population and some are to the quality of services provided by them Various norms and standards for urban development plans formulation has been provided by UDPFI for taking developmental decisions.

2.8 Ancient / Existing Civil / Electrical concept study as a Literature Review for village development:

- Necessity Of Education & Hospital, Sufficient Water & Electricity Supply, Awareness To Modernization Of Generation, Public Awareness For Hygiene, Proper Sanitation System & Drainage System Facility

2.9 Other Projects / Schemes of Gujarat / Indian Government:

- Atal Pension Yojana (2015), Bachat Yojana (2009), Central Government Health Scheme (1954), Deendayal Upadhyay Gram Jyoti Yojana (2015), Deendayal Upadhyay Gramin Kaushal Yojana (2015), Pradhan – Mantri Kaushal Vikas Yojana (2015), Indira Gandhi Matritvasahyog Yojana (2015), Indira Awash Yojana (2006-07), Provision of Urban Amenities to Rural Areas (2004), National Rurban Mission, Pradhan Mantri Adarsh Gram Yojana, Saansad Adarsh Gram Yojan, National Social Assistance Gramin, Pradhan Mantri Awash Yojana.

CHAPTER 3

SMART (CITIES / VILLAGE) CONCEPT IDEA AND ITS VISIT (CIVIL & ELECTRICAL)

3.1 Introduction: Concepts, Definitions and Practices

➢ **Concepts :**

- 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".

➢ **Definitions :**

Integration: Energy, transport and information and communication technologies (ICT) seen as parallel and interdependent factors for smartness in urban areas.

Smart Governance: This aspect is the backbone of smart solutions. Smarter governance is enabled through more informed decision making and participation of disparate opinions and agendas towards overall betterment of cities and communities.

Innovation and Technologies: World over, technologies are enabling smarter solutions. Technology innovation is helping better collection, processing and analysis of data through conventional and crowd/social media methods.

Energy: Although not within the urban local jurisdiction, energy is very much an urban
Concern. While fossil fuel fed mechanized transport remains the biggest head in energy consumption in cities.

Traffic and Transport: As discussed above, transport is a major concern from energy and carbon perspectives. Moreover, mobility is the basic need for any urban economy.

Internet and Communication Technologies: ICTs help cities connect better to their
Citizens, enabling better feedback and cross fertilization of ideas.

➢ **Practices :**

Gujarat International Finance Tech City (GIFT)

- Gujarat International Finance Tech-City or GIFT is an under-construction city in the Indian state of Gujarat which is about 12 kms from Ahmedabad International Airport. It will be built on 500 acres (2.0 sq.km) of land. Its main purpose is to provide high quality physical infrastructure (electricity, water, gas, district cooling, roads, telecoms and broadband), so that finance and tech firms can relocate their operations there from Mumbai, Bangalore, Gurgaon etc. where infrastructure is either inadequate or very expensive.

- It will have a special economic zone (SEZ), international education zone, integratedtownships, an entertainment zone, hotels, a convention center, an international techno park, Software Technology Parks of India (STPI) units, shopping malls, stock exchanges and service units.

GIFT aims at providing transportation network which ensures accessibility, easy &fast mobility and zero road accidental deaths. This would be achieved by:

- Using a multimodal mix of Transport systems (MRTS/LRTS/BRT, etc.) for both inter region (Ahmedabad, Airport, Gandhinagar and the City) and intra-city.
- Using walk-to-work concept as part of urban planning with a nodal split of 10:90 between private and public transport.
- Use of electric Personnel Rapid Transport systems within the City. In future, City will be linked with Ahmedabad BRTS, operated by Ahmedabad JanMarg Ltd.

3.2 Vision-Goals, Standards and Performance Measurement Indicators

➢ Vision-Goals

Transport

- A smart city will have a transport infrastructure to allow commuters to travel through the small and medium size city within 30 minutes and metropolitan area within 45 minutes
- The streets with more than 10 meter wide with carriageway will have dedicated and
- Physically segregated bicycle tracks of 2 meter width or more, one in each direction.

Water Supply

- 24×7 water supply and 100% households with direct water supply connections.
- 135 liters of water supply per capita with 100% metering of water connections and 100%efficiency in collection of water related charges.

Sewerage and Sanitation

- 100% households with toilets, 100% schools with separate toilets for girls.
- 100% houses to be connected to waste water network with 100% efficiency in collection and treatment of waste water.

Solid Waste Management

- 100% households connected with daily doorstep waste collection system.
- 100% recycling of waste with 100% segregation of waste at source.
- 100% collection of municipal solid waste.

Electricity

- 24×7 supply to 100% households with 100% metering.
- Tariff slabs for minimizing the electricity waste with 100% recovery of cost.

Connectivity

- 100% households with telephone connections including mobile.
- 100% of city with Wi-Fi connectivity and broadband speed of up to 100 MBPS

Healthcare

- Telemedicine facility for 100% residents with maximum 30 minutes of emergency response time.
- 1 Dispensary for every 15,000 residents and 1 dispensary for pet for every 1 lakh residents.
- 1 diagnostic center for every 50,000 residents.
- 1 veterinary hospital for every 5 Lakh residents.

Education

- 1 senior secondary school (Class VI to XII) for every 7,500 residents and 1 integrated
- school (Class I to XII) for every Lakh of population.
- 1 School for physically challenged for every 45,000 residents and 1 school for mentally
- challenged every 10 Lakh population.
- 1 College per 1.25 lakh population.
- 1 University, 1 technical education center, 1 engineering college, 1 medical college, 1 professional college and one paramedical instate for every 10 lakh population.

➢ Standards

- The development of a standard on Smart city terminology (PAS 180)
- The development of a Smart city framework standard (PAS 181)
- The development of a Data concept model for smart cities (PAS 182)
- A Smart city overview document (PD 8100)

- A Smart city planning guidelines document (PD 8101)

➢ Performance Measurement Indicators

- Information and Communication Technology
- Environmental sustainability
- Productivity
- Quality of life
- Equity and social inclusion
- Physical infrastructure

3.3 Technological Options

Five Key Technologies of a Smart Village

Smart Energy: Smart energy systems will monitor and control energy usage to more Efficiently manage and conserve energy. Cisco estimates that cities that run on information can improve their energy efficiency by 30 percent within 20 years.

Smart Mobility: Smart mobility strives to find more sustainable transport options. Deloitte reported that an average American is stuck about 34 hours in traffic every year.

Smart Infrastructure: Smart infrastructure creates the fundament for all smart solutions. By using new technology to convert raw data into information, urban and regional development can be planed and designed to fit future demand.

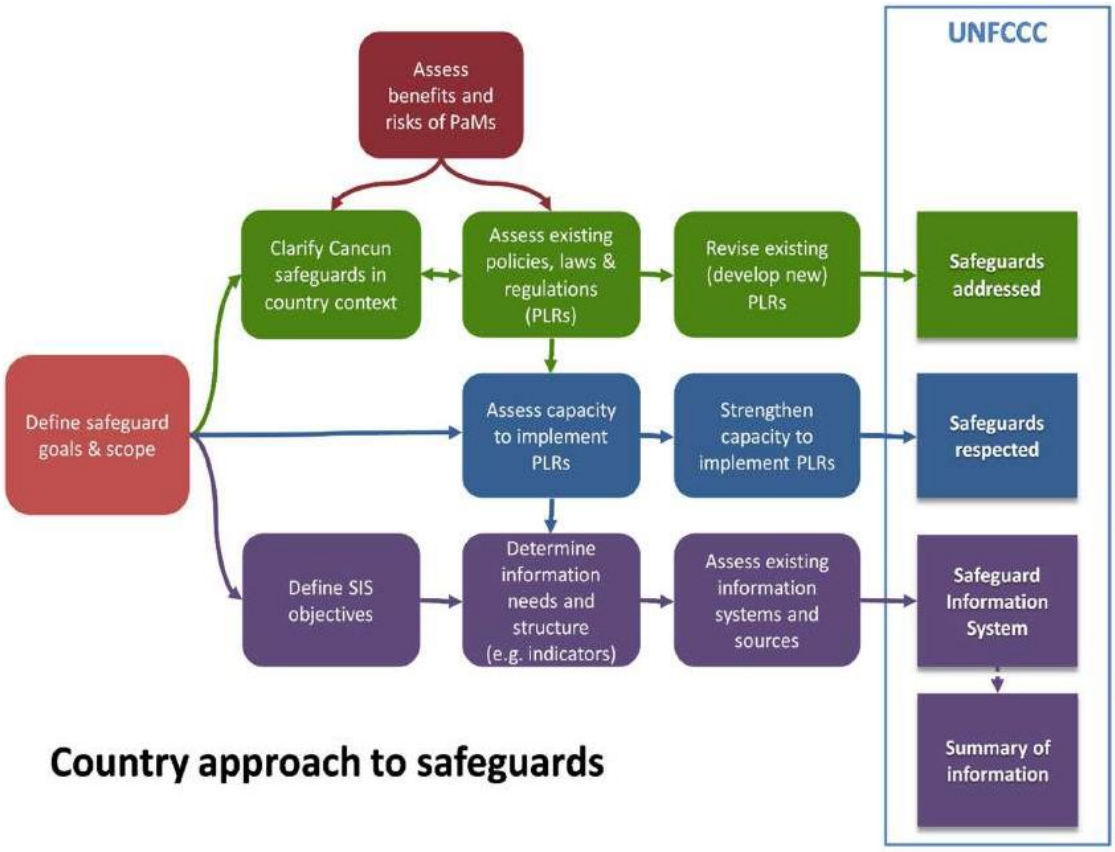
Smart Public Services: By connecting city residents and authorities using innovative Communication technology, cities can become safer, cleaner and the general city standard will improve.

Smart Care: To adapt to changes in population demographics, the development of smarter healthcare services will provide quality services also in the future.

3.4 Road Map and Safe Guards

- Local governments that are thinking about embarking smart city initiatives need to start by developing a roadmap. The top three components to develop a roadmap for a smart city are studying the community, developing a smart city policy, and engaging the community through e-government and a solid citywide Wi-Fi infrastructure. Figure shows illustrates the three-step roadmap process.
- The smart city concept integrates information and communication technology (ICT), and various physical devices connected to the IoT network to optimize the efficiency of city.
- Operations and services and connect to citizens. Smart city technology allows city officials to interact directly with both community and city infrastructure and to monitor what is happening in the city and how the city is evolving. ICT is used to enhance quality, performance and interactivity of urban

services, to reduce costs and resource consumption and to increase contact between citizens and government. Smart city applications are developed to manage urban flows and allow for real-time responses. A smart city may therefore be more prepared to respond to challenges than one with a simple "transactional" relationship with its citizens. Yet, the term itself remains unclear to its specifics and therefore, open to many interpretations.



[Figure 6 Road Map & Safe Guards]

3.5 Issues & Challenges with Smart Village Projects

Issues Concerned with Developing Smart Village Projects

- Under the flagship ―Safe City project, the Union Ministry proposes USD 333 million tomake seven big cities (Delhi, Mumbai, Kolkata, Chennai, Ahmadabad, Bangalore andHyderabad) to center on technological progress rather than manpower.
- Ministry of Urban Development plans to invest more than USD 20 billion in the metro rail projects in coming years. The proposed 534 km, Mumbai- Ahmadabad high speed rail project will have an investment of around USD 10.5 billion.
- The Government of India has approved a USD 4.13 billion plan to spur electric and hybrid vehicle production by laying out an ambitious target of 6 million vehicles by 2020. Electric vehicle charging stations in all urban areas and along all state and national highways by 2027.

- India has invested $1.2 billion so far and hopes to attract more funding from privateinvestors and from abroad. Developing a new or green field Smart City with targetpopulation of 5 to 10 lakhs is likely to require financial investment ranging between INR 75,000 and 150,000 crores and may require 8 – 10 years for implementation.

Challenges for Smart Village Projects in India

- The High Power Expert Committee on Investment Estimates in Urban Infrastructure has assessed a Per Capita Investment Cost of $685 for a 20 yr period. The total estimate of investment requirements for the smart city comes to $113 billion over 20 years (with an annual escalation of 10 percent from 2009-10 to 2014-15) Land acquisition, foreign direct investment and other questions still remain unresolved.
- The establishments that help cities manage electricity, water, waste, traffic flows, municipal operations, and city services are becoming increasingly complex and can be expensive.
- Although the return on investment may be attractive, complexities often make it challenging cities to kick-start their Smart City projects.
- To develop smart cities in India, there is a need to address challenges relating to politicalalliance, financing and stakeholder management. Greater alignment between and within government agencies will be required.
- Building new cities and upgrading existing ones are fraught with challenges pertaining to integrated master planning, political alignment, financing and stakeholder management.
- It is easier to build new ones rather than transform old ones into smart cities. But upgrading cities are also as imperative and it takes anything from two to three decades to do so.
- Other challenges for India include merging technology with law enforcement. There is no point in installing high tech traffic signals if its implementation cannot be enforced.

3.6 Smart Infrastructure - Intelligent Traffic Management

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

Smart Infrastructure Includes Following:

- Smart Building Construction
- Smart Mobility Adoption
- Smart Health Facility
- Smart Energy Conservation
- Smart Waste Management
- Smart Social Infrastructure
- Smart Technology Adoption

3.7 Cyber Security or Any Other Concept As Per The Smart Cyber Protection

- An integral component of the ambitious flagship program of the Indian Government- Digital India, which paves way for a digital data avalanche in the country, is a well-designed digital infrastructure ensuring high connectivity and integration of services, the potential areas being smart cities, smart homes, smart energy and smart grids, to list a few.
- Smart grid is a promising power delivery infrastructure integrated with communication and information technologies which enables monitoring, prediction and management of energy usages.
- In the year 2013, the Ministry of Power (MoP), in consultation with India Smart Grid Forum and India Smart Grid Task Force released a smart grid vision and roadmap for India, a key policy document aligned to Mop's overarching objectives of "Access, Availability and Affordability of Power for All".
- Cyber security in the context of Smart Cities is a hot topic. The objective of Smart Cities is to optimize the city in a dynamic way to offer a better quality of life to the citizens through the application of information and communication technology (ICT). The range of areas where cities can become smarter is extensive: it is an evolution of "Connected Cities" with the prevalence of data exchange at a larger scale. Cyber security or information technology security are the techniques of protecting computers, networks, programs and data from unauthorized access or attacks that are aimed for exploitation. Network security includes activities to protect the usability, reliability, integrity and safety of the network.

3.8 Retrofitting- Redevelopment- Greenfield Development District Cooling

- In the Southeast, air conditioners are almost crucial pieces of equipment for home comfort. However, it can be difficult to find the right air conditioner for your home, one that will provide enough cool air in the summer to cool your home without driving your energy costs through the roof. We can help! At Hammond Services, we can help you choose the perfect air conditioner for your home, install it professionally, and even maintain/repair it in the years ahead.
- District cooling systems supply cold water through pipes in combination with cold storage. Cold water can be produced from waste heat through the use of steam turbine-driven or absorption chillers; from free cooling sources such as lakes, rivers or seas; and via electric chillers.
- District heating has been in use since the 1880s and has advanced significantly since then. Many district heating systems around the world require modernization to bring them to a reliable standard.
- Through heat storage, smart systems and flexible supply, these systems are an inexpensive solution for creating the flexibility required to integrate high levels of variable renewable energy into the electricity grid.
- Fourth-generation systems are located closer to load centres and generators than are Traditional central station generating plants, and the distributive nature and scale of these systems allows for a more nodal and web-like framework, enhancing accessibility to the grid through multiple points.

3.9 Strategic Options for Fast Development

- Retrofitting will introduce planning in an existing built-up area to achieve smart city. Objectives, along with other objectives, to make the existing area more efficient and liveable. In retrofitting, an area consisting of more than 500 acres will be identified by the city in consultation with citizens.
- Redevelopment will effect a replacement of the existing built-up environment and enable co-creation of a new layout with enhanced infrastructure using mixed land use and increased density. Redevelopment envisages an area of more than 50 acres, identified by Urban Local Bodies (ULBs) in consultation with citizens.
- Green field developments could be located either within the limits of the ULB or within the limits of the local Urban Development Authority (UDA).
- Pan-city development envisages application of selected Smart Solutions to the existing citywide infrastructure. Application of Smart Solutions will involve the use of technology, information and data to make infrastructure and services better.

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

India's Urban Water and Sanitation Challenges

Conventional urban water supply and sanitation management is generally characterized by an unsustainable use of water and nutrients. This represents important environmental, economic and social challenges, which are intensified by the process of urbanization.

- Disruption of the natural water cycle
- Pollution of water sources
- Depletion of groundwater sources
- Broken nutrient cycles and impoverished soils
- Waste of resources
- High water demand
- Cost-intensive infrastructure for water supply and wastewater collection

Role of Indigenous Technologies

- Swatch Bharat Abhiyan was launched by Hon'ble Prime Minister of India on 2nd October, 2015, which caught attention of everybody not only in India, but also in the world. The government thus taken various steps to create awareness among the masses for keeping the area surrounding them neat and clean. Government is also paying special attention for cleaning of rivers, railway stations, tourist destinations and other public places.
- To achieve the target of cleanliness, the technologies to treat the waste material should also be developed along with creating awareness. There are many technologies that are used to treat waste

material. They are usually very costly, very complex to be understood and viable only for large size units. At the same time, indigenous technologies are low cost capital and easy to use and they can also be used by different size units. In India, they are particularly suitable for the small and medium units. In this regard, a National workshop on Indigenous water, Wastewater and Solid Waste Treatment Technologies was organised by the Department of Atomic Energy (DAE) in January, 2015 at Gujarat Technological University (GTU) in Ahmadabad.

- The objective of the workshop was to disseminate indigenous technologies of water, wastewater and solid waste treatment developed by the Bhabha Atomic Research Centre (BARC) under "Swatchh Bharat Abhiyan" and to bridge gap between the research at the research centres and the practical application of the technologies. The BARC is playing a pivotal role in the development of these technologies.

3.11 Initiatives In Village Development By Local Self-Government

- Since 1992, local government in India takes place in two very distinct forms. Urban Localities, covered in the 74th amendment to the Constitution, have Nagar Palika but derive their powers from the individual state governments, while the powers of rural localities have been formalized under the Panchayat raj system, under the 73rd amendment to the Constitution. For the history of traditional local government in India and South Asia, see Panchayat raj.
- 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.
- Having moved a step ahead with the release of the draft concept note on the smart city scheme, the government is geared up to launch the Saansad Adarsh Gram Yojana (SAGY) on Saturday at a function to celebrate the birth anniversary of Jayaprakash Narayan.
- The programme, a brainchild of the rural development ministry, is aimed at driving all-round development of villages through a participative approach and will use the existing funds allocated for various development projects.

3.12 Smart Initiatives by District Municipal Corporation

- Managing solid waste is a daunting task for every urban local body (ULB) in India. The irony is such that out of 400 municipal corporations and councils in India, only a handful of ULBs are managing their solid waste management, while reinventing some of the age-old garbage disposal methods with a touch of new technologies. The Council has listed some of the proven examples that can be considered for tackling such a sensitive issue.
- Take Pune's example. The city has managed to tackle the waste of over 1,700 tones that it generates daily, while ensuring minimization of land fill, freeing up urban land for more productive purposes. At present, the Pune Municipal Corporation (PMC) has combined an integrated approach with

decentralized waste management by installing 25 bio-methane plants that produce 600 kW of electricity and compost as a by-product.

The New And Modern Approach To The Solid Waste Management Is As Stated Below:

- Integration of SWM with other activities viz. sewerage, water supply, health care, engineering departments, etc.
- Emphasis was laid on Complaint redressed system, Grievance redressed system, Litter Prevention system, Slum Up gradation & Rehabilitation, Field work, daily meeting in this Regard, etc.

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

Lake Redevelopment Project:

In Maktupur Village, there is a lake named Maktupur Lake, Which is recently redeveloped by Ajay Engineering Pvt Ltd for the wellness of the villagers and is renamed as Hirabha Datt Sarovar in which they have made available some few essential & recreational activities such as:

- Jashiben Hirabhai Patel Children's Park
- Datt Temple
- Jivibaa Open Library
- Amthabha Garden Gym
- Pashabha Walkway
- Ichabaa Water Point
- Nilesh Children's Worm
- Menabaa Birds House


દત્તમંદિર


મનાબા પક્ષીઘર


જીવીબા
ગ્રંથાલય


અમથાભા ગાર્ડન જીમ
: સમય :
સવારે ૫ થી ૯, સાંજે ૫ થી ૭


અમથાભા
ગાર્ડન જીમ


ઈચ્છાબા
પરબ

[Figure 7 Infrastructure Facilities of Maktupur Village]

3.14 How To Implement Other Countries Smart Villages Projects in Indian Village Context (Regarding Environment , Employment)

Seen in the worldwide context, there are several initiatives promoting or using the concept of the Smart Villages.Smart Village initiative: new thinking for off-grid communities worldwide and IEEE Smart Village: Empowering off-grid communities are both worldwide active and striving to meet the SDG 2030, especially goal 7, Affordable and Clean Energy. The first one promotes access to sustainable energy as a main catalyst for the development of good education and healthcare systems, access to clean water, sanitation, economic growth, enhanced security, gender equality, etc. The most important vision of the Initiative is to apply more holistic and integrated approaches to enable the access to the energy in the rural contexts, while connecting/involving governments, developmental and private sector in the process. The component most emphasized is how to connect renewable sources of energy with ICT.The activities of the Initiative are taking place in six large regions, namely East Africa, West Africa, Sustainability **2018**, 10, 2559 4 of 14 South Asia, South-East Asia, South America, and Central America, Caribbean, Mexico—the so-called developing world with limited possibilities to access (educational, electrical, economic and other) infrastructure. To find the most suitable solutions, there is a wide range of professionals working on the field and otherwise: villagers, NGOs, development organizations, entrepreneurs, policy makers, engineers, and

experts from the field of humanities. Their search for solutions is encompassing and, based on long-term research, analysing local and regional circumstances, identifying cross-cutting issues and proposing suitable solutions. More than 30 workshops have been organized whereMore than thousand stakeholders from 70 countries have presented their views and evidence (p. 140). By now, the majority of their activities was funded by Cambridge Malaysian Education and Development Trust and Malaysian Commonwealth Studies Centre. Similarly, the IEEE Smart Village initiative is aiming to promote off-grid communities through education and the creation of sustainable businesses in the energy sector. The initiative was originally established as a Community Solutions Initiative (2009) and took over the current name in 2014. The activities are spread worldwide, by now serving more than 50,000 people, living in 34 villages, mostly located in African continent (e.g., Benin, Cameroon, Kenya, Malawi, Namibia, Nigeria, South Sudan, Zambia), but also in Haiti and India. Its main financing mechanism is fundraising. Besides the development of energy-smart villages mentioned before, the main products of the initiative's efforts are a Sun Blazer II— a mobile solar-based power base station and Learning beyond the Light Bulb— a nine-month program of remote study that enables the exchange of practices of all communities in order to create the mutual benefit, and equips the students with knowledge on different development models and other skills and knowledge needed for the fieldwork.

It has already been noted that the implementation of smart concepts into regional, both rural and urban contexts has to be adapted to socio-cultural and environmental circumstances. Thus, in the cities, different issues need to be tackled than in rural areas, where the main challenge is to bridge the distances among relatively small number of people. In the context of digital transformation that is at Sustainability **2018**, 10, 2559 9 of 14 the forefront of our interest, this means that also digitalization requires adapted concepts, business models and solutions that have to strive to generally improve the well-being of the rural population. In the context of this paper, we are concentrating on Slovenia as a part of the Alpine space region, thus also sharing its problematic. In this regional view, a need for strategic approach towards some major challenges has been noted: Towards Economic globalization, Demographic trend, Climate change, the energy challenge, Alpine region as a transit region. As a solution to the above listed problematic, the project Smart Digital Transformation of Villages in the Alpine Space (Smart Villages) has been proposed and also approved for funding (Interred Alpine Space funding)
in 2018. The partnership consists of 13 partners from six countries included in the Alpine space region (Italy, Austria, Germany, France, Switzerland, Slovenia), thus covering a great majority of the regional territory.
Main challenges that the Smart Villages project is addressing are in line and complementary to sustainable development goals, EU Action for Smart Villages, EU Rural Development Policy, and proposed objectives of the Bled Declaration. More precisely, it addresses the causes for (youth) brain drain in the region: deprivation of jobs, provision of services, favourable climate for entrepreneurship and social innovation. The project aims to bring together stakeholders from different sectors and to improve the quality of life in villages and small cities through sustainable solutions facilitated by ICT.
It is necessary to learn and draw on good practices from other countries, but meanwhile it is also necessary to consider local and regional frameworks within which the implementation of the Smart Village concept will take place. As it has already been noted by others, what is also of vital importance is the quality of rural life. The perceptions of the important building blocks are—once again—locally/regionally conditioned. Therefore, similar to the concept of the "smart" development, the quality of life or well-being of the people are also very slippery and hard to precisely define.
In line with the abovementioned challenges of the Alpine space region, it is necessary to recognize and address the main reasons for the youth brain drain. Moreover, not only to identify the indicators for the quality of life in the chosen area, but also to evaluate their accessibility is essential in understanding
the real-life situations.

CHAPTER 4

BILASIYA VILLAGE

4.1 Introduction

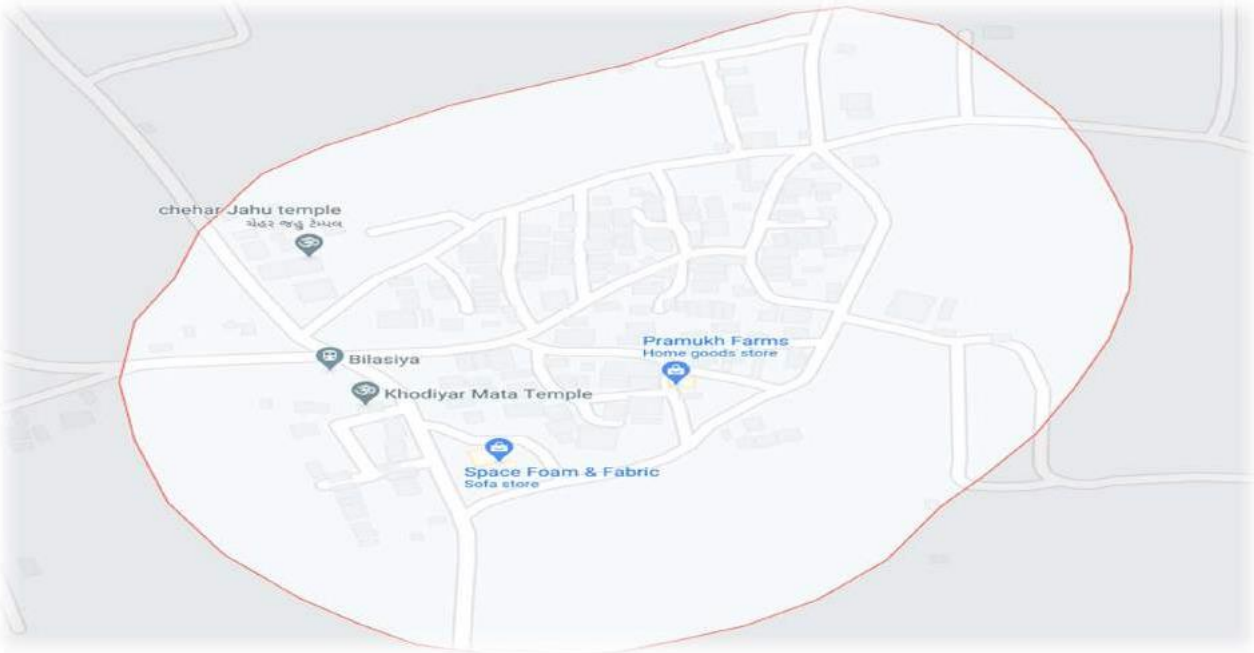
4.1.1 Introduction About Bilasiya Village:

[Table 4 Bilasiya Village Biography]

Village Name:	Bilasiya
Village Area:	10 KM 2
Locality Name:	Near Dahegam Junction Sardar Patel Ring Road
Taluka Name:	Daskroi
District:	Ahmedabad
State:	Gujarat
Language Known:	Gujarati & Hindi
STD Code:	382330

- Bilasiya Village, with population of 2571 is, located in Ahmedabad district in the state Gujarat in India. Total geographical area of Bilasiya village is 10 km2 and it is the 11th biggest village by area in the sub district. Population density of the village is 47 persons per km2.

- Nearest town of the village is Ahmedabad and distance from Bilasiya village to Ahmedabad is 25 km. The village has its own post office and the pin code of Bilasiya village is 382330. The village comes under Bilasiya Panchayat. Daskroi is the sub district head quarter and the distance from the village is 12 km. District head quarter of the village is Ahmedabad which is 25 km away.



[Figure 8 Positioning Map Of Bilasiya Village]

4.1.2 Justification/ Need of the study

Vishwakarma Yojana is one of the initiatives towards Rurbanisation by government of Gujarat, which was allotted as a pilot project to GTU. The students and Faculty Members meet all the stakeholders in a village, survey the existing facilities. Then they re-imagine and re-design the whole of the infrastructure of the village. The students and Faculty Members meet all the stake-holders in a village, survey the existing facilities. Then they re-imagine and re-design the whole of the infrastructure of the village. The students use their engineering skills to prepare detailed project reports for the infra-structure as a part of their Final Year project work.

67.63% of India's population, or 750 million, live in its 638000 villages. The towns are expands significantly towards its fringe villages, more and more villages accommodates rapidly over a period of time hence the issues of these villages regarding the haphazard physical development and infrastructure services and finally to the quality of the life of the villagers decrease. The fringe villages gradually shift towards area under the stress due to remarkable growth of population, built structure and increasing demand of the land. These issues can be solved at an institutional level.

It is necessary to study the appropriate method of planning and management to solve the problems which can lead these villages has the better quality of life.

4.1.3 Study Area (Broadly define)

Bilasiya is a Village in Daskroi Taluka in Ahmedabad District of Gujarat State, India. It is located 25 KM towards from District headquarters Ahmadabad 27 KM from State capital Gandhinagar.

[Table 5 Detailed Bilasiya Village Biography]

Village Name:	Bilasiya
Village Area:	10 KM 2
Locality Name:	Near Dahegam Junction Sardar Patel Ring Road
Taluka Name:	Daskroi
District:	Ahmedabad
State:	Gujarat
Language Known:	Gujarati & Hindi
STD Code:	382330
Elevation / Altitude:	35 Meters Above Sea Level, 23.08, 72.70
Assembly Constituency:	Daskroi Assembly Constituency
Lok Shaba Constituency:	Kheda Parliamentary Constituency

4.1.4 Objectives of the study

- Creation of infrastructure – connectivity, civic and social infrastructure along with Provision of alternative livelihood generation are the key pillars.
- Basic Socio-cultural Infrastructure – Community hall, Public library, recreation facilities should be the priority focus and be provided.
- Basic Sustainable Infrastructure – Rainwater harvesting system, Bio gas plant, solar street light facilities, eco-friendly toilet should be provided and ensure proper delivery of facilities to village dwellers.
- To study the existing growth, characteristics and development of villages.
- To study the existing infrastructure facilities and its management issues phasing by villages.
- To analyse all feasibility parameters and relevant factors for sustainable development of villages.
- To evolve strategic planning proposal in the form of physical, social, and renewable infrastructure facilities for the development of villages, channelizing urban growth and to sustain future.
- Promote integrated development of rural areas with provision of quality housing, better connectivity, employment opportunities and supporting physical and social infrastructure.

4.1.5 Scope of the Study

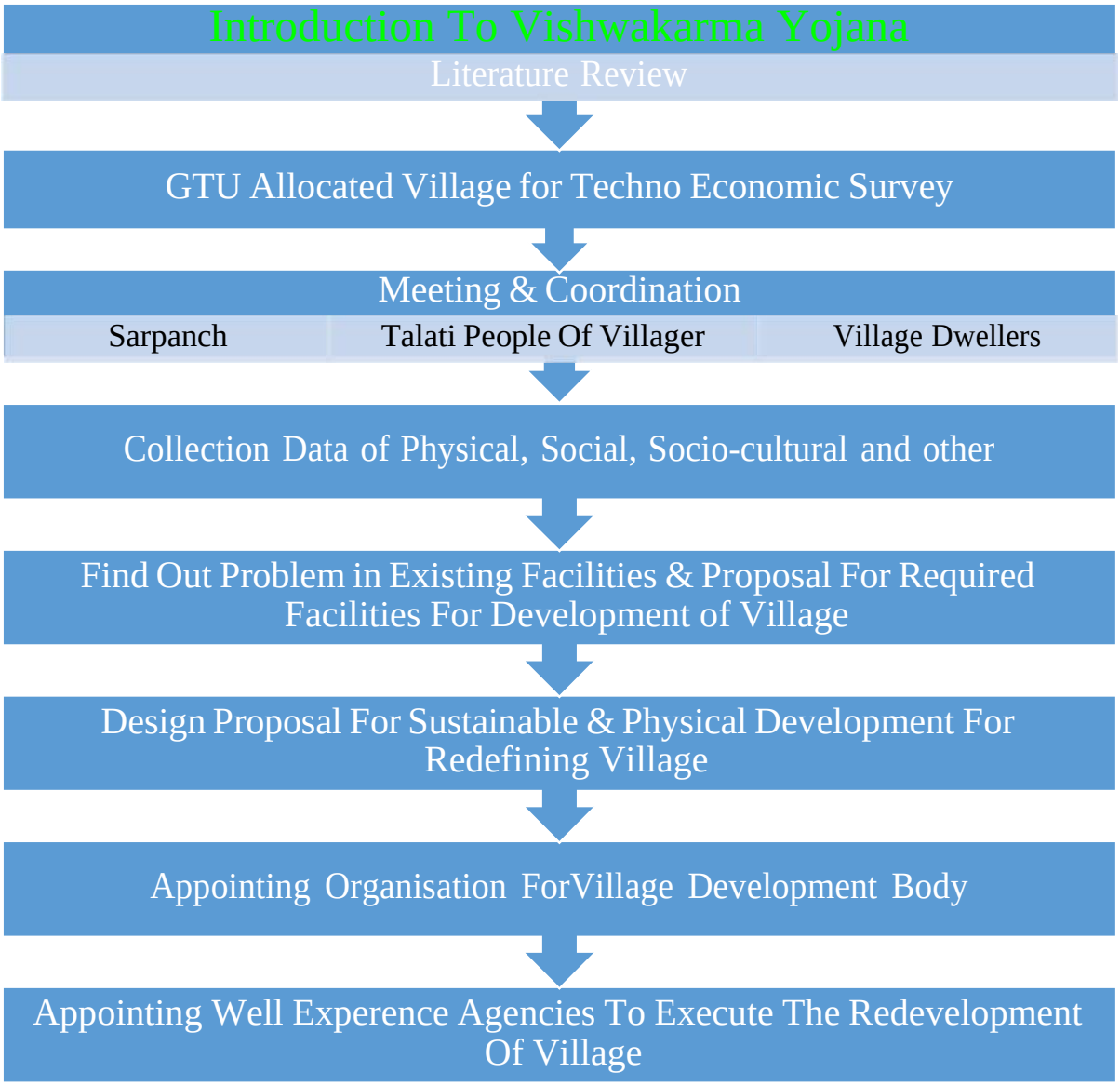
- The study will focus the development trend, growth of the village, and find out the problems related to the physical development of the area and infrastructure services of the village.
- To provide modern & smart facilities for future development of village will be more reliable.
- To find a way which can reduce the migration gap.

- Development strategies for village development will be proposed and planning proposals for Physical infrastructure, Social Infrastructure and Renewable energy Source will be suggested for the village.
- The study will focus the development trend, intensity of growth of the village and find out the problems related to the physical development of the area and infrastructure services of the village. The project proposal and sustainability aspect is not considered in micro level, it is only guiding way.

4.1.6 Methodology Frame Work for Development of Your Village

The methodology for the study and the sequence in which the various stages are as shown in chart:

[Table 6 VY – 8 Village Development Methodology]



4.1.7 Available Methodology for Development Related to Civil

- Water Tank Facility
- Transportation Facility
- Road Connectivity
- Ayurveda Treatment Concept
- Electricity 24 Hr Available

4.2 Study Area Profile

4.2.1 Study Area Location with brief History land use details

- Bilasiya is a Village in Daskroi Taluka in Ahmadabad District of Gujarat State, India.
- It is located 11 KM towards East from District head Quarters Ahmedabad.

[Table 7 Detailed Bilasiya Village Profile]

Village Name:	Bilasiya
Village Area:	10 KM 2
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Assembly Constituency:	Daskroi Assembly Constituency
Lok Sabha Constituency:	Kheda Parliamentary Constituency

4.2.2 Base Location map, Land Map, Gram Tal Map

[Figure 9 Positioning Of Bilasiya Village]

[Figure 10 Land Map Of Bilasiya Village]

4.2.3 Physical & Demographical Growth

[Table 8 Physical & Demographical Growth]

CENSUS	MALE	FEMALE	POPULATION	Total No Of Households
2001	603	540	1143	491
2011	1376	1171	2547	763

4.2.4 Economic Generation Profile / Banks

Bilasiya has 74% population engaged in either main or marginal works. 71% male and 47% female population are working population. 38% of total male population are main (full time) workers and 33% are marginal (part time) workers. For women 34% of total female population are main and 13% are marginal workers.

There is a Kotak Mahindra bank available in Bilasiya Village for Money Transaction.

4.2.5 Actual Problem Faced by Villagers & Smart Solution

- Lack of Waste Management System
  Solution: Waste Disposing Unit Can Installed.
- Lack of Education Facility
  Solution: A Primary, Secondary & Higher Secondary School Development Is Required.
- Lack of Hospital & Medical Availability
  Solution: Availing New Hospital & Medical Facilities.
- Lack of Modern Amenities
  Solution: Availing all the required and necessary smart and easy working amenities to villagers.

4.2.6 Social scenario -Preservation of traditions, Festivals, Cuisine

- It was found that all the people of this village are not connected with today's technology, So they lack modern civilisation.
- The major crops produced in the village are Wheat, Cotton & Paddy, etc.
- The major population of village people get income through the business work, farming work,& working as maidand no other job opportunities are available.
- The education is limited to Primary & Secondary.

[Table 9 Social Scenario of Village]

Number of Households	800 +
Population	2500 +
Male Population	1300 +
Female Population	1250 +
Sex-ratio	M = 1000 & F = 943
Literacy	40 %
Lifestyle	Low Modern Adoption
Tradition	Old Tradition

4.2.7 Migration Reasons / Trends

- Due To Modern Civilization & Modern Amenities.
- Modern Lifestyle
- Due To More Development In Metro City Such As Ahmedabad.
- Due To Change Of Living Culture In Social Science.
- Due To New Trends Of Life
- Easy Availability Of Grocery & Essential Needs.
- Due To Low Working and High Earnings Concept

4.3 Bilasiya Village Data Collection (Photograph/Graphs/Charts/Table)

4.3.1 Describe Methods for Data Collection

If required of data collection, then it can be obtained by conducting local surveys of village, which are as following:

1. Participatory Survey
2. Base line Survey
3. Hand-out Survey
4. Mail survey
5. Face to Face survey
6. Electronic Survey
7. Questionnaire survey

Base line survey is a standard for any intervention during and post application of any development program. A complete baseline survey was undertaken which involved household census survey, bio-physical survey and Village level data collection from Talati. This gave in the details of the Demographic profile of the village, the literacy percentage, SC/ST population, cattle population and net consumption rate in the village, average milk production of the cattle and various schemes running and their benefits Bio- physical survey was undertaken to identify various natural resources available in the village. It included the soil typology, well in the area, crop taken in the field, cropping pattern, fertilizer used and various sources of irrigation in the field.

4.3.2 Primary Details of Survey Details

- Bilasiya Village, with population of 2571 is, located in Ahmedabad district in the state Gujarat in India. Total geographical area of Bilasiya village is 10 km2 and it is the 11th biggest village by area in the sub district. Population density of the village is 47 persons per km2.
- Nearest town of the village is Ahmedabad and distance from Bilasiya village to Ahmedabad is 25 km. The village has its own post office and the pin code of Bilasiya village is 382330. The village comes under Bilasiya Panchayat. Daskroiis the sub district head quarter and the distance from the village is 12 km. District head quarter of the village is Ahmedabad which is 25 km away.

4.3.3 Average Size of the House - Geo-Tagging of House

- Average Size Of Each House is 100 Sq*Ft.
- There are total 800+ houses in village. Most of the houses in village are Pucca houses. The ratio of pakka house is 3:4.
- The process of tagging something (i.e any objects, infrastructure Etc.) with geographical information like latitude, longitude, distance, place name, accuracy data in form of geospatial metadata (may be any QR code, RSS feeds, SMS messages) is called as geotagging.

4.3.4 No of Human Being in One House

- Bilasiya Village has a Population of around 2547.
- Bilasiya Village has a houses around 800+.
- On An Average Each House a human being 3 – 4.

4.3.5 Material Available Locally In the Village and Material Out Sourced By the Villagers

Material Used Locally are: The Temporary or mud houses, Fencing, Temporary Structures are made up of locally available materials.

Material Out Sourced Used are: The Major material is are out sourced for the Permanent Development of village Such as: Cement, Sand, Aggregate, Hardware Tools, etc. are out sourced by the villagers as required and needed.

4.3.6 Geographical Detail

The total geographical area of the village is approximately 887 hectares covering the total area of the village. Out of which 671 hectare is the agricultural land used for farming and other agricultural practices. There is no railway station in Bilasiya less than 21 km. The Soil available is rich in nutrients to grow suitable crops.

4.3.7 Demographical Detail - Cast Wise Population Details / Which ID proof Using by Villagers

The village is home to around 2500+ people, among them 1376 are male and 1171 are female. 49% of the whole population are from general caste, 21% are from schedule caste and 30% are schedule tribes. Child (aged under 6 years) population of Bilasiya village is 7%, among them 53% are boys and 47% are girls. There are 750+ households in the village and an average 3 – 4 persons live in every family.
As per the Census 2011, the literacy rate of Bilasiya is 71.4%**.** Thus Bilasiya village has lower literacy rate compared to 88.2% of Ahmedabad district. The male literacy rate is 77.74% and the female literacy rate is 65.01% in Bilasiya village.

4.3.8 Occupational Detail - Occupation Wise Details / Majority business

In Bilasiya village out of total population, 1571 were engaged in work activities. 47.11 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 53.89 % were involved in Marginal activity providing livelihood for less than 6 months. Of 1571 workers engaged in Main Work, 277 were cultivators (owner or co-owner) while 315 were Agricultural labourer.

4.3.9 Agricultural Details / Organic Farming / Fishery

- Total agricultural area of Bilasiya village are approx. 120 hectare.
- In Bilasiya village 277 were cultivators (owner or co-owner) while 315 were Agricultural Labourer.
- Agricultural credit society is unavailable within the village of Bilasiya and the nearest
- Agricultural credit society is within 7-16 Kms from the village of Bilasiya.

- Agricultural Commodities are: Wheat, Cotton, Paddy, Vegetables, Fruits, Organic Herbs.

4.3.10 Physical Infrastructure Facilities - Manufacturing HUB / Ware Houses

Physical Infrastructure As: Village office, Entrance Gate, Farm House Scheme, Etc.

Manufacturing As: Wheat, Cotton, paddy and milk are the main manufacturing product of this village.

Manufacturing Hub As: Kath Wada GIDC, Odhav GIDC, Naroda GIDC, Etc.

Ware Houses As: Few Ware Houses Available in ranasan village approx. 5 Km.

4.3.11 Tourism Development Available in the Village for Attracting the Tourist

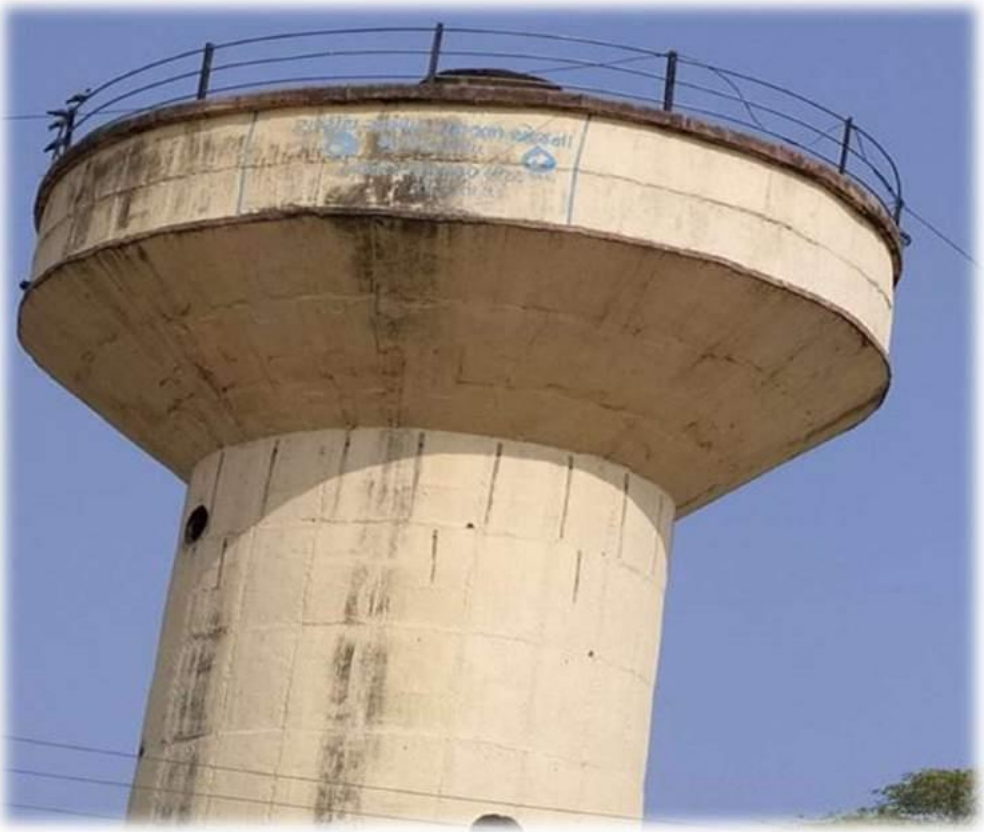
No Special Tourism is available, But Due to Spiritual Temples the village is well known.

4.4 Infrastructure Details (With Exiting Village Photograph)

4.4.1 Drinking Water / Water Management Facilities

The village has one overhead tanks and one tube well bore. Overhead tank capacity is 80000 litters. The village has a drinking water facility also have primary school, gram – Panchayat.

The village has drinking water facility with low TDS.



[Figure 11 Water Tank Of Bilasiya Village]

4.4.2 Drainage Network / Sanitation Facilities

There pipe culvert available for drainage facility and also (Open, Kutchcha) of house water, sanitary water and rainwater to drain it out. In toilet/ latrine waste water should be collected in sump which is privately made in some of the houses of village. So it is essential requirement of village to have a drainage facility. The drainage network / sanitation facilities are underground, so we didn't find the photo for it.

4.4.3 Transportation & Road Network

- In Bilasiya village there are 1 main village road which are Bitumen road is in good condition.
- There are 11 Nos. Of Kuchcha Internal streets in the village which are in poor condition.
- During Monsoon season internal streets are water logged, so it is most required to develop pucca R.C.C. or Bitumen internal streets of village, Also the existing road needs to be resurface with tack coat.
- The nearest State highway is SH-5 from Madhi - Mandvi at nearer to which Balda village is developed. In Balda village, there are 2 main village approach road which are in good condition.

[Figure 12 Transportation & Road Network Of Bilasiya Village]

4.4.4 Housing condition : The Village Has Permanent / Mud / Temporary Houses in the village.

4.4.5 Social Infrastructure Facilities , Health , Education , Community Hall , Library :
The village has Milk co-operative bank, primary school, Gram Panchayat office and Many Spiritual Temples.

4.4.6 Existing Condition of Public Buildings & Maintenance of existing Public Infrastructures : The village has public toilet but condition is not good & requires to refurbish.

[Figure 13 Smart Residential Scheme DevelopmentOf Bilasiya Village]

[Figure 14 Primary School Of Bilasiya Village]

[Figure 15 Road Connectivity Of Bilasiya Village]

[Figure 16 Post Office Of Bilasiya Village]

4.4.7 Technology Mobile/ WIFI / Internet Usage Details : Lack Of Public Wi-Fi Network & Free Private Connection (Internet by Facebook).

4.4.8 Sports Activity as Gram Panchayat : Lack Of Sport activity in village as Gram Panchayat.

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

Other Facilities (e.g like foot path development-Smart toilets-Coin operated entry, self-cleansing, waterless, public building): Lack of Other facilities in village which are essential.

4.5 Electrical Concept

4.5.1 Renewable Energy Source Planning Particularly for Villages : Lack Of This Facility

4.5.2 Irrigation Facilities : The main source of Irrigation facilities are Canal and Tube well.

4.5.3 Electricity Facilities with Area : The village has 24 hr electricity available by HTS poles and wires.

4.6 Existing Institution like - Village Administration – Detail Profile

4.6.1 Bachat Mandali : Yes, the villagers itself run the organization and use it for wellness of villagers.

4.6.2 Dudh Mandali : Yes, the resident of villagers run this organization &provide milk to needy.

4.6.3 Mahila forum : Yes, the female resident runs this organization & aware “Beti Bachao Beti Padhao”.

4.6.4 Plantation for the Air Pollution : Tree Plantation is done on Shoulders of road, to reduce pollution in village.

4.6.5 Rain Water Harvesting - Waste Water Recycling : There is Pond available to store and harvest rain water.

4.6.6 Agricultural Development : The Each and Every Agriculture Land is separated & Covered by Fencing, Also having water pump unit.

CHAPTER 5
Technical Option With Case Studies

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 methods of construction, techniques and technologies have changed little since Roman times. But the application of innovation in the construction industry is not straight forward.

Incorporating advanced construction technology into practice can increase levels of quality, efficiency, safety, sustainability and value for money. However, there is often a conflict between traditional industry methods and innovative new practices, and this is often blamed for the relatively slow rate of technology transfer within the industry.

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. In addition, the weather and other factors can prevent the application of previous experience effectively.

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.

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

- 3D printing.
- Materials.
- Building information modeling (BIM).
- Cladding systems.
- Computer aided design and computer aided manufacturing (CAD/CAM).
- Computer numerical control.
- Construction Innovation Hub.
- Construction plant.
- Modern methods of construction.
- Modular construction.
- Offsite manufacturing.
- Prefabrication and preassembly.
- Research and development.
- Site investigations and surveying.
- Substructure works.
- Water engineering.
- Temporary works.

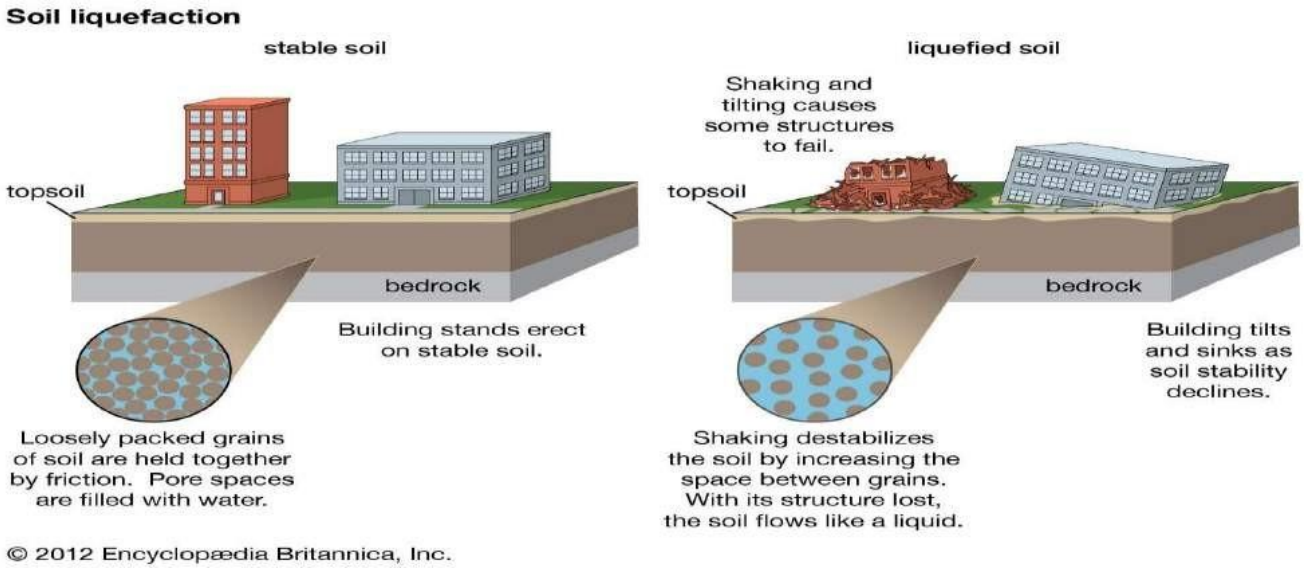
- Smart technology.
- Robotics.
- GPS controlled equipment.

5.1.2 Soil Liquefaction :

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

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



[Figure 17 Soil Liquefaction]

5.1.3 Sustainable Sanitation:

Sustainable sanitation is a sanitation system designed to meet certain criteria and to work well over the long-term. Sustainable sanitation systems consider the entire "sanitation value chain", from the experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment, and reuse or disposal. The Sustainable Sanitation Alliance (SuSanA) includes five features (or criteria) in its definition of "sustainable sanitation": Systems need to be economically and socially acceptable, technically and institutionally appropriate and protect the environment and natural resources.
The purpose of sustainable sanitation is the same as sanitation in general: to protect human health. However, "sustainable sanitation" attends to all processes of the system: This includes methods of collecting, transporting, treating and the disposal (or reuse) of waste.
The main objective of a sanitation system is to protect and promote human health by providing a clean environment and breaking the cycle of disease. In order to be sustainable a sanitation system has to be not only economically viable, socially acceptable, and technically and institutionally appropriate, but it should also protect the environment and the natural resources. According to the Sustainable Sanitation Alliance, when improving an existing and/or designing a new sanitation system, sustainability criteria related to the following aspects should be considered.

5.1.4 Transport Infrastructure / System

Intelligent Transportation System (ITS) applies advanced technologies of electronics, communications, computers, control and sensing and detecting in all kinds of transportation system in order to improve safety, efficiency and service, and traffic situation through transmitting real-time information.

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.

Governments deal with the way the vehicles are operated, and the procedures set for this purpose, including financing, legalities, and policies. In the transport industry, operations and ownership of infrastructure can be either public or private, depending on the country and mode.

Passenger transport may be public, where operators provide scheduled services, or private. Freight transport has become focused on containerization, although bulk transport is used for large volumes of durable items. Transport plays an important part in economic growth and globalization, but most types cause air pollution and use large amounts of land. While it is heavily subsidized by governments, good planning of transport is essential to make traffic flow and restrain urban sprawl.

Human-powered transport remains common in developing countries

Human-powered transport, a form of sustainable transport, is the transport of people and/or goods using human muscle-power, in the form of walking, running and swimming. Modern technology has allowed machines to enhance human power. Human-powered transport remains popular for reasons of cost-saving, leisure, physical exercise, and environmentalism; it is sometimes the only type available, especially in underdeveloped or inaccessible regions.

Although humans are able to walk without infrastructure, the transport can be enhanced through the use of roads, especially when using the human power with vehicles, such as bicycles and inline skates. Human-powered vehicles have also been developed for difficult environments, such as snow and water, by watercraft rowing and skiing; even the air can be entered with human-powered aircraft.

5.1.5 Vertical Farming:

Vertical farming is the practice of growing crops in vertically stacked layers. It often incorporates controlled-environment agriculture, which aims to optimize plant growth, and soilless farming techniques such as hydroponics, aquaponics, and aeroponics. Some common choices of structures to house vertical farming systems include buildings, shipping containers, tunnels, and abandoned mine shafts. As of 2020, there is the equivalent of about 30 ha (74 acres) of operational vertical farmland in the world. The modern concept of vertical farming was proposed in 1999 by Dickson Despommier, professor of Public and Environmental Health at Columbia University. Despommier and his students came up with a design of a skyscraper farm that could feed 50,000 people. Although the design has not yet been built, it successfully popularized the idea of vertical farming. Current applications of vertical farming's coupled with other state- of-the-art technologies, such as specialized LED lights, have resulted in over 10 times the crop yield than would receive through traditional farming methods.

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

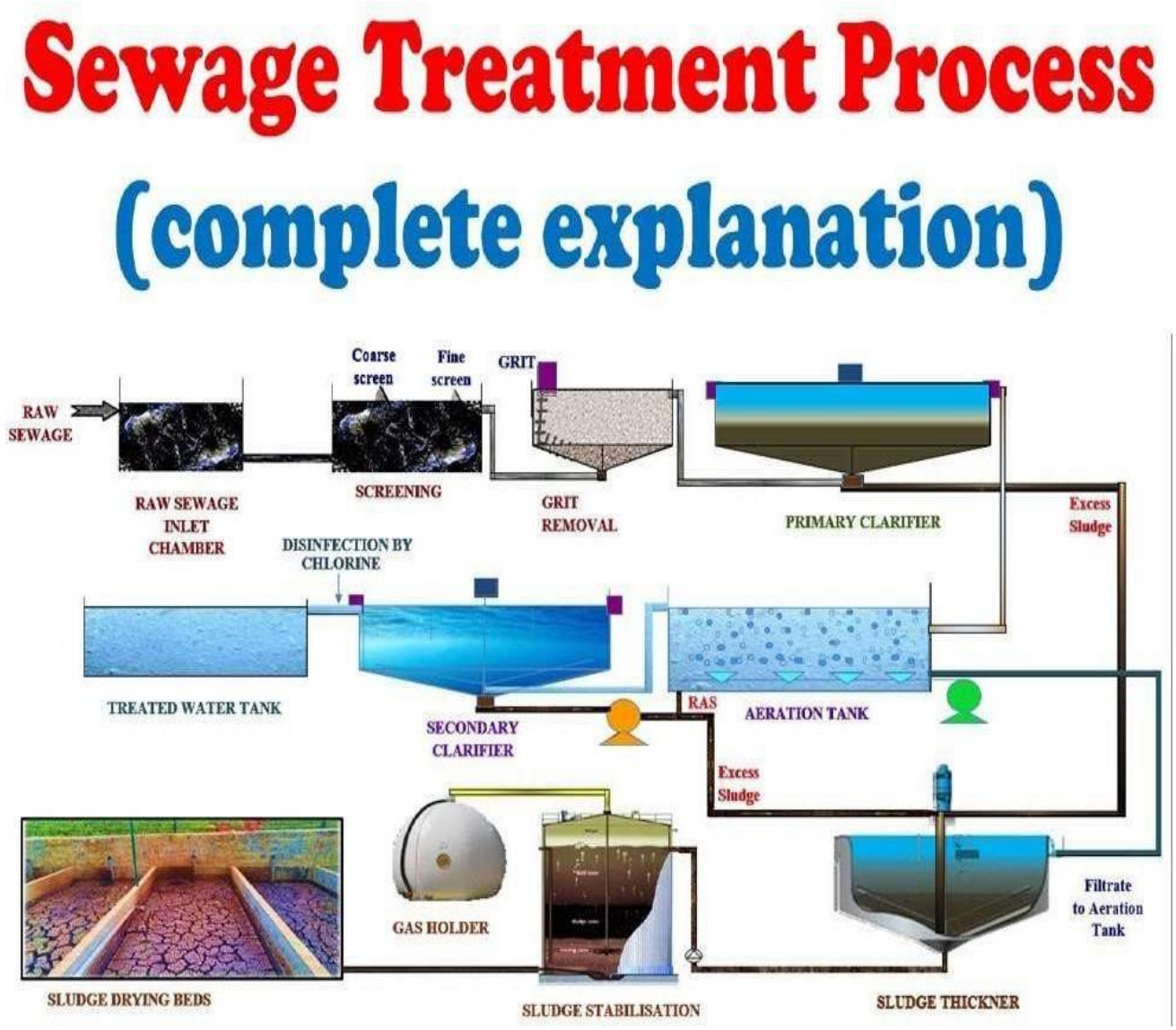
Vertical farming technologies face economic challenges with large start-up costs compared to traditional farms. In Victoria, Australia, a "hypothetical 10 level vertical farm" would cost over 850 times more per square meter of arable land than a traditional farm in rural Victoria. Vertical farms also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

[Figure 18 Vertical Farming]

5.1.6 Sewage Treatment Plant:

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

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



[Figure 19 STP Process]

5.1.7 Corrosion Mechanism, Prevention & Repair Measures of RCC Structure

The durability of concrete structures is influenced by various factors, for example, ecological presentation, electrochemical responses, mechanical stacking, affect harm and others. Of all of these, consumption of the fortification is likely the primary driver for the disintegration of steel strengthen cement (RC) structures.

Consumption administration is ending up progressively important because of the developing number of maturing foundation resources (e.g. spans, burrows and so on.) and the expanded prerequisite for impromptu upkeep with a specific end goal to keep these structures operational all through their outline life (and usually, past).

The primary RC repair, restoration and recovery approaches by and large utilized can be extensively arranged under a) ordinary, b) surface medications, c) electrochemical medicines and d) outline arrangements. The overall point of this examination was to recognize the key consumption administration strategies and embrace exact examinations concentrated on full-scale RC structures to explore their long haul execution.

Their commitments might be comprehensively arranged as I) Investigations on how particular medications and materials perform, ii) Investigations on the viability of existing techniques for estimations and creating options, iii) Changes to the current hypothesis of consumption commencement and capture furthermore iv) Changes to administration system methodologies.

5.1.8 PSC Voided Slab:

Abstract:
A voided slab is a concept that simply removes the excess concrete from the expensive part of the structure slab. It was invented by Jorgan Breuning of Denmark about 20 years ago. It is now gaining popularity both in Europe and in Asia. This paper reviewed the several study done on voided slab system. All technical parameters of voided slab system on which experimental study have been carried out by authors are tabulated in this paper systematically. The realization of the proposed objectives involves documentation activity and theoretical study of all work done by several authors on voided slab concept. The resultant conclusion will be used in defining the failing mechanism that can be useful in the formulation of an adequate mathematical model.

Keywords-Voided slab, Bubble deck, Cobi ax, U-boot, Air deck, Bee plate system, Structural behavior, Punching shear capacity, HDPE, Spherical voided formers,

INTRODUCTION:

This review presents the different types of hollow core slab technology that have appeared over last twenty years. The voided slabs are reinforced concrete slabs in which voids allow to reduce the amount (volume) of concrete. The invention of the hollow slab was in 1950s. But it was used only in one way spanning construction, and must be supported by beams and / or fixed walls. The idea was to create a hollow biaxial slab with the same capabilities as a solid slab, but with considerably less weight due to the elimination of excess concrete. In building constructions, the slab is a very important structural member to make a space. And the slab is one of the largest member consuming concrete. The main obstacle with concrete constructions, in case of horizontal slabs, is the high weight, which limits the span. For this reason major developments of reinforced concrete have focused on enhancing the span reducing the weight or overcoming

concrete's natural weakness in tension. In a general way, the slab was designed only to resist vertical load. However, as people are getting more interest of residential environment recently, noise and vibration of slab are getting more important, as the span is increased; the deflection of the slab is also increased. Therefore, the slab thickness should be increase. Increasing the slab thickness makes the slabs heavier, and will increased column and foundations size. Thus, it makes buildings consuming more materials such as concrete and steel reinforcement. To avoid these disadvantages which were caused by increasing of self-weight of slabs, the voided slab system, was suggested.

LITERATURE REVIEW:

Bubble Deck In the middle of 1990s, a new system was invented in Denmark by Jorgan Breuning to ensure the reduction of dead weight with more than 30% and allowing longer spans between supports which is called bubble deck system. Bubble deck is based on new patented technique which involves the direct way of linking air and steel to creating a natural cell structure acting like a solid slab. For the first time, bubble deck with the same capability as a solid slab, but with considerably less weight due to elimination of superfluous concrete. In this technology, it locks ellipsoid between the top and bottom reinforcement meshes, thereby creating a natural cell structure acting like a solid slab. To replace the superfluous concrete, a HDPE hollow spheres are used in the Centre of slab.

DISCUSSION:

A) Shear strength The results of a number of practical tests confirm that the shear strength depends on the effective mass of concrete. The shear capacity is measured to be in the range of 72-91% of the shear capacity of a solid deck. In calculations, factor of 0.6 is used on the shear capacity for a solid deck of identical height. This guarantees a large safety margins. Areas with high shear loads need therefore a special attention, e.g. around columns. That is solved by omitting a few balls in the critical area around the columns, therefore, giving full shear capacity. Shear strength of slab mainly depend on effective mass of concrete, as the special geometry shaped by the ellipsoidal voids acts like the famous roman arch, hence enabling all concrete to be effective. This is only valid when considering the bubble deck technology. ; Due to use of plastic bubbles, the shear resistance of bubble deck greatly reduces in comparison of solid slabs. In any flat slab, design shear resistance is usually critical near columns. The shear stresses removed from the columns diminishes rapidly outside the column zones it has been demonstrated by testing and calculation and longitudinal shear stresses are within the capacity of the bubble deck slab system. Near the columns, bubbles are left out so in these zones a bubble deck slab is designed exactly the same way as the solid slab.

B) Bending strength Bubble Deck when compared to a solid deck, both practically and theoretically. The results in the table below shows that for the same deck thickness, the bending strength is same for Bubble Deck and for a solid deck and that the stiffness of the Bubble Deck is slightly lower. Bending stresses in the Bubble Deck slab are found to be 6.43% lesser than that of solid slab. The ultimate load value obtaining bending tests were upto 90% greater than the ultimate load value. The bottom reinforcement steel and the top compressive portion of stress block contributes to flexural stiffness in the bending.

C) Comparison of Cost Price In connection with the general tests, a total cost price calculation of the Town Hall in den Haag is carried out. The Town Hall was built with prestressed monolithic elements. The complete construction has been evaluated in order to make a reliable comparison. Two types of comparisons were made: 1. Bubble Deck and a solid deck were compared in three various arrangements– alteration of placement of columns. The calculations were made for increasing spans in the x direction. For a given combination of span and deck thickness, Bubble Deck was 5…16% less expensive than a solid deck. It is important to emphasize that the optimal combination of deck thickness and placement of columns with

Bubble Deck differs from a solid deck. A correct comparison must take this fact into consideration, which was made in the second comparison: 2. Two variants of Bubble Deck were compared; the result was clear – the Bubble Deck building was significant less expensive than the traditional system. The total savings was in the order of 20%.

D) Behavior under seismic loads a non-linear dynamic analysis was conducted by Gislason at Sigillum UniversitatisIslandiae, on a 16-storey office building structure, planned to be built in Reykjavik, Iceland. The building was designed with floor system, as the first one in Iceland, having biaxial hollow slabs with spherical bubbles. Additionally, a comparison on the earthquake effects on buildings for several floor systems was conducted, and the impact of placing the building in Selfoss, a stronger earthquake zone in South-Iceland, was studied. The main conclusions have evidenced the following aspects: - two floors can be added for a fixed total height of the building, if Bubble Deck are used instead of normal slabs; - the building will sustain considerably smaller earthquake forces, as a result of using Bubble Deck instead of normal slabs; - due to large wall surfaces, wind load is dominant for lateral load design.

E) Fire Resistance The fire resistance of the slab is a complex matter but is chiefly dependent on ability of the steel to retain sufficient strength during a fire when it will be heated and lose significant strength as the temperature rises. The temperature of the steel is controlled by fire and the insulation of the steel from the fire. In any case, all concrete is cracked, and in a fire, it is likely that the air would escape and the pressure dissipated. If the standard bubble material is used (HDPE), the products of combustion are relatively benign, certainly compared to other materials that would also be burning in the vicinity. In an intense, prolonged fire, the ball would melt and eventually char without significant or detectable effect. Fire resistance depends on concrete cover nearly 60-180 minutes. Smoke resistance is about 1.5 times the fire resistances.

CONCLUSION:

The benefits of using plastic voided slabs rather than solid slabs are greater for larger spans. Smaller spans do not require substantially thick slabs, therefore only small voids can be utilized and minimal savings are achieved. Larger spans are capable of using larger voids that greatly reduce the overall weight of the slab while meeting load capacity requirements. Construction of plastic voided slabs requires more steps than solid slabs, but the construction process is not significantly more complicated. For bays of the same size, plastic voided slabs typically require less reinforcement. Overall, plastic voided slab systems provide an excellent alternative to solid concrete slabs for many applications. Weight and cost savings as well as architectural flexibility can be achieved with plastic voided slabs. The investigation has proven that voided slab technology is more efficient than a traditional biaxial concrete slab. The finite element models of the slab created for the study verify the prior analysis and experiment.

[Table 10 PSC Voided Slab Comparison]

Sr. No.	Name of Paper	Year of publis-hing	Stiffness Modifica-tion factor	Ultimate loaded carrying capacity	Cost Analysis	Bending strength	Stress Distribution	Compressive strain	Rigidity	Shear Strength	Punching shear	Deflection	Creep	Fire resistence	Acoustic behaviour	Crack pattern	Dissi-pation Rate
1.	Expt. program regarding BubbleDeck concrete slab with spherical gaps	2009										✓				✓	
2.	Summary of tests and studies done abroad on the BubbleDeck system	2009			✓	✓					✓	✓	✓	✓	✓		
3.	An expt. study on two-way bubbledeck slab	2010		✓								✓				✓	

4.	Issues of achieving an experimental model concerning bubble deck concrete slab with spherical gaps	2010										✓				✓	
5.	Calculation of voided slab rigidities	2012							✓			✓					
6.	Flexural capacities of reinforced concrete two-way bubbledeck slabs of plastic spherical voids	2012		✓				✓				✓				✓	
7.	Structural behaviour of bubble deck slab	2012				✓	✓			✓		✓			✓		
8.	Flat slabs with spherical voids	2013				✓				✓							
9.	The expt. analysis of bubbledeck slab using modified elliptical balls	2013		✓		✓				✓		✓				✓	
10.	Analysis of voided deck slab & cellular deck slab using Midias Civil	2014				✓				✓		✓					
11.	Comparative study of voided flat plate slab & solid flat plate slab	2014	✓			✓					✓						
12.	Design factors and the economical application of spherical type voids in RC slabs	2014	✓		✓	✓				✓							
13.	A study on behaviour of bubbledeck slab using ANSYS	2015		✓			✓					✓				✓	
14.	An experimental study on bubble deck slab system with elliptical balls	2015		✓		✓				✓		✓				✓	
15.	Comparative structural analysis of Biaxial voided slabs and solid slab	2015	✓	✓		✓											
16.	Finite element analysis of voided slab with HDPP void formers.	2015										✓				✓	
17.	Numerical analysis of flat slabs with spherical voids subjected to shear force	2015	✓			✓				✓		✓				✓	
18.	Parametric study of solid slab and voided slab	2015					✓					✓					
19.	Collapse of reinforced concrete voided slab	2016		✓		✓										✓	✓
20.	Numerical & expt. study on bubbledeck slab	2016		✓			✓					✓				✓	
21.	Punching shear strength development of bubbledeck slab using GFRP stirrups	2016					✓				✓	✓					

CHAPTER 6
Swatchh Bharat Abhiyan (Clean India)

6.1 Swatchhta Needed in Bilasiya Village

Swatchhta is necessary in village to reduce spread of health diseases, To maintain ecology cycle, To reduce the Non – Degradable Garbage, rubbish, bio – liquid waste, etc. Hence, developing more hygienist village.

6.2 Guidelines - Implementation in Allocated Village with Photograph

The Bilasiya village has implemented the "Swachh Bharat Abhiyan: Household Toilet" Under the Guidelines of the "Swachh Bharat Abhiyan Scheme". To reduce the Illness in the village, To avoid bad odour, To maintain the pure atmosphere air. To prevent ecology.

6.3 Activities Done by Students for allocated village with Photograph

[Figure 20 School of Bilasiya]

CHAPTER 7
Village Condition Due To Covid-19

7.1 Taken Steps in Bilasiya Village Related to Existing Situation

In Bilasiya Village during lockdown of covid – 19 , The Villagers took the initiative of not to allow other people to village who are non-residents of village

The Border of village was closed for the safety purpose.

The village people followed the guidelines of safety precautions for covid – 19.

They all went to agriculture land and do some which make them feel fresh during lockdown of nation.

7.2 Activities Done by Students for Bilasiya Village

In Bilasiya village due to covid – 19 Situation, there wasn't possible to carry out any activities as we were at our home.

7.3 Any Other Steps Taken by the Students / Villagers

The Steps taken by the villagers are mentioned in 7.1.

[Figure 21 Safety Precautions For COVID - 19]

CHAPTER 8

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

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

8.1 Proposed Design in the Village

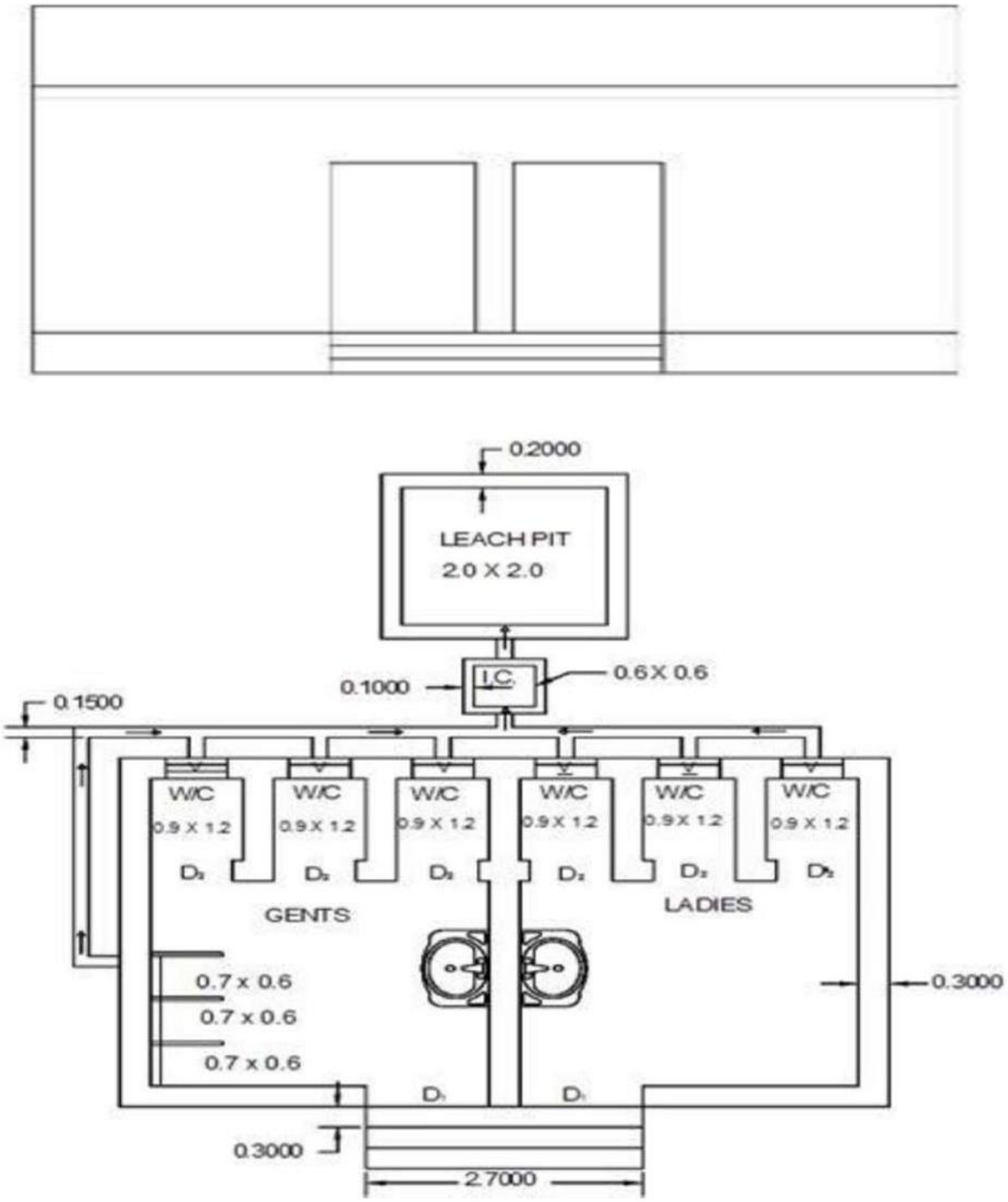
- Designing of Public Health centre.
- Design of Park.
- Design of Solar based water distribution pump station.
- Library
- Public toilet
- Social Community Hall

8.1.1 Sustainable Design (Civil)

A design proposal is used by a freelance designer, design agency, or other design business. It's sent out to prospective design clients to provide details on design and branding work. A design project proposal needs to be crisp and professional since it represents the business that sends it out. It also needs to be consistent with the organization's own branding.

Planning: Successful projects begin with diligent planning. The design process starts with an initial meeting to discuss the vision, logistics, and final project outcomes with the key decision makers and the creative experts on the commercial general contractor team. This should be a collaborative process that explores options and directions that ultimately lead to an amazing finished product. Together, the team will walk through architectural, physical and economic requirements of the project as well as code requirements.

Design Development: Design development then kicks off with experienced design professionals creating architectural, structural, and engineering drawings, as needed. These designs should detail specifications of the project from the ground up, oftentimes with artist renderings.



[Figure 22 Public Toilet Development for Bilasiya Village]

[Table 11 Public Toilet Development Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF TOILET BLOCK AT BILASIYA, TAL:- DASKROI, DIST:- AHMEDABAD							
MEASUREMENT SHEET							
ITEM	**DESCRIPTION**	**NO**	**L**	**B/W**	**H/D**	**QUANTIY**	**UNITS**
ITEM NO 1							
1	Excavation for Foundation						
	L= 37.1	1	37.1	0.7	0.9	23.37	Cu.m.
ITEM NO 2							
2	C.C. work in foundation						
	L=37.1 m	1	37.1	0.7	0.15	3.89	Cu.m.
ITEM NO 3							
3	Brick masonry work in						
	Foundation (L=37.10)						
	1st step						
	L=42 –14*(0.5/2)	1	38.5	0.5	0.30	5.77	Cu.m
	=38.5						
	2nd step						
	L=42 –14*(0.3/2)	1	39.9	0.3	0.95	11.37	Cu.m
	=39.9m						
	Total Brick masonry work in foundation					17.14	Cu.m.
ITEM NO 4							
4	Earth filling work						
	For Toilet	6	0.9	1.2	0.45	2.916	Cu.m.
	For Open Space	2	3.3	3.0	0.45	8.190	
ITEM NO 5							
5	Brick masonry work in						
	super structure						
	L=39.90m	1	39.9	0.3	3.00	35.91	Cu.m.
	Deduction for door &						

	Window						
	Door 1	2	1.2	0.3	2.1	1.512	Cu.m.
	Door 2	6	0.9	0.3	2.1	3.40	Cu.m.
	Ventilator – V	6	0.6	0.3	0.5	0.51	Cu.m.
	Deduction for lintel						
	Door 1	6	0.9	0.3	0.15	0.243	Cu.m.
	Door 2	2	1.5	0.3	0.15	0.135	Cu.m.
	Ventilator – V	6	1.2	0.3	0.15	0.320	Cu.m.
	Total Brick masonry						
	Work						
	= 35.91 –6.148					29.762	Cu.m.
ITEM NO 6							
6	Brick masonry work in step						Cu.m.
	Step: 1	1	2.7	0.6	0.25	0.40	Cu.m.
	Step: 2	1	2.7	0.3	0.25	0.20	Cu.m.
					Total	0.60	Cu.m.
ITEM NO 7							
7	Internal plaster work						
	For open space	2	3.3		3.0	19.80	Sq.m
		2		3.0	3.0	18.00	Sq.m
	For Toilet	2x6	0.9		3.0	32.4	Sq.m
		2x6		1.2	3.0	43.2	Sq.m
					Total	113.4	Sq.m
	Deduction						
	Door 1	0.5x2	1.2		2.1	2.52	Sq.m
	Door 2	6	0.9		2.1	11.34	Sq.m
	Ventilation	0.5x6	0.6		0.50	0.9	Sq.m
					Total	14.76	Sq.m
	Total Internal Plaster					98.64	Sq.m
ITEM NO 8							
8	External plaster work						
	Side:1	2	7.5		4.5	67.54	Sq.m.
	Side:2	2	5.1		4.5	45.9	Sq.m.
					Total	113.5	Sq.m.
	Deduction						
	Door 1	½ x 2	1.2		2.1	2.52	Sq.m.

	Door 2	½ x 6	0.6		0.5	0.9	Sq.m.
					Total	3.42	Sq.m.
	Total External plaster work						
	=113.5 – 3.42					109.98	Sq.m.
ITEM NO 9							
9	Dedo work					179.94	Sq.m.
	For Toilet						
	Side:1	2x6	0.9		1.0	10.8	Sq.m.
	Side:2	2x6	1.2		1.0	14.4	Sq.m.
	For Urinal	2	2.8		1.0	5.6	Sq.m.
					Total	30.8	Sq.m.
	Deduction						
	Door 2	6	0.9		1.0	5.4	Sq.m.
	Total Dedo work	(30.8-5.4)				25.4	Sq.m.
ITEM NO 10							
10	Flooring work						
	For Open Space	2	3.3	3.0		19.8	Sq.m.
	For Toilet	6	0.9	1.2		6.48	Sq.m.
	For Door Sill						
	Door 1	2	1.2	0.3		0.72	Sq.m.
	Door 2	6	0.9	0.3		1.62	Sq.m.
	Total Flooring Work					28.62	Sq.m.
ITEM NO 11							
11	For R.C.C. slab	1	7.5	5.1	0.125	4.781	Cu.m.
ITEM NO 12							
12	For Lintel Work						
	(1)Ventilator	6	0.9	0.3	0.15	0.243	Cu.m.
	(2)Door:1	2	1.5	0.3	0.15	0.135	Cu.m.
	(3)Door:2	6	1.2	0.3	0.15	0.320	Cu.m.
					Total	0.698	Cu.m.
ITEM NO 13							
	Internal White wash						
	=(internal P.L.-Dedo work)						
	=(98.64-30.8)					67.84	Sq.m.
ITEM NO 14							

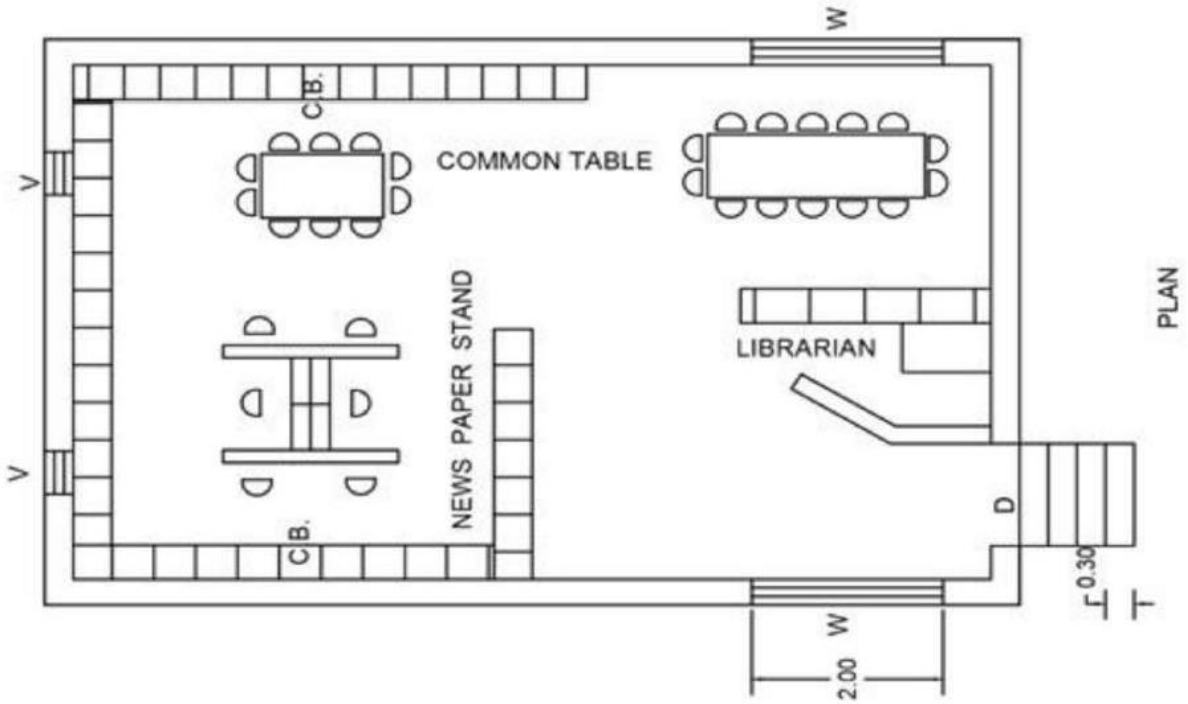
	External white wash (as per external plaster work)					109.98	Sq.m.
ITEM NO 15							
	Excavation work for leach pit	1	2.4	2.4	2.5	14.1	Cu.m.
ITEM NO.:- 16							
	Brick work in leach pit						
	L=4(0.20+2.0+0.20)	1	8.8	0.20	2.5	4.4	Cu.m.
	=8.8m						
ITEM NO 16							
	Internal plaster work in leach pit						
	Side: 1	2	2.0		2.5	10	Sq.m.
	Side: 2	2	2.0		2.5	10	Sq.m.
ITEM NO 17							
	Celling of leach pit(precast cover)	1	2.4	2.4	0.15	0.864	Cu.m.
ITEM NO 18							
	Excavation work in inspection chamber	1	0.8	0.8	0.7	0.448	Cu.m.
ITEM NO 19							
	Brick work in inspection chamber	1	2.8	0.10	0.7	0.20	Cu.m.
		33					
ITEM NO 20							
	Internal plaster work in						
	inspection chamber						
	Side: 1	2	0.6	0.7	0.42		Sq.m.
	Side: 2	2	0.6	0.7	0.42		Sq.m.
ITEM NO 21							
	R.C.C.cover for inspection chamber(precast cover)	1	0.8	0.8	0.1	0.064	Sq.m.
ITEM NO 22							
	PVC pipe 150mm dia.	1	15.5			15.5	Rmt
	L=15.5m						

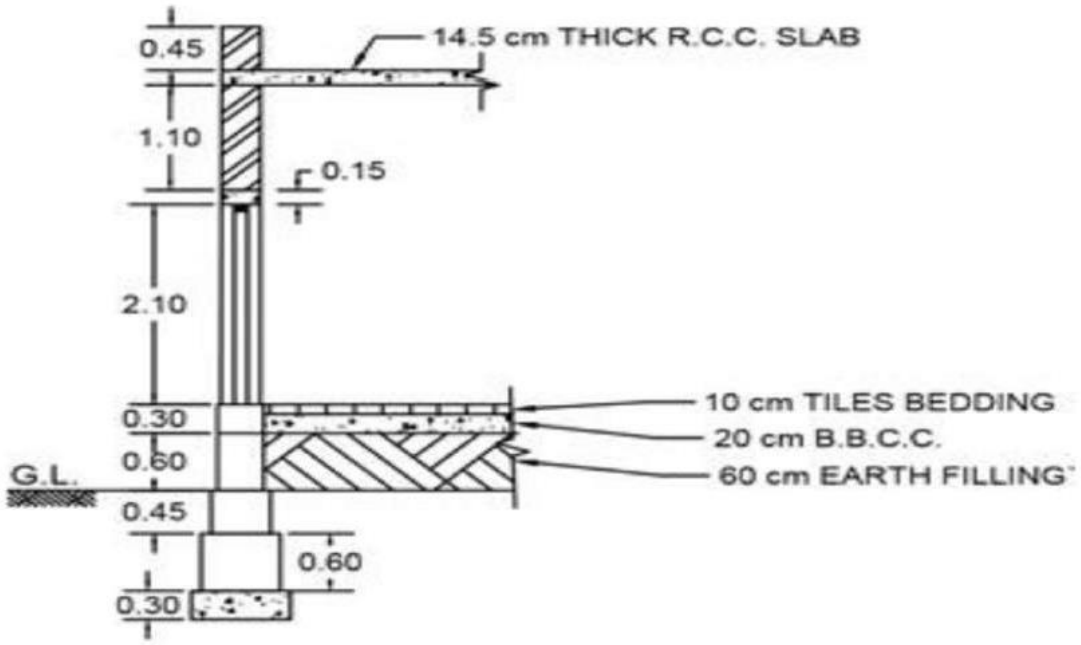
ABSTRACT SHEET

Sr.	Item description	Quantity	Rate	Per	Amount
1.	Excavation work	23.37	**155**	Cu.m.	3622.35
2.	P C.C	3.89	**3000**	Cu.m.	11670
3.	Brickwork in foundation	17.14	**3200**	Cu.m.	54848
4.	Brickwork in Superstructure	28.36	**3500**	Cu.m.	99260
5.	Plastering	208.62	**150**	Sq.m.	31293
6.	Flooring	28.62	**855**	Sq.m.	24470.1
7.	R.C.C slab	4.781	**4900**	Cu.m.	23426.9
8.	Painting	208.62	**25**	Sq.m.	5215.5
9.	Dedo Work	25.4	**1000**	Sq.m.	25400
10.	P.V.C. Pipe	15.5	**350**	Rmt	5425
11.	Gully trap (150mmx100mm size)	6	64.00	NOS	384
12.	Urinal flat back	3	437	NOS	1311
13.	W/C pan	6	320	NOS	1920
14.	Wash basin	2	1114	NOS	2228
15.	Elbow	3	20.00	NOS	60.00
16.	T-Pipe	7	24	NOS	168.00

Total Rupees	**290702**
Contingencies 5 % Charges	**14535.0925**
Water Charges 2 %	**5814.037**
Labour Charges 3 %	**8721.0555**
Contractors Charges 10 %	**29070.185**
Total Estimated Amount	**348842**

8.1.2 Physical design (Civil) – Library





[Figure 23 Library Development for Bilasiya Village]

[Table 12 Library Development Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF LIBRARY AT BILASIYA, TAL:- DASKROI, DIST:- AHMEDABAD

MEASUREMENT SHEET

ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
	ITEM NO 1						
1	Excavation for Foundation						
	L= 32.4 m	1	32.4	0.75	1.35	32.805	Cu.m.
	TOTAL QTY					32.805	Cu.m.
	ITEM NO 2						
2	C.C. work in foundation						
	L=32.4 m	1	32.4	0.75	0.3	7.29	Cu.m.
	TOTAL QTY					7.29	Cu.m
	ITEM NO 3						
3	Brick masonry work in Foundation						
	1st step						
	L=32.4 m	1	32.4	0.6	0.6	11.664	Cu.m.
	2nd step						
	L= 32.4 m	1	32.4	0.45	0.45	6.56	Cu.m.
	Total Brick masonry					28.43	Cu.m.
	work in foundation						
	Brick masonry work						
	for step						
	1st step	1	1.2	0.9	0.3	0.324	Sq.m.
	2st step	1	1.2	0.6	0.3	0.216	Sq.m.
	3st step	1	1.2	0.3	0.3	0.108	Sq.m.
	Total Brick masonry					0.648	Sq.m.
	work for step						
	ITEM NO 4						
4	Earth filling work		9.6	6	0.45	25.92	

ITEM NO 5							
5	D.P.C work						
	L=32.4 m	1	32.4	0.3		9.72	Rmt
ITEM NO 6							
6	Brick masonry work in						
	super structure						
	L=32.4 m	1	32.4	0.3	3.35	3.35	Cu.m.
	Deduction for door &						
	Window						
	Door – D	1	1.2	0.3	2.1	0.756	Cu.m.
	Window – W	2	2	0.3	1.2	1.44	Cu.m.
	Ventilator – V	2	0.5	0.3	0..5	0.5	Cu.m.
	Deduction for lintel						
	Door – D	1	1.5	0.3	0.15	0.0675	Cu.m.
	Window – W	2	2.3	0.3	0.15	0.207	Cu.m.
	Ventilator – V	2	0.8	0.3	0.15	0.072	Cu.m.
	Total Brick masonry						
	Work						
	= 32.56 – 5.038					27.552	Cu.m.
ITEM NO 7							
7	Lintel work as per						
	Above					2.692	Cu.m.
ITEM NO 8							
8	Internal plaster work	2	9.6		3.35	64.32	Sq.m.
		2	6.0		3.35	40.2	Sq.m.
	Celling	1	9.6	6		57.6	Sq.m.
	Deduction for door &						
	window						
	Window – W	½ x 2	2		1.2	2.4	Sq.m.
	Door – D	½ x 1	1.2		2.1	1.26	Sq.m.
	Ventilation – V	½ x 2	0.5		0.5	0.22	Sq.m.
	Total Internal Plaster work					158.24	Sq.m.
ITEM NO 9							
9	White wash as per above					158.21	Sq.m.
ITEM NO 10							
10	Brick masonry work	1	32.4	0.20	0.45	2.916	Cu.m.

	For parapet wall						
ITEM NO 11							
11	External plaster work						
	For long wall	2	10.2		4.845	98.80	Sq.m.
	For short wall	2	6.6		4.845	63.95	Sq.m.
	Inner side of parapetwall	1	32.4		0.45	14.58	Sq.m.
	Top of parapetwall	1	32.4	0.2		6.48	Sq.m.
	TOTAL					183.85	Sq.m.
	Deduction for door &						
	window						
	Door – D	½ x 1	1.2		2.1	1.26	Sq.m.
	Window – W	½ x 2	2		1.2	2.4	Sq.m.
	Ventilation – V	½ x 2	0.5		0.5	0.25	Sq.m.
	TOTAL DEDUCTION					3.91	Sq.m.
	Total External plaster work						
	=183.85 – 3.91					179.94	Sq.m.
ITEM NO 12							
12	External white wash as per above					179.94	Sq.m.
ITEM NO 13							
13	Flooring work	1	9.6	6		57.6	Sq.m.
	Door seal	1	1.2	0.3		0.36	Sq.m.
	Flooring for stair	3	1.2	0.3		1.058	Sq.m.
	Total Flooring work					59.04	Sq.m.
ITEM NO 14							
14	Skirting work	2	9.6			19.2	Sq.m.
		2	6			12	Sq.m.
	Total Skirting work					31.2	Sq.m.
ITEM NO 15							
15	R.C.C Work for slab						
	L=10.2 m	1	10.2	6.6	0.145	9.76	Cu.m.
	B= 6.6 m						
	H= 0.145 m						
	R.C.C work for beam						
	L=6.6 m	4	6.6	0.3	0.5	3.96	Cu.m.
	B=0.3 m						

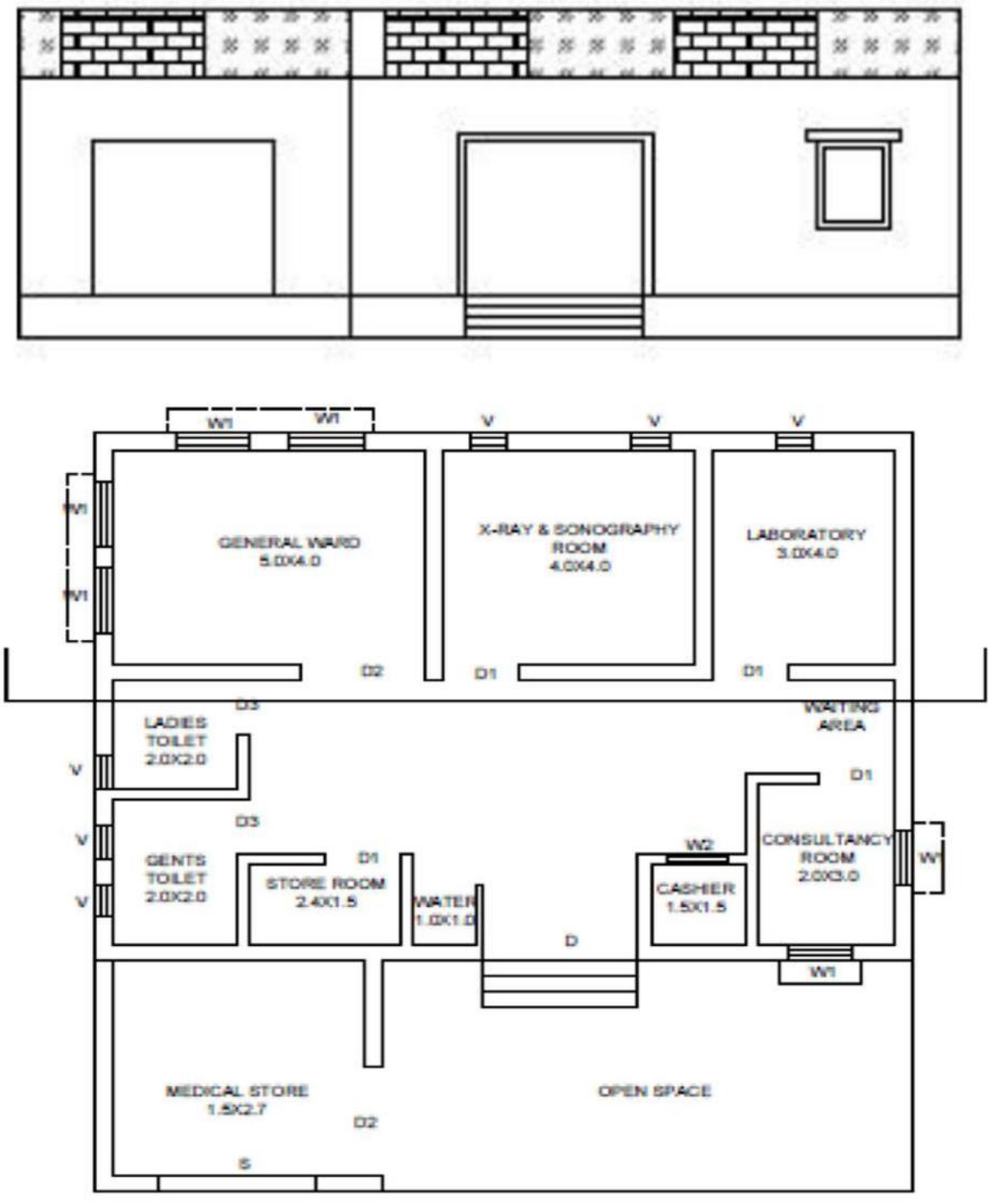
	H= 0.5 m						
ITEM NO 16							
16	Formwork for beam						
	Bottom	2	6	0.3		3.6	Sq.m.
	Side	8	6.6		0.5	26.4	Sq.m.
	end	8		0.3	0.5	1.2	Sq.m.
	Formwork for slab						
	Bottom	1	9	6		54	Sq.m.
	Long side	2	10.2		0.15	3.06	Sq.m.
	Short side	2	6.6		0.15	1.98	Sq.m.
	Total form work					90.24	Sq.m.

ABSTRACT SHEET

Sr.	Item description	Quantity	Rate	Per	Amount
1.	Excavation work	4967.75	4967.75	4967.75	4967.75
2.	P C.C	21870	21870	21870	21870
3.	Brickwork in Foundation	101773	101773	101773	101773
4.	Brickwork in superstructure	106638	106638	106638	106638
5.	Plastering	50722.5	50722.5	50722.5	50722.5
6.	Flooring	53136	53136	53136	53136
7.	R.C.C slab	47824	47824	47824	47824
8.	Beams	57420	57420	57420	57420
9.	Painting	8453.75	8453.75	8453.75	8453.75

Total Rupees	**452805**
Contingencies 5 % Charges	**22640.25**
Water Charges 2 %	**9056.1**
Labour Charges 3 %	**13584.15**
Contractors Charges 10 %	**45280.5**
Total Estimated Amount	**543366**

8.1.3 Social design (Civil) – Public Health Centre



[Figure 24 Public Health Centre Development for Bilasiya Village]

[Table 13 Public Health Centre Development Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF PUBLIC HEALTH CENTER AT- BILASIYA, TAL:- DASKROI, DIST:- AHMEDABAD

MEASUREMENT SHEET							
ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
ITEM NO.:- 1							
1	Excavation for foundation						
	For 300 mm thick wall						
	L=66.70 m	1	66.70	0.9	2.7	162.08	Cu.m.
	For 200 mm thick wall						
	L=16.4 m	1	16.4	0.7	2.7	30.99	Cu.m
	TOTAL					193.07	Cu.m
ITEM NO.:- 2							
2	P.C.C. work in foundation						
	For 300 mm thick wall						
	L=66.70 m	1	66.70	0.9	0.9	54.02	Cu.m.
	For 200 mm thick wall						
	L=16.4 m	1	16.4	0.7	0.6	6.89	Cu.m.
ITEM NO.:- 3							
3	Brick masonry work in foundation						
	For 200 mm thick wall						
	1st step						
	L=18.5	1	18.5	0.4	0.4	2.96	Cu.m
	2nd step						

	L=19.2	1	19.2	0.3	0.4	2.30	Cu.m
	3rd step						
	L=19.9	1	19.9	0.2	0.45	1.79	Cu.m.
	For 300 mm thick wall						
	1st step						
	L=68.80	1	68.80	0.6	0.6	24.79	Cu.m
	2nd step						
	L=69.50	1	69.50	0.5	0.6	20.85	Cu.m
	3rd step						
	L=70.2	1	70.2	0.4	0.6	16.85	Cu.m.
	4th step						
	L=72.93	1	72.93	0.3	0.45	9.84	
	Total Brick masonry					79.38	Cu.m.
	Up to P.L.						
ITEM NO.:- 4							
4	Earth filling work	106.09-21.22-49.469				35.401	Cu.m.
ITEM NO.:- 5							
5	Brick masonry work in super structure						
	For 200 mm thick wall						
	L=19.90	1	19.9	0.2	3.05	17.14	Cu.m.
	For 300 mm thick wall	1	70.9	0.3	3.05	64.87	Cu.m.
	L=70.90						
	Deduction for door & Window (for 200 mm wall)						
	D	1	2.7	0.2	2.1	1.134	Cu.m.
	D 1	4	1.2	0.2	2.1	2.016	Cu.m.
	D 2	1	1.5	0.2	2.1	0.63	Cu.m.
	D 3	2	0.9	0.2	2.1	0.756	Cu.m.

	W 1	6	1.8	0.2	1.2	2.592	Cu.m.
	W 2	1	1.2	0.2	0.9	0.216	Cu.m.
	V	6	0.6	0.2	0.6	0.432	Cu.m.
	SHUTTER	1	1	0.2	2.8	0.56	Cu.m.
		Total deduction				8.336	Cu.m.
	For 300 mm wall						
	D	1	2.7	0.3	2.1	17.01	Cu.m.
	D 1	4	1.2	0.3	2.1	3.02	Cu.m.
	D 2	1	1.5	0.3	2.1	0.945	Cu.m.
	D 3	2	0.9	0.3	2.1	1.134	Cu.m.
	W 1	6	1.8	0.3	1.2	3.89	Cu.m.
	W 2	1	1.2	0.3	0.9	0.324	Cu.m.
	V	6	0.6	0.3	0.6	0.648	Cu.m.
	SHUTTER	1	1	0.3	2.8	0.84	Cu.m.
	Total deduction(2)					27.81	Cu.m.
	Deduction for lintel (200 mm wall)						
	D	1	3.7	0.2	0.1	0.074	Cu.m.
	D 1	4	1.5	0.2	0.1	0.12	Cu.m.
	D 2	1	0.45	0.2	0.1	0.009	Cu.m.
	D 3	2	1.2	0.2	0.1	0.048	Cu.m.
	W 1	6	2.1	0.2	0.1	0.252	Cu.m.
	W 2	1	1.5	0.2	0.1	0.03	Cu.m.
	V	6	0.9	0.2	0.1	0.108	Cu.m.
	SHUTTER	1	1.3	0.2	0.1	0.026	Cu.m.
	Total deduction(3)					0.667	Cu.m.
	Deduction for lintel (300 mm wall)						
	D	1	3.7	0.3	0.1	0.111	Cu.m.
	D 1	4	1.5	0.3	0.1	0.18	Cu.m.
	D 2	1	0.45	0.3	0.1	0.0135	Cu.m.
	D 3	2	1.2	0.3	0.1	0.072	Cu.m.
	W 1	6	2.1	0.3	0.1	0.378	Cu.m.
	W 2	1	1.5	0.3	0.1	0.045	Cu.m.
	V	6	0.9	0.3	0.1	0.162	Cu.m.
	SHUTTER	1	1.3	0.3	0.1	0.039	Cu.m.
	Total deduction(4)					1.0005	Cu.m.
	Work						

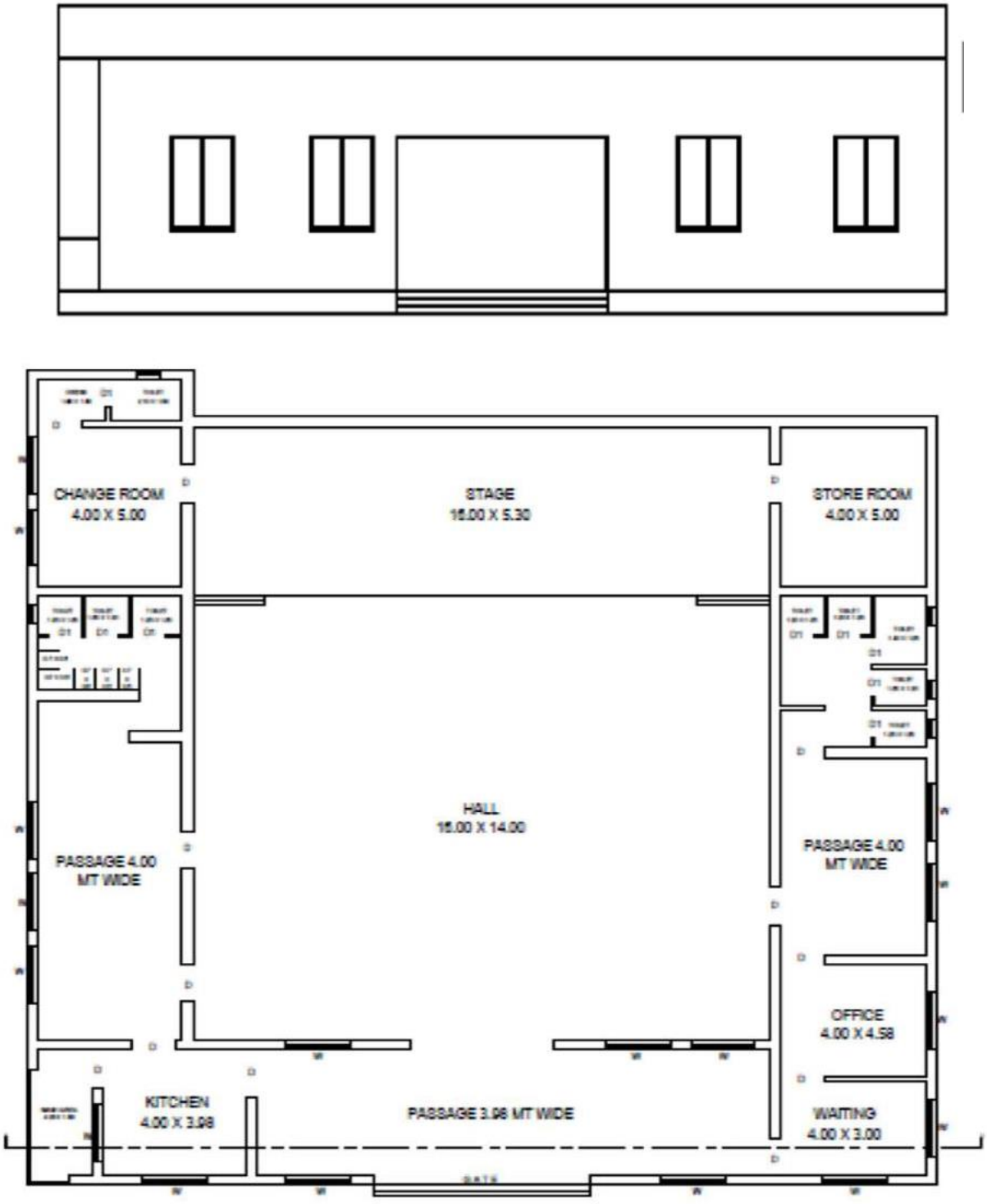
	TOTAL (200)					3.137	Cu.m
	TOTAL(300)					36.06	Cu.m
	GRAND TOTAL					39.25	Cu.m
ITEM NO.:- 6							
6	D.P.C. at plinth level						
	For 200 mm wall						
	L = 16.4 m	1	16.4	0.7	0.6	6.89	Cu.m
	For 300 mm wall					54.02	Cu.m
	L =66.70 m	1	66.70	0.9	0.9		
	TOTAL					60.91	Cu.m
ITEM NO.:- 7							
7	Earth filling in plinth	1	5	4	0.6	12	Cu.m.
		1	4	4	0.6	9.6	Cu.m.
		1	3	4	0.6	7.2	Cu.m.
		1	2	2	0.6	2.4	Cu.m.
		1	2	2	0.6	2.4	Cu.m.
		1	2.4	1.5	0.6	2.16	Cu.m
		1	1	1	0.6	0.6	Cu.m
		1	1.5	1.5	0.6	1.35	Cu.m
		1	2	3	0.6	3.6	Cu.m
		Total Earth Feeling				41.31	Cu.m.
ITEM NO.:- 8							
8	5 cm thick flooring	1	5	4		20	Sq.m.
	between walls	1	4	4		16	Sq.m.
		1	2	2		4	Sq.m.
		1	2	2		4	Sq.m.
		1	2.4	1.5		3.6	Sq.m.
		1	1	1		1	Sq.m
		1	1.5	1.5		3.25	Sq.m
		1	3	4		12	Sq.m
		1	2.5	5.2		13	Sq.m
		1	2	3		6	Sq.m
		1	1.5	2.7		4.5	Sq.m
		1	2.7	1.5		4.05	Sq.m
	TOTAL					89.95	Sq.m
		Total Flooring Work				55.280	Sq.m.

ITEM NO.:- 9							
9	15cm thick inside smooth plaster work	2	5		3.05	30.5	Sq.m.
		3	4		3.05	36.6	Sq.m.
		5	4		3.05	61	Sq.m.
		3	3		3.05	27.45	Sq.m.
		2	4		3.05	24.4	Sq.m.
		4	2		3.05	24.4	Sq.m.
		4	2		3.05	24.4	Sq.m.
		2	2.4		3.05	146.4	Sq.m.
		2	1.5		3.05	9.15	Sq.m.
		4	1		3.05	12.2	Sq.m.
		4	1.5		3.05	12.2	Sq.m.
		2	2		3.05	18.3	Sq.m.
		2	3		3.05	18.3	Sq.m.
		1	1.2		3.05	3.66	Sq.m.
		3	1.5		3.05	13.72	Sq.m.
		2	2.7		3.05	16.47	Sq.m.
							Sq.m.
		Total Plaster Work				347.39	Sq.m.
	Deduction						
	D	0.5x1	2.7		2.1	2.83	Sq.m.
	D1	0.5x1	1.2		2.1	15.12	Sq.m.
	D2	0.5x2	1.5		2.1	3.15	Sq.m.
	D3	0.5x6	0.9		2.1	5.67	Sq.m.
	W1	0.5x4	1.8		1.2	4.32	Sq.m.
	W2	0.5x1	1.2		0.9	0.54	Sq.m.
	V	0.5x6	6.0		0.6	1.08	Sq.m.
	S	0.5*1	1.0		2.8	1.4	
		Total Deduction				34.1	Sq.m.
		Net Outer Plaster				313.28	Sq.m.
ITEM NO.:- 10							
10	White washing inside as per internal plaster					313.28	Sq.m.
ITEM NO.:- 11							
11	Concreting work in	1	13.2	9.1	0.15	18.01	Cu.m.

	slab	1	2.1	3.0	0.15	0.945	Cu.m.
	TOTAL					18.955	Cu.m.

ABSTRACT SHEET					
Sr.	**Item description**	**Quantity**	**Rate**	**Per**	**Amount**
1	Excavation Work	193.07	**150**	Cu.m.	28960.5
2	P.C.C	61.02	**3000**	Cu.m.	183060
3	Brickwork In Foundation	79.38	**3100**	Cu.m.	246078
4	Brickwork In Superstructure	39.25	**3500**	Cu.m.	137375
5	Plastering	313.28	**140**	Sq.M	43859.2
6	Flooring	89.95	**850**	Sq.M	76457.5
7	R.C.C Slab	18.955	**4900**	Cu.m.	92879.5
8	Painting	313.280	**25**	Sq.M	7832
			Total Rupees		**816501.7**
			Contingencies 5 % Charges		**40825.085**
			Water Charges 2 %		**16330.034**
			Labour Charges 3 %		**24495.051**
			Contractors Charges 10 %		**81650.17**
			Total Estimated Amount		**979802.04**

8.1.4 Socio-Cultural design (Civil) – Community Hall



[Figure 25 Community Hall Development for Bilasiya Village]

[Table 14 Community Hall Development Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF COMMUNITY HALL AT BILASIYA, TAL:-DASKROI, DIST:-AHMEDABAD

MEASUREMENT SHEET

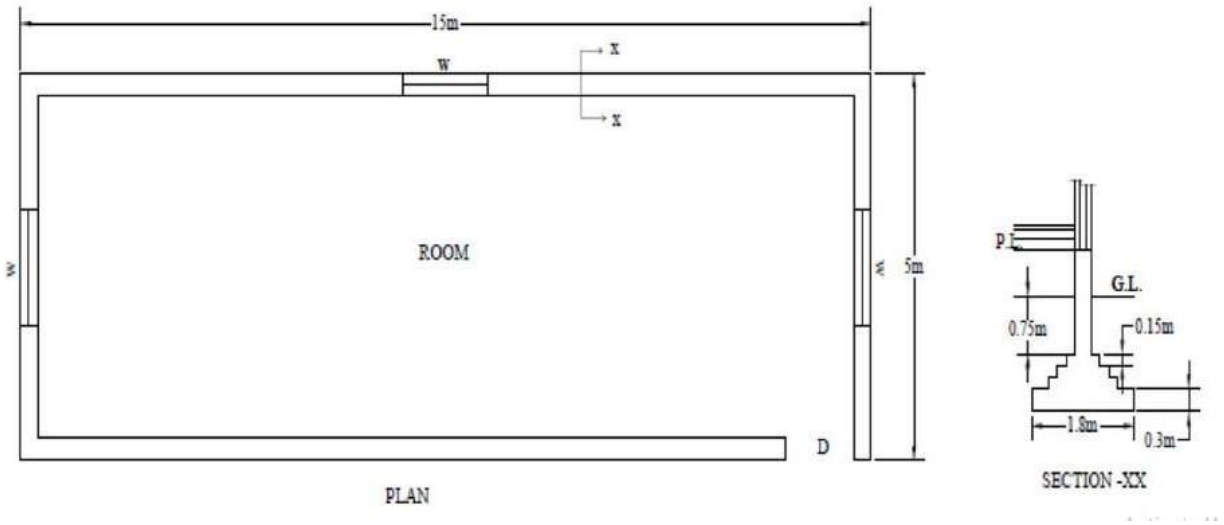
ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTITY	UNITS
	ITEM NO 1						
1	Excavation for Foundation						
	L=188	1	188	0.9	1.2	203.04	Cu.m.
	ITEM NO 2						
2	C.C. work in foundation						
	L=188	1	188	0.9	0.2	33.84	Cu.m.
	ITEM NO 3						
3	Brick masonry work in						
	Foundation						
	1st step						
	L=197–20*(0.6/2)	1	191	0.6	0.1	11.46	Cu.m
	=191						
	2nd step						
	L=197–20*(0.5/2)	1	192	0.5	0.1	9.6	Cu.m
	=192						
	3rd step						
	L=197–20*(0.4/2)	1	193	0.4	0.1	7.72	Cu.m
	=193						
	4th step	1	194	0.3	0.7	40.74	Cu.m
	L=197 –20*(0.3/2)						
	=194						
	Total Brick masonry					69.52	Cu.m.
	work in foundation						
	ITEM NO 4						
4	Brick masonry work in						
	super structure						
	L=197	1	197	0.3	4	236.4	Cu.m.

	Deduction for door &						
	Window						
	Door	14	1.2	0.3	2.1	10.58	Cu.m.
	Door 1	9	0.9	0.3	2.1	5.103	Cu.m.
	Ventilator – V	9	0.6	0.3	0.6	0.972	Cu.m.
	Door 2	1	4	0.3	2	2.4	Cu.m
	Deduction for lintel						
	Door	14	1.2	0.3	0.1	0.504	Cu.m.
	Door 1	9	0.9	0.3	0.1	0.243	Cu.m.
	Ventilator – V	9	1.2	0.3	0.1	0.324	Cu.m.
	Door 2	1	4	0.3	0.1	0.12	Cu.m
	Total Brick masonry						
	Work						
	= 236.4 –20.25					216.15	Cu.m.
ITEM NO 5							
	Brick masonry work in step						Cu.m.
	Step: 1	1	4	0.6	0.25	0.6	Cu.m.
	Step: 2	1	4	0.3	0.25	0.3	Cu.m.
					Total	0.9	Cu.m.
ITEM NO 6							
	D.P.C at plinth level						
	For 200mm thick wall	1	8	0.7	0.6	3.36	cu.m
	For 300mm thick wall	1	197	0.9	0.9	159.57	cum
	Total					162.93	Cu.m
ITEM NO 7							
	EARTH FILLING	2	4	5	0.6	24	Cu.m
		1	16	14	0.6	134.4	Cu.m
		1	16	5.30	0.6	50.88	Cu.m
		1	4	4.58	0.6	11	Cu.m
		1	4	3	0.6	7.2	Cu.m
		1	4	3.98	0.6	9.55	Cu.m
		1	4	8	0.6	19.2	Cu.m
		1	4	7	0.6	16.8	Cu.m
	TOTAL					273.03	Cu.m

	INTERNAL PLASTER	14	4			84	
		5	5			25	
		5	6			30	
		3	3	4		36	
		16	6	4		384	
		5	5	4		100	
		5	5	4		100	
	Total					754	Sq.M
ITEM NO 8							
	WHITE WASH PER ABOVE					754	Sq.M
ITEM NO 9							
	RCC WORK FOR SLAB	1	25.2	24.18	0.15	91.4	Cu.m
	L=25.2						
	B=24.18						
	H=0.15						

ABSTRACT SHEET					
Sr.	**Item Description**	**Quantity**	**Rate**	**Per**	**Amount**
1.	Excavation work	203.04	155	Cu.m.	31472
2.	P C.C	33.84	3000	Cu.m.	101520
3.	Brickwork in Foundation	69.52	3200	Cu.m.	222464
4.	Brickwork in Superstructure	216.15	3500	Cu.m.	756525
5.	Plastering	754	150	Sq.m.	113100
6.	R.C.C slab	91.4	4900	Cu.m.	447860
7.	Painting	754	25	Sq.m.	18850
	Total Rupees			**1691791**	
	Contingencies 5 % Charges			**84589.55**	
	Water Charges 2 %			**33835.82**	
	Labour Charges 3 %			**50753.73**	
	Contractors Charges 10 %			**169179.1**	
	Total Estimated Amount			**2030149**	

8.1.5 Smart Village Design (Civil) – Solar Based Water Distribution System



[Figure 26 Solar Based Water Distribution System Development for Bilasiya Village]

[Table 15 Solar Based Water Distribution System Development Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF SOLAR PANEL ROOM FOR SOLAR BASED WATER DISTRIBUTION SYSTEM AT-BILASIYA, TAL- DASKROI, DIST- AHMEDABAD							
MEASUREMENT SHEET							
ITEM	**DESCRIPTION**	**NO**	**L**	**B/W**	**H/D**	**QUANTITY**	**UNIT**
ITEM NO 1							
	Excavation for						
	Foundation						
	L= 41.2m	1	41.20	0.9	1.2	44.496	Cu.m.
ITEM NO 2							
	C.C. work in foundation						
	L=41.20m	1	41.20	0.9	0.3	11.124	Cu.m.
ITEM NO 3							
	Brick masonry work upto						

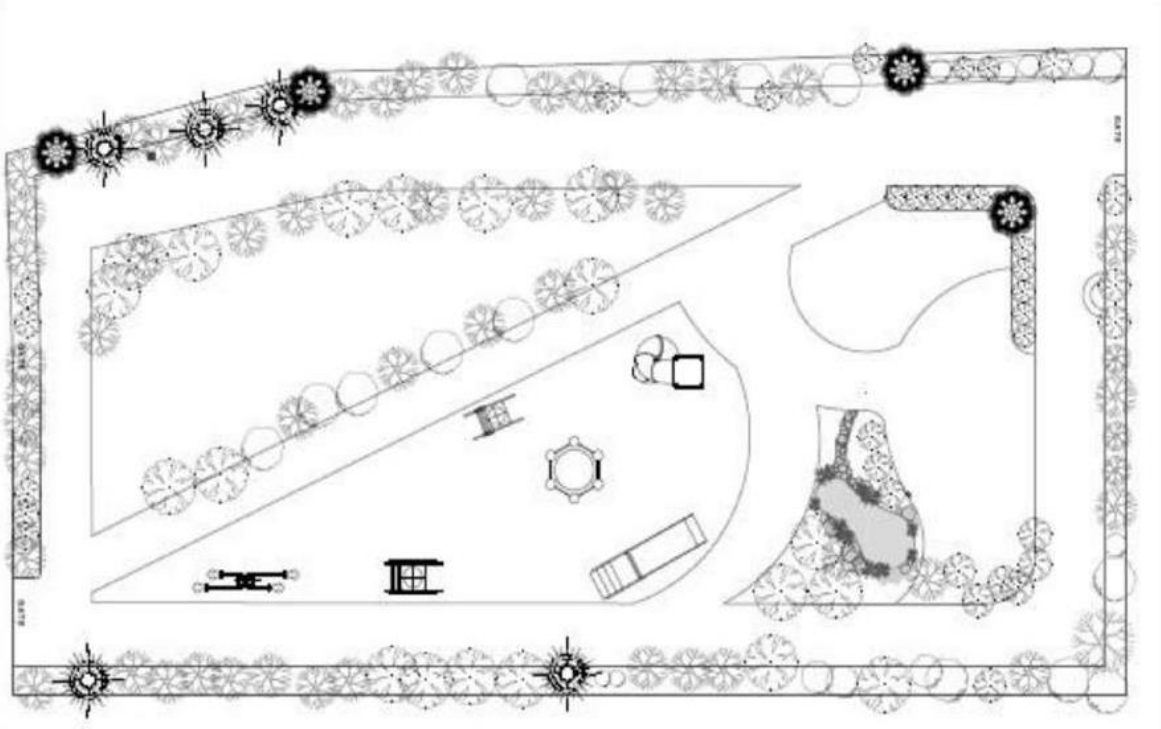
	Plinth (L=41.20m)						
	1st step						
	L=41.20m	1	41.20	0.6	0.2	4.944	Cu.m
	2nd step						
	L=41.20m	1	41.20	0.5	0.2	4.12	Cu.m
	3rd step						
	L=41.20m	1	41.20	0.4	0.2	3.296	Cu.m
	4th step	1	41.20	0.3	0.9	11.124	Cu.m
	L=41.20m						
	Total Brick masonry					23.484	Cu.m.
	work upto plinth						
ITEM NO 4							
	Brick masonry work in						
	Plinth to slab						
	L=41.20m	1	41.20	0.3	3.50	43.26	Cu.m.
	Deduction for door &						
	Window						
	Door	1	3.0	0.3	1.5	1.35	Cu.m.
	window	2	1.0	0.3	1.0	0.6	Cu.m.
	Deduction for lintel						
	Door	1	3.3	0.3	0.15	0.1485	Cu.m.
	window	2	1.3	0.3	0.15	0.117	Cu.m.
	Total Brick masonry						
	Work						
	= 43.26-1.35-0.6-0.1485-0.117					41.044	Cu.m.
ITEM NO 5							
	Internal plaster work	2	15		3.5	105	Sq.m
	Room	2	5.0		3.5	35	Sq.m
	Ceiling	1	15	5.0		75	Sq.m
	Deduction						

	Door	0.5* 1	3.0		1.5	2.25	Sq.m
	window	0.5* 2	1.0		1.0	1.0	Sq.m
	Total Internal Plaster					211.75	Sq.m
ITEM NO.:- 6							
	2 cm thick flooring						
	Room	1	15	5.0		75	Sq.m

ABSTRACT SHEET

Sr.	Item description	Quantity	Rate	Per	Amount
1.	Excavation work	44.496	155	Cu.m.	6897
2.	P C.C	11.124	3000	Cu.m.	33372
3.	Brickwork upto plinth	23.484	3200	Cu.m.	75149
4.	Brickwork in plinth to slab	41.044	3500	Cu.m.	143654
5.	Plastering	211.75	150	Sq.m.	31763
6.	Flooring	75.00	855	Sq.m.	25419
7.	Solar panel	12	11200	No.	123200
	Total Rupees				**439454**
	Contingencies 5 % Charges				**21972.7**
	Water Charges 2 %				**8789.08**
	Labour Charges 3 %				**13183.62**
	Contractors Charges 10 %				**43945.4**
	Total Estimated Amount				**527345**

8.1.6 Heritage Village Design (Civil) – Public Garden



[Figure 27 Public Garden Development for Bilasiya Village]

[Table 16 Public Garden Development Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF PUBLIC GARDEN AT, BILASIYA, TAL:- DASKROI, DIST:- AHMEDABAD

MEASUREMENT SHEET

ITEM	DESCRIPTION	NO	L	B/ W	H/D	QUANTIY	UNITS
ITEM NO.:- 1							
	Excavation for foundation						
	L=221.2m	1	221.2	0.7	1.8	278.712	Cu.m.
ITEM NO.:- 2							
	P. C.C. work in foundation						

	L=221.2m	1	221.2	0.7	0.6	92.904	Cu.m.
ITEM NO.:- 3							
	Brick masonry work in						
+	super structure						
	L=221.2m	1	221.2	0.3	2.00	132.72	Cu.m.
	Deduction for door	2	3.0	0.3	3.0	5.40	Cu.m.
	= 132.72 – 5.40					127.32	Cu.m
ITEM NO.:- 4							
	Internal plaster work for wall deduction	2	221.2		2.0	884.8	Sq.m
	Deduction for door	0.5*2	3.0		3.0	9.0	Sq.m
	Total Internal Plaster					875.8	Sq.m

ABSTRACT SHEET					
Sr.	**Item description**	**Quantity**	**Rate**	**Per**	**Amount**
1.	Excavation work	278.712	**155**	Cu.m.	43200
2.	P C.C	92.904	**3000**	Cu.m.	278712
3.	Brickwork in superstructure	127.32	**3500**	Cu.m.	445620
4.	Plastering	875.80	**150**	Sq.m.	131370
5.	Extra kids facilities				50000
	Total Rupees				**948902**
	Contingencies 5 % Charges				**47445.118**
	Water Charges 2 %				**18978.0472**
	Labour Charges 3 %				**28467.0708**
	Contractors Charges 10 %				**94890.236**
	Total Estimated Amount				**1043792.596**

8.2 Reason for Students Recommending this Design

Some of the few reasons to recommend the design for the development of village are:

- To Make Infrastructural Growth
- To Make Hybrid Village
- To Make Smart Village
- To Improve Daily Necessity Needs
- To Improve Social – Cultural Growth
- To Input Modern Resources & Technology For The Better Future

8.3 About Designs Suggestions / Benefit of the villagers

- The All Above Proposed Design Are Suggested To Make Improvement In The Village.

- Also By implementing the all above design the Village is benefitted by many ways, also generatingjobs opportunity & Hence Fulfilling and Improving the necessary requirements and needs of village.

- Growth of Economy of the village.

CHAPTER 9

Proposing Designs for Future Development of the Village for the PART- I – II Design

The Designs Proposed For Future Development of The Village In Part – II Designs are as follow :

1) Bus Stand
2) Bank – Financial Services
3) Medical Store With Pharmacy
4) Rain Water Harvesting On Community Hall
5) Grocery Store
6) Animal Husbandry
7) Bus Stand
8) Bank – Financial Services
9) Medical Store With Pharmacy
10) Rain Water Harvesting On Community Hall
11) Grocery Store
12) Animal Husbandry

CHAPTER 10
Conclusion of the Entire Village Activities of the Project

- Socio Economic Survey has been done for the study area in detail. All the types of the needs, facilities has been studied in detail. Gap analysis have been done and interviews of the local peoples has been done in detail.

- The existing structures and infrastructures have been studied and reviewed in detail. Suggestions have been proposed for the repair and renovation of existing structures and design proposals for its development.

- The preliminary survey and socio-economic study shows that the village has insufficient infrastructure requirement. If the planning and proposals will be proposed based on the requirement of the people the life of the people can be made prosperous.

- Following designs have been carried out: Public Health Centre, Public Park, Solar based water distribution pump station, Library, Public toilet, Social Community Hall

CHAPTER 11
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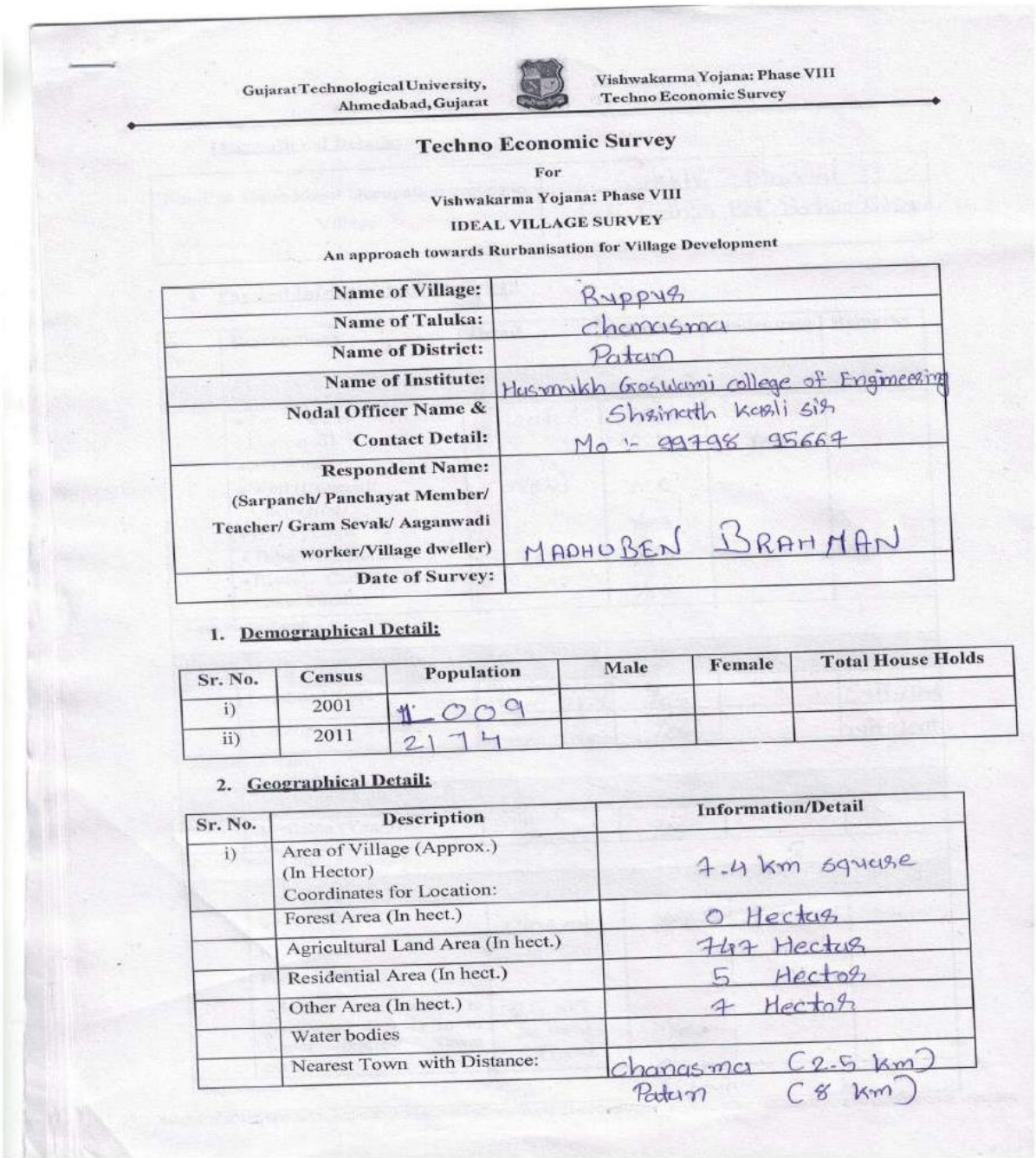
CHAPTER 12
Annexure Attachment

12.1 Survey form of Ideal Village Scanned copy attachment in the report



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:	Ruppur
Name of Taluka:	Chanasma
Name of District:	Patan
Name of Institute:	Hasmukh Goswami college of Engineering
Nodal Officer Name & Contact Detail:	Shrinath Kasli Sir Mo :- 99798 95667
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	MADHUBEN BRAHMAN
Date of Survey:	

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	1009			
ii)	2011	2174			

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	7.4 km square
	Forest Area (In hect.)	0 Hectar
	Agricultural Land Area (In hect.)	747 Hectar
	Residential Area (In hect.)	5 Hectar
	Other Area (In hect.)	7 Hectar
	Water bodies	
	Nearest Town with Distance:	Chanasma (2.5 km) Patan (8 km)

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3. Occupational Details:

Name of Three Major Occupation groups in Village	1. Sakkhi Mandal 2. Beti Padhao Beti Bachao Abhiyan 3.

4. Physical Infrastructure Facilities:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated) • RO Water • Well (Covered/ Uncovered) • Hand pumps • Tube well/ Borehole • River/ Canal/ Spring/ Lake/ Pond	Treated Covered	Yes Yes Yes Yes Yes	Yes	
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 100000 Cusec litres	Yes		Sufficient
	Underground Sump	Capacity: 75000 Cusec litres	Yes		Sufficient
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)	Under ground	Yes		
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	Closed	Yes		
	If Open than Pucca / Kutchcha				
	Whether drain water is discharged directly in to Water bodies/ Sewer plants	25 m below Pond	Yes		
Suggestions if any:					

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E.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	Bitumen		Yes	Not Good
	Main road	All Weathes	Yes		Good
	Internal streets	Cement Concrete		Yes	Not Good
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH 8 Golden Quadrilateral			Good Connectivity
Suggestions if any:					

F.	Transport Facility				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No		Yes	15 km Petlad Railway Station
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes	Yes		Ruppus Bus Stand
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	Yes		Ruppus Chhohsa
Suggestions if any:					

G.	Electricity Distribution				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	GEB Connection More than 6 hrs	Yes		Good 24 hrs Available Rare case In Cutoff
	Power supply for Domestic Use	24 hrs	Yes		
	Power supply for Agricultural Use	12 hrs	Yes		
	Power supply for Commercial Use	12 hrs	Yes		
	Road/ Street Lights	No Street Lights		Yes	

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	Electrification in Government Buildings/ Schools/ Hospitals		Yes		only In School & Village office
	Renewable Energy Source Facilities (Y/ N)		No		
	LED Facilities		No		

Suggestions if any:

H.	Sanitation Facility				
	Public Latrine Blocks If available than Nos.	Available	Yes		These is 3 Gents- 4 Ladies Publicly
	Location Condition				
	Community Toilet (With bath/ without bath facilities)	Not Available		No	It is Necessary To Build
	Solid & liquid waste Disposal system available	Not Available		No	It is Necessary To Build
	Any facility for Waste collection from road	Municipal Van	Yes		But these should Be 2-3 vans To collect All waste

Suggestions if any:

I.	Irrigation Facility:				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	Pond well, Small Stream	Yes		But it is Required to make clean & Clear & supply with All - fitting

Suggestions if any:

J.	Housing Condition:				
	Kutchha/Pucca (Approx. ratio)	71% Pucca	Yes		Still Many Hybrid Homes use Developing

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:	Any Checkup is not Available in Village & also not in nearby		Yes	These is an requirement to Develop and Build New Multi speciality Hospital In Ruppus Village
	Private Clinic/Private Hospital/ Nursing Home	Any Health Safety			Hospital Available Nearby but within 15km
	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	Available	Yes		Required to Renovate
	Primary School	Available	Yes		Required to Renovate
	Secondary school	Available	Yes		Required to Renovate
	Higher sec. School	Available	Yes		Required to Renovate
	ITI college/ vocational Training Center	No Available		Yes	
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	No Availabe		Yes	
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					

M.	Socio- Culture Facilities				
	Community Hall (With or without TV) Location:	Not Available		Yes	to build

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	Condition:				
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	No Available		Yes	To build
	Public Garden Location: Condition:	Available	Yes		To maintain
	Village Pond Location: Condition:	Available	Yes		To maintain
	Recreation Center Location: Condition:	Not Available		Yes	to build
	Cinema/ Video Hall Location: Condition:	Not Availabe		Yes	
	Assembly Polling Station Location: School Condition:	Available	Yes		
	Birth & Death Registration Office Location: Condition:	No Available		Yes	Required

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	Available	Yes		
	Telecommunication Network/ STD booth	Not Available		Yes	

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	General Market	Not Available		Yes	
	Shops (Public Distribution System)	Available	Yes		
	Panchayat Building	Available	Yes		
	Pharmacy/Medical Shop	Available	Yes		
	Bank & ATM Facility	Available	Yes		
	Agriculture Co-operative Society	Available	Yes		
	Milk Co-operative Soc.	Available	Yes		
	Small Scale Industries	Available	Yes		
	Internet Cafes/ Common Service Center/Wi Fi	No Available		Yes	
	Other Facility				
Suggestions if any:					

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

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
O.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	Still Not Adopted		Yes	to Adopt
P.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	Still Not Adopted		Yes	to Adopt
Q.	Any Other				

7. **Data Collection From Village**

Village Base Map Available: Hard Copy/Soft Copy	Not Available Village Base Map

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Recent Projects going on for Development of Village	Painting of each every house
Any NGO working for village development	

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)		Some of Repair & maintenance is required
2.	Additional Information/ Requirement		

9. Smart Village Proposal Design

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	MAKTUPUR VILLAGE	85%. DEVELOPED	

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

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

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12.2 Survey form of Smart Village Scanned copy attachment in the report

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Vishwakarma Yojana: Phase VIII

SMART VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Name of District:	MEHSANA
Name of Taluka:	UNJHA
Name of Village:	MAKTUPUR
Name of Institute:	Hasmukh Goswami College of Engineering
Nodal Officer Name & Contact Detail:	Shrinath Kasli Sir Mo:- 99798 95667
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Madhuben M Patel.
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	907			
2.	2011	2377			

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	2.5 Km square
2.	Forest Area (In hect.)	98 Hectar
3.	Agricultural Land Area (In hect.)	171 Hectors
4.	Residential Area (In hect.)	21 Hectar
5.	Other Area (In hect.)	121 Hectors
6.	Distance to the nearest railway station (in kilometers):	8 Km

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7.	Name of Nearest Town with Distance:	Unjha 4 Km
8.	Distance to the nearest bus station (in kilometers):	Unjha 3 Km
9.	Whether village is connected to all road for the any facility or town or City?	Yes

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Sakkhi Mandal 2. Beti Padhao Beti Bachao Abhiyan 3.

Major crops grown in the village:	1. Wheat 2. Jowar 3. Cotton

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		
2.	**DUG WELL** Protected Well Un Protected Well		Yes		
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring		Yes		
	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		

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Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 200000 CuSec litres	Yes		200000 CuSec litres available
	Underground Sump	Capacity: 125000 CuSec litres	Yes		125000 CuSec litres available
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	Underground Drainage is Available With closed Pipe	Yes		It is Required To Maintain Yearly To Avoid Diseases.
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	All Weathes	Yes		
	Main road	All Weathes	Yes		
	Internal streets	All Weathes	Yes		
	Nearest NH/SH/MDR/ODR Dist. in kms.	All Weathes	Yes		
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Not Available	Yes		Unjha 7 km
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Available	Yes		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Available	Yes		
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	GEB Available	Yes		24 Hours Available

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

Suggestions if any:

G.	Sanitation Facility				
	Public Latrine Blocks If available than Nos.	4 Nos	Yes		Maintanance Reqvised
	Location Condition				
	Community Toilet (With bath/ without bath facilities)	No			
	Solid & liquid waste Disposal system available	IN Dsainage	Yes		
	Any facility for Waste collection from road	Dumping Vehicle	Yes		Available In Mosning

Suggestions if any:

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

Suggestions if any:

I.	Housing Condition:				
	Kutchha/Pucca (Approx. ratio)	85 : 15	Yes		100% Pucca House will Be Made by 2025.

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi) Sub-Centre PHC BLOCK PHC CHC/RH District/ Govt. Hospital Govt. Dispensary Private Clinic Private Hospital/ Nursing Home AYUSH Health Facility sonography /ultrasound facility	ICDS, BLOCK PHC, Private Clinic are available	Yes		• PHC • Govt. Dispensary • Nursing Home • AYUSH Health facility are required
	If any of the above Facility is not available in village than approx. distance from village: 5 kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Available	Yes		Renovate
	Primary School	Available	Yes		Renovate
	Secondary school	Available	Yes		Renovate
	Higher sec. School				Required
	ITI college/ vocational Training Center				Required
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities				NoT Necessary
	If any of the above Facility is not available in village than approx. distance from village: 5 kms.				

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Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	Without TV	ASIDE of School		
	Public Library (With daily newspaper supply: Y/N)	Well Maintain		Yes	
	Public Garden	Good		Yes	
	Village Pond	Good		Yes	
	Recreation Center				No
	Cinema/ Video Hall				No
	Assembly Polling Station	Good		Yes	
	Birth & Death Registration	Good		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	Good		Yes	
	Telecommunication Network/ STD booth				No
	General Market	Good		Yes	
	Shops (Public Distribution System)	Good		Yes	
	Panchayat Building	Good		Yes	
	Pharmacy/Medical Shop				No
	Bank & ATM Facility				No
	Agriculture Co-operative Society	Good		Yes	
	Milk Co-operative Soc.	Good		Yes	
	Small Scale Industries	Good		Yes	
	Internet Cafes/ Common Service Center/Wi Fi				No
	Youth Club	Good		Yes	
	Mahila Mandal	Good		Yes	

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	Project Proposed	Yes		Govesment Contsibution Requised
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	Project Proposed	Yes		Govesment Contsibution Requised
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				Not Available
2.	Recent Projects going on for Development of Village	Swachh Village	Yes		
3.	Any NGO working for village development	Villagess Itself	Yes		Vesy Good
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	No Natusal Calamity occused	Yes		Vesy Good

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks

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1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	Yes, All facilities Required to Repair & Maintain	
2.	Additional Information/ Requirement	fund Required	
3.	During the last six months how many times CLEANING .... FOGGING...................................... Drive was undertaken in the village?	Twice	

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

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12.3 Survey form of Allocated Village Scanned copy attachment in the report

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Vishwakarma Yojana: Phase VIII
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Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Name of District:	Ahmadabad
Name of Taluka:	Daskroi
Name of Village:	Bilasiya
Name of Institute:	Hasmukh Goswami college of Engineering
Nodal Officer Name & Contact Detail:	Shainath Kaili Sir Mo : 99798 95667
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Arvid Chauhan (Sarpanch)
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	1133	-		
2.	2011	2184	1202	982	747

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	10 KM square
2.	Forest Area (In hect.)	0 Hactar
3.	Agricultural Land Area (In hect.)	929 Hactar
4.	Residential Area (In hect.)	62 Hactar
5.	Other Area (In hect.)	9 Hactar
6.	Distance to the nearest railway station (in kilometers):	14 KM, Kalupur Railway Station Ahmadabad

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7.	Name of Nearest Town with Distance:	Ahmadabad
8.	Distance to the nearest bus station (in kilometers):	5.5 Km Naroda Bus Station
9.	Whether village is connected to all road for the any facility or town or City?	Ahmadabad (22 km)

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Sakkhi Mandal
	2.	Beti Padhao Beti Bachao Abhiyan
	3.	

Major crops grown in the village:	1.	Wheat
	2.	Paddy
	3.	Cotton Crops

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		
2.	**DUG WELL** Protected Well Un Protected Well		Yes		
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring		Yes		
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump		Yes		

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	Other(Specify)Lake/ Pond		Yes		
Suggestions if any:					
B.	Water Tank Facility				
	Overhead Tank	Capacity: 80000 cusec litres	Yes		It is 80000 cusec. litres Available
	Underground Sump	Capacity: 100000 cusec litres	Yes		It is 100000 litres Available
Suggestions if any:					
C.	The Type of Drainage Facility				
	A. UNDERGROUND DRAINAGE 1	Undeground Drainage Is Available with closed Pipe	Yes		It is Required To Maintain yearly To Avoid Diseases.
Suggestions if any:					
D.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	Bitumen		Yes	Not Good
	Main road	All Weather	Yes		Good
	Internal streets	Cement Concrete		Yes	Not Good
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH & Golden Quadrilateral			Good Connectivity
Suggestions if any:					
E.	Transport Facility				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No		Yes	22 km kalupur Railway station
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes In-Village	Yes		Bilasiya Bus stand
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	Yes		Bilasiya Chhohsa
Suggestions if any:					
F.	Electricity Distribution				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	GEB Connection More Than 6 hrs	Yes		Good 24 hrs Available Rare Cutoff Incase of fault

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	Power supply for Domestic Use	24 Hrs	Yes		
	Power supply for Agricultural Use	12 Hrs	Yes		
	Power supply for Commercial Use	12 Hrs	Yes		
	Road/ Street Lights	No Street Lights		Yes	
	Electrification in Government Buildings/ Schools/ Hospitals		Yes		Only In School & Village office
	Renewable Energy Source Facilities (Y/ N)		No		
	LED Facilities		No		
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	Available	Yes		These is 2 Gents -2 Ladies Publicly
	Location Condition				
	Community Toilet (With bath/ without bath facilities)	Not Available		No	It is Necessary To Build
	Solid & liquid waste Disposal system available	Not Available		No	It is Necessary To Build
	Any facility for Waste collection from road	Municipal Van	Yes		But these should Be 2-3 Vans To Collect All Waste
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL OTHER (SPECIFY)	Pond Well Small Stream	Yes		But it is Required to Make clean & Clear supply with All fittings & Fixtures, to Conserve Waste of Water
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	50 % Pucca	Yes		Still Many Hybsid Homes are Developing

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi) Sub-Centre PHC BLOCK PHC CHC/RH District/ Govt. Hospital Govt. Dispensary Private Clinic Private Hospital/ Nursing Home AYUSH Health Facility sonography /ultrasound facility	Any Health Safety & Checkup is not Available in Village & also Not in Neasby		Yes	There is an Requirement to Develop and Build New Multi Speciality Hospital In Bilasiya Village, Because as There is No Hospital Available Neasby Within 15 km Radius, And also people Have To Go 20km Far, For These Treatment To City.
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Available		~~yes~~	Naroda - 9 km
	Primary School	50 years old	Yes		Required To Build New
	Secondary school	50 years old	Yes		Required To Build New
	Higher sec. School	Not Available		Yes	
	ITI college/ vocational Training Center	Not Available		Yes	
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	Not Available			Apollo - 2 km Shree Monnath Education Trust - 9 km

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

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)				No
	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			Yes	
	Birth & Death Registration Office				No

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

Suggestions if any:

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

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

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village?	25 %		Yes	
	2. Are there any beneficiaries in the village from the following programme?	Many But Where Not Aware of It.			
	3. Janani Suraksha Yojana				No
	4. Kishori Shakti Yojana				No
	5. Balika Samriddhi Yojana				No
	6. Mid-day Meal Programme				No
	7. Intergrated Child Development Scheme (ICDS)				No
	8. Mahila Mandal Protsahan Yojana (MMPY)				No
	9. National Food for work Programme (NFFWP)				No
	10. National Social Assistance Programme				No
	11. Sanitation Programme (SP)				No
	12. Rajiv Gandhi National Drinking Water Mission				No
	13. Swarnjayanti Gram Swarozgar Yojana				No
	14. Minimum Needs Programme (MNP)				No
	15. National Rural Employment Programme				No
	16. Employee Guarantee Scheme (EGS)				No
	17. Prime Minister Rojgar Yojana (PMRY)				No
	18. Jawahar Rozgar Yojana (JRY)				No
	19. Indira Awas Yaojna (IAY)				No
	20. Samagra Awas Yojana (SAY)				No
	21. Sanjay Gandhi Niradhar Yojana (SGNY)				No
	22. Jawahar Gram Samridhi Yojana (JGSY)				No
	23. Other (SPECIFY)				No

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	Not Available		Yes	Highly Recommended
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	Not Available		Yes	High Recommended
3.	Any Other	Not Available			

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy	Not Available			
2.	Recent Projects going on for Development of Village		Yes		To Make Sustainable & Smart Village
3.	Any NGO working for village development	No		Yes	
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	No	Yes		Sometimes Pond Water Comes on Road which Makes Inconvenience.

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VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	Repair of all Roads & should be develop New Road on Temp-rary Roads and all other Water & sanitation system is Required To Be Repair.	These should Be a body Formed which Take Respon-sibility for the Development of Village and Its Maintaina-nce
2.	Additional Information/ Requirement	Lack of working body	Requirement
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	Cleaning : Monthly Fogging :- only in Winter Season	

IX. Smart Village / Heritage Details

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	IS THEIR ANY THING FOR THE VILLAGE ENHANCEMENT POSSIBLE ?	Necessity of Proper Workable Body for Developping Village.	It should be Provided By Goverment Authority

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
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Email ID:
rurban@gtu.edu.in

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12.4 Gap Analysis of the Allocated Village

[Table 17 Gap Analysis of Bilasiya Village]

VILLAGE GAP Analysis					
Village Facilities	**Planning Commission/UDPFI Norms**	**Village Name:**	**BILASIYA**		
		Population:		**2547**	
		Existing	**Required as per Norms**	**Smart Vilage / Cities / Heritage Future Projection Design**	**Gap**
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	1	1	1	**0**
Primary School	Each Per 2500 population	1	1	1	**0**
Secondary School	Per 7,500 population	1	1	1	**0**
Higher Secondary School	Per 15,000 Population	0	0	1	**1**
College	Per 125,000 Population	0	0	0	**0**
Tech. Training Institute	Per 100000 Population	0	0	1	**1**
Agriculture Research Centre	Per 100000 Population	0	0	1	**1**
Skill Development Center	Per 100000 Population	0	0	1	**1**
Health Facility					
Govt/Panchyat Dispensary or Sub PHC or Health Centre	Each Village	0	0	1	**1**
Primary Health & Child Health Center	Per 20,000 population	0	0	1	**1**
Child Welfare and Maternity Home	Per 10,000 population	0	1	1	**1**
Multispeciality Hospital	Per 100000 Population	0	0	1	**1**
Public Latrines	1 for 50 families (if toilet is not there in home, specially for	2 Gents & 2 Ladies	1	5	**0**

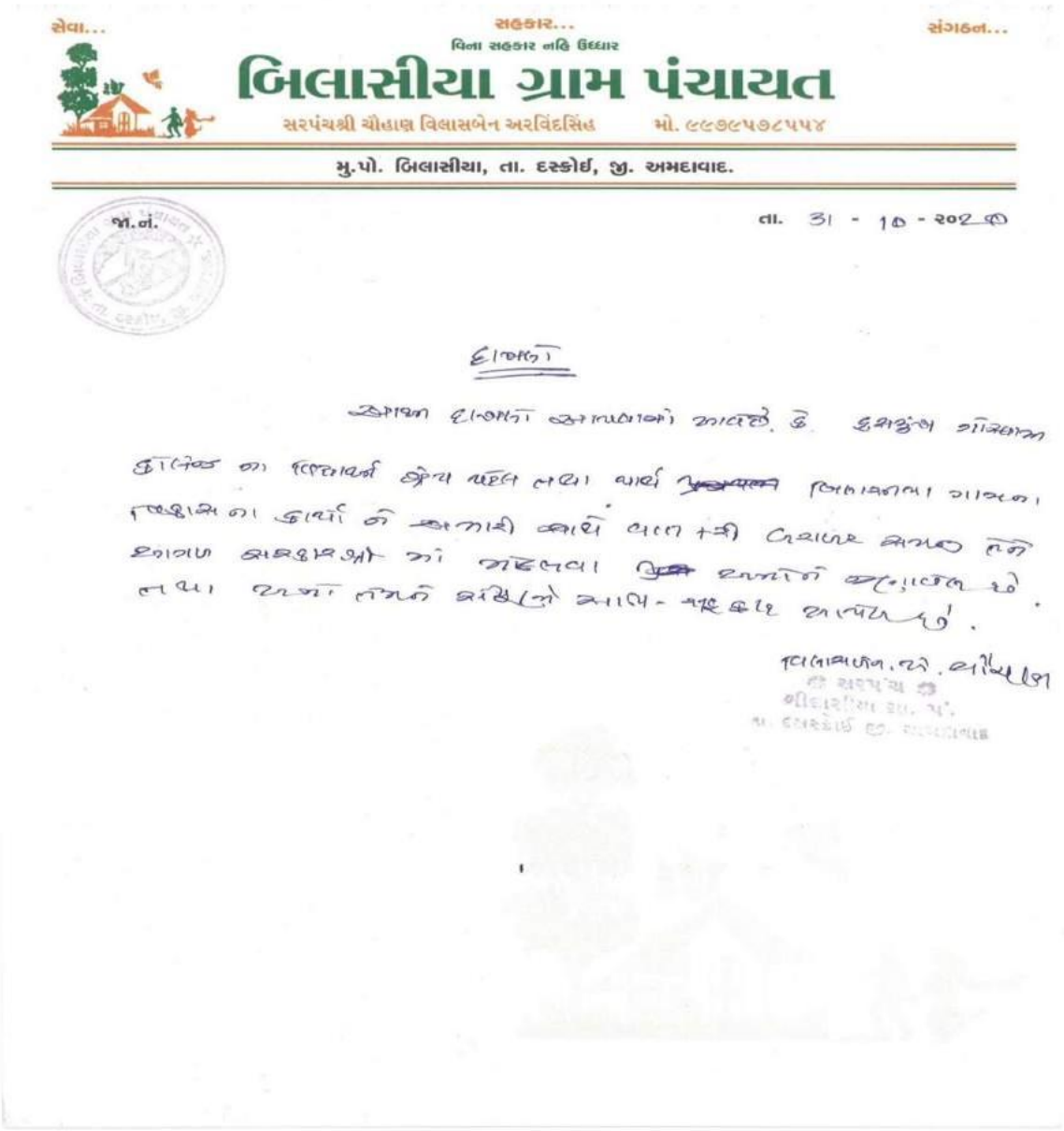
	slum pockets & kutcha house)				
Physical Infrastructure Facilities					
Transportation		**Adequate / Inadequate**			
Pucca Village Approach Road	Each village	Adequate	Adequate	Adequate	**0**
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	Adequate	Adequate	Adequate	**0**
Drinking Water (Minimum 70 lpcd)		Adequate	Adequate	Adequate	**0**
Over Head Tank	1/3 of Total Demand	Adequate	Adequate	Adequate	**0**
U/G Sump	2/3 of Total Demand	Adequate	Adequate	Adequate	**0**
Drainage Network - Open					**0**
Drainage Network - Cover		Adequate	Adequate	Adequate	**0**
Waste Management System		Inadequate	Adequate	Adequate	**0**
Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	0	1	1	**1**
community hall and Public Library	Per 15000 Population	0	1	1	**1**
Cremation Ground	Per 20,000 population	0	0	0	**0**
Post Office	Per 10,000 population	1	1	1	**0**
Gram Panchayat Building	Each individual/group panchayat	1	1	1	**0**
APMC	Per 100000 Population	0	0	1	**1**
Fire Station	Per 100000 Population	0	0	1	**1**
Public Garden	Per village	0	1	1	**1**
Police post	Per 40,000Population	0	0	1	**1**
Shopping Mall		0	0	0	**0**

12.5 Summary Details of All the Villages Designs in Table Form

[Table 18 Summary Details of All Village Design]

SR NO	VILLAGE NAME	PART – I	PART - II
1	BILASIYA	1) Public Health Center 2) Public Garden 3) Library 4) Community Hall 5) Solar Based Water Distribution System 6) Public Toilet	1) Bus Stand 2) Bank – Financial Services 3) Medical Store With Pharmacy 4) Rain Water Harvesting On Community Hall 5) Grocery Store 6) Animal Husbandry
2	KANBHA	1) Public Toilet 2) Super Market 3) RCC Road 4) Bus Stand 5) Underground Water Tank 6) Library	1) Public Garden 2) RCC Road Works 3) Arogya Kendra 4) Mahila Mandali 5) Sports Club
3	KUBADTHAL	1) Design Of Bank 2) P.H.C 3) Post Office 4) Skill Development Class 5) Cyber Café 6) Aangan – wadi	1) Government Grocery Store 2) Community Hall 3) Public Library 4) Maintenance Of Panchayat Building 5) Maintenance Of Road Network 6) Public Toilet
4	KUHA	1) Public Toilet 2) Government Medical Shop 3) Auditorium 4) Public Library 5) Waste Management 6) Ground Water Recharge By Vertical – Shaft	1) Bus Stop 2) Play Ground 3) Activity Club 4) Mahila Mandali 5) Gate 6) Post Office

12.6 Village Interaction with Sarpanch Approval For Report



[Figure 28 Sarpanch Project Approval For The Allocated Bilasiya Village]

12.7 Sarpanch Letter Giving Information about the Village Development

Sarpanch Verbally provided & discussed the information regarding the village development.

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 Designs / Planning With Any Software).

13.1 Design Proposals for Future.

We visited the village under this project. First, we meet the Sarpanch of the village and collect the data of the village. In addition, doing their analysis after more visits of T.D.O, Sarpanch, and Talati we take much information about the village. In addition, analyse the data, which we collect. In addition, we visit the village with villagers and Talati and observe the present condition of the village. We saw that the village condition is good. However, it is required to develop at some extent.

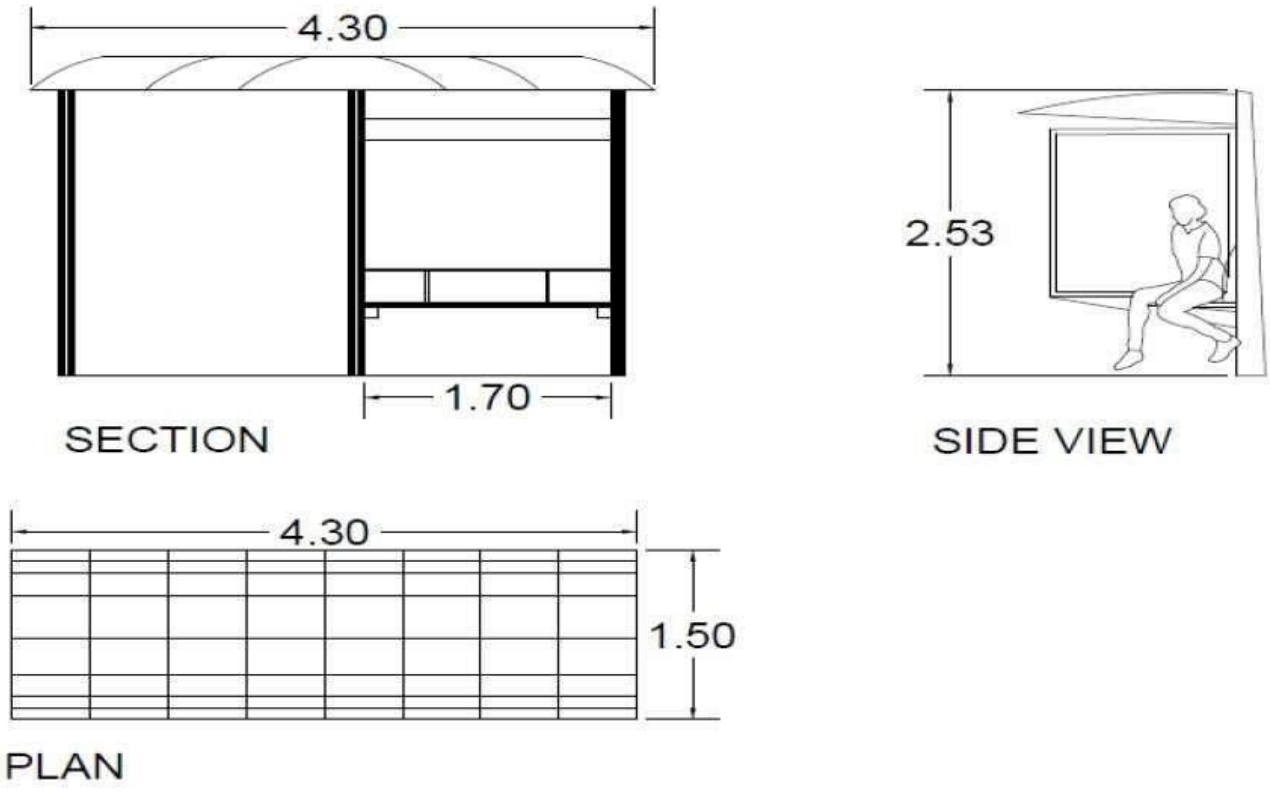
In the Physical infrastructure facility, we observed Main Source of Drinking Water, water tank facility, drainage facility, types of drainage, Road networks, Transportation facility, Electrical Distribution, Sanitation facility, irrigation facility and housing condition etc.

In the Social Infrastructure Facility, we observed health facility, Education Facility and Social Cultural facility. In the village all, the physical infrastructure facilities are very good but some facility required to renovate properly for working condition. In the village, not any developed sustainable facilities.

1) Designing of Public Health centre.
2) Design of Park.
3) Design of Solar based water distribution pump station.
4) Library
5) Public toilet
6) Social Community Hall
7) Bus Stand
8) Bank – Financial Services
9) Medical Store With Pharmacy
10) Rain Water Harvesting On Community Hall
11) Grocery Store
12) Animal Husbandry

13.1.1 Civil Design 1: Bus Stand.

[Figure 29 Bus Stand Development for Bilasiya Village]



[Table 19 Bus Stand Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF BUS STAND AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD							
MEASUREMENT SHEET							
ITEM	**DESCRIPTION**	**NO**	**L**	**B/W**	**H/D**	**QUANTIY**	**UNITS**
ITEM NO.:- 1							
1	Excavation for Foundation						
	L= 86.4 m	1	86.4	0.9	0.9	69.984	Cu.m.
	TOTAL QTY					69.984	Cu.m.

ITEM NO.:- 2							
2	C.C. work in foundation						
	L=86.4 m	1	86.4	0.9	0.8	23.33	Cu.m.
	TOTAL QTY					23.33	Cu.m
ITEM NO.:- 3							
3	Brick masonry work in Foundation						
	1st step						
	L=88.8 m	1	88.8	0.6	0.3	15.98	Cu.m.
	2nd step						
	L= 89.6 m	1	89.6	0.5	0.3	13.44	Cu.m.
	3rd step						
	L= 90.4 m	1	90.4	0.4	0.6	21.70	Cu.m.
	Total Brick masonry					51.12	Cu.m.
	work in foundation						
ITEM NO.:- 4							
4	Earth filling work	1	4	2	0.45	3.6	Cu.m
			4	2	0.45	3.6	Cu.m
		1	3	3	0.45	4.05	Cu.m
		1	3	3	0.45	4.05	Cu.m
		1	3	4	0.45	5.4	Cu.m
		1	3	2	0.45	2.7	Cu.m
		2	5	8.17	0.45	18.38	Cu.m
		2	1.5	4	0.45	0.154	Cu.m
		1	1	4	0.45	3.6	Cu.m
		1	1.2	2	0.45	1.08	Cu.m
	TOTAL					51.86	Cu.m
ITEM NO.:- 5							
5	Brick masonry work in super structure						
	L=93.9 m	1	93.9	0.3	3.0	84.51	Cu.m.
	Deduction for door &						
	Window						
	Door – D	7	1.2	0.3	2.1	5.202	Cu.m.
	Window – W	9	1.2	0.3	1.8	5.832	Cu.m.
	Window – W 1	1	0.9		1.8	0.456	Cu.m.
	Ventilator – V	11	0.6	0.3	0..6	1.188	Cu.m.
	Deduction for lintel	1	93.9	0.3	0.6	4.225	

	Total Brick masonry work					71.692	Cu.m.
ITEM NO.:- 6							
6	Lintel work as per						
	Above					4.225	Cu.m.
ITEM NO.:- 7							
7	Internal plaster work	4	4			48	Sq.m.
		2	2			12	Sq.m.
		4	4			48	Sq.m.
		2	2			12	Sq.m
		3	3		3	27	Sq.m
		2	3		3	18	Sq.m
		3	3		3	27	Sq.m
		2	3		3	18	Sq.m
		2	3		3	18	Sq.m
		2	4		3	24	Sq.m
		3	2		3	18	Sq.m
		2	3		3	18	Sq.m
		2	15		3	9	Sq.m
	TOTAL					297	Sq.m
ITEM NO.:- 8							
8	White wash as per					297	Sq.m.
	Above						

ITEM NO.:- 9							
9	Flooring work	1	4		2	8	Sq.m
		1	4		2	8	Sq.m
		1	3		3	9	Sq.m
		1	3		3	9	Sq.m
		1	3		4	12	Sq.m
		1	3		2	6	Sq.m
		1	5		8.17	40.85	Sq.m
		2	1.5		4	12	Sq.m
		2	1		4	8	Sq.m
		1	1.2		2	2.4	Sq.m
	Total Flooring work					115.85	Sq.m
ITEM NO.:- 10							
10	Skirting work	2	9.6			19.2	Sq.m.

		2	6			12	Sq.m.
	Total Skirting work					31.2	Sq.m.
ITEM NO.:- 11							
11	R.C.C Work for slab						
	L=16.4 m	1	16.4	8.9	0.15	25.45	Cu.m.
	B= 8.9 m						
	H= 0.15 m						

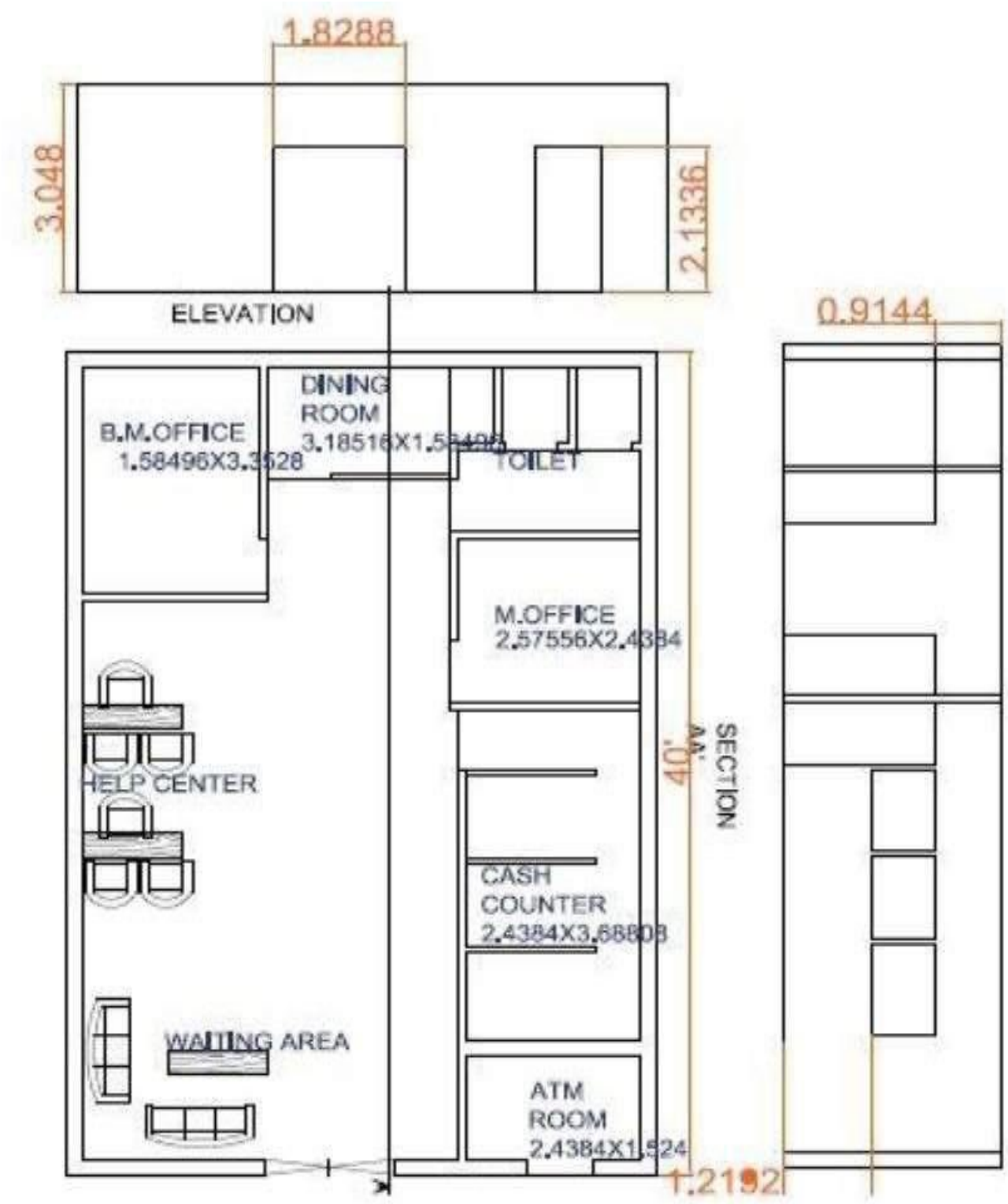
PROP. CONSTRUCTION WORK OF BUS STAND AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD

ABSTRACT SHEET

Sr.	Item description	Quantity	Rate	Per	Amount
1.	Excavation work	69.984	155	Cu.m.	₹10,847.00
2.	P C.C	23.33	3000	Cu.m.	₹69,990.00
3.	Brickwork in Foundation	51.12	3200	Cu.m.	₹163,584.00
4.	Brickwork in Superstructure	71.692	3500	Cu.m.	₹250,922.00
5.	Plastering	297	150	Sq.m.	₹44,550.00
6.	Flooring	115.85	855	Sq.m.	₹99,051.00
7.	R.C.C slab	25.45	4900	Cu.m.	₹124,705.00
8.	Painting	297	25	Sq.m.	₹7,425.00
	Total Rupees				**₹771,074.00**
	Contingencies : 05.00% Rupees				**₹38,553.00**
	10% contractor charges				**₹77,107.00**
	2% water charges				**₹15,421.00**
	Total Amount Rupees				**₹902,155.00**
	Say Rupees				**9,00,000.0**

13.1.2 Civil Design 2: Bank – Financial Services

[Figure 30 Bank Development for Bilasiya Village]



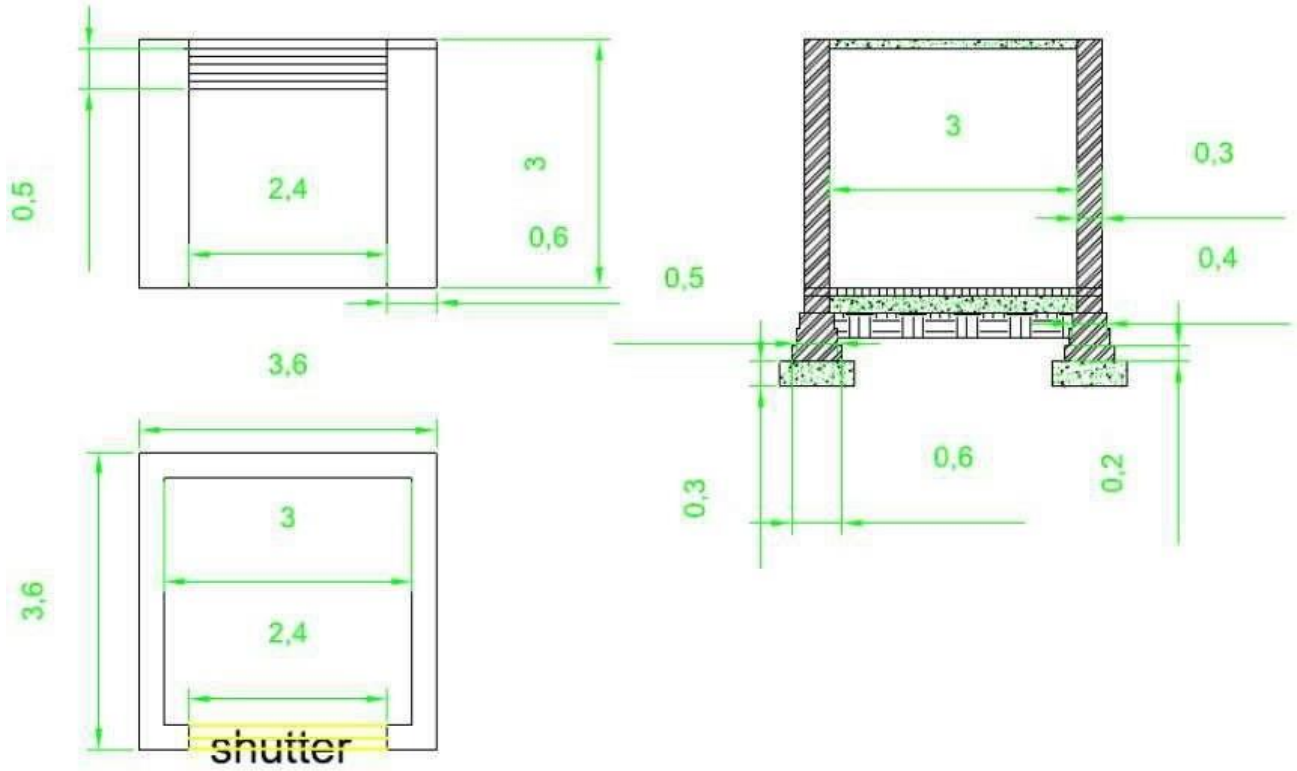
[Table 20 Bank Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF BANK AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD						
MEASUREMENT SHEET						
Sr. No.	Item Description	No.	L (M)	B (M)	H (M)	Qty.
1	Excavation for Foundation	1	41.52	0.8	1.2	39.85 m^3
2	Providing and laying BBCC (1:4:8) in ordinary row etc. complete	1	41.52	0.8	0.3	9.96 m^3
	B =0.6	1	41.52	0.6	0.3	7.41 m^3
	B =0.4	1	41.52	0.4	0.3	4.98 m^3
	B =0.3	1	41.52	0.3	0.3	3.73 m^3
4	For Earth Filling	1	8.56	12.01	0.45	46.26 m^3
5	DPC	1	41.52	0.3	–	12.45 m^3
6	Brick Masonry Up to Slab	1	41.52	3	0.3	37.36 m^3
7	For Slab	1	8.75	12.19	1.2	127.99 m^3
8	Parapet	1	41.52	0.9	0.2	7.47 m
9	Providing and laying Tiles flouring etc. complete	1	41.52	6	1	249.12 m^3
10	Deduction for opening					
	Door	7	0.91	31.5	1	200.65 m^3

PROP. CONSTRUCTION WORK OF BANK AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD						
ABSTRACT SHEET						
Sr. No.	Particular	Qty.	Rate	Per	Amount	
1	Excavation for Foundation	39.85	130	m^3	5,180/-	
2	Providing and laying BBCC (1:4:8) in ordinary row etc. complete	9.96	1900	m^3	18,924/-	
3	Earth filling	46.26	900	m^3	41,603.4/-	
4	Brick Masonry up to slab	37.36	2800	m^3	1,04,608/-	
5	Providing and laying Tiles Flouring etc. complete	249.12	30	m^3	7,473.6/-	
6	providing Door	7	760	No	5,320/-	
Total construction Cost				Rs. 1,83,109/-		
10% Contractor Profit				Rs. 18,310.9/-		
5% Painter Profit				Rs. 9,155.45/-		
Overall Cost				Rs 200000		

13.1.3 Civil Design 3: Medical Store with Pharmacy

[Figure 31 Pharmacy with Medical Store Development for Bilasiya Village]



[Table 21 Pharmacy with Medical Store Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF PHARMACY WITH MEDICAL STORE AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD						
MEASUREMENT SHEET						
NO.	**Items**	**No.**	**Length**	**Breath**	**Height**	**Quantity**
1	Excavation in foundation					
	Long wall					
	L=3+2*0.3+2*0.45	2	4.5	0.9	1.2	9.72 cu.m
	4.5					
	Short wall					
	L=3+0.3-2*0.45	2	2.4	0.9	1.2	5.18 cu.m
	2.4				Total=	14.9 cu.m

2	P.C.C. (1:4:8) in Foundation					
	Long wall	2	4.5	0.9	0.3	2.46cu.m
	Short wall	2	2.4	0.9	0.3	1.29 cu.m
	Total= 3.75 cu.m					
3	Brick Masonry in foundation and plinth c.m. 1:6					
	L=4.5-2*0.15					
	4.2	2	4.2	0.6	0.2	1.00 cu.m
	l=4.2-2*0.05					
	4.1	2	4.1	0.5	0.2	0.82 cu.m
	L=4.1-2*0.05					
	4	2	4	0.4	0.2	0.64 cu.m
	L=4-2-2*0.05					
	3.9	2	3.9	0.3	0.9	2.01cu.m
	Short wall					
	L=2.4+2*0.15					
	2.7	2	2.7	0.6	0.2	0.64 cu.m
	L=2.7+2*0.05					
	2.8	2	2.8	0.5	0.2	0.56 cu.m
	L=2.8+2*0.05					
	2.9	2	2.9	0.4	0.2	0.46 cu.m
	L=2.9+2*0.05					
	3	2	3	0.3	0.9	1.62 cu.m
	Total= 7.75 cu.m					
4	Earth Filling in plinth					
	Stationery Shop	1	3	3	0.55	4.95 cu.m
5	Plaster Work					
	Stationery shop					
	wall	4	3	-	3	36 sq.m
	ceiling	1	3	3	-	9 sq.m
	Total= 45 sq.m					
6	Deduction of Shutter	0.5	2	-	2.5	2.5 sq.m
7	Skirting for Stationery Shop	4	3	-	-	12 m
8	R.C.C Slab	1	3.6	3.6	0.15	1.944 cu.m

PROP. CONSTRUCTION WORK OF PHARMACY WITH MEDICAL STORE AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD

ABSTRACT SHEET

Item No.	Particulars of Item	Quantity	Per	Rate	Amount Rs.
1	Excavation in foundation	14.9	cu.m	85	₹1,266.50
2	Plain cement concrete (P.C.C.) in foundation 1:4:8	3.75	cu.m	3200	₹12,000.00
3	Brick work in foundation	7.75	cu.m	3200	₹24,800.00
4	Earth filling in plinth	4.95	cu.m	50	₹247.50
5	Smooth plaster work	45	sq.m	150	₹6,750.00
6	R.C.C. Slab	1.944	cu.m	8800	₹17,072.00
Total Cost					Rs. 62136/-
Add 5% Contingencies					Rs. 31068/-
Total Cost with 5% Contingencies					Rs. 652428/-

13.1.4 Civil Design 4: Rain Water Harvesting on Community Hall

Existing Situation:

The rain water harvesting facility is not present in the village. There are also trouble in the drinking water.

We propose the rain water harvesting design.

Data: To design rain water harvesting system we found out average rainfall data of last 10 years is 928 mm in ahmedabad

We design this system on toilet block in village.

Average rainfall: 928mm = 0.93 meter = 3.04 foot = 37 inch.

Catchment area of rainfall = 7ft X 13ft = 91ft2 = 2.13m X 3.96m =8.43m2

Volume of rainfall water = Catchment area X rainfall
= 8.43 X 0.93 = 7.84m3 = 7840 litre /year We can provide tank is about 8 cubic meter capacities.

Catchment area: The catchment of a water harvesting system is the surface which directly receives the rainfall and provides water to the system. A roof made of reinforced cement concrete (RCC) can be used for water harvesting.

Coarse mesh is provided at the roof to prevent the passage of debris.

Conduits: Conduits are pipelines or drains that carry rainwater from the catchment to the system. Conduits can be of any material like polyvinyl chloride (PVC) or galvanized iron (GI), materials that are commonly available.

Filter: The filter is used to remove suspended pollutants from rainwater collected over roof. A filter unit is a chamber filled with filtering media such as fibre, coarse sand and gravel layers to remove debris and dirt from water before it enters the storage tank.

Storage tank: The storage tank can construct underground in rectangular shape with RCC work. Overflow tank. The overflow tank is provided for safety against overflow of storage tank.

[Table 22 Rain Water Harvesting On Community Hall Measurement for Bilasiya Village]

PROPOSED CONSTRUCTION WORK OF RAIN WATER HARVESTING AT: BILASIYA, TAL : DASKROI, DIST : AHMEDABAD

MEASUREMENT SHEET

Component Details Of RWH

Sr No.	Component	Width(m)	Length(m)	Height(m)
1	filter tank	1	1	1
2	underground tank	2	2	2
3	over flow tank	1	1	1

Excavation Work

Sr No.	Description	Length(m)	Width(m)	Height(m)	Volume(m3)
1	FILTER TANK	-	-	-	0
2	WATER TANK	2 .15	2.15	2.1	9.7
3	OVER FLOW TANK	1.15	1.15	1.1	1.462
				Total	11.162

Details Of RCC Works

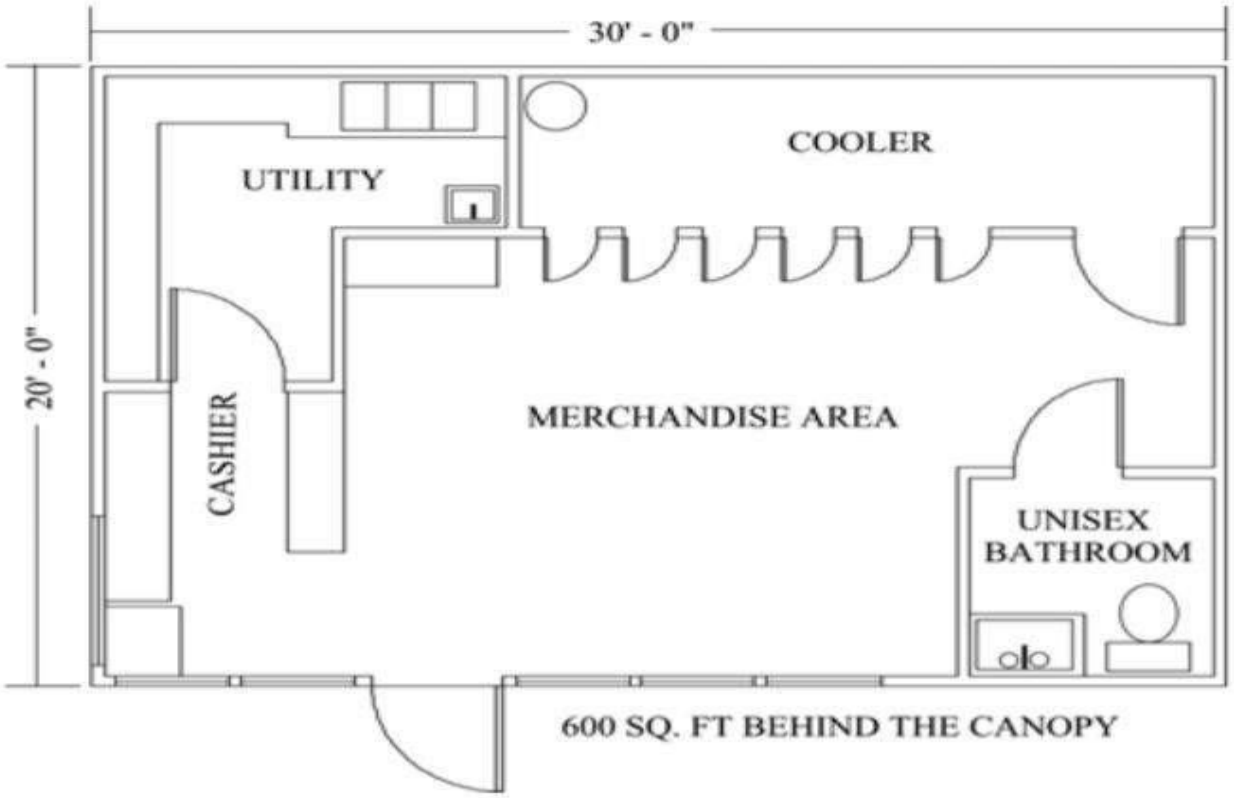
	Description	Numbers	Dimension			Volume (m3)
			Length (m)	Width (m)	Thickness (m)	
FILTER TANK	bottom slab	1	1	1	0.15	0.15
	side wall	4	1	1	0.15	0.6
	top slab	1	1	1	0.1	0.1
WATER TANK	bottom slab	1	2	2	0.15	0.6
	side wall	4	2	2	0.15	2.4
	top slab	1	2	2	0.1	0.4
Deduction	opening cover	1	0.5	0.5	0.1	-0.025
OVER FLOW TANK	bottom slab	1	1	1	0.15	0.15

ABSTRACT SHEET (RWH)

Item No.	Description	Quantity	Rate	Per	Total amount
1	Earth Work	11.162	320	m^3	₹3,571.84
2	R.C.C. work	5.075	3429.3	m^3	₹17,403.70
			Total		₹20,975.54
		Contractor's Profit(5% of Total Cost)			₹1,048.78
		Contingency + water Charges + Plumbing (5% + 1.5% of total cost)			₹1,363.41
		Overall cost of RWH			**₹44,363.26**

13.1.5 Civil Design 5: Grocery Store

[Figure 32 Grocery Store Development for Bilasiya Village]



[Table 23 Grocery Store Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF GOVT GROCERY STORE AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD							
MEASUREMENT SHEET							
ITEM	**DESCRIPTION**	**NO**	**L**	**B/W**	**H/D**	**QUANTIY**	**UNITS**
ITEM NO : 1							
	Excavation for Foundation						
	L= 43.35	1	43.35	0.75	1.35	43.89	Cu.m.
	TOTAL QTY					43.89	Cu.m.

ITEM NO : 2							
	C.C. work in foundation						
	L=43.35 m	1	43.35	0.75	0.3	9.75	Cu.m.
	TOTAL QTY					9.75	Cu.m
ITEM NO : 3							
	Brick masonry work in Foundation						
	1st step						
	L=43.5 m	1	43.5	0.6	0.6	15.66	Cu.m.
	2nd step						
	L= 43.65 m	1	43.65	0.45	0.45	8.84	Cu.m.
	Total Brick masonry work in foundation					24.50	Cu.m.
	Brick masonry work						
	for step						
	1st step	1	6.6	0.6	0.3	1.19	Cu.m.
	2st step	1	6.6	0.3	0.3	0.59	Cu.m.
	Total Brick masonry					1.78	Cu.m.
	work for step						
ITEM NO : 4							
	Earth filling work	1	12.9	6.6	0.45	38.31	Cu.m.
ITEM NO : 5							
	D.P.C work						
	L=43.8 m	1	43.8	0.3		13.14	Sq.m.
ITEM NO : 6							
	Brick masonry work in super structure						
	L=43.8 m	1	43.8	0.3	4.2	55.19	Cu.m.
	Deduction for door &						
	Window						
	Door – D	1	1.5	0.3	2.1	0.945	Cu.m.
	Window – W	6	1.2	0.3	1.6	3.46	Cu.m.
	Shutter	4	2.35	0.3	2.5	7.05	Cu.m.
	Deduction for lintel						

	Door – D	1	1.5	0.3	0.15	0.0675	Cu.m.
	Window – W	6	1.2	0.3	0.15	0.324	Cu.m.
	Shutter	4	2.35	0.3	0.15	0.423	Cu.m.
	Total Brick masonry						
	Work						
	= 55.19 – 12.27					42.92	Cu.m.
ITEM NO : 7							
	Lintel work	1	43.8	0.3	0.15	1.97	Cu.m.
ITEM NO : 8							
	Internal plaster work	2	7		3.75	52.5	Sq.m.
	Room – 1	2	6		3.75	45	Sq.m.
	Celling	1	7	6		42	Sq.m.
	Room – 2	2	5		3.75	37.5	Sq.m.
		2	6		3.75	45	Sq.m
	Celling	1	5	6		30	Sq.m.
	Deduction for door &						
	Window						
	Window – W	½ x 6	1.2		1.6	5.76	Sq.m.
	Door – D	½ x 1	1.5		2.1	1.575	Sq.m.
	Shutter	½ x 4	2.35		2.5	11.75	Sq.m.
	Work						
	= 252 – 19.08					232.915	Sq.m.
ITEM NO : 9							
	Internal White wash as Per					232.915	Sq.m.
	Above						
ITEM NO : 10							
	Brick masonry work	1	37.8	0.2	0.9	6.80	Cu.m.
	For parapet wall						
ITEM NO : 11							
	External plaster work						
	For long wall	2	12.9		6.2	159.96	Sq.m.
	For short wall	2	6.6		6.2	81.84	Sq.m.
	TOTAL					241.8	Sq.m.

	TOTAL DEDUCTION					17.51	Sq.m.
	Total External plaster work						
	= 241.8 – 17.51					224.29	Sq.m.
ITEM NO : 12							
	External white wash as per above					224.29	Sq.m.
ITEM NO : 13							
	Flooring work Room - 1	1	7	6		57.6	Sq.m.
	Room - 2	1	5	6		30	Sq.m.
	Door seal	1	1.5	0.3		1.8	Sq.m.
	Seal for shutter	4	2.35	0.3		2.82	Sq.m.
	Flooring for stair	2	6.6	0.3		3.96	Sq.m.
	Total Flooring work					96.18	Sq.m.
ITEM NO : 14							
	Skirting work Room - 1	2	7			14	m.
		2	6			12	m.
	Room - 2	2	5			10	m.
		2	6			12	m.
	Total Skirting work					48	m.
ITEM NO : 15							
	R.C.C Work for slab						
	L=12.9 m	1	12.9	6.6	0.15	12.77	Cu.m.
	B= 6.6 m						
	H= 0.15 m						

PROP. CONSTRUCTION WORK OF GOVT GROCERY STORE AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD

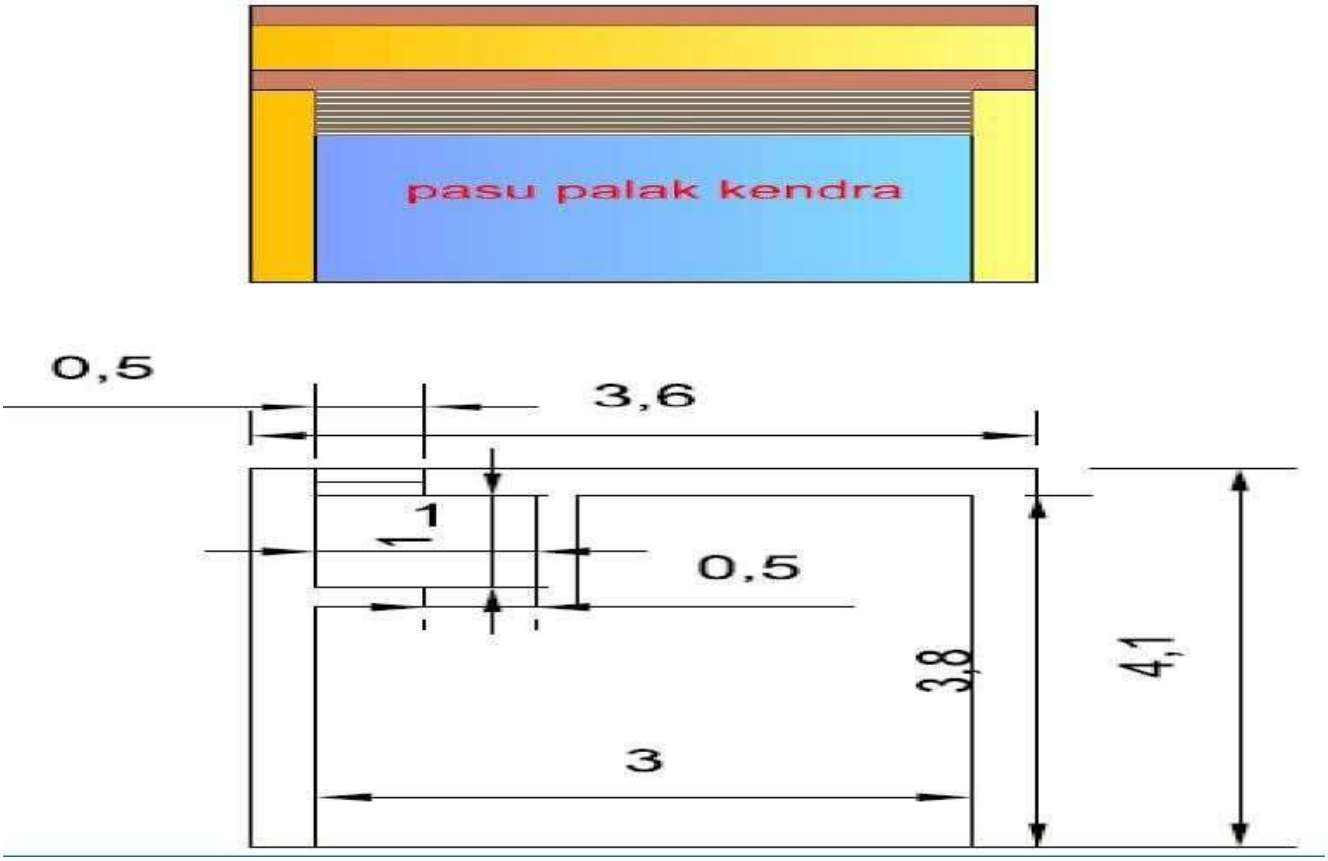
ABSTRACT SHEET

SR NO	ITEM DESCRIPTION	QUANTITY	RATE	UNIT	AMOUNT
1.	Excavation work	43.89	155	Cu.m.	₹6,802.95

2.	P C.C	9.75	3000	Cu.m.	₹29,250.00
3.	Brickwork in foundation	24.50	3200	Cu.m.	₹78,400.00
4.	Brickwork in superstructure	44.7	3500	Cu.m.	₹156,450.00
5.	Plastering	457.205	150	Sq.m.	₹68,580.75
6.	Flooring	96.18	855	Sq.m.	₹82,233.90
7.	R.C.C Work	14.74	4900	Cu.m.	₹72,226.00
8.	White Washing	457.205	15	Sq.m.	₹6,858.07
9.	Painting	457.205	25	Sq.m.	₹11,430.12
Total Rupees					**₹512,231.79**
Conti… 05.00% Rupees					**₹25,611.59**
10% contractor charges					**₹51,223.18**
2% water charges					**₹10,244.64**
Total Amount Rupees					**₹599,311.19**
Say Rupees					**₹600,000.00**

13.1.6 Civil Design 6: Animal Husbandry

[Figure 33 Animal Husbandry Development for Bilasiya Village]



[Table 24 Animal Husbandry Measurement for Bilasiya Village]

PROP. CONSTRUCTION WORK OF ANIMAL HUSBANDRY AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD						
MEASUREMENT SHEET						
No	**Descriptions**	**No**	**L**	**B**	**H**	**Qty**
1	Excavation for foundation					
	Long wall					
	L=3.8+2*0.3+2*0.45					
	5.3	2	5.3	0.9	1.2	11.44
	Short wall -1					
	L=3+0.3-2*0.45					
	2.4	1	2.4	0.9	1.2	2.59
	SHORT WALL 2					
	L=1+0.3-2*0.45					

	0.4	1	0.4	0.9	1.2	0.43
	SHORT WALL 3					
	L=1+0.3-2*0.45					
	0.4	1	0.04	0.9	1.2	0.43
					TOTAL	14.9
2	PCC(1:4:8)In foundation					
	long wall	2	5.3	0.9	0.3	2.86
	short wall 1	1	2.4	0.9	0.3	0.64
	short wall 2	1	0.4	0.9	0.3	0.1
	short wall 3	1	0.4	0.9	0.3	0.1
						total =3.7
	earth filling in plinth	1	3.8	3	0.55	6.23
	plaster work					
	room 1					
	wall 1	2	3.8		3	22.8
	wall 2	1	3		3	9
	selling	1	3	3.8		8.4
	wc					
	wall	4	1		3	12
	selling	1	1	1		1
						total=56.2
	deduction					
	door	0.5	0.5		2.1	0.52
	ventilation	0.5	0.5		0.45	0.11
	RCC slab	1	4.1	3.6	0.1	1.476
	Brick masonry in foundation					
	long wall					
	l=5.3-2*0.15					
	5	2	5	0.6	0.2	1.2
	l=5-2*0.05					
	4.9	2	4.9	0.5	0.2	0.98
	l=4.9-2*0.05					
	4.8	2	4.8	0.4	0.2	0.76
	l=4.8-2*0.05					
	4.7	2	4.7	0.3	0.9	2.53
	short wall 1					
	l=2.4+2*0.15					
	2.7	1	2.7	0.6	0.2	0.32

	l=2.7+2*0.05					
	2.8	1	2.8	0.5	0.2	0.28
	l=2.8+2*0.05					
	2.9	1	2.9	0.4	0.2	0.23
	l=2.9+2*0.05					
	3	1	3	0.3	0.9	0.81
	short wall 2					
	l=0.4+2*0.15					
	0.7	1	0.7	0.6	0.2	0.081
	l=0.7+2*0.05					
	0.8	1	0.8	0.5	0.2	0.08
	l=0.8+2*0.05					
	0.9	1	0.9	0.4	0.2	0.07
	l=0.9+2*0.05					
	1	1	1	0.3	0.9	0.27
	short wall 3					
	l=0.4+2*0.15					
	0.7	1	0.7	0.6	0.2	0.081
	l=0.7+2*0.05					
	0.8	1	0.8	0.5	0.2	0.08
	l=0.8+2*0.05					
	0.9	1	0.9	0.4	0.2	0.07
	l=0.9+2*0.05					
	1	1	1	0.3	0.9	0.27
						total=8.11

PROP. CONSTRUCTION WORK OF ANIMAL HUSBANDRY AT : BILASIYA, TAL : DASKROI, DIST : AHMEDABAD

ABSTRACT SHEET

No	Item	Qty	Rate	Per	Amount
1	Excavation for foundation	14.9	85	cu.m	1266.5
2	PCC in foundation	3.7	3200	cu.m	11840
3	Brick work in foundation	8.11	3200	cu.m	25952
5	Earth filling	6.23	50	cu.m	311.55
6	Plaster work	56.2	150	sq.m	8430
	Total Cost				Rs. 47800.05/-
	Total Cost with 5% Contingencies				Rs. 50190.05/-

13.2 Reasons For Students Recommending This Design.

Following are Some Facilities, Which Are Not Available In Village, And These Are Important For The Development Of Village.

In Village For Transportation Facility, the Bus Stand is far 3 KM on Main Road from Village, So It Is Required to Build new at Entrance / Centre Of Village.

In Village the people have to go far 5 – 6 Km for Financial Services, so we suggest to Develop Bank in the Village.

In Village There is no medical facility so we suggest to to Develop Pharmacy with Medical Store.

For The Proposed Design Of Community Hall In Part – 1, We Suggest To Rain Water Harvesting on it.

The Villagers have to travel long for groceries, So we suggest to have a Grocery Store in Village.

In village maximum cow & buffalo are available, we are planning drinking water tank for animals.

In Village there is no Animal Husbandry, So to have at least 1 Animal Husbandry in Village to specify as a proper village.

13.3 About Designs Suggestions / Benefit of The Villagers.

1) Villagers need market for buy or sell the daily need of villagers like vegetable, etc.
2) Maintain good Education village required the Library.
3) As village has 2 public toilets but it needs more because the population of village is more so the community toilet will be beneficial for villagers.
4) There is no playground nor are garden so providing it design villager refresh their self. Besides of all these, there is also need for the proper drainage system.
5) For the cleaning purpose Villagers need solid waste Management system.

CHAPTER 1 4
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.
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.

Earthquake-resistant or aseismic structures are designed to protect buildings to some or greater extent 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. This means the loss of life should be minimized by preventing collapse of the buildings for rare earthquakes while the loss of the functionality should be limited for more frequent ones.

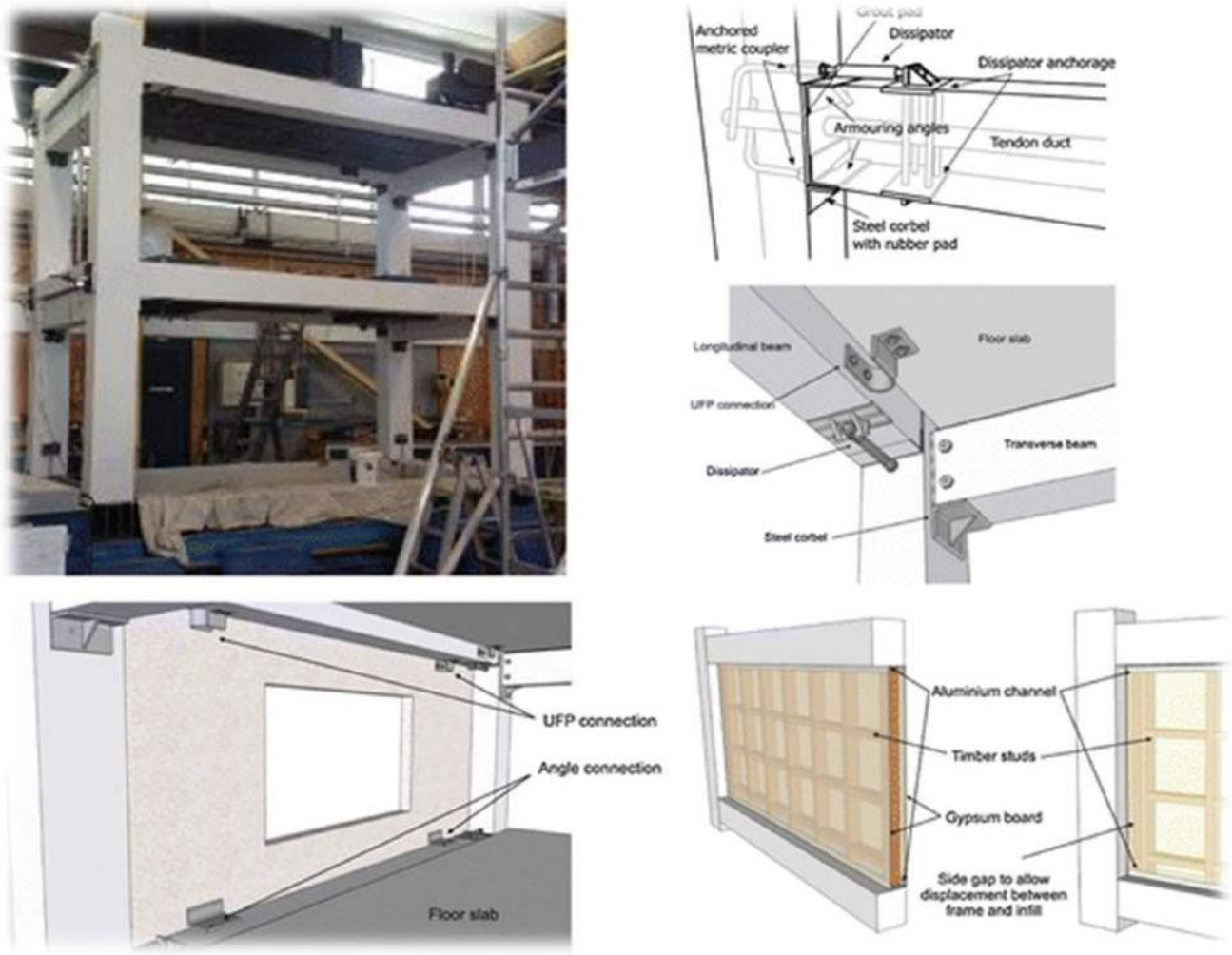
To combat earthquake destruction, the only method available to ancient architects was to build their landmark structures to last, often by making them excessively stiff and strong.

Currently, there are several design philosophies in earthquake engineering, making use of experimental results, computer simulations and observations from past earthquakes to offer the required performance for the seismic threat at the site of interest. These range from appropriately sizing the structure to be strong and ductile enough to survive the shaking with an acceptable damage, to equipping it with base isolation or using structural vibration control technologies to minimize any forces and deformations. While the former is the method typically applied in most earthquake-resistant structures, important facilities, landmarks and cultural heritage buildings use the more advanced (and expensive) techniques of isolation or control to survive strong shaking with minimal damage. Examples of such applications are the Cathedral of Our Lady of the Angels and the Acropolis Museum.

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 degree instead of 90 degree for better anchorage. • The arrangement of lateral ties in the columns should be as per code and must be continued through the joint as well.

- **ACTUAL COST ESTIMATION: 21121 RS / SQ.M**
- **PROTOTYPE MODEL:**



[Figure 34 Advance Earthquake Resistance Prototype]

14.1.2 Seismic Retrofitting of Building:

The seismic retrofitting of reinforced concrete buildings not designed to withstand seismic action is considered. After briefly introducing how seismic action is described for design purposes, methods for assessing the seismic vulnerability of existing buildings are presented. The traditional methods of seismic retrofitting are reviewed and their weak points are identified. Modern methods and philosophies of seismic retrofitting, including base isolation and energy dissipation devices, are reviewed. The presentation is illustrated by case studies of actual buildings where traditional and innovative retrofitting methods have been applied.

Seismic retrofitting is the modification of existing structures to make them more resistant to seismic activity, ground motion, or soil failure due to earthquakes. With better understanding of seismic demand on structures and with our recent experiences with large earthquakes near urban centers, the need of seismic retrofitting is well acknowledged. Prior to the introduction of modern seismic codes in the late 1960s for developed countries (US, Japan etc.) and late 1970s for many other parts of the world (Turkey, China etc.), many structures were designed without adequate detailing and reinforcement for seismic protection. In view of the imminent problem, various research work has been carried out. State-of-the-art technical guidelines for seismic assessment, retrofit and rehabilitation have been published around the world – such as the ASCE-SEI 4 and the New Zealand Society for Earthquake Engineering (NZSEE)'s guidelines. These codes must be regularly updated; the 1994 Northridge earthquake brought to light the brittleness of welded steel frames, for example.
The retrofit techniques outlined here are also applicable for other natural hazards such as tropical cyclones, tornadoes, and severe winds from thunderstorms. Whilst current practice of seismic retrofitting is predominantly concerned with structural improvements to reduce the seismic hazard of using the structures, it is similarly essential to reduce the hazards and losses from non-structural elements. It is also important to keep in mind that there is no such thing as an earthquake-proof structure, although seismic performance can be greatly enhanced through proper initial design or subsequent modifications.

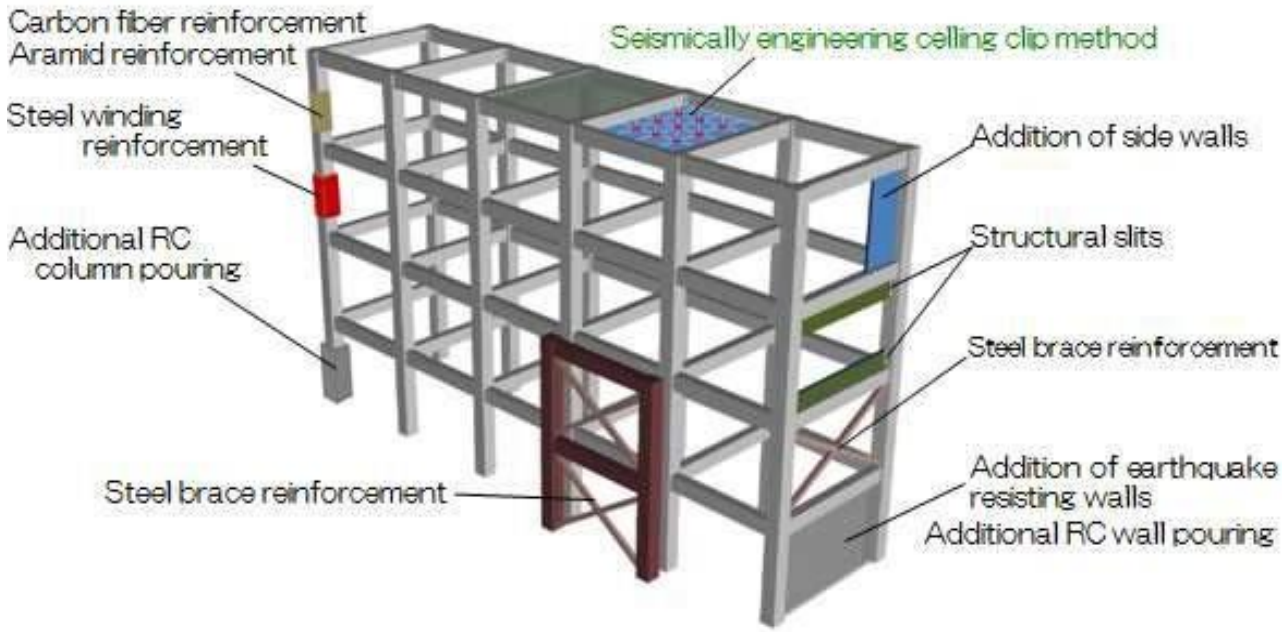
STRATEGIES:

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

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

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

- **ACTUAL COST ESTIMATION: 9923 RS / SQ.M**
- **PROTOTYPE MODEL:**



[Figure 35 Seismic Retrofitting Of Building Prototype]

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

Advanced Practices In Construction Field

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

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. In addition, the weather and other factors can prevent the application of previous experience effectively.

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

Incorporating **advanced construction technology** into practice can increase levels of quality, efficiency, safety, sustainability and value for money. However, there is often a conflict between traditional industry methods and innovative new practices, and this is often blamed for the relatively slow rate of technology transfer within the industry.

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.

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

1) 3D printing.
2) Materials.
3) Building information modeling (BIM).
4) Cladding systems.
5) Computer aided design and computer aided manufacturing (CAD/CAM).
6) Computer numerical control.
7) Construction Innovation Hub.
8) Construction plant.
9) Modern methods of construction.
10) Modular construction.
11) Offsite manufacturing.
12) Prefabrication and preassembly.
13) Research and development.
14) Site investigations and surveying.
15) Substructure works.
16) Water engineering.
17) Temporary works.
18) Smart technology.
19) Robotics.
20) GPS controlled equipment.

Modern construction methods (MMC) are methods that are developed in construction industry with proper planning and design so that each project reduces the construction time, cost and maintain overall sustainability.

There are many methods followed and constructed in the present scenario widespread. Most famous and highly applied methods of modern construction are listed and explained below.

Types of Modern Methods of Construction Techniques.

The Different MMC used in construction field includes:

- Precast Flat Panel System
- 3D Volumetric Modules
- Flat Slab Construction
- Precast Cladding Panels
- Concrete Wall and Floors
- Twin Wall Technology
- Precast Concrete Foundation

- Concrete Formwork Insulation
- **ACTUAL COST ESTIMATION: 14771 RS / SQ.M**
- **PROTOTYPE MODEL:**

[Figure 36 Advance Construction Technology Prototype]

14.1.4 Engineering Aspects Of Soil mechanics - Environmental Impact Assessment:

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

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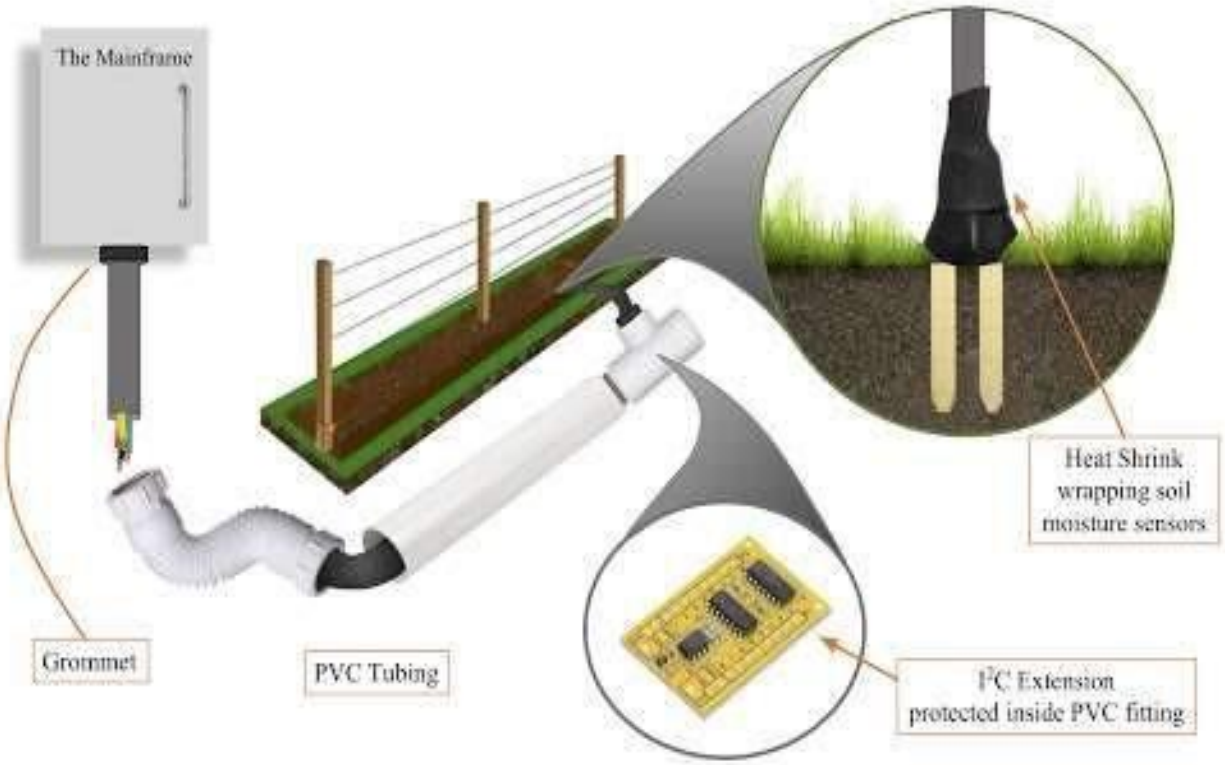
Keywords: Environmental impact assessment, flow station, environmental pollution, civil engineering infrastructure, impact mitigation

- **ACTUAL COST ESTIMATION: 4974 RS / SQ.M**
- **PROTOTYPE MODEL:**



[Figure 37 Engineering Aspects Of Soil Mechanics Prototype]

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

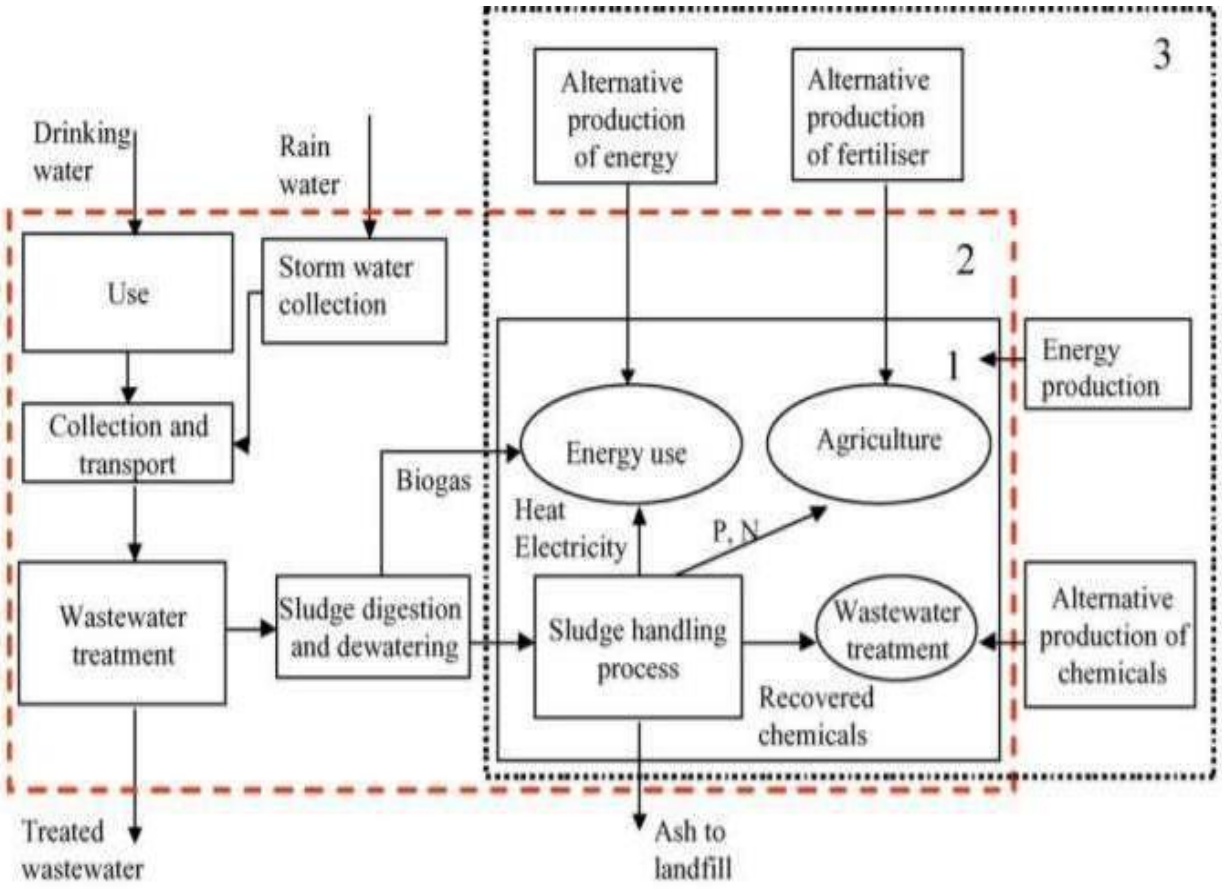
Water is one of the world's most valuable resources, yet it is under constant threat due to climate change and resulting drought, explosive population growth, and waste. One of the most promising efforts to stem the global water crisis is industrial and municipal water reclamation and reuse. The WateReuse Association defines reused, recycled, or reclaimed water as "water that is used more than one time before it passes back into the natural water cycle." Thus, water recycling is the reuse of treated wastewater for beneficial purposes such as agricultural and landscape irrigation, industrial processes, toilet flushing, or replenishing a groundwater basin (referred to as groundwater recharge). Water reuse allows communities to become less dependent on groundwater and surface water sources and can decrease the diversion of water from sensitive ecosystems. Additionally, water reuse may reduce the nutrient loads from wastewater discharges into waterways, thereby reducing and preventing pollution. This 'new' water source may also be used to replenish overdrawn water sources and rejuvenate or reestablish those previously destroyed. The objective of the present paper is to give insight into the appropriate technology for treatment of wastewater. The paper discusses sustainable wastewater treatment systems in the context of urban areas of the developing world. The paper concludes that, "Since the urban areas of many developing countries are growing rapidly, ecological sanitation systems must be implemented that are sustainable and have the ability to adapt and grow with the community's sanitation needs." In order to determine the appropriate treatment system, the developer must consider the area's climate, topography, and socioeconomic factors. Keywords: Developing countries, ecological engineering, high efficiency production, sustainable wastewater treatment & reuse, urban areas, and environmental quality.

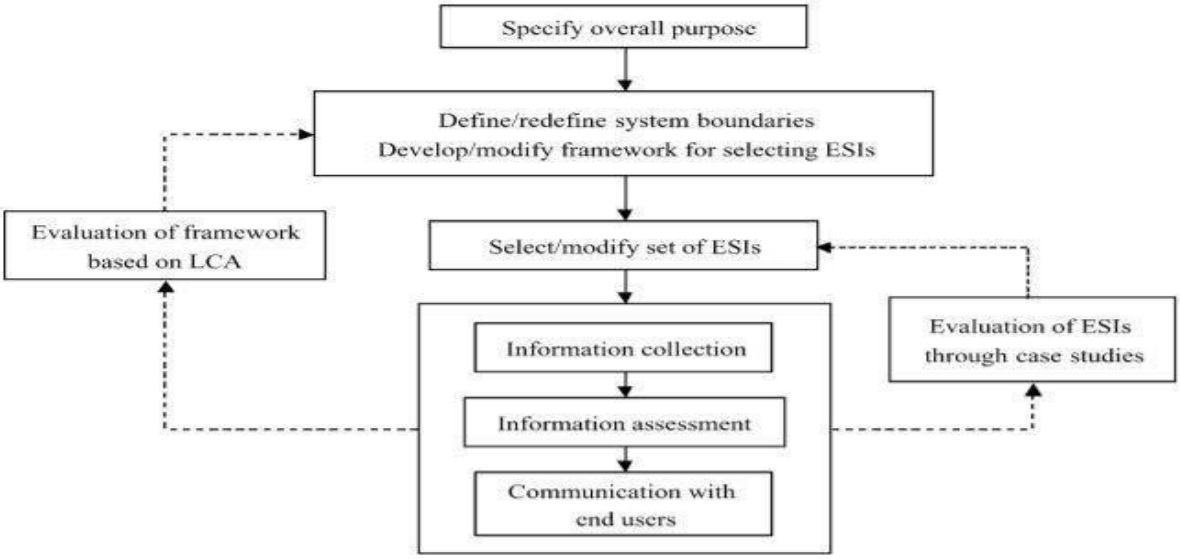
Water scarcity and water pollution are crucial issues in today's world. One of the ways to reduce the impact of water scarcity and pollution is to expand water and 2 Consilience wastewater reuse. The increasing scarcity of water in the world along with rapid population increase in urban areas gives rise to concern about appropriate water management practices. In the context of trends in urban development, wastewater treatment deserves greater emphasis. Currently, there is a growing awareness of the impact of sewage contamination on rivers and lakes. Accordingly, wastewater treatment is now receiving greater attention from the World Bank and government regulatory bodies. Urban wastewater treatment has received less attention compared to 'water supply & treatment.' Water scarcity coupled with the bursting seams of our cities and towns have taken a toll on our health and environment. The sewage contamination of our lakes, rivers, and domestic water bodies has reached dangerous levels and is being recognized by leading organizations like the World Bank. The current urban wastewater management system is a linear treatment system that is based on disposal. The traditional system needs to be transformed into a sustainable, closed-loop urban wastewater management system that is based on the conservation of water and nutrient resources. A huge loss of life-supporting resources is the result of failed organic wastewater recovery. A wastewater management team is well equipped to create a wastewater management strategy that will result in the reduction of pathogens in surface and groundwater to improve public health.

The production and delivery of drinking water and the conduction and treatment of wastewater are vital functions in any society; hence securing them for current and future generations is an important part of sustainable development. This has also been recognised in many of the initiatives to measure different aspects of sustainability and select appropriate sustainable development indicators (SDIs) that were launched following the U.N. conference on Environment and Development in Rio de Janeiro in 1992. Initially, a majority of the SDIs proposed were intended for use at the international, national, regional or other administrative or geographical levels (see, e.g. OECD, 1998; UNCSD, 1996; Verbruggen and Kuik, 1991), and included suggestions on indicators such as withdrawal of freshwater (OECD), sewage connection rates (OECD) and releases of nitrogen and phosphorus (UNCSD) (for review see Lundin, 1999). In the latter half

of the 1990s the role and responsibility of companies in the implementation of sustainable development attracted increasing attention, leading to a new set of initiatives, now to develop SDIs for use at the company level. The use of SDIs within companies in general is described by e.g. Bennett and James (1999), Fiksel et al. (1999), Olsthoorn et al. (2000), Schaltegger and Burritt (2000), Veleva and Ellenbecker (2001) and Veleva et al. (2001). SDI projects applying specifically to the water industry are reviewed by e.g. Balkema et al. (2002) and Foxon et al. (2002). There are among these projects, within the water sector or elsewhere, few examples of successful implementation of SDIs, i.e. SDIs made operational. The reasons for this are most likely manifold, but it is increasingly understood that sustainability issues at company level call for extended involvement of employees if management towards increased sustainability is to be successful (Schelin et al., 2003) and this is often ignored (Azzone et al., 1996; Noci, 2000). This paper reports on a co-operative case study aiming at the construction of operational SDIs for a water company. The study involved the indicator users (company staff and one member of the board) and researchers, in order to provide indicators that meet the needs of the company to indicate its contribution to a sustainable development. The study was focused on wastewater and sludge handling systems and included the conduct of LCA, risk and uncertainty assessment, economic assessment and multi-criteria analysis of a number of sludge handling options.

- **ACTUAL COST ESTIMATION: 34779 RS / SQ.M**
- **PROTOTYPE MODEL:**





[Figure 38 Water Supply Sewerage Sustainable Development Techniques]

14.1.6 PSC SEGMENTAL:

A segmental bridge is a bridge built in short sections (called segments), i.e., one piece at a time, as opposed to traditional methods that build a bridge in very large sections. The bridge is made of concrete that is either cast-in-place (constructed fully in its final location) or precast concrete (built at another location and then transported to their final location for placement in the full structure).

These bridges are very economical for long spans (over 100 meters), especially when access to the construction site is restricted. They are also chosen for their aesthetic appeal.
The first cantilevered segmental cast-in-place concrete bridge, built in 1930, was Ponte Emilio Baumgartner across Rio do Peixe in the state of Santa Catarina of Brazil.[1] It was followed in 1951 by the prestressed concrete bridge across the Lehn River in Balduinstein, Germany, the first of many cantilevered bridges designed by Ulrich Finsterwalder.[citation needed]
The first prestressed concrete bridge, assembled by several precast elements, was the Pont de Luzancy across the river Marne in France, built according to the design by Eugène Freyssinet and commenced in 1940, but due to the war, completed only in 1946.

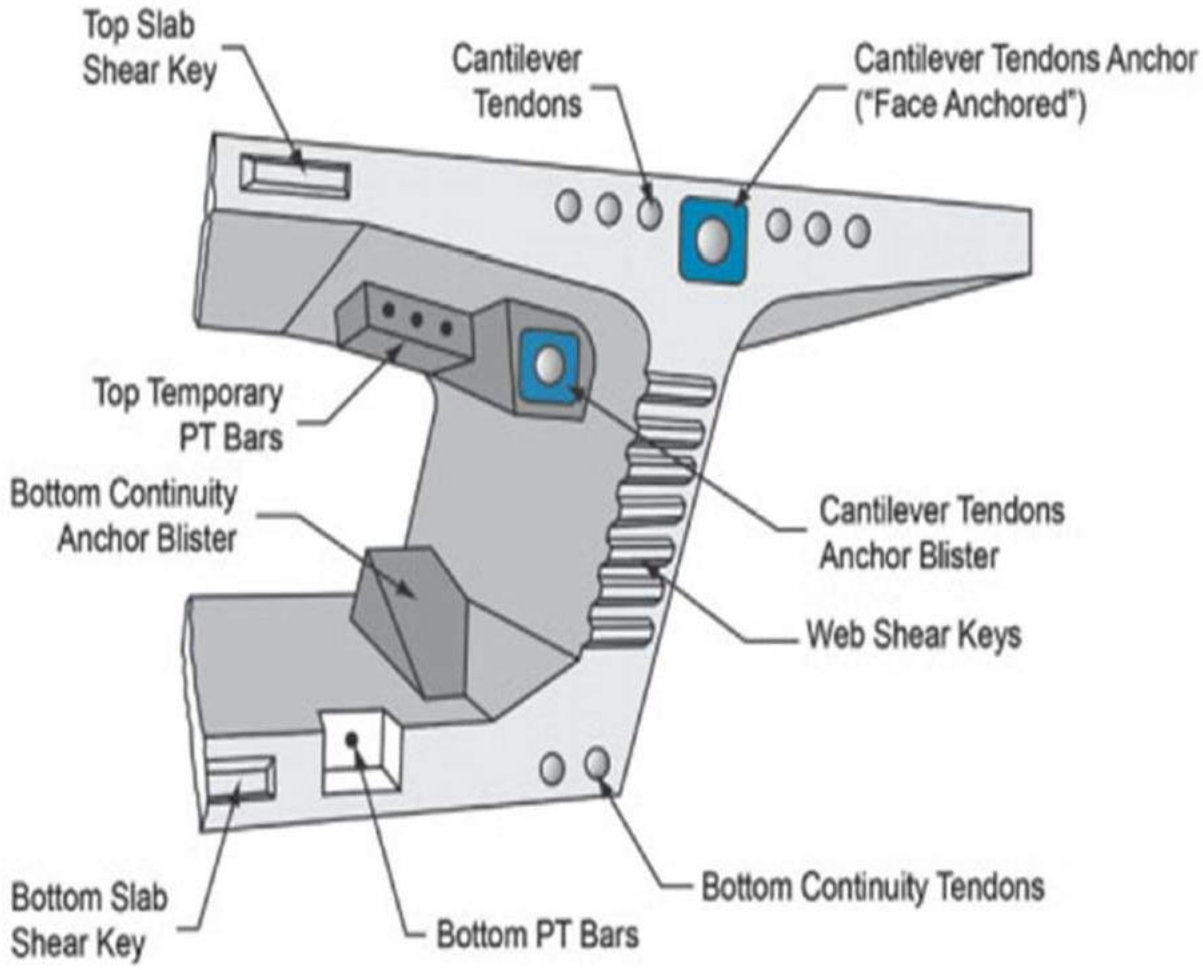
- **CONSTRUCTION DESIGN SEQUENCES:**

- The sequence of construction is similar to traditional concrete bridge building, i.e., build the support towers (columns), build the temporary false work, build the deck, and perform finish work. The principal differences are as follows:
- The support towers may be built segmentally. Often this is accomplished using "slip-form" construction, where the false work moves (slips) upward following sequential concrete "pours." The false work uses the newly constructed concrete as the basis for moving upward.
- After the towers are built, a superstructure is built atop the towers. This superstructure serves as the "launching" point for building the deck. (The deck is often built in both directions away from the tower, simultaneously.)

- The deck is now constructed sequentially, beginning at the tower, one section at a time. This process is usually accomplished using a self-propelled bridge layer that hoists the bridge section into place.
- In cast-in-place bridges, the false work is connected to the previously installed concrete and allowed to cantilever freely. Next, the permanent reinforcing steel and supports are installed. Finally, the concrete is placed and cured, freeing the false work to be moved.
- In pre-cast bridges, the concrete segment is constructed on the ground, and then transported and hoisted into place. As the new segment is suspended in place by the crane, workers install steel reinforcing that attaches the new segment to preceding segments. Each segment of the bridge is designed to accept connections from both preceding and succeeding segments.
- The process in step 3 is repeated until the span is completed.

➢ **ACTUAL COST ESTIMATION: 47121 RS / SQ.M**

➢ **PROTOTYPE MODEL:**



[Figure 39 P.S.C Segmental Prototype]

CHAPTER 1 5

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

(For Allocated village development, villagers happiness, comfortable and for enhancement of the village) (With the Smart village development Concept As Per Your Idea And Village Visit, modern technology with innovation).

[Table 25 Proposed Design of Bilasiya Village Impact]

SR NO	PROPOSED DESIGN NAME	DESIGN EFFECT PERIOD	BENEFIT	TOTAL AMOUNT EXPENDITURE
CHAPTER 8 : Sustainable Design Planning Proposal (Part – 1)				
1	Designing Of Public Health Centre	Within 6 Months	For the Medical Facility to the Villagers.	979502
2	Design Of Park	Within 1 Year	For the Refreshment of children's & Senior Citizen of Villagers.	1043792
3	Design of Solar Based Water Distribution Pump Station	Immediately	To Reduce Water Expense Of Panchayat Department which Directly affects the Villagers.	527345
4	Design Of Library	Within 3 Months	The Teenagers Studying In The Village Can Get A Place To Study with All Educational Materials.	543336
5	Design Of Public Toilet	Immediately	As an "away-from-home" toilet room, a public toilet can provide far more than access to the toilet for urination and defecation. People also wash their hands, use the mirrors for grooming, get drinking water (e.g. refilling water bottles), attend to menstrual hygiene needs, and use the waste bins.	348842
6	Design Of Social Community Hall	Within 1 Year	For The Events, Functions, Social Functions / Get To Gather Of The Villagers.	2030149

CHAPTER 13 : Proposed Future Designs (Part – 2)				
7	Bus Stand	Within 3 Months	Public Transportation	900000
8	Bank	Within 6 Months	Financial Facility	200000
9	Pharmacy Medical Store	Within 3 Months	Rapid Medical Facility	652428
10	Rain Water Harvesting on Community Hall	Immediately	Rain Water Saving For Direct Use	44363
11	Grocery Store	Immediately	Villagers Convenience	599947
12	Animal Husbandry	Within 3 Months	To Avoid Roaming's Of Animals In Villaage	50021

CHAPTER 1 6

Survey By Interviewing With Talati & 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	Farm, School, Health centre
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	
8	Child girl education is appreciated in village?	Yes	
9	Facility of vaccination to child is available in village?	NO	
10	Are village people aware about child vaccination and done to each and every child as per norms?	Yes	
11	Women help line number information is provided to village people?	yes	
12	Is water scarcity in village? How many days per year?	NO	
13	Is village under any debt?	NO	
14	Is any serious issue due to debt from bank or any person happened in village?	NO	
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	NO	
16	Is any death of patient occurred due to unavailability of medical facility in village?	Yes	
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	Total = 14 Male = 7, boy = 3 female = 3, girl = 1
18	Is village improvement is observed in comparative scenario from past to present?	No	
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

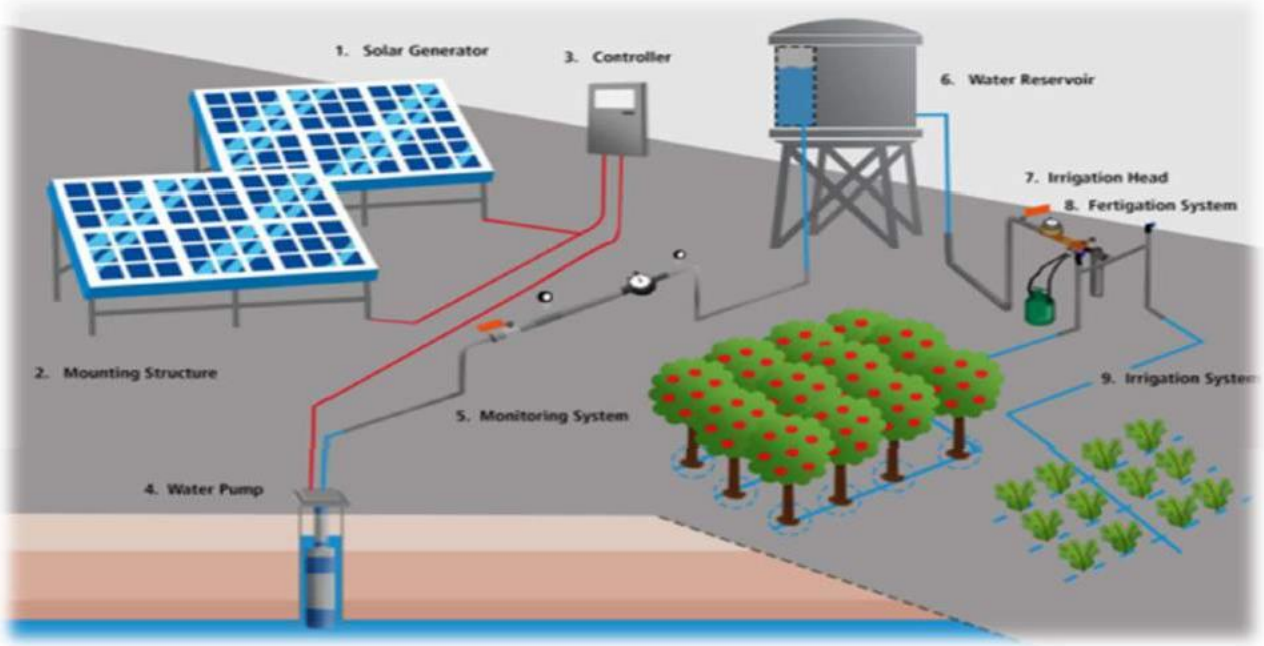
CHAPTER 1 7

IRRIGATION / AGRICULTURAL ACTIVITIES, AGRO INDUSTRY & ALTERNATE TECHNIQUES.

17.1 SOLAR IRRRIGATION

- In recent days, agriculture field farmers are facing many problems in watering their plants to keep their crops green in summer season.
- It's because they don't have correct idea about the availability of the power. Even if the power is available, they have to wait until the pitch is properly watered.
- Thus, this process restricts them to stop doing other deeds. But there is a solution, i.e., automatic solar submersible pump control panel for irrigation.
- In the trial of solar based plant irrigation using submersible pumps, PV cells are used to generate electricity, which is stored in rechargeable batteries.
- These batteries used to produce power are Lithium Battery for the system operation.
- A submersible pump controller is used to pump a water from a boor well to a storage water tank. Then, the water is drawn by a submersible pump at the slope's toe, where the installed sprinklers water the crops or plants.
- Farmers have always played a significant role in our society as they provide the world's population with food. However, one may forget that, not only do they provide food but they also provide energy, which nowadays, is of paramount importance, especially as in light of renewable energies. Indeed, farmers can produce energy from the wind, the sun or the biomass and they can use it for their own farm, or, if they have a surplus, resell it to companies.
- Solar energy might be one of the easiest ways for farmers to produce energy. Indeed, farmers usually have several large buildings whose roofs are directly under the sun, without being hindered by the shadows of the trees, turning them into an ideal place to settle a photovoltaic system. Therefore, the use of solar energy in agriculture is becoming increasingly popular and the energy produced from this renewable source can be used either on the farm or in the local power grid, providing the farmer with an additional income.
- One of the areas in agriculture that benefits the most from solar energy is irrigation, especially in arid regions. The main reason is that using the sun for irrigation represents a virtuous circle: when the sun shines, it feeds the irrigation system, well, we know that crops needs more water when the sun shines a lot. Therefore, a large quantity of energy is available when it is actually needed.

[Figure 40 Proposal of Solar Irrigation for Bilasiya Village]



17.2 E LEARNING & ONLINE LIBRARY

- One of the natural responses to the challenges of e-learning environment is the introduction of the digital library to support e-learning with resources network, designed to meet the needs of the learners, in both individual and collaborative settings, constructed to enable the dynamic use of a broad array of materials for learning primarily in digital format, and managed actively to promote the reliable access anytime and anywhere to quality collections and services, available both within and outside the network.

- The introduction of digital libraries into the education process was made easier by distance education, which has developed over the years.

- With the Internet and the World Wide Web, distance education programs can mount sets of materials on web servers to support online courses.

- One of the basic ideas is to aggregate the learning materials on various topics, written by many educators, in a digital library of courseware.

- Digital libraries have the potential to significantly change the fundamental aspects of the classroom in ways that could have an enormous impact on teaching and learning.

- New pedagogical methods should accompany digital libraries as an emerging technology for education to reach the compelling vision of education.

- Therefore, for an ideal e-learning situation, digital libraries are regarded as the hub of the library collections and services that function together in the real e-learning environment.
- Digital libraries have the potential to offer unprecedented resources for supporting e-learning. This paper addresses and discusses such aspects as what is meant by "e-learning", and how can it be supported by the library environment, the functionality of the digital library; and how e-learning resources are included and organized in the digital library. Design/methodology/approach – The paper explores the advantages of digital libraries for e-learning and the types of learning that can be supported by digital libraries. Findings – There is undoubtedly a keenness to use online information resources for research and teaching, but this seems to be matched by a lack of awareness of how best to integrate these resources into the e-learning environment. Originality/value – The paper provides a useful insight into the role and influence of digital libraries and online resources on e-learning.

[Figure 41 E – Learning & Online Library for Bilasiya Village]

17.3 WIND TURBINE:

- Wind can be considered a form of kinetic energy and in order to take advantage of the energy carried by the wind, some form of energy conversion must be employed.

- The wind turbine is a device designed to capture the wind movement and turn the energy into rotational force.

- The rotational force is ultimately used to power a generator, which produces electricity.

- In rural areas, large-scale wind energy production is impractical. Therefore, a small wind turbine is usually used.
- A **wind farm** or **wind park**, also called a **wind power station** or **wind power plant**, is a group of wind turbines in the same location used to produce electricity. Wind farms vary in size from a small number of turbines to several hundred wind turbines covering an extensive area. Wind farms can be either onshore or offshore.
- Many of the largest operational onshore wind farms are located in China, India, and the United States. For example, the largest wind farm in the world, Gansu Wind Farm in China had a capacity of over 6,000 MW by 2012, with a goal of 20,000 MW by 2020. As of December 2020, the 1218 MW Hornsea Wind Farm in the UK is the largest offshore wind farm in the world. Individual wind turbine designs continue to increase in power, resulting in fewer turbines being needed for the same total output.
- Because they require no fuel, wind farms have less impact on the environment than many other forms of power generation. Wind farms have, however, been criticised for their visual impact and impact on the landscape. Typically they need to be spread over more land than other power stations and need to be built in wild and rural areas, which can lead to "industrialization of the countryside", habitat loss, and a drop in tourism. Some critics claim that wind farms have adverse health effects, but most researchers consider these claims to be pseudoscience (see wind turbine syndrome). Wind farms can interfere with radar, although in most cases, according to the US Department of Energy, "siting and other mitigations have resolved conflicts and allowed wind projects to co-exist effectively with radar".

[Figure 42 Wind Turbine Development for Bilasiya Village],

CHAPTER 1 8

SOCIAL ACTIVITIES – ANY PLANNED BY STUDENTS

COVID – 19: Awareness in a Village

[Figure 43 Awareness of Covid – 19 for Bilasiya Village]


CG05
K-7131

CHAPTER 1 9

BILASIYA VILLAGE S A G Y QUESTIONNARIE SURVEY FORM

1

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Bilasiya Gram Panchayat: Arvindbhai chauhan Ward No. 05

Block: _____ District: Ahmedabad

State: Gujarat L S Constituency: Kheda Parliamentary Constituency.

1. Family Identity and Size

Name of Head of Household	Arvindbhai chauhan							Male/ Female	Male
SECC Survey ID:		Family Size	4	Over 18	3	6 to 18	1	Under 6	No

2. Category & Entitlement Details (Tick as appropriate)

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

2. Adults (above 18 years)

Name	Age	Sex M/F / O	Disability Status Y/N	Marital Status[3]	Education Status[4]	Adhaar Card (Y/ N)	Bank A/C (Y/N)	Social Security Pension[5]
Nirmaben B Barot	58	F	N	2	03	Y	Y	0
Bharatbhai Barot	62	M	N	2	04	Y	Y	0
Mukeshbhai V Darji	40	M	N	2	03	Y	Y	0
Nilaben Darji	38	F	N	2	04	Y	Y	0

3. Children from 6 years and up to 18 years

Name	Age	Sex M/F/O	Disability Y/N	Marital Code*	Level of Education: Code#	Going to School /College (Y/N)	Current Class	Computer Literate Y/N
Janki Darji	16	F	N	1	05	N	—	N
Sahil Darji	17	M	N	1	06	Y	12th	Y
Nikul Chauhan	17	M	N	1	05	Y	10th	Y

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
Sujal Thakor	6	M	No	Y	N	Y	Y	23
Sahil Thakor	6	M	NO	Y	N	Y	Y	23
Priyansa Thakor	2	F	No	N	N	N	Y	21

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

2

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

5. Hand washing

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

6. Use of Mosquito Net
Children: ~~Yes~~ / No Adults: ~~Yes~~ / No

7. Do members take Regular Physical Exercise

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

8. Consumption of Tobacco

	Smoking	Chewing
Adults	✓	✓
Children	X	X

9. House & Homestead Data

Own House: Yes / ~~No~~	No. of Rooms: 2
Type: ~~Kutcha~~ / Semi Pucca / Pucca	
Toilet: Private / ~~Community~~ / ~~Open Defecation~~	
Drainage linked to House: Covered / ~~Open~~ / ~~None~~	
Waste Collection System	Door Step / ~~Common Point~~ / ~~No Collection System~~
Homestead Land: Yes / ~~No~~	Kitchen Garden : Yes / ~~No~~
Compost Pit: ~~Individual~~/ Group/ ~~None~~	Biogas Plant: ~~Individual~~/ ~~Group~~/ None

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

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

11. Source of Lighting and Power

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

12. Landholding (Acres)

1. Total	2472	2. Cultivable Area	1540
3. Irrigated Area	1842	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
Wheat		2.47 ton
Cotton		1.71
teddy		1.21

17. Livestock Numbers

Cows: 200	Bullocks: 45	Calves: 10
Female Buffalo: 150	Male Buffalo: 100	Buffalo Calves: 25
Goats/ Sheep: 100	Poultry/ Ducks: NO	Pigs: NO
Any other: Type NO		No. NO
Shelter for Livestock: Pucca / ~~Kutcha~~ / ~~None~~		
Average Daily Production of Milk(Litres): 1000		

18. What games do Children Play
– Cricket
– football

19. Do children play musical instrument (mention)
Dhol , Trumpet

Schedule Filled By:
Principal Respondent:
Date of Survey:

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: Arvindbhai chauhan.
b. Block: _____
c. District: Ahmedabad.
d. State: Gujarat
e. Lok Sabha Constituency: Kheda Parliamentary Constituency.
f. Number of Wards in the Gram Panchayat: 05
g. Number of Villages in the Gram Panchayat: 54
h. Names of Villages: Badodesa, Baksol, Bhatt, Chandshas, Ensan, Jamdi, Ghuma, Kanbha, Kathwada, Kubadtal, Kuha, Kujad, Navapura, Paddhol, Sopda, Sasoda

Demographic Information

Number of Households 763 Total Population 2547 Male 1376 Female 1171

SC HHs 20-/- ST HHs 10-/- OBC HHs 70-/- Other HHs —

I. Access to Infrastructure / Facilities / Services

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

4

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	Yes	Kathwada
p	Nearest Agro Service Centre	Yes	Kathwada
p	MSP based Government Procurement Centre	Yes	Jetalpur
q	Milk Cooperative /Collection Centre	Yes	Bilasiya
r	Veterinary Care Centre	Yes	Bilasiya
s	Ayurveda Centre	NO	
t	E – Seva Kendra	Yes	Bilasiya
u	Bus Stop	Yes	Bilasiya
v	Railway Station	Yes	Kalupur
w	Library	NO	
x	Common Service Centre	Yes	Bilasiya

IV. Sports Facilities in the Gram Panchayat

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

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

V. Education, ICDS

a. Number of Angan Wadi Centres: 5

b. Number of villages without Angan Wadi Centres_____

Names of such villages: _____

_____

c. Schools (Number)

Primary Private: 0 Primary Govt.: 1

Middle Private: 0 Middle Govt.: 1

Secondary Private: 0 Secondary Govt.: 0

Higher Secondary Private: 0 Higher Secondary Govt: 0

VI. Public Distribution System

	Item	Private Contractor	Women's SHG	Gram Panchayat	Cooperative	Other (Mention)	Location in GP (mention Location)	If outside GP, Location & distance from GP HQrs)
a.	Cereal (Rice/ Wheat/ Millets)	Yes		Yes	Yes	NO		
b.	Kerosene	Yes				NO		
c.	Other (mention)	—	—	—	—	—		

2

5

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

VII. Coverage of Villages under different Facilities & Services

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

VIII. Land and Irrigation

	Private Land	Area in Acres		Common Land	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	1540	d.	Pasture / Grazing Land	20	g.	Check Dam	No
b.	Irrigated Land	1842	e.	Forests/ Plantations	10	h.	Wells/Bore Wells	25
c.	Un-irrigated Land	452	f.	Other Common Land	—	i	Tanks /Ponds	2

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

6

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)	40
b)	Number of Households receiving pension (old age, widow, disability)	40
c)	Number of eligible Households who are not receiving pension	0
d)	Number of Households eligible for Ration Card	400
e)	Number of eligible HHs having ration cards	400
f)	Number of households covered under RSBY (Rashtriya Swasthya Bima Yojana)	200
g)	Number of HHs covered under AABY (Aam Aadmi Bima Yojana)	100
h)	Number of active Job Card holders under MGNREGA	120
i)	Number of Job Card holders who completed 100 days of work during 2013-14	60
j)	Number of shops selling alcohol	NO
k)	Number of BPL families	60
l)	Number of landless households	100
m)	Number of IAY beneficiaries	[0] NO
n)	Number of FRA[2] beneficiaries	[0] NO
o)	Number of Community Sanitary Complexes	2
p)	Number of Households headed by single women	25
q)	Number of Households headed by physically handicapped persons	14
r)	Total number of Persons with Disability in the village	09
s)	Number of SHGs	4
t)	Number of active SHGs	4
u)	Number of SHG Federations	4
v)	Number of Youth Clubs	1
w)	Number of Bharat Nirman Volunteers	50

Name and Signature of Surveyor and Respondent'

Shsay Patel Ramani Parth Surveyor	[illegible] PRI Respondent (Preferably Gram Panchayat Chairperson)	[illegible] Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey

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

4

7

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

I. Basic Information

a. Village: Bilasiya
b. Ward Number: 05
c. Gram Panchayat: Arvindbhai chauhan.
d. Block: _____
e. District: Ahmedabad.
f. State: Gujarat
g. Lok Sabha Constituency: Kheda
h. Number of Habitations / Hamlets in the Gram Panchayat: 760
i. Names of Habitations / Hamlets:
   ① Indira Awas yojana
   ② Sardar Awas yojana
   ③ Pradhan mantri awas yojana

Demographic Information

Number of Households 760 Total Population 2547 Male 1376 Female 1171

SC HHs 20% ST HHs 10% OBC HHs 70% Other HHs —

II. Access to Infrastructure/Amenities etc.

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

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

1

8

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

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: All *(1-All 2-None 3-Some)*
If 3 mention the name of the habitations not covered: —

b.Hand Pump Coverage in Habitations: None *(1-All 2-None 3-Some)*
If 3 mention the name of the habitations not covered: —

iv. Coverage of Habitations under Waste Management System
a. Coverage under Covered Drains: All *(1-All 2-None 3-Some)*
If 3 mention the name of the habitations not covered: —

b. Coverage under Open Drains: All *(1-All 2-None 3-Some)*
If 3 mention the name of the habitations not covered: —

c. Coverage under Doorstep Waste Collection: *(1-All 2-None 3-Some)*
If 3 mention the name of the habitations not covered: —

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: Nandambaya Road, Others Roads.

vi. Sports Facilities in the Village
a.Number of Play Grounds in the Village (minimum size 200 square meters): NO
b.Mini Stadium : NO Yes(Y) /No (N)

vii. Education, ICDS
a. Number of Anganwadi Centres: 05
c. Schools (Number)
Primary Private: 0 Primary Govt.: 1
Middle Private: 0 Middle Govt.: 1
Secondary Private: 0 Secondary Govt.: 0
Higher Secondary Private: 0 Higher Secondary Govt: 0

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	1540	d.	Pasture / Grazing Land	20	g.	Check Dam	NO
b.	Irrigated Land	1842	e.	Forests/ Plnatations	10	h.	Wells/Bore Wells	25
c.	Un-irrigated Land	452	f.	Other Common Land	—	I	Tanks /Ponds	2

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	120
2	Number of active Job Card holders who have completed 100 days of work	60
3	Number of shops selling alcohol	No
4	Number of BPL families	60
5	Number of landless households	100
6	Number of IAY beneficiaries	4
7	Number of FRA beneficiaries	1
8	Number of common sanitation complexes	4
9	Number of SHGs	4
10	Number of active SHGs	4
11	Existence of SHG Federation in the Village (Yes / ~~No~~)	4
12	Number of Youth Clubs	1
13	Number of Bharat Nirman Volunteers	50

Name and Signature of Surveyor and Respondent

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

CHAPTER 20

TDO – DDO – COLLECTOR E – MAIL SOFT COPY

Submission Of Bilasiya Village DPR Under VY -08 In Coordination With GTU.
1 message

SHRAY PATEL <shraypatel1998@gmail.com> Wed, 8 Sep, 2021 at 1:21 pm
To: srinath.karli@gmail.com, head024cv@gmail.com
Cc: ramaniparth400@gmail.com

Respected Sir / Mam,

We are the student of hasmukh goswami college of engineering vahelal Ahmedabad affiliated to Gujarat technical university GTU, GTU has been assigned to vishwakarma yojana -vy in which student survey various village and design various amenities to deliver it to them making the ideal for living better life as per requirement and village problem statement.

As a part of a vishwakarma yojana guidelines we have been asked to inform all the respected officers about our project in which we will shortly notice about BILASIYA Village profile and our design work for them which is as below.

PROPOSED DESIGN CALCULATIONS FOR BILASIYA VILLAGE

Sr .No	Proposed Design Name	Period	Expenditures	Benefit
1	PUBLIC HEALTH CENTRE	6 Months	₹979,502.00	Medical Facility
2	DESIGN OF PARK	1 Year	₹1,043,792.00	Happiness For Children and Senior Citizens
3	SOLAR BASED WATER DISTRIBUTION PUMP	Immediately	₹527,345.00	Energy Efficient
4	DESIGN OF LIBRARY	3 Months	₹543,336.00	Educational Purpose
5	DESIGN OF PUBLIC TOILET	Immediately	₹348,842.00	Hygenic Of Villagers
6	SOCIAL COMMUNITY HALL	1 Year	₹2,030,149.00	Social Purpose
7	BUS - STAND	3 Months	₹900,000.00	Public Transportation
8	DESIGN OF BANK	6 Months	₹200,000.00	Financial Facility
9	PHARMACY MEDICAL STORE	3 Months	₹652,428.00	Rapid Medical Facility
10	RAIN WATER HARVESTING ON COMMUNITY HALL	Immediately	₹44,363.00	Rain Water Savings To Direct Use.
11	GROCERY STORE	Immediately	₹599,947.00	Villagers Conveinence
12	ANIMAL HUSBANDRY	3 Months	₹50,021.00	To Avoid Roaming Of Animals In Village

CHAPTER 2 1

COMPREHENSIVE REPORT FOR ENTIRE VILLAGE

CONCEPT

Gujarat Technological University is allotted important and prestigious project of Vishwakarma Yojana By the Government of Gujarat through Commissioner ate of Technical Education for the benefit of real world experience and simultaneously apply technical Knowledge in the development of rural infrastructure planning & management by students of Gujarat Technological University.

The Contribution and the hard work but by the GTU students has made this project going on smooth sail and indeed will be a huge success.

Vishwakarma Yojana is provides special scheme for development of village by GTU and Government of Gujarat in which students work together and collect data and information regards village development with the help of gram panchayat and stake holders. Village have some basic facilities likes drinking water, drainage system, pucca road, and other facilities like primary school, primary health center, community hall, library, public latrine block, are sufficient so that village can develop. So, we will give proposal regarding sustainable energy sources and solution related to infrastructure problems. Efforts have been made in this project work to identify and plan some of the below facilities for sustainable development of village and to meet need of future population.

Vishwakarma Yojana is one of the initiatives towards Rurbanisation that is village development by the government of Gujarat, which was allotted as a real time situation type project provides to GTU.

It is one of the strategies to reduce urban city pressure and lower the migration rate by developing village with a “rural soul” but with all urban amenities that a city may have. In this project the students meet the relevant citizens of village and survey the existing facilities. Then design of the sustainable infrastructure which is to be modified is carried out for the village. This includes implementation of engineering skills to prepare detailed project reports for village as a part of the final year project work. By this project certain experiences recreates a real work and need of application of an individual technical knowledge on any existing problems. Based on survey we tried to give design of basic facilities to fulfill their needs. By providing these basic facilities to village for reduce urban city pressure and decrease migration rate, which is ultimate aim of Vishwakarma Yojana.

Suggestion Schemes” are being operated in many progressive industrial undertakings in the country for the last several years. These “ Schemes” operate on plant wide basis. Good suggestions leading to outstanding achievement or good performance on the part of workers in increasing productivity, quality, safety, working conditions, import substitution etc. are suitably rewarded by the Management at the enterprise level with financial & non-financial incentives including prizes & citation. The quantum of the prize money is generally related to the anticipated annual savings in the cost of production, resulting from the implementation of the suggestion at the plant level.

1 DESIGN INFRASTRUCTURE: PUBLIC TOILET

2 DESIGN INFRASTRUCTURE: LIBRARY

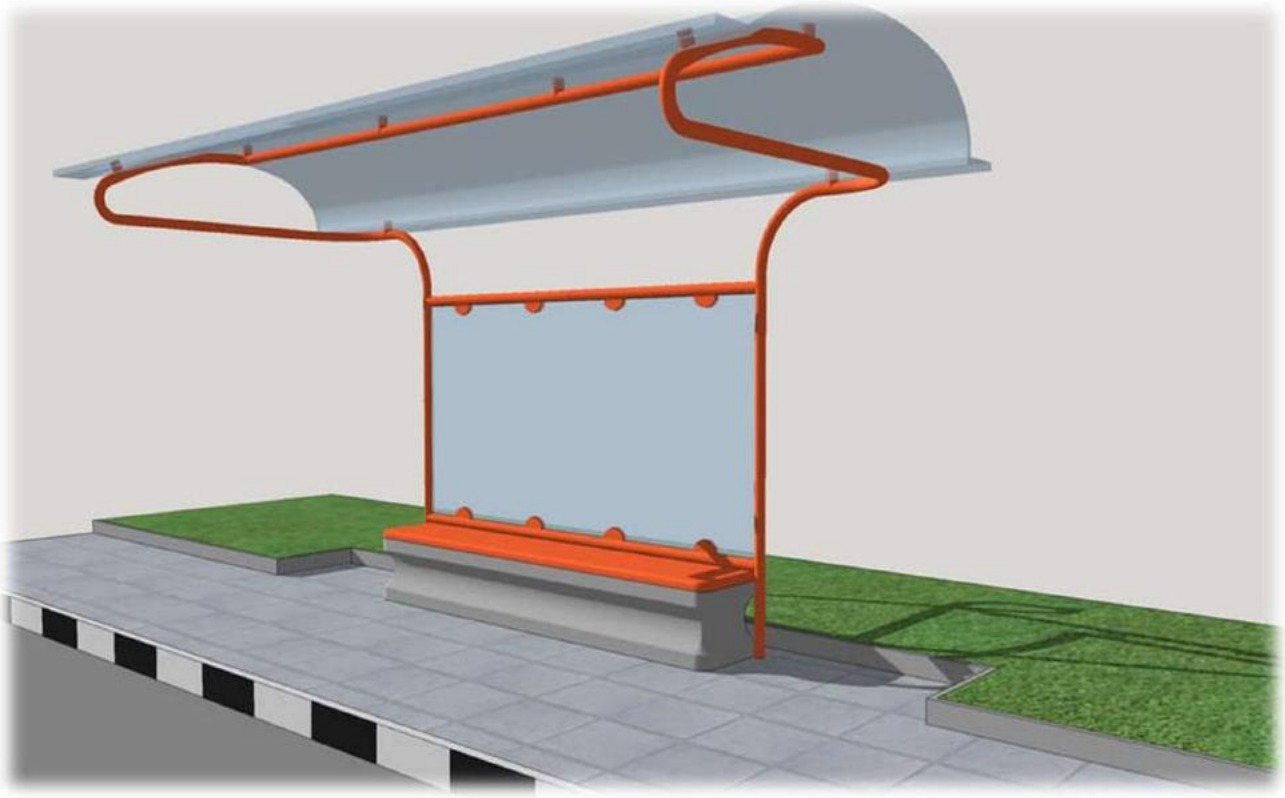
3 DESIGN INFRASTRUCTURE: PUBLIC HEALTH CENTER

4 DESIGN INFRASTRUCTURE: COMMUNITY HALL

5 DESIGN INFRASTRUCTURE: SOLAR BASED WATER DISTRIBUTION SYSTEM

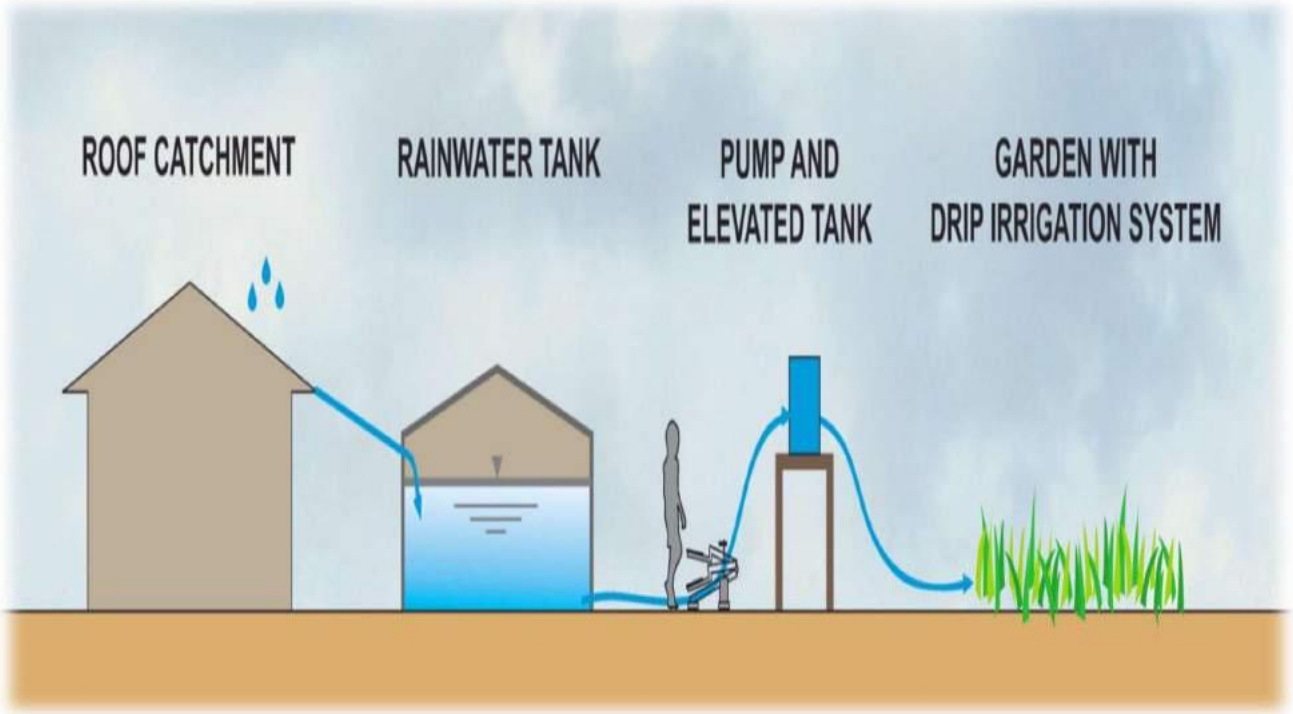
6 DESIGN INFRASTRUCTURE: PUBLIC GARDEN

7 DESIGN INFRASTRUCTURE:. BUS STATION



8 DESIGN INFRASTRUCTURE:. BANK

9 DESIGN INFRASTRUCTURE: RAIN WATER HARVESTING SYSTEM ON COMMUNITY HALL



10 DESIGN INFRASTRUCTURE: GROCERY STORE

11 DESIGN INFRASTRUCTURE: PHARMACY WITH MEDICAL STORE

11 DESIGN INFRASTRUCTURE: ANIMAL HUSBANDRY

NODAL OFFICER STATEMENT:

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

All the design which is given as above are very helpful for future development of village and village people for their enhancement and prosperity. I admire these students SHRAY PATEL (180243106013) & PARTH RAMANI (170240106008) to do work related to civil engineering people and hope these works is help to improve and understand their skills and make it even better. I am sure they got deep knowledge about development of village and various infrastructure facility design of village.

Lastly, we all enjoyed the informational as well as practical journey of civil engineering work.

Nodal Officer
Mr. Srinath Karli
Hasmukh Goswami of College