DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII
AN APPROACH TOWARDS RURBANISATION
Sundan Village

Anand District

PREPARED BY

STUDENT NAME	BRANCH NAME	ENROLLMENT NO
Mistry Vraj Devendrabhai	Civil Engineering	171170106007
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COLLEGE NAME:

Neotech Institute Of Technology

NODAL OFFICERS NAME:

Prof. Piyush Prajapati

YEAR: 2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmedabad – 382424 Gujarat

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CERTIFICATE

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

Detail Project Report for,

VILLAGE SUNDAN

DISTRICT ANAND

Under

Vishwakarma Yojana: Phase-VIII

in partial fulfillment of the project offered by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

during the academic year 2020-21.

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

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College Name:	**Neotech Institute of Technology**
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ABSTRACT

Rurbanization is the process of developing the rural area with the vast available facilities of the Urban Cities while keeping the rural soul alive, the green spaces and agriculture. Making Villages a relatively nice place for living and making progress towards the development of cities and thus developing the whole Country.

Vishwakarma Yojana provides the benefit of real-life experiences to engineering students and simultaneously to apply their technical knowledge in the development of infrastructure in rural areas of Gujarat. Vishwakarma Yojana is one of the initiatives by Government of Gujarat towards Rurbanization. Under this Yojana, the villages are surveyed and students analyses with various aspect and provide suggestion and designs of various infrastructure, so this project was identified and selected for implementation.

Our allocated village is Sundan. Sundan village is located in Anand Taluka of Anand district in Gujarat, India, located at 16km away from Anand, which is both district & sub-district headquarter of Sundan village. Sundan village is also a gram panchayat. Total geographical area of village is approximately 530.5 Hectares. Total population of Sundan village is 4,897 peoples. There are about 1,008 houses in Sundan village, Sundan village falls under Anklav assembly & Anand Parliamentary Constituency. Anand is one of the nearest towns to Sundan which is approximately 16km away. Sundan is also connected to the road network via State Highway No. 8.
Gujarati is the main language spoken in the village. Villagers are mainly involved in agricultural activities (65%) which is primary source of income, other sources are Employment at various industries located at nearby villages, also there are other activities like dairy farming, poultry farming.
There are many facilities which lack in Sundan village, such as Fire Safety building, Proper Road network, drainage network, sewage treatment facility, solid waste management. Apart of that the existing infrastructure also needs to be replaced as soon as possible. These includes panchayat building, community hall, primary school building.
The design we are proposing for the implementation are very well surveyed and it will surely contribute to make the village a smart village and will add up to the vision and mission of Vishwakarma Yojana.

By studying the current status of Sundan village and performing techno-economic survey, in terms of basic services, public facilities, other infrastructural facilities for the need of the people and to prepare a report on the predictable socio-economic growth of the area with the discussion of TDO, DDO and Sarpanch will help full in providing better facilities and services in village. With the help of the gap analysis, development plans for village will be projected and planning proposals for Physical infrastructure, Social Infrastructure and Renewable Energy Source will be suggested for the village.
By providing these basic facilities to villager, migration rate will be decreased. This is end goal of the Vishwakarma yojana project.

Key Words: Rurbanisation, Urban, Rural, Development, Sundan, sustainable development, rural soul, reduce migration, agriculture, modernization, Traditional identities

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

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ABBREVIATIONS

SHORT NAME / SYMBOL	FULL NAME
PHC	Public health Centre
CHC	Community Health Centre
TDO	Taluka Developer Officer
DDO	District Developer Officer
PPP	Public Private Partnership
NGO	Non-government organization
PURA	Provision of Urban Amenities in Rural
DRDA	District Rural Development Agency
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
PMGSY	Pradhan Mantri Gram Sadak Yojana
NRUM	National Rurban Mission
WBM	Water bound macadam
CDHO	Chief District Health Officer
MoRTH	Ministry of Road Transport and Highways
MoHUA	MINISTRY OF HOUSING AND URBAN AFFAIRS
RTO	Road Transport Offices
ATM	AUTOMATED TELER MACHINE
SWOT	STRENGTH, WEAKNESS, OPPORTUNITIES, THREATS
DPR	Detailed Project Report
BIM	Building Information Modeling
BPL	Below Poverty Level
PCIC	Per Capita Investment Cost
APMC	Agriculture Produce Market Committee
CCTV	Closed Circuit Television

Chapter : 1

1.1 Background

We have selected Vasad as our Ideal Village. Vasad is located in Anand district of Gujarat, it is on the banks of the river Mahisagar. As per the government records, the town area number of Vasad is **516943**. The town area has 3047 families. According to Census 2011, Vasad's population is 14,384. Out of this, 7530 are males and 6854 are females. This town area has 1,478 children in the age group of 0-6 years. Out of this 813 are boys and 674 are girls.

Literacy rate in Vasad town area is 89.30 %. In Vasad Male literacy stands at 94.37 % while female literacy rate was 83.79 %. The Good part is that illiteracy rate of Vasad town area is low 10.7%. Male illiteracy rate here is very low at 5.63% as 423 males out of total 7530 are illiterate. Among the females the illiteracy rate is 16.21% and 1067 out of total 6584 females are illiterate in this town area.

The number of employed people of Vasad is 5572, they were engaged in work activities. 87.60 % of workers describe their work as Main Work, while 12.40 % were involved in Marginal activity providing livelihood for less than 6 months. From 5572 workers engaged in Main Work, 399 were cultivators (owner or co-owner) while 1365 were Agricultural laborer.

❖ Study Area Location

Vasad is located 16km from Anand District of Gujarat, India. Vasad's geocoordinate are 22.4500 Latitude and 73.0667 Longitude.

Place :	**Vasad**
PIN Code	**388306**
District:	**Anand**
Tehsil/ Taluka :	**Anand**
State :	**Gujarat**
Latitude :	**22.4500**
Longitude :	**73.0667**

Table 1: Study area location

Fig : Gram Panchayat (Vasad)

1.2 Concept of Ideal Village

Concept of an Ideal Village is a community village with a Self-Sustaining income producing projects, Independent electrification system generated from non-fuel based devices, clean water facilities for drinking and irrigation purpose, affordable quality housings, Schools, Medical facilities for human beings and animals both, proper sanitation System, Information Centre, bank, police station, retail outlet for household and agriculture needs, phone facility and connecting roads to nearby villages and towns.

1.2.1 Objectives

- To provide global means to local needs
- To use the potential of IT to maximize the benefits for the rural community
- Analysis of the villages on various socio-economic parameters at a micro as well as macro level; Improving the literacy rate of the villages by reducing the dropout rate.
- Maximizing the Employment Potential by providing the profiles of rural youth to the potential employers in India and abroad.
- Improving the economic conditions of the Semi-skilled and Un-skilled labour by publishing their availability status on the Internet.
- Providing updated information and databanks to the Government for better analysis and individual profiling.
- Web-based Career Counselling for the rural community by providing information on various courses; providing databases on demand to the manufacturing organizations dealing in Agro-based products and implements like Tractors, Manures, and Fertilizers etc.
- To set up a Global Rural Development Grid (GRDG) by sharing information, ideas and solutions.

1.2.2 Example/live case studies of ideal village of India/Gujarat:-

❖ Ankapoor, Telangana

Ankapoor is located in the Nizamabad district in the state of Telangana. Ankapoor has been globally recognized as a “Model Agricultural Village” for its achievements in introducing modern technologies in agriculture while ensuring the participation of all sections of the village community, particularly women. Organizations like the Indian Council for Agricultural Research (ICAR), International Rice Research Institute (IRRI), Manila and International Crops Research Institute for the Semi-arid Tropics (ICRISAT) have formally commended the developments in agriculture in the village.

Some of the important features of the agricultural model of the Ankapoor include:

- Peasant Association of the village coordinates various agricultural interventions
- The decision-making process is inclusive and based on consensus-building. Women have a dominant role in the utilization and supervision of labour.
- Focus on new sources of income, such as commercial cultivation of seeds, scientific crop rotation techniques.

- Sustainable agriculture with greater use of farmyard manure and lesser use of chemical fertilizers
- Village Market Yards facilitate the sale of agricultural produce with minimal wastage.

Since agriculture accounts for almost the entire economic output from many villages in India, participatory agriculture, with equal focus on irrigation, watershed management and technology- led cultivation should be the way forward.

1.2.3. The Idea of model/Smart Village

In Smart villages access to sustainable energy services acts as a catalyst for development enabling the provision of good education and healthcare, access to clean water, sanitation and nutrition, the growth of productive enterprises to boost incomes, and enhanced security, gender equality and democratic engagement. Unfortunately, it is a fact that, in the world today, 1.3 billion people remain without access to electricity.

❖ **Key elements of a model village: -**

Sustainability: -

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

Community involvement: -

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

Technology: -

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

Connectivity: -

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

- Financial connectivity.

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

The village in India holds a unique place, both in the social and economic spheres. There were 212.6 million people living in rural areas in 1901, in 2001 rural population has increased to 721.1 million naturally the density of population has increased, land under agriculture has diminished, affected the forests and exodus to urban areas accelerated agricultural labor continued to be exploited. The phenomenon of Rural Development is becoming more and more complex despite technological advancement and availability of resources as well as continued efforts from the pre independence period. Rural Development has a long history in India.

❖ Emergence of the Idea of Rural Development in India:

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

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

❖ Rural Development in pre independence period

Rural Development has never been a new concept for India it is rather interwoven in the heritage of Indian culture, mention of it has been made along with the history of mankind. Even in the famous epics and drams like Ramayana and Mahabharata the instances of rural governance in terms of welfare of the people, justice to the people has been made. The philosophy of governance in such literature gives hints of Rural Development.

Rural Development traces back its history to the Seventeenth Centaury when voluntary efforts to serve the mankind were initiated. A religious society of people known as 'Friends' or 'Quakers' had emerged as a movement in this direction for the first time in England and then in the other parts of the world in rapid strides. It aimed at providing services to mankind transcending bonds of religion, territory, and culture.

❖ **The nationalist movement and Rural Development:**

With the entry of Mahatma Gandhi into Indian Public life Rural Development received mass popular support. The Rural Development was perceived with the concept of Gram Swaraj, Swadeshi, Khadi, Safai, Shram Dan etc. The Non-Cooperation movement, started by Mahatma Gandhi in 1920, was the first political attempt in India to mobilize the villagers. The Non-Cooperation Resolution, moved by Mahatma Gandhi and passed by the Indian National Congress in its Calcutta session of September 1920, articulated the approach to rural development by recommending 'hand-spinning in every house and handweaving on the part of millions of weavers who have abandoned their ancient and honorable calling for want of encouragement.

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

❖ **Resources available in Ideal Village**

➢ Agriculture	➢ Schools	➢ College
➢ Hospital	➢ Substation	➢ Bank & ATM

❖ **Physical & Demographical Growth:**

Today Vasad is a well-developed village of Anand District of Gujarat. We can see all basic facilities like Hospital, School, Good Roads, Approach from all direction of the village, Banks, Lake, Proper water Facility, Electric Power Grid Substation, Public Transportation facility, clean atmosphere, etc.

Dwellers over here are of middle class and mature enough to understand the running scenario. As per the government records, literacy rate in Vasad town area is 89.30 %. In Vasad Male literacy stands at 94.37 % while female literacy rate was 83.79 %. The Good part is that illiteracy rate of Vasad town area is low 10.7%. Male illiteracy rate here is very low at 5.63% as 423 males out of total 7530 are illiterate. Among the females the illiteracy rate is 16.21% and 1067 out of total 6584 females are illiterate in this town area.

Economic profile

The number of employed people of Vasad is 5572, they were engaged in work activities. 87.60 % of workers describe their work as Main Work, while 12.40 % were involved in Marginal activity providing livelihood for less than 6 months. From 5572 workers engaged in Main Work, 399 were cultivators (owner or co-owner) while 1365 were Agricultural laborer. Major 3 occupation in village are namely farmers, agriculture, labour and small private business.

❖ **Infrastructure Facilities (all type):**

Infrastructure of Vasad is having all primary and secondary needs for giving a better lifestyle to village people.

- Primary Infrastructural need:

All primary infrastructure needs are fulfilled here. They have pukka houses, and necessary government buildings. All this are well developed and well maintained. Amongst this all

buildings newly constructed houses are having proper wiring scheme and earthling, while in old, constructed government building there is no proper earthling. Even roads over here are of good condition.

- Secondary Infrastructural need:

Vasad have School and Anganvadi for better development of Children also with midday meal facility. It also has a Hospital, so that people of Vasad can get the treatment within very own village only..

Smart village: Vasad

Fig. 1.3.1Milk Co-op Society/Dairy

Fig. 1.3.2 High Secondary School

Fig. 1.3.3 Panchayat Building

Fig. 1.3.4 Village Center (Vasad)

Ideal village: Dasharath

Fig. 1.3.5 Village Lake

Fig. 1.3.6 Water Tank

Fig. 1.3.7 Primary Healthcare Centre

Fig. 1.3.8 Primary school

Fig. 1.3.9 I.T.I. Dasharath

Fig. 1.3.10 Bank Dasharth

1.4 SWOT analysis of Ideal village

We visited Vasad village as our ideal village. We did SWOT analysis there and found the following things.
SWOT: Strength-Weakness-Opportunity-Threats.

STRENGTHS (+)

- Water tank facility
- Drainage facility
- Transport facility
- Sanitation facility
- Irrigation facility
- Housing condition
- Education Facility
- Health Facility

WEAKNESSES (–)

Absence of renewable energy like:

- Solar power plant-based streetlight
- Biogas plant
- Hydroelectric power
- Rainwater Harvesting System

OPPORTUNITIES (+)

- More development works can be carried out.
- Beautification of lake
- As there is availability of higher education facilities in village high literacy rate can be achieved
- Use of renewable energy sources

THREATS (–)

- As ground water is main source of water in village, ground water level may deplete, and water scarcity may arise.
- Very less sustainability to environment in future.
- Poor waste management

1.5 Prospects.

In future they think to do installation of solar, biogas or any other renewable energy sources as per availability of sources in village and more suitable source for the area. If any other problems were occurring in future, then try to solve that problem also.

- Solar streetlight
- Biogas Plant
- Wastewater treatment plant

- Blood Bank
- Water Meter

1.6 Benefits of the visit.

- We got the opportunities to see the community closely and thus gets an experience of human nature in relation to his / her environment. Volunteered integration with the slum dwellers and villagers exposes them to the realities of life and bring about a change in their social perception. Get an opportunity to meet the people from different walks of life
- It provides diversified opportunities to students in colleges and universities to develop their Personality through community service. Can bring about social change. The integration of experiential education/practical/applied dimension to theoretical issues Increase interest and understanding as students become independent learners helping students to sensitize.
- From this village we get the actual definition idea of developed village.
- We get idea about how to develop our village.
- We know about which basic amenities should provide in village.
- Know about development of village only use by government scheme.

1.7 Civil concept of Ideal village / Smart Village

- To get the culture of the village infrastructure, social behavior, development.
- To inquire the people about the development about how they feel or get the expression on their face about their village being one amongst the other dwelling villages.
- The goal is to present the village to the village dwellers in such form that they had dreamt of with every facility that we could provide and ensure that the government to agrees with our likes about the village.
- The purpose of our work is to satisfy the needs of the villagers for the better of the village environment because a person always loves to stay in a clean and green environment, no one prefers a wasteland over a wonderland that's what we have as our concept.

Chapter : 2

2. Village Literature Review

2.1 Introduction: Urban & Rural.

- Rural area
  - The word 'Rural' means an area
  - Which is marked by non-urban lifestyle, occupational structure, social organization, and settlement pattern.
  - Rural is noticeably agricultural, its settlement system consists of villages or homesteads Socially it signifies greater inter dependence among people, more deeply rooted community life and a slow moving rhythm of life built around nature and natural phenomenon; and economy mainly depended on crop farming, animal husbandry, tree crops and related activities.

- Urban area.

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

Name	**Population**
City	50000 to 100000
Great city	100000 and over
Super City	More than 300000
Metropolis	1000000 and above
Mega polis	5000000 and above

Table 2 Urban Town Population

2.2 Ancient Villages / Different Definition of: Rural area / Villages.

- By the Numbers in the United States, the Census Bureau classifies a rural area as a town with lesser than 1,000 people per 2.6 square kilometers, and surrounding areas with lesser than 500 people per 2. Square kilometers.
- A rural area is an open swath of land that has few homes or other buildings, and not very many people. A rural areas population density is very low. Many people live in a city, or urban area. Their homes and businesses are located very close to one another.

- In a rural are a, there are fewer people, and their homes and businesses are located far away from one another.
- Agriculture is the primary industry in most rural areas. Most people live or work on farms or ranches. Hamlets, villages, towns, and other small settlements are in or surrounded by rural areas.
- Wildlife is more frequently found in rural areas than in cities because of the absence of people and buildings. In fact, rural areas are often called the country because residents can see and interact with the country's native wildlife.

2.3 Scenario: Rural / Urban India & Gujarat as per Census 2011.

- As per Census, Population of India has reached 1.21 Billion (121 Crore) in 2011 which is an increase of 17% from the earlier figure of 103 Crore of 2001. Although population growth rate has decreased but actual population continues to rise. As per a study report, it is expected that India would be most populous country by 2025 overtaking china.
- Gujarat Population Census report shows that it has Total Population of 6.03 Crore which is approximately 4.99% of total Indian Population. Literacy rate in Gujarat has seen upward trend and is 79.31% as per 2011 census. Of that, male literacy stands at 87.23% while female literacy was 70.73%.
- Urban Population of the State is 42.6%, which was 37.4% in 2001. Rural population in the state in 2011 fall to 57.4% from 62.6% in 2001.

Ahmedabad is the most populated District in the State, with 7.20 million people, up 11.94% from 2001, followed by Surat at second position with 6.07 million people, up 10.07%, as per Gujarat's Directorate of census operations.

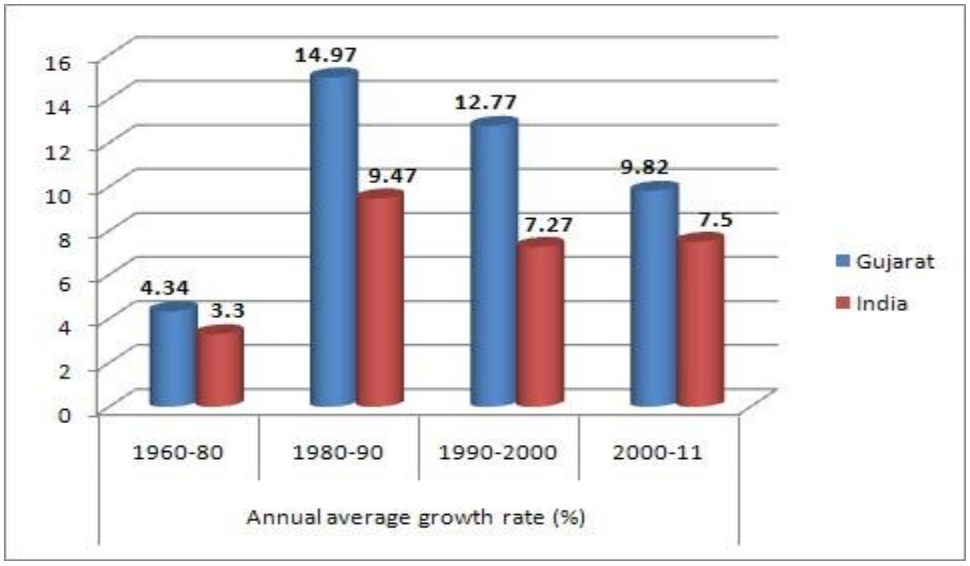


Figure 2.3.1 Rural and Urban Population growth (Gujarat).

2.4 Rural development issues & Concerns.

Education.

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

Empowering Girls.

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

Environment.

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

Gender Discrimination.

Even though women in developing countries provide nearly 70 percent of the agricultural labour.

Health.

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

Hunger.

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

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

2.5 Various Measures for Rural Development

The main objective of rural development has been to remove poverty of the people and fill the widened gap between the rich and the poor. Rural development which encompasses the entire gamut of improvement in the overall quality of life in the rural areas can be achieved through eradication of poverty in rural areas.

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

1. Need to develop a rural area as of its culture, society, economy, digitalization and health.
2. We need to develop living slandered of rural people.
3. We need to develop education in rural youths, children and women.
4. We need to develop and empower human resource of their psychology, skill and other abilities.
5. We need to develop infrastructure facility of rural area in terms of sanitation, water and roads facility.
6. We need to provide minimum facility to rural mass in terms of education, electricity, communication, and network facility.

7. We need to develop rural institutions like panchayat, cooperatives, post, banking and credit.
8. We need to provide a financial source for rural people to create an own business
9. We need to develop rural industries through the development of handicrafts, small-scaled industries, village industries, rural crafts, cottage industries and other related economic operations in the rural sector.
10. We need to develop agriculture, animal husbandry and other agricultural related areas.
11. We need to restore uncultivated land, provide irrigation facilities, and motivate farmers to adopt a new soil cultivation method.

2.6 Various Infrastructure and Guidelines /Norms for Villages for the Provisions of Different Infrastructure Facilities.

- DRDAs must themselves be more professional and should be able to interact effectively with various other agencies. They are expected to coordinate with the chain of departments, the Panchayati Raj Institutions, the banks and other financial institutions, the NGOs as well as the technical institutions, with a view to gathering the support and resources required for poverty reduction effort in the district. It shall be their endeavor and objective to secure inter-sectoral and inter-departmental coordination and cooperation for reducing poverty in the district. It is their ability to coordinate and bring about a convergence of approach among different agencies for poverty alleviation that would set them apart.
- The DRDAs are expected to oversee the implementation of different anti-poverty programs of the Ministry of Rural Development in the district. This is not to be confused with actual implementation, which will be by the Panchayati Raj and other Institutions. The DRDAs will monitor closely the implementation through obtaining of periodic reports as well as frequent field visits. The purpose of the visit should be to facilitate the implementing agencies in improving implementation process, besides ensuring that the quality of
- Implementation of programs is high. This would include over-seeing whether the intended beneficiaries are receiving the benefits under the different programs.
- The DRDAs shall keep the Jilla Parishad, the State and the Central Government duly informed of the progress of the implementation of the programs through periodic reports in the prescribed formats. Special report, as and when called for, shall be provided.
- The DRDAs shall take necessary step to improve the awareness regarding rural development and poverty alleviation particularly among the rural poor. This would involve issues of poverty, the opportunities available to the rural poor and generally infusing a sense of confidence in their ability to overcome poverty.

2.7 Importance in rural context

- Rural development is the process of improving the quality of life and economic wellbeing of people living in rural areas, often relatively isolated and sparsely populated areas.
- Rural development actions are intended to further the social and economic development of rural communities.
- Rural development programs have historically been top-down from local authorities, regional development authorities, NGOs, national governments or international development organizations.
- Rural development aims to find ways to improve rural lives with participation of rural people themselves, so as to meet the required needs of rural communities.
- The outsider may not understand the setting, culture, language and other things prevalent in the local area. Therefore, rural people themselves have to participate in their sustainable rural development.

2.8 Sustainable Village Development Concept

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it three key concepts:

- The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."
- While the modern concept of sustainable development is derived mostly from the 1987 Brundtland Report, it is also rooted in earlier ideas about sustainable forest management and twentieth century environmental concerns. As the concept developed, it has shifted to focus more on economic development, social development and environmental protection for future generations. It has been suggested that "the term 'sustainability' should be viewed as humanity's target goal of human-ecosystem equilibrium (homeostasis), while 'sustainable development' refers to the holistic approach and temporal processes that lead us to the end point of sustainability".

Goals of Sustainable development

- No Poverty
- Good Health and well-being
- Quality Education
- Gender equality
- Clean water and sanitation

2.9 Other Schemes/Projects.

1. **Pradhan Mantri Adarsh Gram Sadak Yojana (PMAGSY):**

- Rural connectivity is one of major goals of PMAGSY.
- About 6 lakh village located in plain, hilly, desert, tribal pocket etc.

- Due to the improper planning some village having four road for connectivity and some village not having any single road.

2. Bharat Nirman Yojana:

It was launched in 2005 for building infrastructure and basic amenities in rural areas. It comprises of six components—

- rural housing
- irrigation,
- drinking water,
- rural roads,
- electricity
- rural telephone

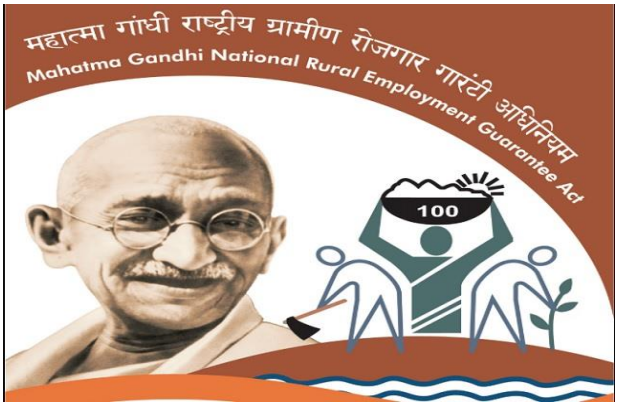
3. Indira Aawas Yojna:

- The Indira Awaas Yojana is a public housing scheme that was introduced by the government in 1985, as a sub-scheme of the Rural Landless Employment Guarantee Program (RLEGP).
- This program aimed to construct houses for free bonded laborers and individuals falling under the SC/ ST category. By 1994, the scheme also included non- SC/ST individuals to benefit from this scheme.
- In 1996, the *Indira Awaas Yojana* became an independent scheme undertaken by the Ministry of Rural Development. The focus of this scheme has broadened to include eradication of rural poverty and providing rural people with various development program.

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

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

- This work guarantees also serve other objectives: generating productive assets and skills thereby boosting the rural economy, protecting the environment, empowering rural women, reducing rural urban migration and fostering social equity, among others.



Chapter : 3

3. Smart Cities/ Village Concept as per our Idea and its Visit

3.1 Understanding Smart Cities (Concepts, Definitions and Practices)

Smart city can be defined as a city which has been provided with all types of facilities such as Educational facilities, Health Care facilities, Infrastructure, communication, internet services, Transportation facilities, sanitation facilities with improved method of disposal (solid waste management), etc.
Smart city is an urban area that uses various types of electronics data collection sensor to supply information used to manage assets and resources efficiently. The smart city concept integrates information and communication technology and various physical devices connected to networks to optimize efficiency of operation and services. The smart city may also be defined as the application of electronics and digital technologies to communities and cities. It also includes more efficient use of physical infrastructure (roads, environment) through artificial intelligence and data analytics to support a strong and healthy economic, social, cultural development.

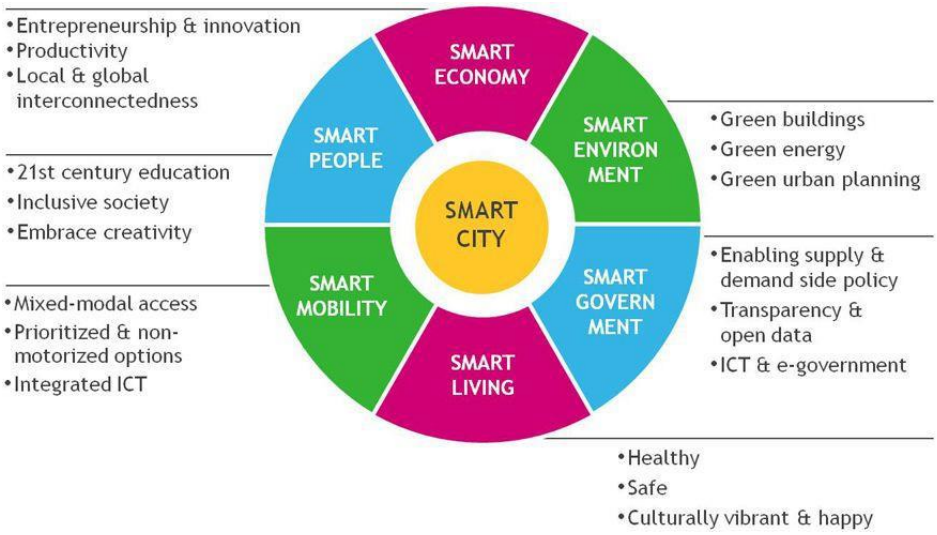


Fig. 3.1.1 Smart City

Smart Village

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

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

Fig.3.1.2 Smart village concept

3.2 Smart Cities Bench Marks, Standards and Performance Measurement Indicators.

Parameter	Benchmark
Sewerage and sanitation.	100% household should have access to toilets. 100% schools should have separate toilets for girls.
Solid waste management.	100% household are covered by daily door-to-door step Collection system. 100% collection of municipal solid waste. 100% segregation of waste. 100% recycling of solid waste.
Storm water drainage.	100% coverage of road network with storm water drainage Network. Aggregate number of incidents of water logging reported.
Electricity.	100% household have electricity connection. 27X7 supply of electricity. 100% metering of electricity supply. 100% cost recovery. Tariff slabs that work towards minimizing waste.
Telephone connection.	100% household have a telephone connection including Mobile.
Wi-Fi connectivity.	100% of the city has Wi-Fi connectivity. 100 Mbps internet speed.
Transport.	Maximum travel time 30 minutes in small and medium size. Cities and 45 minutes in metropolitan area. Access to para-transit within 300m walking distance.
Spatial planning.	175 persons per Hours along transit corridors. At least 30% residential and 30% commercial/ institutional in every TOD zone within 800m of Transit station

Table 3 Benchmarks for Smart Village

- Smart Cities Standards: -
  - Effective governance and efficient delivery of services.
  - International and Local targets, benchmarking and planning.
  - Ease decision making and policy formulation.
  - Leverage for funding and recognition in international entities.
  - Transparency and open data availability for investment attractiveness.
  - A reliable foundation for use of big data and the information explosion to assist cities in building core knowledge for decision-making, and enable comparative insight.
  - Evaluate the impact of infrastructure projects on the overall performance of a city.

- Smart Cities Performance Measurement Indicators: -
  - Electricity infrastructure.
  - Uses of renewable re-sources like bio gas, solar etc.
  - Smart primary health care system 27 X 7.
  - Metaled roads and streets.
  - Smart primary and secondary education facility.
  - Solar energy plant to preserve electricity at the village level.
  - Proper sanitation, harvesting of rain water.
  - Hygienic drinking water and purification. system.
  - Connectivity through internet, Wi-Fi and mobile tower.
  - Easy access to Banks, ATMs, post offices etc.
  - Provision of area for solid waste disposal and liquid waste disposal.
  - Rural market with access to all basic facilities.
  - Common places like community hall, marriage hall, theater etc.

3.3 Technological Options for Smart Cities.

1. **Smart buildings: -** Automated Intelligent Buildings, Advanced Heating Ventilation and Air conditioning systems (HVAC), Lighting Equipment.
2. **Smart mobility: -** Intelligent mobility; Advanced traffic management system (ATMS), Parking management, ITS-enabled transportation pricing system.
3. **Smart governance and smart education: -** Government-on-the-Go; e-Government-Education, Disaster management solutions.
4. **Smart healthcare: -** Intelligent Healthcare, Technology, use of e-Health and mHealth systems, Intelligent and connected medical devices.

3.4 Road Map and Safe Guards for Smart Cities

- A smart city is defined as a city that engages its citizens and connects its infrastructure electronically. A smart city has the ability to integrate multiple technological solutions, in a secure fashion, to manage the city‘s assets-the city‘s assets include, but not limited

to, local departments' information systems, schools, libraries, transportation systems, hospitals, power plants, law enforcement, and other community services.

- The goal of building a smart city is to improve the quality of life by using technology to improve the efficiency of services and meet resident's needs. Business drives technology and large-scale urbanization drives innovation and new technologies. Technology is driving the way city officials interact with the community and the city's infrastructure.
- Through the use of real-time control systems and sensors, data are collected from citizens and sensors and then processed in real-time.
- The information and knowledge gathered are keys to tackling inefficiency, which leads to optimizing systems. A smart city offers technological solutions to tell what is happening in the city, how the city is evolving, and how to enable a better quality of life.
- The Smart City mission has two components: area-based development for smaller areas within the city and pan-city development where one idea is implemented all throughout.
- According to officials from the Ministry of Urban Development (MoUD), among other things, area-based plans allow for the purchase of buses and other means to augment public transportation.

3.5 Smart cities: Issues and Challenges by Smart City Council India:

❖ **Modernization of existing legacy city infrastructure to make it smart:**

There are a number of hidden issues to consider when reviewing a smart city strategy. The most important is to determine the existing city's weak areas that need utmost consideration, e.g. 100% distribution of water supply and sanitation. The integration of formerly isolated legacy systems to achieve citywide efficiencies can be a significant challenge.

❖ **Financing smart cities:**

The High-Power Expert Committee (HPEC) on Investment Estimates in Urban Infrastructure has assessed a per-capita investment cost (PCIC) of Rs 43,386 for a 20-year period. Using an average figure of 1 million people in each of the 100 smart cities, the total estimated investment requirements for the smart city comes to Rs 7 lakh crore over 20 years (with an annual escalation of 10 per cent from 2009-20 to 2014-15). This translates into an annual requirement of Rs 35,000 crore. One needs to see how these projects will be financed as the majority of project need would move through complete private investment or through PPPs (public-private partnership).

❖ **Availability of master plan or city development plan:**

Most of our cities don't have master plans or a city development plan, which is the key to smart city planning and implementation and encapsulates all a city needs to improve and provide better opportunities to its citizens. Unfortunately, 70-80 per cent of Indian cities don't have one plan.

❖ **Financial sustainability of ULBs:**

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

❖ **Technical constraints of ULBs:**

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

❖ **Three-tier governance:**

Successful implementation of smart city solutions needs effective horizontal and vertical coordination between various institutions providing various municipal amenities as well as effective coordination between central government (MoUD), state government and local government agencies on various issues related to financing and sharing of best practices and service delivery process.

❖ **Providing clearances in a timely manner:**

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

❖ **Dealing with a multivendor environment:**

Another major challenge in the Indian smart city space is that (usually) software infrastructure in cities contains components supplied by different vendors. Hence, the ability to handle complex combinations of smart city solutions developed by multiple technology vendors becomes very significant.

❖ **Capacity building program:**

Building capacity for 100 smart cities is not an easy task and most ambitious projects are delayed due to lack of quality manpower, both at the central and state levels. As all these have a lag time, capacity building needs to be strengthened right at the beginning.

❖ **Reliability of utility services:**

For any smart city in the world, the focus is on reliability of utility services, from electricity, water, telephone to broadband services. Smart cities must have universal access to electricity 24×7; this is not possible with the existing supply and distribution system. Cities need to move towards renewable energy sources and focus on green buildings and green transport to reduce the need for electricity.

3.6 Smart Infrastructure:

Smart infrastructure provides the foundation for all of the key themes related to a smart city, including smart people, smart mobility, smart economy, smart living, smart governance and smart environment. The core 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.

3.7 Cyber security:

Cyber security is the body of technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access. In a computing context, security includes both cyber security and physical security. It is important because government, military, corporate, financial, and medical organizations collect, process, and store unprecedented amounts of data on computers and other devices.
A significant portion of that data can be sensitive information, whether that is intellectual property, financial data, personal information, or other types of data for which unauthorized access or exposure could have negative consequences. Organizations transmit sensitive data across networks and to other devices in the course of doing businesses, and cyber security describe the discipline dedicated to protecting that information and the systems used to process or store it.
Ensuring cyber security requires coordinated efforts throughout an information system. Elements of cyber security include:

- Application security
- Information security
- Network security
- Disaster recovery / business continuity planning
- Operational security
- End-user education

3.8 District heating and cooling:

District heating is a system for distributing heat generated in a centralized location for residential and commercial heating requirements such as space heating and water heating. The heat is often obtained from a cogeneration plant burning fossil fuels but increasingly also biomass, although heat-only boiler stations, geothermal heating, heat pumps and central solar heating are also used, as well as nuclear power. District heating plants can provide higher efficiencies and better pollution control than localized boilers. According to some research, district heating with combined heat and power is the cheapest method of cutting carbon emissions, and has one of the lowest carbon footprints of all fossil generation plants. A combination of CHP and centralized heat pumps are used in the Stockholm multi energy system. This allows the production of heat through electricity when there is an abundance of intermittent power production and cogeneration of electric power and district heating when the availability of intermittent power production is low. District cooling is the cooling equivalent of district heating. Working on broadly similar principles to district heating,

district cooling delivers chilled water to buildings like offices and factories needing cooling. In winter, the source for the cooling can often be sea water, so it is a cheaper resource than using electricity to run compressors for cooling.

3.9 Strategic Options for Fast Smart Cities Development:

- The strategic components of area-based development in the Smart Cities Mission are city improvement, city renewal (redevelopment) and city extension (Greenfield development) plus a Pan-city initiative in which Smart Solutions are applied covering larger parts of the city. Below are given the designs of the three models of Area-based smart city development:
- Retrofitting will introduce planning in an existing built-up area to achieve smart city objectives, along with other objectives, to make the existing infrastructure more efficient and livable. In retrofitting, an area consisting of more than 500 acres will be identified by the city in co-ordination with citizens. Depending on the existing level of infrastructure services in the identified area and the vision of the residents, the cities will prepare a strategy to become smart. Since existing structures are largely to remain intact in this model, it is expected that more efficient infrastructure service levels and a large number of smart applications will be packed into the retrofitted smart city. This strategy may also be completed in a shorter time frame, leading to its replication in another part of the city.
- Redevelopment will affect 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. For instance, a new layout plan of the identified area will be prepared with mixed land-use, higher FSI and high ground coverage. Two examples of the redevelopment model are the Saifee Burhani Upliftment Project in Mumbai (also called the Bhindi Bazaar Project) and the redevelopment of East Kidwai Nagar in New Delhi being undertaken by the National Building Construction Corporation.

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

Traditionally water supply in India was limited to the major cities within the spread of the process of urbanization. Declining health standards in the rural areas urged the postIndependence government to take serious initiatives to improve the rural drinking water and sanitation. Now, one of the most important aims of the government is to ensure safe water supply to the rural areas. This initiative was first taken up by Accelerated Rural Water Supply Programme (ARWSP) in 1972-73. Between the years 1972 to 1986, the aim of ARWSP was to ensure safe water supplies to rural areas. ARWSP was renamed Rajiv Gandhi National Drinking
Water Mission in 1991-92 with further stress on rural water supply coupled with community planning and management of drinking water. Five factors were kept in focus:

- Sustainability of water supply

- Portability
- Adequacy
- Convenience
- Affordability & equity

❖ Indigenous water purification technologies:

These technologies can improve the drinking water quality of smaller villages as well as larger cities. It uses the Pressure Driven Membrane Processes. These are suitable for all capacity units e.g. they are adaptable from household level unit or community level unit to large scale unit. Water purification technologies make use of the nuclear energy and solar energy also.

❖ Environment friendly Plasma technologies:

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

❖ Unique Multi Stage Biological Treatment Solution:

Multi Stage Biological Treatment Solution (MSBT) can be implemented on existing STP which is not able to process Sewage to optimum efficiency. MSBT can be implemented as a modular or container on the banks of rivers on Drains/Nalas which discharge waste water to the river. It can also be implanted in small urban societies and housing complex for better water management.

Benefits of MSBT are: No Surplus of Organic Sludge, No Odour problem, Drastic reduction of electrical Power usage which minimizes operating costs, No need for return sludge pumping.

3.11 Initiatives in village development by local self-government

- Under the scheme, during 2019-24, Members of Parliament will be able select one village every year for integrated development aimed at improving the overall quality of rural life. The project also envisages turning villages into model villages not just through infrastructure development but gender equality, peace and harmony.
- It also aims to instill the spirit of community service, mutual cooperation, self-reliance, local self-governance and drive transparency and accountability in public life.
- The program also aims to inspire a sense of pride among people by giving them ownership of the development schemes and through initiatives like honoring village elders, celebrating village day and folk festivals and by driving them to develop their own village song.

- The blueprint of the project, which is likely to be unveiled by prime minister Narendra Modi on Saturday, will have the gram panchayat as the basic unit for development. While a population size of 3,000-5,000 per development unit has been fixed for plain areas, for hilly, tribal and difficult areas the population base for each of these selected villages will be between 1,000 and 3,000. According to the document, while Lok Sabha MPs will have to choose a gram panchayat from within their constituencies, Rajya Sabha MPs will be able to select a gram panchayat from a district of their choice in the state from which they have been elected.

3.12 Smart Initiatives by District Municipal Corporation

- Stabilization of pond system for waste water treatment
- Duckweed based waste water treatment with pisciculture
- Root zone treatment system
- Anaerobic Decentralized Waste Water Treatment System
- Aerobic DEWATS
- Study Technological Options at Household Level Management like
- Kitchen Garden with Piped Root Zone System, Kitchen Garden without Piped Root
- Zone System and Leach Pit
- Pile Method, NADEP Method, Bangalore Method, Indor Method and Coimbatore Method
- Verme composting
- Windrow Composting
- Thermophilic Composting
- MARC Method
- Biogas Plant
- Toilet waste Biogas Plant

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

- Government of India has launched the scheme "Deendayal Upadhyaya Gram Jyoti Yojana" for rural electrification. The erstwhile Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) scheme for village electrification and providing electricity distribution infrastructure in the rural areas has been subsumed in the DDUGJY scheme. Rural Electrification Corporation is the Nodal Agency for implementation of DDUGJY.
- Under DDUGJY-RE, Ministry of Power has sanctioned 921 projects to electrify 1,21,225 un-electrified villages, intensive electrification of 5,92,979 partially electrified villages and provide free electricity connections to 397.45 lakh BPL rural households. As on 30th June 2015, works in 1,10,146 un-electrified villages and intensive electrification of 3,20,185 partially electrified villages have been completed and 220.63 lakh free electricity connections have been released to BPL households.

Chapter: 4

4. Introduction of Allocated Village (Sundan)

4.1 Introduction

4.1.1 Introduction about Sundan village

We are allocated with a village named Sundan located in Anand District of Gujarat. It is located 16 KM from District headquarters Anand and 109 KM from State capital Gandhinagar. This Place is near to the border of the Anand and Vadodara Districts. It is situated 16 KM away from Anand, which is both district & sub-district headquarter of Sundan. As, per 2009 stats, Sundan village is also a gram panchayat.

The total geographical area of village is 530.5 hectares. Sundan has a total population of 4,897 peoples. There are about 1,008 houses in Sundan village. As per 2019 stats, Sundan villages comes under Anklav assembly & Anand parliamentary constituency. Local Language at Sundan is Gujarati.

❖ Connectivity of Sundan

Public Bus Service is Available within village
Private Bus Service is Available within 10 km distance
Railway Station is Available within 5 km distance
Nearby Villages of Sundan are Kanthariya (2 KM) , Adas (2 KM) , Bhetasi (talpad) (3 KM) , Vasad (4 KM) , Bhetasi(4 KM)

- There is no recreational facility in the village. The Water Distribution facility is also not proper. Streetlights are not available in every street and those available are also not working properly. For Education Primary Schools are available but, the building is not proper condition.
- If proper education facilities are provided to children of village, literacy rate of the village will also increase. If recreation facilities are provided dwellers don't have to go outside for recreation. They can also use solar and biogas plant as a mean of renewable resources.
- We can design a park, also the pond can be beautified as a part of recreational facilities, a primary school building so that dwellers do not need to migrate to nearby villages to take benefit of such facility. Also, we can enlighten the streets of village with less running cost by designing Solar Street Light Paths. Also, we can reduce our power consumption charge by providing Solar Roof top Design which will help us take the benefit of the renewable energy source at Residential and Commercial Buildings.

4.1.2 Study justification/ Need of study

Village studies have their own importance. These have enriched the knowledge of the Indian Society in general and rural India. These have given great encouragement to the growth of rural society. After independence, planners in India realised that unless Indian villages were properly studied, no real progress could be made.
Scholars now began to pay more and more attention to village studies.

1. Village studies help in planning rural reconstruction.
2. Village studies provide useful information to other disciplines.
3. Village studies provide useful knowledge about Indian social reality.

4.1.3 Study Area (Broadly define)

Present status and techno-economic survey of villages in given District of the state in terms of basic and public amenities, essential commodities, other infrastructural facilities for the need of people and on the adequacy of the available resource with reference to the population of the village and growth of the area with the collection of Local revenue income and authorities, TDO and DDO the future need of the village keeping to mind the need of days, future targeted population growth, growth of surrounding town or Taluka places etc.

4.1.4 Objectives of 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, solid waste management system, solar street light facilities, toilet should be provided and ensure proper delivery of facilities to village people.
- 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 Study

- To provide some urban amenities to a village without affecting the soul of village.
- Due to providing urban facilities development of village will be possible.
- Most of people lived at village so first to developed the village as per the Rurbanisation term.

4.1.6 Methodology Frame Work for Development of Village

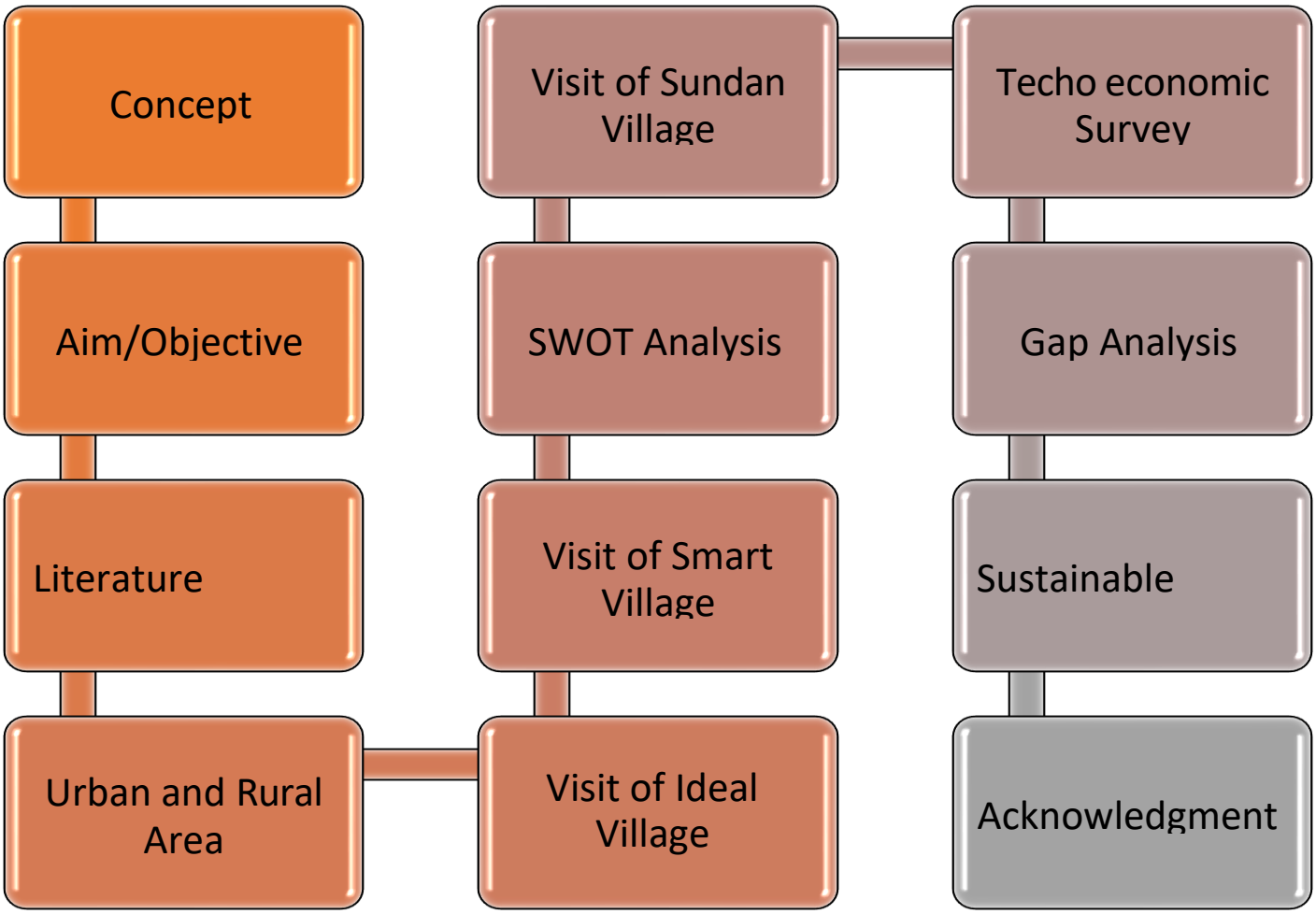


Fig. 4.1.1 Flow chart of Methodology

4.1.7 List of Objects Available Related To Civil Methodology:

- Gram Panchayat
- Temple
- Proper Drainage System
- Overhead Water Tank
- Bus Stop
- R.C.C Roads
- Milk Co-Operative Society.
- General Provision Street.
- Water Supply System
- Solid Waste Collection

4.2 Study Area Profile

4.2.1 Study area location

- **Locality Name:** Sundan (સુંદણ)
- **Taluka Name**: Anand
- **District**: Anand
- **State:** Gujarat
- **Language**: Gujarati and Hindi
- **Time zone**: IST (UTC+5:30)
- **Elevation / Altitude**: 44 meters. Above Sea level
- **Telephone Code / Std Code:** 02692
- **Pin Code:** 388305
- **Post Office Name**: Adas

4.2.2 Base Location map

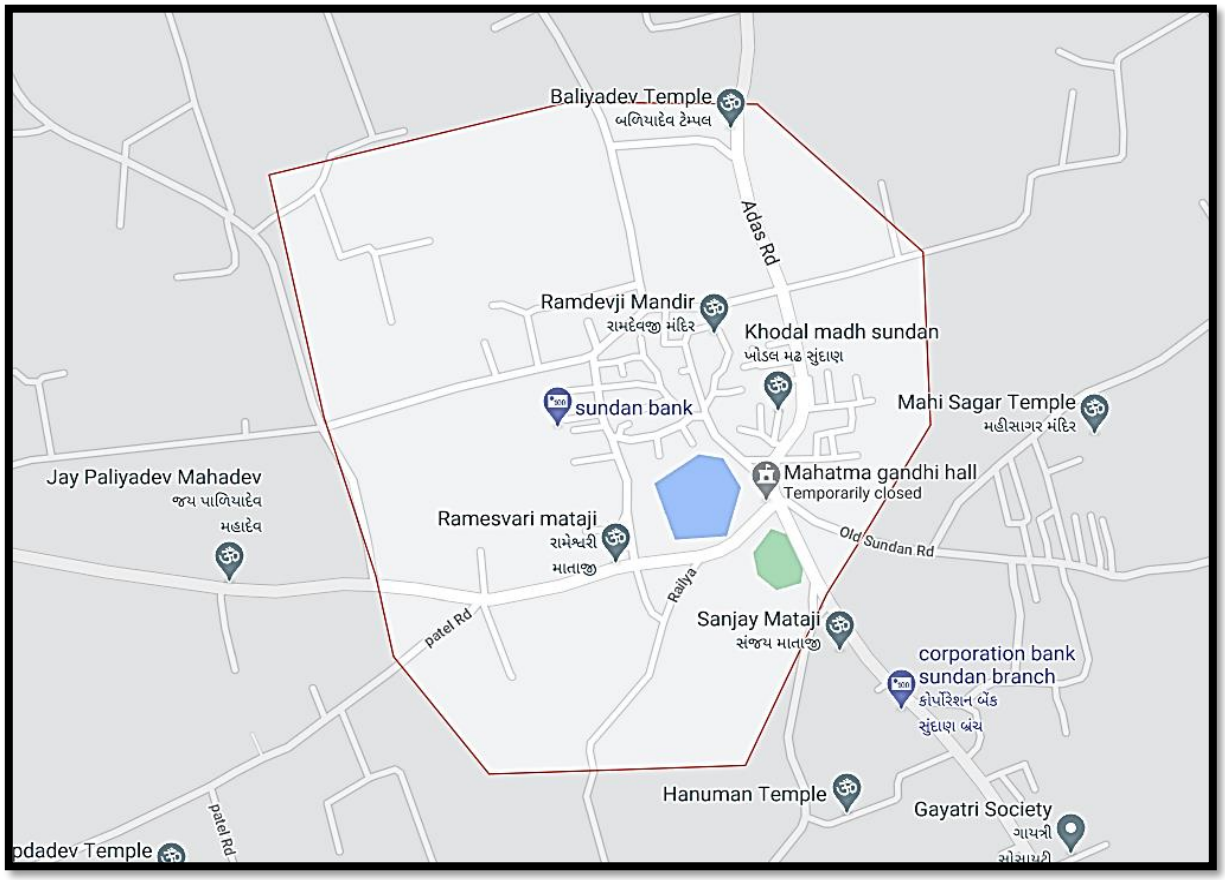


Fig.4.2.1 Location of village

4.2.3 Physical & Demographical Growth

It is located 16 KM towards South-West from District headquarters Anand and 110 KM from State capital Gandhinagar. This Place is near to the border of the Anand and Vadodara Districts. It is situated 25KM away from Vadodara. As, per 2009 stats, Sundan village is also a gram panchayat.

The total geographical area of village is 530.5 hectares. Sundan has a total population of 4,897 peoples. There are about 1,008 houses in Sundan village. As per 2019 stats, Sundan villages comes under Anklav assembly & Anand parliamentary constituency. Local Language at Sundan is Gujarati. Village literacy rate is 87% and the Female Literacy rate is 77.96%.

4.2.4 Economic profile/bank

In Sundan village out of total population, 1933 were engaged in work activities. Villagers are mainly involved in agricultural activities (62%) which is primary source of income, other sources are Employment at various industries located at nearby villages, also there are other activities like dairy farming, poultry farming which accounts for 38% of economic activities.

4.2.5 Actual Problem faced by Villagers and smart solution

There is no recreation facility in the village. The Water Distribution facility is also not proper. Streetlights are not available in every street and those available are also not working properly. For Education Primary Schools are available but students have to migrate to Nearby Village or to the town for further studies.

We can design a recreation center, a secondary school and a library so that dwellers do not need to migrate to nearby villages for such facility. Also, we can enlighten the streets of village with less running cost by designing Solar Street Light Paths.

Also, we can reduce our power consumption charge by using Solar Roof top Design which will help us take the benefit of the renewable energy source at Residential and Commercial Buildings.

4.2.6 Social Scenario

Schedule Caste (SC) constitutes 239 people while Schedule Tribe (ST) are none of total population in Sundan village.

4.2.6 Land Map, Gram Tal Map

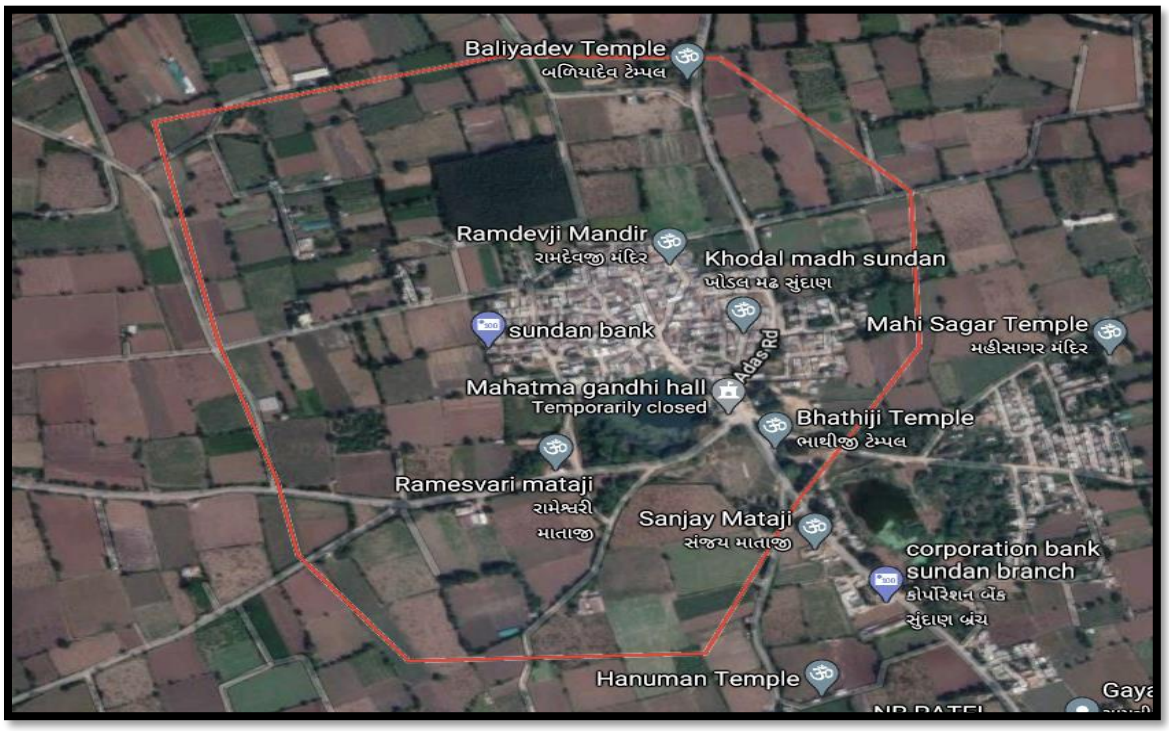


Fig. 4.2.2 base location Map

4.3 Data Collection from Village

4.3.1 Method for Data Collection:

There are basically different types of data collection methods for collection of data from village or city or any of the town is as follows:

- By filling of survey form
- By interaction with villagers
- By interaction with sarpanch
- By observing the current condition of village
- Visiting different location of village

In all above method of data collection, we can use the Home Interview Survey. For the data collection of the Sundan village we can try to home interview survey & collect other data from the panchayat house of Sundan village. The sarpanch and Talati of the village was giving the overall important details of the village like area, population, and existing facility in the village. In Techno Economic Survey form fill the all data which are required.

4.3.2 Primary survey details

Particulars	Total	Male	Female
Total No. of Houses	1008	-	-
Population	4895	2520	2375
Child (0-6)	636	342	294
Schedule Caste	239	120	119
Schedule Tribe	0	0	0
Literacy	87.00 %	95.64 %	77.96 %
Total Workers	**1933**	1532	401
Main Worker	**1705**	-	-
Marginal Worker	228	55	173

4.3.3 No. of Human being in One House

There is total 1008 household each of average 5 member are in one house.

4.3.4 Which Material used locally

Basically, houses are made with clay or brick. Concrete and RCC is also used.

4.3.5 Out Sourced Material

All the materials are out sourced and supplied by outside contractors.

4.3.6 Labour work doing

As main occupation of village is agriculture, some of the people have their own farms, others are farm labours and self-employed.

4.3.7 Costing

Costing of house is depending upon area of construction, type of material used, nature of work.

4.3.8 Occupational Detail

Main occupation of village is Agricultural, animal husbandry. Small household activities are also carried out in village.

4.3.9 Agricultural Details / Organic Farming / Fishery

Main crops of village are cabbage, millets, cauliflower, rice.

4.3.10 Manufacturing HUB / Ware Houses

There is not any such infrastructure in the village.

4.3.11 Tourism Cluster

There is no structure or recreation center as tourism cluster. No historical place, pond exists but in not adequate condition, no garden is there.

4.3.12 Service Cluster

There is only Gram Panchayat office in village, which is not in well condition.

4.3.13 Physical Infrastructure Facilities:

1. Primary School
2. Overhead Water Tank
3. Electricity 24*7
4. Milk Co-Operative Society.
5. Angandwadi

4.4 Infrastructure Details

4.4.1 Drinking Water:

There is only 1-2 hours water supply daily in the village. Water comes from the government supply and then distributed in the village. There is only one water tank in village.

4.4.2 Drainage Network:

There both open type drainage facility in Sundan, mostly closed drainage system can be seen in village. The drainage water is discharged directly in to its nearby water body or on the free land. Also, it creates bad smell & polluted atmosphere. It is not good for the people those are living near it.

4.4.3 Transportation & Road network:

There is bus stand in the outer area of village. All the roads in the village are in usable condition. There is quite good approach road is available. But for the agricultural land there is no strong or hard road only earth road is available. This type of earth roads is not used in monsoon season because it is very difficult for the farmer to go and out from farm. It is very difficult for the transportation of crop. There is no railway station in the village, nearby railway station is Vasad situated within 5Km. People use their own vehicles for the local transportation.

4.4.4 Housing condition

Almost 85% existing houses are pucca, only 15% of the houses are kuchha.

4.4.5 Social infrastructure

Health Facilities:

There is no any type of health center is available such as clinic, PHC center etc. One small community health center is available.

Fig. 4.4.1 Health Care Center

Education system:

There is 6 Aanganwadi in the and 2 primary school, and one higher secondar school is available within village. For the higher study like collage, medical college, engineering collage are not available near the village, it is 9 km away from this village.

Community Hall:

There is one community Hall in the village.

Fig. 4.4.2 Community Hall

Fig. 4.4.3 Primary School

4.4.6 Existing Condition of Public Buildings & Maintenance of existing Public Infrastructures

1. Maintenance of existing Public Infrastructures:

- It is required to maintain and repair the overhead water tank also the capacity of the tank needs to be increased.
- Required to maintain the road for the agricultural land, approach road.
- It is required to rebuild the Gram Panchayat building.
- Apart of that need of recreational facility is there.

2. Existing Condition of Panchayat Building:

- The condition of public buildings is not good. There is one Panchayat building which is in very bad condition.

4.4.7 Technology Mobile / Wi-Fi / Internet Usage Details :

- There is personal Wi-Fi in the village. From the total population 70% people are using mobile phone and their own internet. There is no any other Wi-Fi facility available for public usage

4.4.7 Sports Activity as Gram Panchayat:

- There is no sports activity in the village.

4.4.8 Socio Cultural Facilities:

- Public Library: There is no Public Library in the village.
- Public Garden: There is no Public Garden in the village.
- Village Pond: There are 5 pond or lake in the village.
- Community Hall: There is one community Hall in the village.

Public Library:

- There is no Public Library in the village.

Public Garden / Park / Playground:

- There is no Public Garden/ Park/ Playground in the village.

Village Pond / Lake:

- There is total 5 ponds are available in village.

Fig 4.4.4 Village Lake

4.4.9 Other Facilities:

- There is one Panchayat Building in the village.
- There is one Bank in the village.
- There is one Milk Co-operative Society in the village.
- There is no medical shop in the village.

4.4.10 Sustainable Infrastructure Facilities & Repair & Maintenance

➢ Water supply system	➢ Waste water management system
➢ Solid waste management system	➢ Bank
➢ Community hall	➢ Underground tank
➢ Health Centre	➢ Rainwater harvesting system
➢ Vegetable market	➢ Post office
➢ Public toilet	➢ Lake development

4.6 Existing Institution like - Village Administration – Detail Profile

4.61 Bachat mandali:

- No bacchat mandali in village.

4.6.2 Dudh mandali:

- One milk co-operative society is available and total milk is supplied to the Amul.

4.6.3 Plantation for air pollution:

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

4.6.4 Rain water harvesting:

- Rainwater harvesting is required in village.

Fig. 4.4.5 Dairy Building

Chapter : 5

5. Sustainable Technical Options with Case Studies

5.1 Concept (civil)

5.1.1 Advance sustainable construction techniques

Researchers Discover Additive to Help Concrete Withstand 9.0 Earthquakes

Concrete is an extremely strong building material, but has a notoriously weak tensile strength. In order to resist tension, bending, and shear forces, steel rebar or other reinforcement materials are added either prior to the placement or into the mix. Even with reinforcement, concrete is still extremely rigid and prone to cracking. In the event of a major earthquake, the uneven and horizontal forces can cause structures to crack and, in the worst case, cause failure.

Fig 5.1.1 Fly ash concrete

To help keep buildings and their occupants safe in major earthquakes, researchers at the University of British Columbia have discovered a spray-on concrete reinforcement that greatly improves concrete's resistance to earthquakes up to a magnitude of 9.1.Concrete walls are sprayed with the reinforcement, which is made up of "polymer-based fibers, fly ash, and other industrial additives," in a 0.4 inch (10mm) thick layer. The retrofit reinforcement allows the concrete to bend with the movement of the earthquake, making it much more ductile.

The product is being called Eco-Friendly Ductile Cementitious Composite, or EDCC, due to its heavy reliance on fly ash, with is an industrial byproduct of coal. "By replacing nearly 70 per cent of cement with fly ash, an industrial byproduct, we can reduce the amount of cement used," said UBC civil engineering professor Nemy Banthia in a press release. "This is quite an urgent requirement as one ton of cement production releases almost a tons of carbon dioxide into the atmosphere, and the cement industry produces close to seven per cent of global greenhouse gas emissions."

This is an extremely interesting product to me, because, traditionally, reinforcement has always been added prior to the concrete placement or within the concrete mixture. Since this material is meant as a retrofit for existing walls, it can help save many lives in the event of an earthquake, because it won't require extremely expensive and time-consuming demolition

and rebuilding of exterior walls on at-risk structures. Imagine the impacts retrofit reinforcement could have on failing infrastructure around the world. Within the next couple months, EDCC will be installed in its first official real-world application at the Dr. Annie B. Jamieson Elementary School in Vancouver, Canada.

5.1.2 Soil Liquefaction

What is soil liquefaction ?

"A Phenomenon whereby a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress, usually earthquake shaking or other sudden change in stress condition, causing it to behave like a liquid" is called Soil Liquefaction.

How does Soil Liquefaction Work?

The soil is a mixture of soil particles that stay connected together. These particles naturally rest upon each other due to gravity and form grids based on its properties. Each particle produces its own contact force by the surrounding particle. These contact forces together hold all the individual soil particles in their place. Soil liquefaction occurs due to sudden and rapid load on the soil particle. The sudden water pressure leads to soil losing its cohesive strength. Once the soil loses its cohesion, it gets softened, weak and loses its solid properties that are converted to liquid properties.

Methods to reduce damage due to soil Liquefaction:

1) By avoiding construction on saturated soil: soil study must be conducted before construction to check whether the soil is durable for construction. Soil mapping must be made mandatory.
2) Liquefaction-proof structural system
3) Improving Soil Conditions

Methods to mitigate soil liquefaction have been designed to improve soil strength and quality. Methods such as Vibro compaction, dynamic compaction, and use of vibro stone columns are preferable.

5.1.3 Sustainable Sanitation

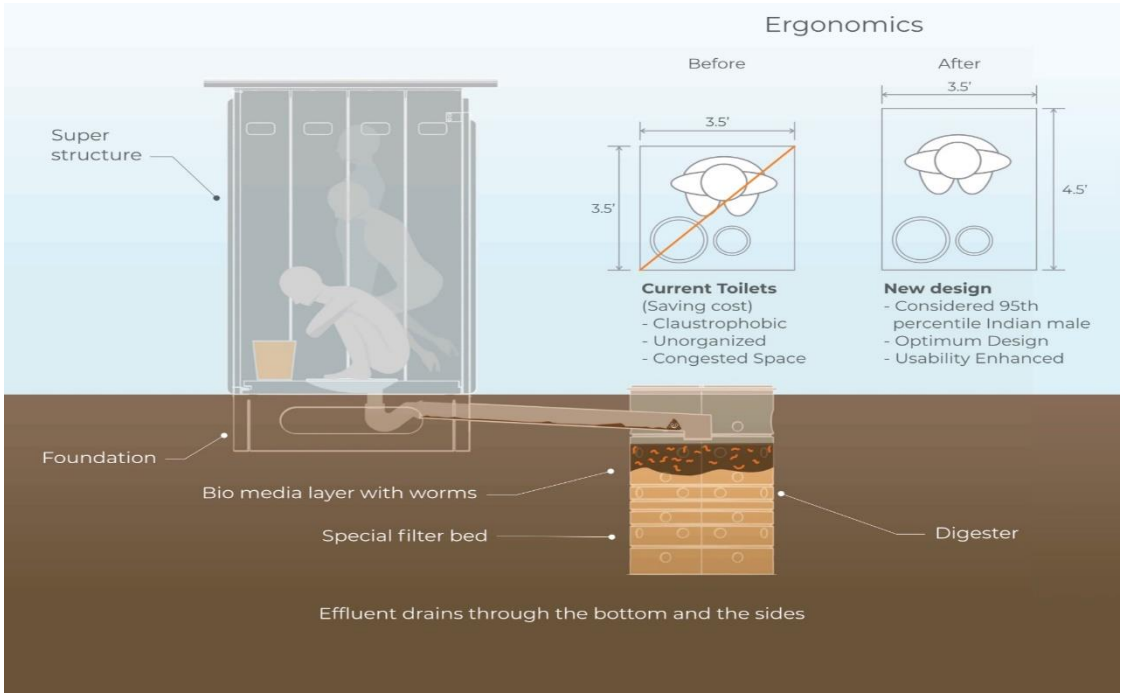
Sustainable sanitation is a **sanitation** system designed to meet certain criteria and to work well over the long-term.

Present conventional forms of wastewater management and sanitation fall either under the category of conventional waterborne or dry (pit) systems. In both cases, the design is based on the premise that excreta are waste, and that this waste should be disposed of. It is also assumed that the environment can safely assimilate this waste. These assumptions lead to

linear flows of resources and wastes and often cause severe environmental pollution (see also water pollution). The technological developments that were once designed to solve the sanitation problem have become part of the problem, not the answer to it.

On-site systems:
In pit systems, which are abundant in many parts of the world, the toilet does form a barrier between human beings and excreta. Yet, this barrier is incomplete. Pit latrines are mostly designed to retain solids and infiltrate liquids. When liquids infiltrate, nutrients, and worse, pathogens also infiltrate. If there are large settlements, or if the toilets are built too close to water sources, this can lead to a severe pollution of ground and surface waters, as shown above. Consequences are a high prevalence of **waterborne diseases**.

Design For Sustainable Sanitation :
Challenge was to create a usable ergonomic toilet, improve handling during construction and usability for the end users. The Digester was designed as a modular system that plugs into the superstructure.



Also, conventional waterborne systems have their drawbacks. One of the largest is probably that they are linear "end-of-pipe" systems, which are constructed on the assumption that a treatment will take place at the end of the pipe. Yet, worldwide, more than 90% of the wastewater does not receive any treatment at all thus polluting an even larger amount of water.

Sustainable sanitation can be defined more precisely:

The main objective of any 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 do this, and additionally be economically viable, socially acceptable, and technically and institutionally appropriate, and it should also protect the environment and the natural resources. This implies the following criteria:

- Health and hygiene
- Environment and natural resources
- Technology and operation
- Financial and economic issues
- Socio-cultural and institutional aspects

5.1.4 Transport Infrastructure / system

The Extension of rural road network is of vital importance for bringing the social amenities, education and health within reasonable reach of villagers/tribal and for the expeditious transportation of agricultural produce from tribal villages to market yards and distribution centers.

There are 72407 habitations in the state of Andhra Pradesh, of which only 41619 habitations are connected by all-weather roads. The total length of road network in the state is about 146944 kms (91307 miles). Of the total road length of 146944 kms, the length of BT road is 8819 kms, WBM is 34226 kms and Gravel road is 60768 kms. There are 6824 unconnected habitations of which 6134 are having a population of 100 and above.

The existing soils, climate and terrain conditions in Srikakulam district of Andhra Pradesh state in India are suitable for the development of Agricultural, Sea and Horticulture Products.

Road Inventory Survey

Detailed road inventory surveys were carried out to collect details of all existing road and pavement features along the existing road sections. The data collected included, but not limited to - Terrain (flat, rolling mountainous), Land-use (agricultural, commercial, forest, residential etc.), Carriageway width, surfacing type, Shoulder surfacing type and width, Sub-grade/local soil type (textural classification), Horizontal curve: Vertical curve, Cross road type and details, Road intersection type and details, Location of water bodies (lakes and reservoirs), Height of embankment or depth of cutting, Land width - RoW (if available), Culverts, bridges and other structures (type, size, span arrangement and location), Roadside arboriculture, Existing utility services on either side within RoW, General drainage conditions, etc.

Pavement Condition Survey

Condition of the pavement was evaluated based on the field measurements. In case of Bituminous surface roads, primary pavement surface distress indicators like cracking

(narrow and wide), patching, levelling, cutting and potholing were estimated visually coupled with physical measurements, and in case of gravel/ WBM roads apart from cracking and potholes, depressions, corrugations and material loss have been estimated. The extent of each distress has been visually estimated for every 200m length of the road in terms of percentage area affected and then averaged for a kilometer length. Edge breaking was also noted in terms of percentage length of road affected and shoulder drop off in terms of depth in millimeters.

Alignment

Utmost care has to be taken in deciding the proposed road alignment as it plays a pivotal role with regards to the total cost of construction. Due consideration has to be given to the following items which economize the cost of construction.

- As far as possible the alignment must pass along the ridges, for easy drain off.
- The alignment must pass through minimum cross drains, must be straight and plain to avoid the horizontal and vertical curves.
- The alignment must preferably pass through the out skirts of the habitation rather than passing through the midway of the habitation.

Land Acquisition

Generally, in Rural Areas, the alignment of the proposed roads in predetermined, because of existing earmarked tracks. The existing tracks will generally have a minimum width equal to length of one Ganter's chain i.e., 33'-0" or one length of Engineer's chain i.e. 66'-0". In some rare occasions only, where there are no such pre- existing tracks, for their convenience in transportation of the agriculture products, the farmers on either side of the existing pavement, donate some of their land for a nominal width of the track i.e. up to a maximum width of 20"-0" only. Hence, in such cases only when the proposed road has to pass through the fields land acquisition problem arises. As the present road project is for up gradation only and having sufficient existing road width, land acquisition problem is not anticipated.

Test Pits

Sub grade soil samples were collected by digging test pits at the interface of the carriageway and shoulder so that both the pavement and the shoulder composition could be known. To determine the field density, core cutter was used. Following tests were conducted on the soil samples collected from the field.

The pavement layers were measured and logged

- The field moisture content was determined by rapid moisture meter at site
- Grain size analysis and Atterberg's limits were determined in the laboratory for classification of soils

- The Maximum Dry Density and Optimum Moisture Content are determined as per IS 2720 Part 7
- CBR testing was carried out on the specimens compacted at OMC at 3 different energy levels, on specimens both for un soaked and 4 day soaked
- CBR of samples remolded at field moisture density. The test results are produced

CONCLUSIONS

Pavement Design

Based on the field work, the traffic studies, reviewing various IRC codes for Rigid and Flexible pavement design, sub grade CBR and keeping the economics in consideration, the following composition has been suggested for the project under study. Rigid pavements have a high compressive strength, which tends to distribute the load over a relatively wide area of soil. Other advantages include - Low maintenance costs, Long life with extreme durability, High value as a base for future resurfacing with asphalt, decreasing base and sub grade requirements, Ability to be placed directly on poor soils, No damage from oils and greases and Strong edges.

5.1.5 Vertical Farming

Definition & Requirement of Vertical Farming in India

As the India's population grows in a rapid manner, the land required to produce the food required also increases. The concept of a vertical farm was introduced to remedy this crisis. In vertical farming, farms are stacked on top of one another, instead of branching out horizontally. After the Industrial revolution carbon footprint produced from the industries has increased in rapid manner resulting in climate change and global warming which had adversely affected agricultural production in many ways like degrading the quality and quantity of crops. Many variables to consider are cultivation quantity and quality, design and supporting technology in order to have successful implementation of vertical farming in India.

Vertical farming is the practice of producing food and medicine in vertically stacked layers, vertically inclined surfaces or integrated in other structures such as in a skyscraper, used warehouse, or shipping container, terrace etc. The project study is restricted to propose a selfsustained structure based on vertical farming using a modern farming technique of soil-less agriculture to counter the problems generated in current conventional farming i.e. horizontal farming practiced in India. The

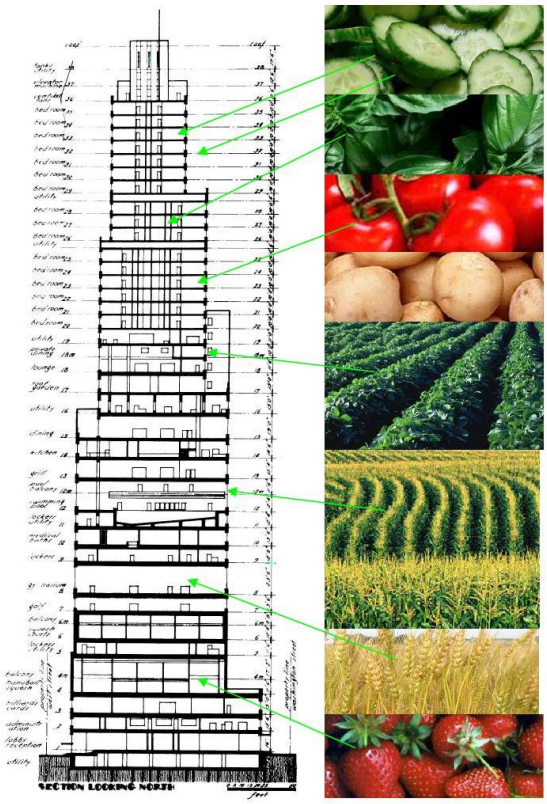


Fig. Vertical Farming

project study also concludes cost benefit of vertical farming over horizontal farming. Project focuses on use of technique of hydroponic in vertical farming.

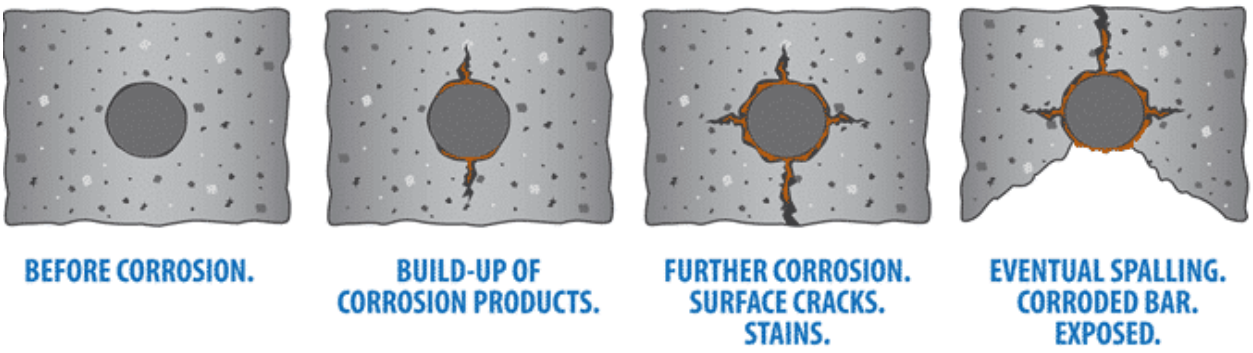
➢ **Methodology**

Step 1: Study of Vertical Farming.
Step2: Modern Techniques of farming.
Step 3: Selected Hydroponic technique to implement in vertical farming.
Step 4: Site visit.
Step 5: Study of Hydroponic system.
Step 6: Modeling of Hydroponic setup for 1M* 1M.
Step 7: Cost analysis of Hydroponic setup for 1M* 1M.
Step 8: Cost analysis of 100 M* 100 M area in Vertical Farming.
Step 9: Cost analysis of 100 M* 100 M area in Horizontal Farming.
Step 10: Cost comparison between Vertical Farming and Horizontal Farming.
Step 11: Proposing G+11structure and G+3 warehouse

5.1.6 Corrosion Mechanism, Prevention & Repair Measures of RCC Structure

Corrosion in RC Structures

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 strengthens 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).

Repairs

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
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.

Approaches for Repair, Substitution and Recovery.

1) Patch repairs and nascent anodes
2) Impressed Current Cathodic Protection
3) Galvanic Cathodic Protection, what's more
4) Hydrophobic medications.

The determination of the above research bundles depended on over a wide span of time use by the development industry to repair, renovate and restore RC structures.

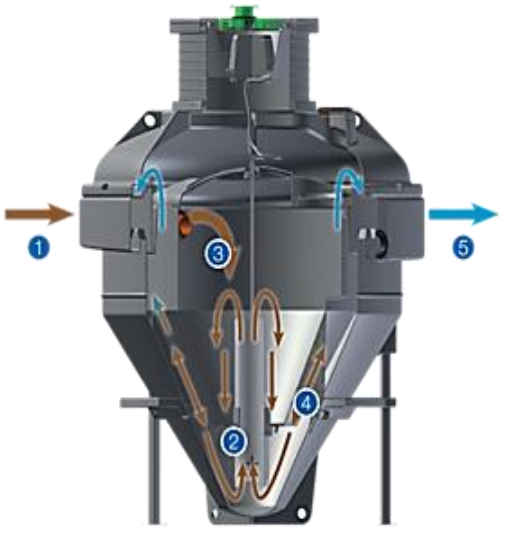
Their commitments might be comprehensively arranged as

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.

5.1.7 Sewage Treatment Plant

What is sewage treatment plant?

Sewage treatment is the process of removing contaminants from domestic and municipal wastewater, containing mainly household sewage plus some industrial wastewater. A STP can be express as the factory, which prevents the environment from waste produced by human beings. When the waste produced is beyond the limit of environment to decompose, STP is only the solution. The present STP reduces the waste produces manure& energy and



helps us to keep our rivers, ponds clean. Various types of STPs are introducing each day, according to the requirement and economic view.

A Case Study on Sewage Treatment Plant (STP), Delawas, Jaipur

STP in Delawas is working on ASP (activated sludge process). It consists of two-phase capacity of each is 62.5MLD. It is a best example of STP known for not using any chemicals in whole treatment process & not using any pump in sewerage system for bringing the sewage to STP from 25 Km. The farthest point of sewerage is 25Km and nearest is 1Km from the STP. This type of STPs can also be termed as **energy saver of a country**.

Identification of Problems Associated: While studying the area along the confined area and try to understand the disposal method for treated water by STP Delawas. This fact came into light that the water after secondary treatment left open in AmanishaNallah which ultimately meet to Dhund river and pollute it. Local farmers for irrigation purpose use the water illegally and without any noticeable information to local bodies. There are no measures taken to remove phosphorus and nitrogen from treated water, which ultimately can cause eutrophication in Dhund River. On the governmental level, there is no plan for reusing or proper disposal of treated water. The treated water even not disinfected before drain it into runnel (nallah) and in open run smells bed to passersby.

This would prove a fatal mistake in case of any road accident or if animal drink this. Local farmers for utilizing as manure for their fields take the sludge produce from the plant away. However, on official level, there is no record of this sludge and even no proper method of disposal of sludge. Due to RIICO industrial area nearby and cloth dying, the STP receive toxic waste from industries but no testing of heavy metals concentration at inlet and outlet of plant is done on regular basis. The treated water is not using by STP to make its surrounding area green, no plantation on large scale with treated water seen except in front of office and generator room. No holding tank is there for wastewater reuse in an organized manner.

Fig.5.1.7 STP plant

Case Study

Vertical Hydroponic Farm, Goa:

In Goa, a Hydroponic farmer Ajay Naik started India's first hi-tech hydroponic vertical indoor farm(Letcetra Agritech pvt.ltd) and is concentrating on creating social awareness about vertical

farming technology and helping farmers across the India to get maximum yield from minimum use of resources. Letcetra Agritech is involved in the production of high-quality pesticide-free lettuce in a completely indoor farm.

Fig. Vertical Farming Goa

Using various technologies such as air conditioning systems control the temperature and humidity, while LED lights are used to compensate for sunlight.

Automated systems are placed for monitoring and controlling water temperature, pH and nutrient level etc. Letcetra Agritech's produce – romaine lettuce, basil, rocket/arugula, oak leaf and lollo green is distributed to the local supermarkets.

- **Cost Analysis**

Sr. no	MATERIAL	Requirement	Cost per unit(Rs)	Cost (in Rs.)/cycle
1.	Seeds	40 kg	100	4000/-
2.	Water	20,000 liters	0.5	10,000/-
3.	Potash and dye	10 kg	240	2400/-
4.	Fertilizer	50 kg	10	500/-
5.	Labor cost	10 person	1000	10000/-
			Total	26,900/-

Unit Cost of Electricity (₹)	8.75	
Installation for Plants (sqm)	2752	(A)
Installation for Saplings (sqm)	1376	(B)
Cost for 1sqm (₹)	1,931	(C)
Total system cost (₹)	7,969,327	((A+B) X C) =(H)
Operational Cost for 1year (₹)	39,203,386	(I)
Combined Cost for a year (₹)	47,172,712	(H+I)
Sales Cost for Vegetables per kg (₹)	150	(D)
Sales Cost for Sapling (₹)	10	(E)
Vegetable Sold in Wholesale Market in 15cycles (₹)	30,960,000	(D X 15cycles) =(F)
Saplings Income in 18cycles (₹)	297,216,000	(E X 18cycles)=(G)
Average Sale in a year	328,176,000	(F+G)
Total Lighting Load (KW)	495.36	
Connected Load as Operation is in 2 shifts	247.68	

Chapter : 6

6. Swatchh Bharat Abhiyan (Clean India)

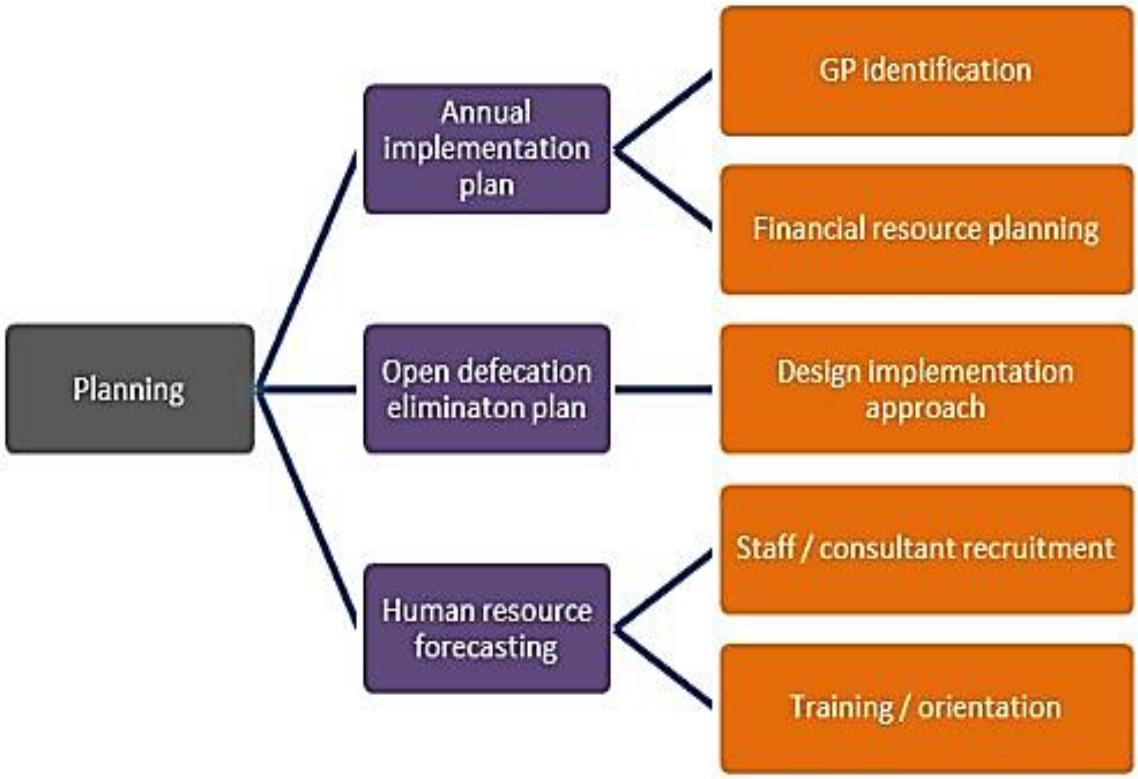
6.1 Strategic Technology options for Swatchh Bharat Abhiyan (SBA) (Clean India) with Photograph.

- On October 2nd 2014, Prime Minister Narendra Modi officially launched the Swachh Bharat Abhiyan (SBA) at Rajpath, New Delhi, by taking up the broom to clean a road.
- The SBA was launched with eight core objectives. The principal objective was to ensure a healthy life for Indian citizens and to improve India's semblance globally. ➢ SBA has specific goals aimed for the rural as well as urban areas.
- Gramin SBA, i.e., for the rural areas has a target of 11 crore household latrines to be installed in villages by 2019. The central agency for this work is the Drinking Water and Sanitary Ministry.
- The Urban SBA has a target to build 1 crore household toilets, 2.5 lakh community toilets, 2.6 lakh public toilets and solid waste management. Ministries are to build 50,000 toilets in schools by August 2015.The central agency for this work is the Urban Development and Housing Ministry.
- SBA has to achieve its ultimate goal by 2019, the 150th birth anniversary of Mahatma Gandhi, to ensure a clean and green India (every city and village).
- The intention and expected results of SBA undoubtedly are remarkable however, apt implementation remains as a significant challenge.

{Fig 6.1.1 Swatchh Bharat Abhiyan}

❖ Strategies

- The focus of the Strategy is to move towards a 'Swachh Bharat' by providing flexibility to State Governments, as Sanitation is a state subject, to decide on their implementation policy and mechanisms, taking into account State specific requirements.
- It is suggested that Implementation Framework of each State be prepared with a road map of activities covering the 3 important phases necessary for the Programmer:
- Planning Phase
- Implementation Phase
- Sustainability Phase
- Each of these phases will have activities that need to be specifically catered for with concrete Plans of Action, which shall need specific preparation and planning.
- A schematic representation of the SBA Programmer Implementation Diagram is represented below as an illustrative model.
- A schematic representation of the SBA Programmed Implementation Diagram is represented below as an illustrative model.



{Fig 6.1.2 Planning Phase SBA}

6.2 Guidelines for the process of the implementation of SBA

- Implementation of SBA (G) is proposed with 'District 'as the base unit, with the goal of creating ODF GPs.

- A project proposal shall be prepared by a District, and scrutinized and consolidated by the State Government into a State Plan.

- Funds are to be made available for these preliminary IEC works including for triggering behavior change. This will endeavor to reach every household in every community and shall disseminate information regarding the need for safe sanitation, and the ill effects of open defecation getting the population oriented towards satisfying their felt-needs.

- The proliferation of educational facilities in the rural areas provides the opportunity to utilize an approach that should essentially include an element that involves school and college children as potential agents of change in homes.

- The built-in flexibility in the menu of options is to give the poor and the disadvantaged families' opportunity for subsequent up gradation of their toilets depending upon their requirements and financial position.

- The provision of Incentives for individual household latrine units to the rural households is available to States which wish to provide the same this may also be used to maximize coverage so as to attain community outcomes.

- The Scheme shall aim to saturate coverage in the first instance the States/ Districts/ GPs in all major river basins of India e.g., Sutlej, Ravi, Beas, Ganga, Yamuna, Godavari, Narmada, Tapti, Kaveri, Brahmaputra. This will ensure the outcomes required for pollution free rivers, in addition to ODF communities.

- A robust Monitoring arrangement has to be put in place to monitor open defecation status of a village, the implementation of Solid and Liquid Waste Management projects as well as the construction and us of Household, Schools, Aanganwadi toilets and Community Sanitary Complexes. The monitoring has inter-alia also to use a robust community led system, like Social Audit.

- To accelerate coverage in Gram Panchayat selected under the Sansad Adarsh Gram Yojana, these GPs may be selected on priority for coverage under the SBA.

Chapter : 7

7. Village condition due to COVID-19

Today, we are battling an invisible enemy, the COVID-19. The ongoing global outbreak has been recognized as a pandemic by the World Health Organization as it has crossed all national boundaries and continues to spread its reach. More than 128 million people have been globally affected and thousands have unfortunately succumbed to it. In India, close to 12.1 million cases have been reported and the number continues to be on the rise with each passing day.

The pandemic has had a far-reaching socio-economic impact well beyond just the spread of the disease. The strain on the global and Indian economies has further been aggravated by a negative impact across sectors including automotive, tourism, and aviation which were already witnessing an unprecedented downturn. For the manufacturing sector, there is a disruption to offices, factories and logistics, making it even more challenging to keep the operations running smoothly.

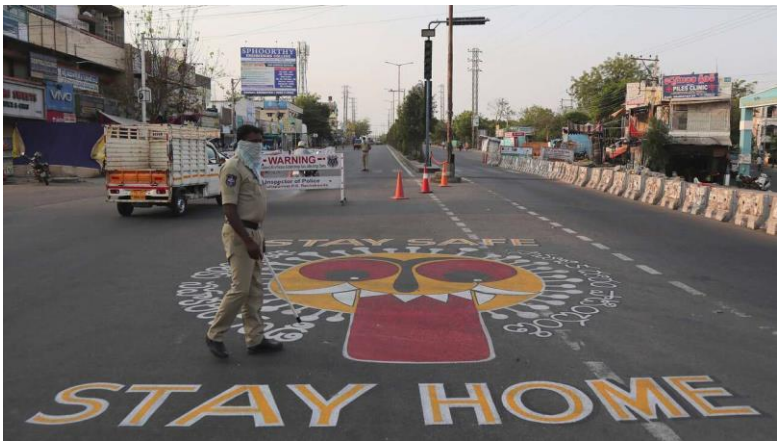
7.1 Taken steps in allocated village related to existing situation

As village falls under the district of Anand and Government of Gujarat had to follow the guidelines of Central Government in the initial phase of covid-19 all the steps followed was as following:

- Administrative measures

1. On March 18, the government issued guidelines specifying preventive measures to be taken in all government offices and employees. Recommendations include: (i) avoiding face-to-face meetings and non-essential travel, (ii) closure of gyms and yoga centers in the Secretariat, (iii) home quarantine for officials exhibiting any symptoms, and (iv) mandatory leave to be given to such persons going on quarantine.
2. On March 21, the government released the terms of reference of Regional Nodal Officers appointed to work towards preventing the spread of COVID-19.
3. On March 23, the Gujarat Legislative Assembly decided to indefinitely postpone the Rajya Sabha elections that were originally to be held on March 26.

- Health measures



1. The COVID-19 regulations were immediately supplemented with the n-COVID-19 Guidelines. These guidelines cover: (i) case definitions, (ii) basic infection prevention control measures, and (iii) standard precautions to be followed during the care and treatment of suspected patients.
2. On March 15, the government instructed all higher education institutions and other educational institutions including schools, polytechnics, aganwadi, to shut down till March 29. However, examinations of class X, XII, and universities were permitted to continue. Further, spitting in public was made a punishable offence.
3. On March 19, the government ordered the closure of gyms, amusement parks, wedding halls, till March 31. Additionally, all private doctors, practicing modern as well as traditional systems of medicine, were instructed to report suspect cases to the government.
4. A Fever Helpline 104 was launched on March 20 for reporting of suspect cases of COVID-19. Further, guidelines were also issued on the reporting of cases of Severe Acute Respiratory Illnesses (SARI) to the government. These include: (i) preparation of travel history and contact lists of reported suspect cases, (ii) nodal officer to decide on steps and treatment protocol for such cases, (iii) relevant authorities to initiate follow up and contact tracing for the patient for last 14 days, and (iv) initiating cluster management guidelines when new cases emerge.

Apart of these measures and orders by state and central government few regulations were also put in order to reduce the spread of novel corona virus by the local governing body of the village such as:

1. Compulsory wearing mask while moving out of house.
2. No one except the essential service workers and goods transportation was allowed.
3. Villagers was not visiting other cities and all the job worker was also stayed at home during lockdown.
4. Partial relief in shops selling essential goods was given, for example 9 am to 2 pm.

Chapter : 8

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

Sustainable design seeks to reduce negative impacts on the environment, and the health and comfort and amenities of building occupants, thereby improving the building performance, like strength, life span. The necessary objectives of sustainability are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments.

Sustainable design principles include the ability to:

- Optimize site potential
- Minimize non-renewable energy consumption use environmentally preferable products protect and conserve water
- Enhance indoor environmental quality
- Optimize operational and maintenance practices.

Some of the goals we need to fulfill for the sustainable design:

- Achieve and maintain annual reductions in building energy use, and implement energy efficiency measures that reduce costs.
- Reduce potable and non-potable water consumption, and comply with storm water management requirements.
- Ensure that new construction and major renovations conform to applicable building energy efficiency requirements and sustainable design principles. Revised Guiding Principles for Sustainable Federal Buildings were issued by the Council on Environmental Quality in 2016.

8.1 Design Proposal

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

- **Public Toilet**
- **Bal Mandir**
- **Panchayat Building**
- **Public Garden**
- **Bus Stand**
- **U/G water tank (63000 Liter Capacity)**

8.2 Recommendations of the Design

Design to be proposed should be convenient enough, cost effective and valuable to the residents of the villagers. The design proposed is designed according to the use, value, costing recommended by the villagers. The cost of the design is the most important part which need to be taken care of. Costing should be value for money. Design should be designed according to number of people visiting, number of people going to use it, number of people wants the building or not.

Our Allocated village Sundan has most of the amenities and facilities needed by the residents and villagers for daily needs. Some amenities like public garden, Public Library, Strong Store Room, Maternity home, and some requirements which are not there which can be provided to the villagers, for development of the village. These are some amenities which can be beneficial to them in the long run and might also connect them to the fast-running world. Knowledge can be gained through public library, children can have some private study area for them, bus stand connects them to the nearby cities and many more facilities. Some of this might be not needed but might be as a recreational facility and which can be used in the future.

8.3 Suggestion/Benefits of Villagers

Villagers also need to be provided with best amenities and services for daily needs, and good life for living.
Some Amenities needed by villagers:

- A cremation place was requested by people.
- Scientific agriculture practices easily accessible to each village.
- Encourage villagers to open cooperative so that they can speak as one.
- Electricity supply which of course is different from electrification.
- Water management practice.
- Public garden will help people to build social contact.

8.1.1 Public Toilet (Social Design):

Proposed public toilet consists of total 8 WC units (4 man & 4 woman) and 2 Bathrooms (1 man & 1 woman). Also, provision of solar panels is given by which electricity can be produced, other than that water can be conserved by Rain water harvesting system.

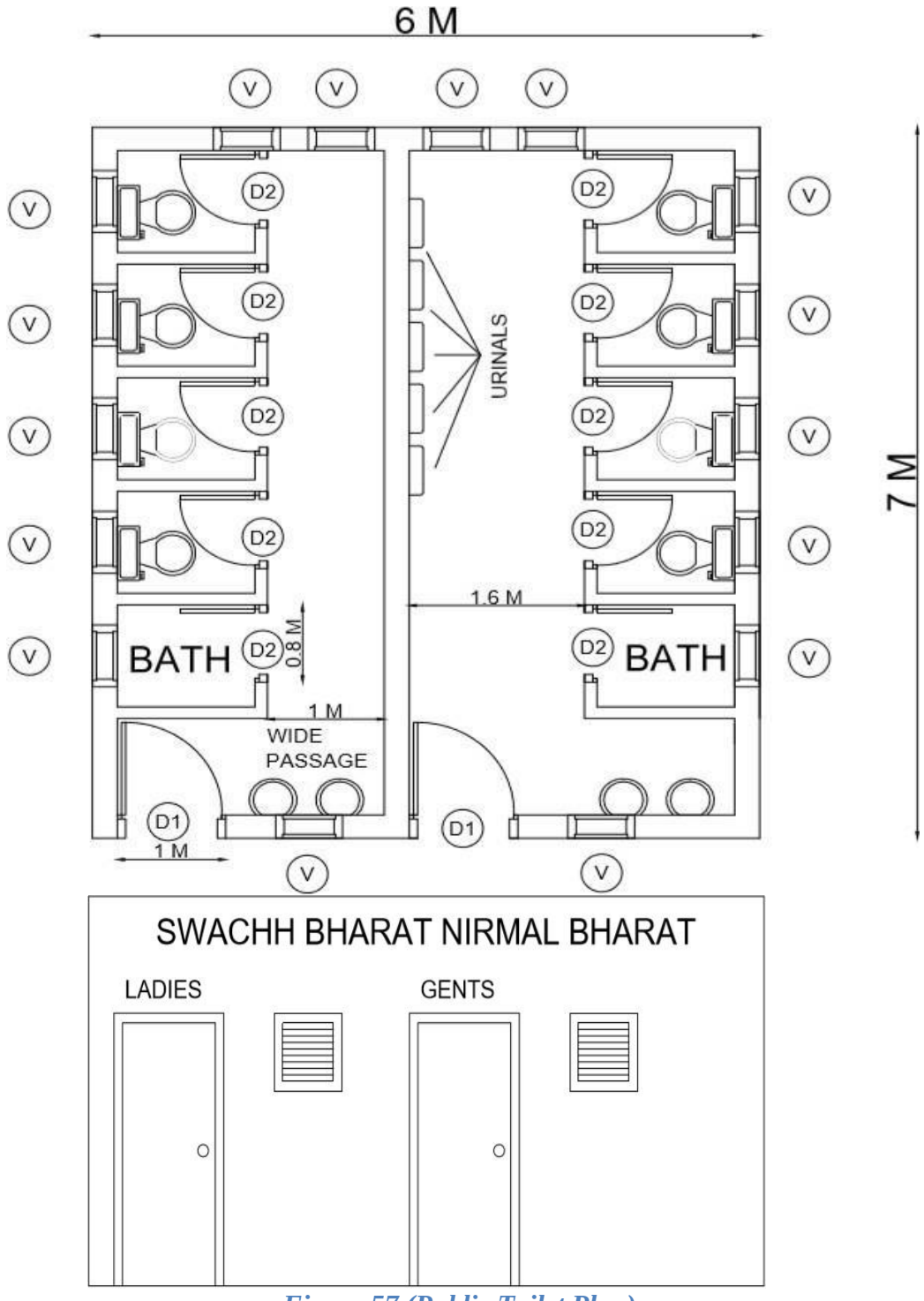


Figure 57 (Public Toilet Plan)

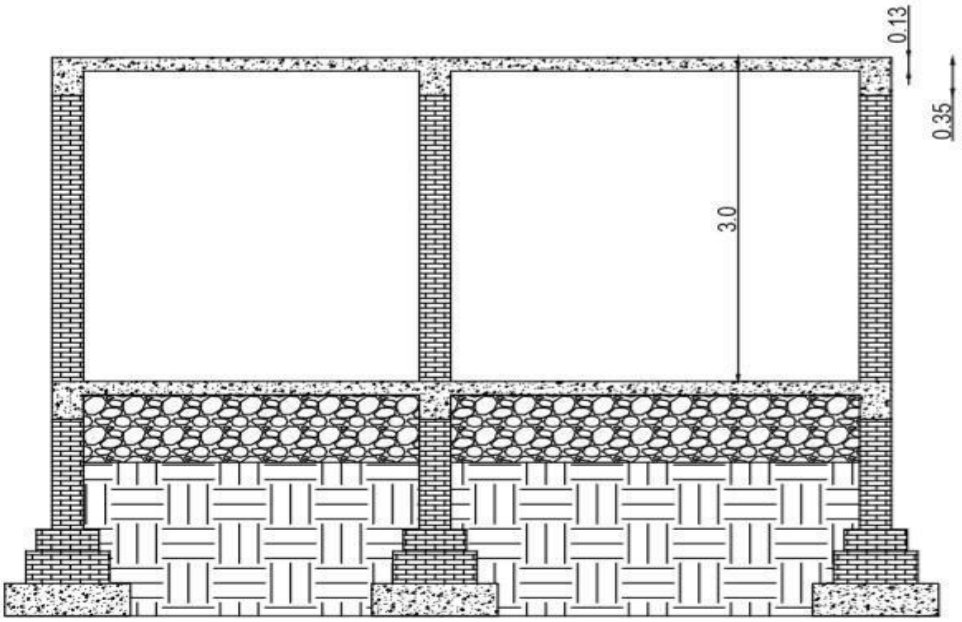
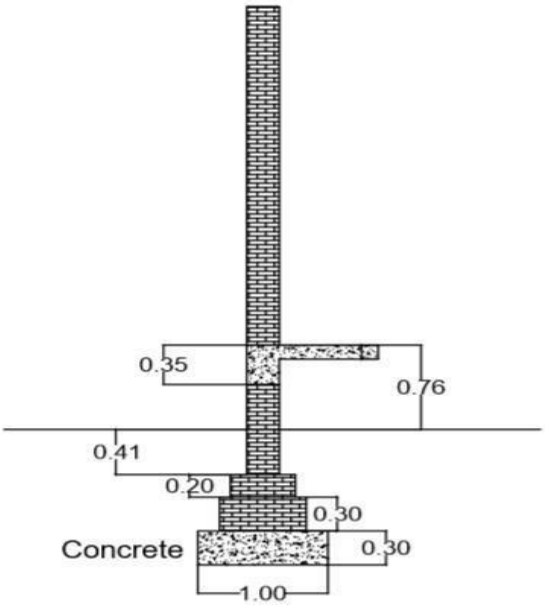


Figure 59 (Public Toilet Section)



FOOTING DETAILS

(ALL DIAM. ARE IN METER)

.

Measurement Sheet						
SR. NO.	DESCRIPTION	NO.	LENGTH (M)	WIDTH (M)	HEIGHT (M)	QUANTITY
1	Excavation in Foundation					
	Total C. L=47.14 m					
	Actual Length=46.24 m	1	46.24	0.9	1.2	49.93 m3
	Total					**49.93 m3**
2	Plain cement concrete (P.C.C) in					
	Foundation (1:4:8)					
	PCC	1	46. 24	0.9	0.3	12. 48 m3
	Total					**12.48 m3**
3	Brickwork in Foundation up to Plinth level					
	First step	1	46.54	0.6	0.3	8.377 m3
	Second step	1	46.84	0.3	0.2	2.81 m3
	Third step	1	46.92	0.228	0.8	8.55 m3
	Total					**19.737 m3**
4	Brickwork in superstructure in cement mortar 1:6					
	For Ground Floor					
	External Wall	1	31.42	0.228	3	21.49 m3
	Internal Wall	1	15.5	0.112	3	5.2 m3
						26.69 m3
	Deduction for					
	Door/Ventilation					
	:					
	D1	2	1	228	2.1	0.957 m3
	D2	10	0.8	0.112	2.1	1.88 m3
	V	16	0.6	0.228	0.6	1.313 m3
	Deduction for lintels:					
	Bearing = 0.15 m					
	D1	2	1.3	0.228	0.15	0.089
	D2	10	1.1	0.112	0.15	0.18
	V	16	0.9	0.228	0.15	0.49
						(-)0.759 m3
	Total					**21.78 m3**
5	RCC Work					
	Slab	2	7	6	0.12	10.08
	Lintel					0.759
	Total					**10.839 m3**

6	2 cm thick marble flooring					
	Blocks	10	1.3	1		13
	Passage		6.6	2.4		15.7
	Extra space	2	0.98	2.8		5.48
	Total					**34.188 m2**
	area					
7	Smooth plaster on inside walls and ceiling in					
	cm. (1:3)					
	Wall	4	2.772		4	44.35
		4	6.54		4	104.64
	Ceiling	1	5.54	6.54		36.23
	Total					**185.22 m2**
9	Earth filling in Excavation					
	Total excavation for walls					49.93 m3
	Brickwork up to G.L.					(-)19.737 m3
	PCC					(-)12.48 m3
	Total					**17.713 m3**

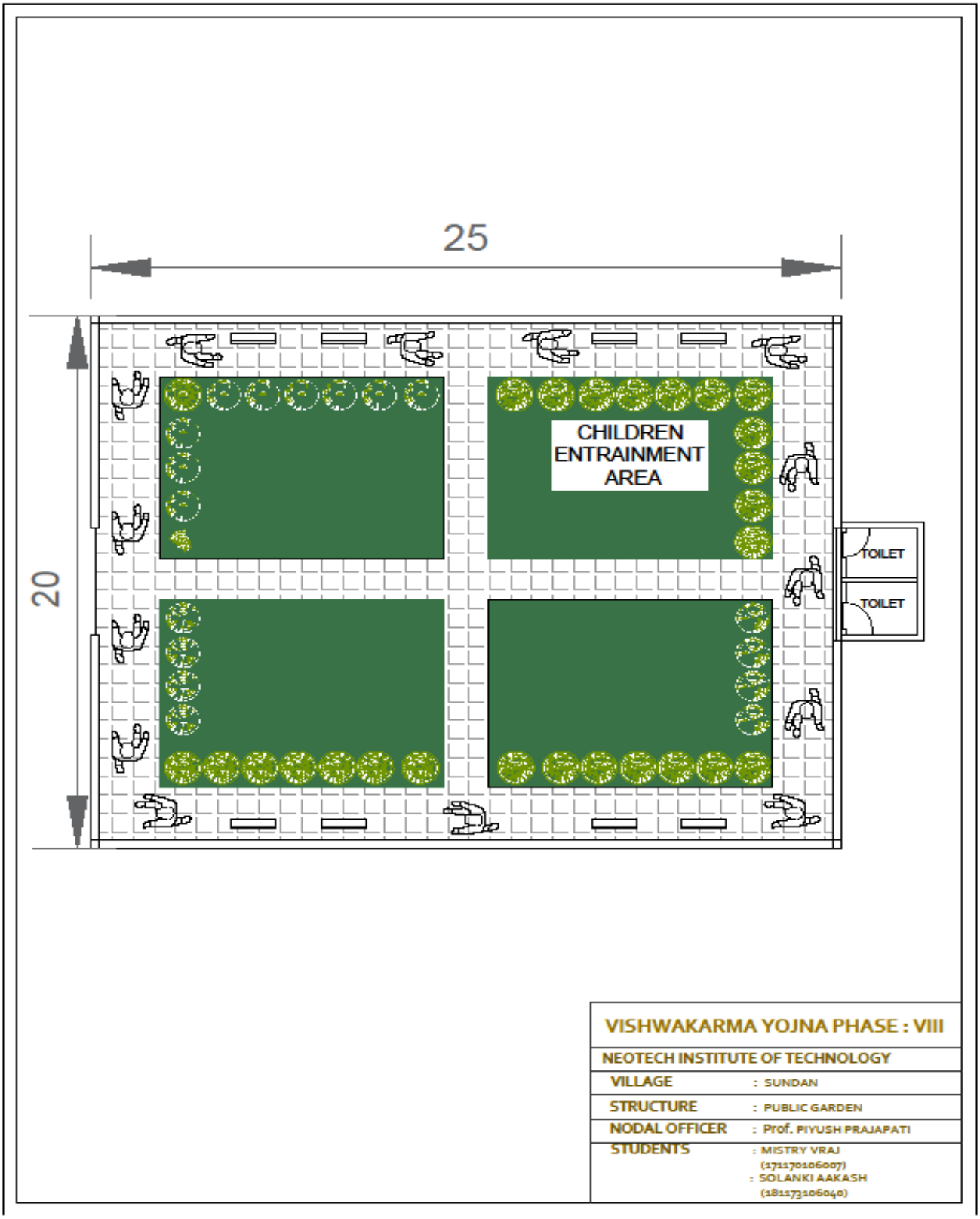
ABSTRACT SHEET

SR. NO.	PARTICULARS	QUANTITY	UNIT	RATE	PER	AMOUNT
1	Excavation in Foundation	49.93	m3	85/m3	m3	4244
2	Plain cement concrete (P.C.C) in Foundation (1:4:8)	12.48	m3	3000/m3	m3	37440
3	Brickwork in	19.737	m3	3200/m3	m3	63158
	Foundation up to Plinth level					
4	Brickwork in superstructure in cement mortar 1:6	21.78	m3	3500/m3	m3	76230
5	RCC Work	10.839	m3	8800/m3	m3	95383.2
6	2 cm thick marble flooring	34.188	m2	500/m2	m2	17094
7	Smooth plaster on inside walls and ceiling in cm. (1:3)	185.22	m2	150/m2	m2	27783
9	Earth filling in Excavation	17.713	m3	50/m3	m3	885.65
	Total					3,22,228 Rs.
	Add 5% contingencies					16,109 RS.
	Grand Total					3,38,339 Rs.
					Approx.	3,40,000 Rs.

8.1.2 Public Garden

ABSTRACT SHEET

Item Description	Total Quantity	Rate	Amount
Provide sit clearance	500 m2	8	4000
Complete wall cons.	493.7 m2	150	74055
Walking Area	164m2	500	82000
Sand pit in Garden	10.86m2	0	0
paver block	164m2	78	12792
flling mooram for grass			
in garden	50.4m2	500	25200
Rcc benches	8no.	1300	10400
Gate	1no.	1200	1200
garden plants	25nos.	500	12500
		total=	2,51,047
	10% contractors	profit	25100
Excavation	20.2X25.2	45.5	44,946
	849.04		
		Grand Total=	2,83,682Rs.


25
20
CHILDREN ENTRAINMENT AREA
TOILET
TOILET
VISHWAKARMA YOJNA PHASE : VIII
NEOTECH INSTITUTE OF TECHNOLOGY
VILLAGE : SUNDAN
STRUCTURE : PUBLIC GARDEN
NODAL OFFICER : Prof. PIYUSH PRAJAPATI
STUDENTS : MISTRY VRAJ (171170106007)
: SOLANKI AAKASH (181173106040)

8.1.3 Panchayat Building

MEASUREMENT SHEET							
Sr. no.	Description	No.	Length	Widt h	High t	Quantit y	Total Quantity
1	Earth excvation	9	1.3	1.3	2.19	33.3	33.3 cu.m
	L/W= 1+0.15+0.15= 1.3m						
	Depth from G.L. = 2.19m						
2	P.C.C. work	9	1.3	1.3	0.04	0.608	0.608 cu.m
	L/W = 1.3m						
	H = 0.04m						
3	Footing	9	1	1	0.15	1.35	1.35 cu.m
4	R.C.C. column	9	0.46	0.23	2.93	2.789	2.789 cu.m
5	R.C.C. Beam G.B.						2.655 cu.m
	Beam 1(0.23 x 0.23) L=4.3m	3	4.3	0.23	0.23	0.682	
	Beam 2(0.23 x 0.23) L=3.3m	3	3.3	0.23	0.23	0.524	
	Beam 3(0.23 x 0.23) L=4.9m	3	4.9	0.23	0.23	0.778	
	Beam 4(0.23 x 0.23) L=4.2m	2	4.2	0.23	0.23	0.444	
	Beam 5(0.23 x 0.23) L=4.4m	1	4.4	0.23	0.23	0.227	
						2.655	
6	DPC						11.569 cu.m
	Beam 1(0.23 x 0.23) L=4.3m	3	4.3	0.23		2.967	
	Beam 2(0.23 x 0.23) L=3.3m	3	3.3	0.23		2.277	
	Beam 3(0.23 x 0.23) L=4.9m	3	4.9	0.23		3.381	

	Beam 4(0.23 x 0.23) L=4.2m	2	4.2	0.23		1.932	
	Beam 5(0.23 x 0.23) L=4.4m	1	4.4	0.23		1.012	
						11.569	
7	**R.C.C. column for super structure**						**4 cu.m**
	size (0.46 x 0.23)	9	0.46	0.23	4.2	4	
	H = 4.2						
8	**R.C.C. Beam at slab level**						**2.655 cu.m**
	Beam 1(0.23 x 0.23) L=4.3m	3	4.3	0.23	0.23	0.682	
	Beam 2(0.23 x 0.23) L=3.3m	3	3.3	0.23	0.23	0.524	
	Beam 3(0.23 x 0.23) L=4.9m	3	4.9	0.23	0.23	0.778	
	Beam 4(0.23 x 0.23) L=4.2m	2	4.2	0.23	0.23	0.444	
	Beam 5(0.23 x 0.23) L=4.4m	1	4.4	0.23	0.23	0.227	
						2.655	
9	**R.C.C. slab**						**11.3 cu.m**
	L = 10m , W = 8.7 m	1	10	8.7	0.15	13.05	
	Deduction						
	Beam 1(0.23 x 0.23) L=4.3m	3	4.3	0.23	0.15	0.445	
	Beam 2(0.23 x 0.23) L=3.3m	3	3.3	0.23	0.15	0.341	
	Beam 3(0.23 x 0.23) L=4.9m	3	4.9	0.23	0.15	0.507	
	Beam 4(0.23 x 0.23) L=4.2m	2	4.2	0.23	0.15	0.289	
	Beam 5(0.23 x 0.23) L=4.4m	1	4.4	0.23	0.15	0.152	
	column(0.46 x 0.23)	1	0.46	0.23	0.15	0.016	

						1.75	
10	**Earth Filling upto plinth**	1	10	8.3	0.6	49.8	**42.858 cu.m**
	L = 10m , W = 8.3m						
	Deduction						
	Beam 1(0.23 x 0.23) L=4.3m	3	4.3	0.23	0.6	1.78	
	Beam 2(0.23 x 0.23) L=3.3m	3	3.3	0.23	0.6	1.367	
	Beam 3(0.23 x 0.23) L=4.9m	3	4.9	0.23	0.6	2.029	
	Beam 4(0.23 x 0.23) L=4.2m	2	4.2	0.23	0.6	1.159	
	Beam 5(0.23 x 0.23) L=4.4m	1	4.4	0.23	0.6	0.607	
						6.942	
11	**Brick work GL to PL**						**4.23 cu.m**
	Beam 1(0.23 x 0.23)	3	4.3	0.23	0.37	1.098	
	L=4.3m						
	Beam 2(0.23 x 0.23) L=3.3m	3	3.3	0.23	0.37	0.842	
	Beam 3(0.23 x 0.23) L=4.9m	3	4.9	0.23	0.37	1.251	
	Beam 4(0.23 x 0.23) L=4.2m	2	4.2	0.23	0.37	0.715	
	Beam 5(0.23 x 0.23) L=4.4m	1	4.4	0.23	0.37	0.374	
						4.23	
12	**Brick wall masonry for super structure**						**29.118 cu.m**
	wall-1	3	10	0.23	3	20.7	
	wall-2	2	8.7	0.23	3	12.006	
	wall-3	2	3.5	0.12	3	2.52	
	wall-4	1	1.6	0.12	3	0.576	

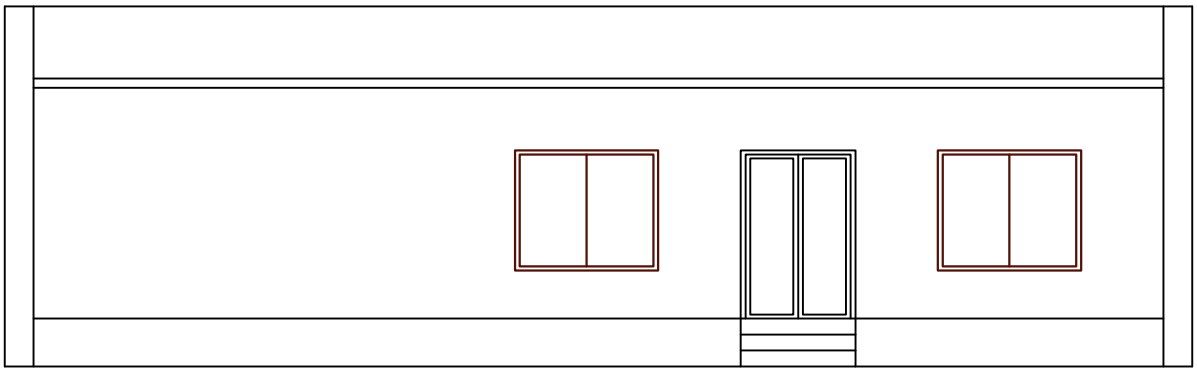
	wall-5	2	1.2	0.12	3	0.864	
	wall-6	1	1.9	0.12	3	0.684	
	wall-7	1	4.4	0.12	3	1.584	
						38.934	
	Deduction						
	D	1	1.2	0.23	2.1	0.579	
	D1	4	0.9	0.12	2.1	0.907	
	D2	1	0.8	0.12	2.1	0.202	
	O	2	1.5	0.23	3	2.07	
	W	3	1.8	0.23	1.2	1.49	
	W1	1	1.2	0.23	1.2	0.331	
	W2	1	0.8	0.23	1.2	0.221	
	V	1	0.6	0.23	0.6	0.083	
	verandah front	1	4.7	0.23	3	3.243	
	verandah side	1	1	0.23	3	0.69	
						9.816	
13	**Parapet wall**	2	10	0.23	1.15	5.29	**9.89 cu.m**
		2	8.7	0.23	1.15	4.6	
14	**Steel**	1	1	1	1	1943	**1943 Kg**
	1% of total R.C.C.						
15	**Wood work**						**21.36 sq.m**
	D	1	1.2		2.1	2.52	
	D1	4	0.9		2.1	7.56	
	D2	1	0.8		2.1	1.68	
	W	3	1.8		1.2	6.48	
	W1	1	1.2		1.2	1.44	
	W2	1	0.8		1.2	1.68	
						21.36	
16	**Internal Plaster**						**294.44**
	Ceiling	1	5	4.5		22.5	**sq.m**
		1	3.12	3.5		10.92	
		1	4.32	1.89		8.164	
		1	3.12	1.5		4.68	

		1	1.5	1.2		1.8	
		1	3.5	3.5		12.25	
		1	1.5	5.2		7.8	
		1	1.2	3.7		4.44	
		1	4.66	1		4.66	
						77.214	
	wall	1	82.53		3	247.59	
	Deduction						
	D	1	1.2		2.1	2.52	
	D1	4	0.9		2.1	7.56	
	D2	1	0.8		2.1	1.68	
	O	2	1.5		3	9	
	W	3	1.8		1.2	6.48	
	W1	1	1.2		1.2	1.44	
	W2	1	0.8		1.2	1.68	
						30.36	
17	**Outer Plaster**						
	Wall	1	37.4		4.8	179.52	
	Parapet top	1	37.4	0.23		8.602	
	Parapet inside	1	35.56		1.15	40.894	
	Deduction						**216.892 sq.m**
	D	1	1.2		2.1	2.52	
	W	3	1.8		1.2	6.48	
	W1	1	1.2		1.2	1.44	
	W2	1	0.8		1.2	1.68	
						12.12	
18	**Flooring**						
		1	5	4.5		22.5	
		1	3.12	3.5		10.92	
		1	4.32	1.89		8.164	**77.124 sq.m**
		1	3.12	1.5		4.68	
		1	1.5	1.2		1.8	
		1	3.5	3.5		12.25	
		1	1.5	5.2		7.8	

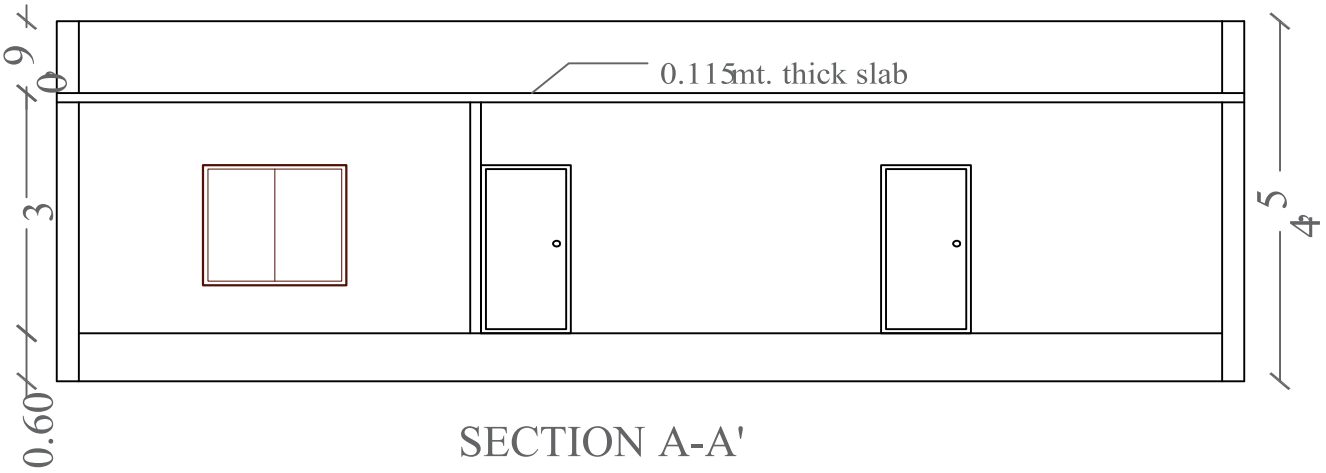
		1	1.2	3.7		4.44	
		1	4.66	1		4.66	
19	**Skirting**	1	82.53			82.53	**82.53 m**

ABSTRACT SHEET					
Sr. no.	**Quantity**	**Description**	**Rate**	**Per**	**Amount**
1	33.3	Earth excvation	150	cu.m	4995
2	0.608	P.C.C. work	3900	cu.m	2371.2
3	1.35	Footing	4300	cu.m	5805
4	2.789	R.C.C. column	4300	cu.m	11992.7
5	2.655	R.C.C. Beam G.B.	4300	cu.m	11416.5
6	11.569	DPC	120	cu.m	1388.28
7	4	R.C.C. column for super structure	4300	cu.m	17200
8	2.655	R.C.C. Beam at slab level	4300	cu.m	11416.5
9	11.3	R.C.C. slab	4300	cu.m	48590
10	42.858	Earth Filling upto plinth	150	cu.m	6428.7
11	4.23	Brick work GL to PL	4900	cu.m	20727
12	29.118	Brick wall masonry for super structure	4900	cu.m	142678.2
13	9.89	Parapet wall	4900	cu.m	48461
14	1943	Steel	60	cu.m	116580
15	294.44	Internal Plaster	260	sq.m	76554.4
16	216.892	Outer Plaster	310	sq.m	67236.52
17	77.124	Flooring	450	sq.m	34705.8
18	82.53	Skirting	50	m	4126.5
					285009.08
		ADD 3% CONTIGENCIES			17267
		ADD 2% LABOUR CHARGES			11511
					313787.08
***ALL ABOVE RATE FILLED MAY VARY DUE TO MARKET INFLATION**			**GRAND TOTAL**		**315000**

PRODUCED BY AN AUTODESK STUDENT VERSION
PRODUCED BY AN AUTODESK STUDENT VERSION
PRODUCED BY AN AUTODESK STUDENT VERSION
PRODUCED BY AN AUTODESK STUDENT VERSION
NOTE
All Dimensions are in meter unless and untile stated
(1)Height of all w/c partation wall are 2.2mt. and at bath 2.38 mt.
(2)Slab thicknes = 0.12 mt.
(3)Clear cover at beam = 25mm
at slab = 20 mm
(4)Grade of concrete = M25
(5)Grade of steel = fe415
(6)Offset of beam is inner side of structure
VISHWAKARMA YOJNA PHASE : VIII
NEOTECH INSTITUTE OF TECHNOLOGY
VILLAGE : SUNDAN
STRUCTURE : PANCHAYAT BUILDING
NODAL OFFICER : Prof. PIYUSH PRAJAPATI
STUDENTS : MISTRY VRAJ (171170106007)
: SOLANKI AAKASH (181173106040)
A
A
11,35
11,56
12,43
7,71
0,75
Talati Cabin
3.50 x 4.00
Sarpanch Cabin
4.00 x 4.00
Meeting Room
4.00 x 6.00
Computerdesk
5.00 x 2.50
Storeroom
4.10 x 1.50
waiting area
7.65 x 4.30
Pantry
2.45 x 1.40
W/C
1.65 x 1.25
W/C
1.65 x 1.25



FRONT ELEVATION



SECTION A-A'

NOTE

All Dimensions are in meter unless and untile stated

(1)Height of all w/c partation wall are 2.2mt. and at bath 2.38 mt.
(2)Slab thicknes = 0.12 mt.
(3)Clear cover at beam = 25mm
at slab = 20 mm
(4)Grade of concrete = M25
(5)Grade of steel = Fe415
(6)Offset of beam is inner side of structure

VISHWAKARMA YOJNA PHASE : VIII	
NEOTECH INSTITUTE OF TECHNOLOGY	
VILLAGE	: SUNDAN
STRUCTURE	: PANCHAYAT BUILDING
NODAL OFFICER	: Prof.PIYUSH PRAJAPATI
STUDENTS	: MISTRY VRAJ (171170106007) : SOLANKI AAKASH (181173106040)

8.1.4 Bus Stand

ABSTRACT SHEET					
Item No.	Quantity	Description	Rate Rs.	Per	Amount Rs.
1	1.32	EXCAVATION	150	M3	198
2	1.09	PCC	4200	M3	4578
3	3.1	RCC FOR SUPER STRUCTURE WALL	4900	M3	15190
4	1.87	BACKFILL	120	M3	224
5	1.03	EXPOSED CONCRETE WORK	6600	M3	6798
6	2.25	GRANITE	550	M2	1238
7	1	FOOTING	11591	RS.	0
8	1	GROUND BEAM	15314	RS.	0
9	1	COLUMN	15557	RS.	15557
10	1	SLAB	6734	RS.	6730
11	1	SOLAR PANEL	-	kW	Through Subsidy
					46340
		ADD 5% CONTINGENCY			2317
*** ALL ABOVE RATE FILLED MAY VARY DUE TO MARKET INFLATION.**			**TOTAL**		**48657**
*** DETAILD BOQ OF R.C.C. MEMBERS ARE PROVIDED BELOW.**					

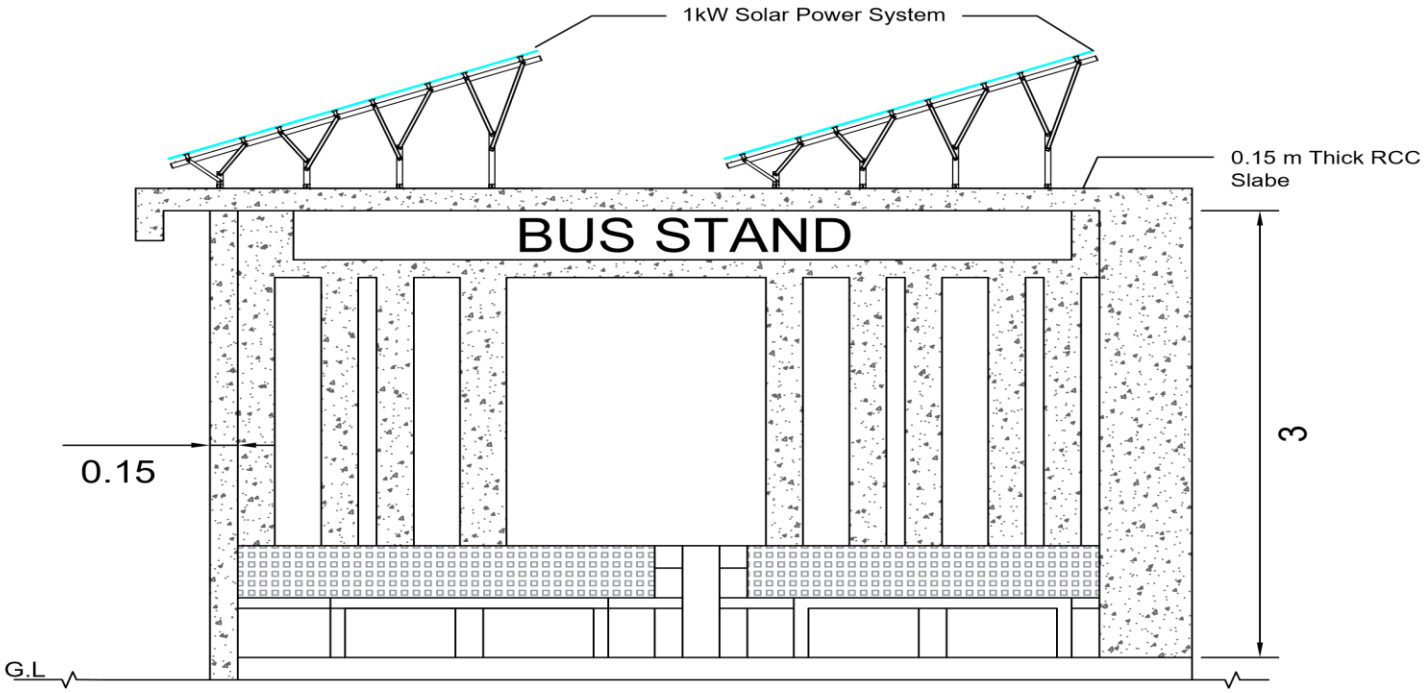
BOQ SUMMARY

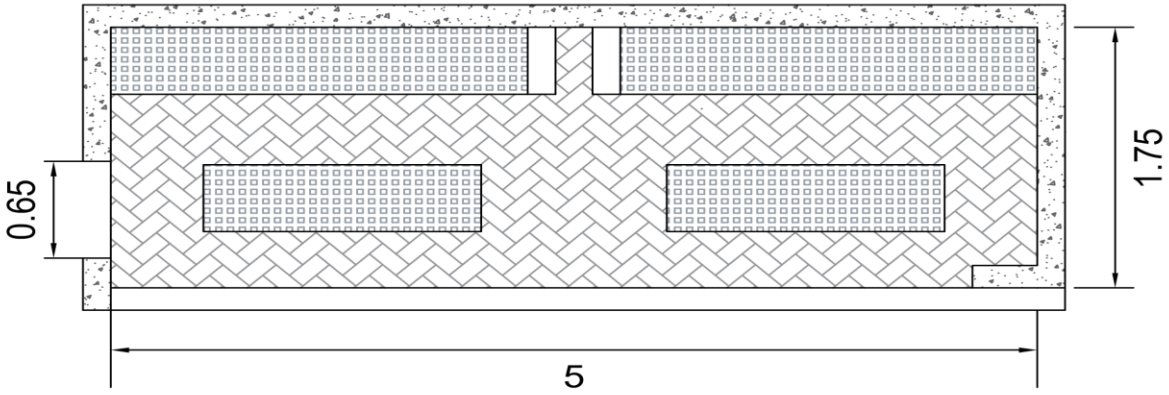
Element: RCC

No.	Material	Unit	Quantity	Rate ₹	Cost ₹
1	Concrete M25	(cum)	8	4100.00	32800
	Sub Total		8		32800
2	Rebar T8 (Fe415)	(kg)	150.67	45.00	6780
	Sub Total		150.67		6780
3	Shuttering	(sqm)	45.60	250.00	11400
	Sub Total				11400
	Grand Total				***64073***
Design M25		Concrete ratio		=34.79 kg/cum =100.00% =6.06 sqm/cum	**48657 +64073 = 85730**

MEASUREMENT SHEET

Item No.	Description	No.	Dimensions			Quantity	Total
			L	B	H		
1	EXCAVATION FOR GB	1	12.8	0.3	0.3	1.152	
	STEPS	1	3.9	0.4	0.1	0.16	1.312
2	PCC						
	STEPS	1	3.9	0.4	0.1	0.156	
	FLOOR	1	3.9	2.4	0.1	0.94	
3	CONCRETE FOR SUPER STRUCTURE						1.096
	SHORT WALL	2	2.2	0.3	0.9	1.188	
	LONG WALL	1	3.7	0.3	1.5	1.665	
	STEPS	1	5	0.3	0.15	0.1665	3.0195
4	BACKFILL	1	3.9	2.4	0.2	1.872	1.87





VISHWAKARMA YOJNA PHASE : VIII	
NEOTECH INSTITUTE OF TECHNOLOGY	
VILLAGE	: SUNDAN
STRUCTURE	: BUS STAND
NODAL OFFICER	: Prof. PIYUSH PRAJAPATI
STUDENTS	: MISTRY VRAJ (171170106007) : SOLANKI AAKASH (181173106040)

8.1.5 Bal Mandir

MEASUREMENT SHEET							
Sr. no.	Description	no.	Length	Width	Height	Quantity	Total Quantity
1	earth excavation						43.682 cu.m
	for wall	1	43.32	0.9	1.11	43.15	
	for step	1	3.13	1.7	0.1	0.5321	
2	P.C.C.						8.3081 cu.m
	for Foundation	1	43.2	0.9	0.2	7.776	
	for step	1	3.13	1.7	0.1	0.5321	
3	2nd class masonry						27.894 cu.m
	0.6 mm thick wall	1	43.5	0.6	0.2	5.22	
	0.4 mm thick wall	1	43.7	0.4	0.2	3.49	
	0.3 mm thick wall	1	43.8	0.3	1.46	19.18	
4	DPC	1	43.2	0.3	_	12.96	12.96 sq.m
5	1st class brick masonry for super structure	1	43.87	0.23	3	30.27	34.213 cu.m
	Partition wall	1	6.69	0.12	3	2.408	
	Parapet wall	1	40.26	0.12	1.15	5.556	
						38.234	
	Deduction						
	O	1	2.68	0.23	3	1.849	
	D	1	1.2	0.23	2.1	0.5796	
	D1	1	0.9	0.23	2.1	0.4395	
	D2	1	0.76	0.23	2.1	0.367	
	W	2	1.8	0.23	1.2	0.9936	
	W1	3	1	0.23	1.2	0.828	
	W2	1	0.9	0.23	1.2	0.2484	

	V	1	0.6	0.23	0.6	0.828	
	Lintel						
	D	1	1.5	0.23	0.15	0.0518	
	D1	1	1.2	0.23	0.15	0.0414	
	D2	1	1.06	0.23	0.15	0.0365	
	W	2	2.1	0.23	0.15	0.1449	
	W1	3	1.3	0.23	0.15	0.13455	
	W2	1	1.2	0.23	0.15	0.0414	
	V	1	0.9	0.23	0.15	0.03105	
						4.0205	
6	**R.C.C. work**						
	D1	1	1.2	0.23	0.15	0.0414	
	D2	1	1.06	0.23	0.15	0.0365	
	W	2	2.1	0.23	0.15	0.1449	
	W1	3	1.3	0.23	0.15	0.13455	**8.543 cu.m**
	W2	1	1.2	0.23	0.15	0.0414	
	V	1	0.9	0.23	0.15	0.03105	
	SLAB	1				7.918	
	CHAJJA W	2	1.8	0.4	0.1	1.44	
7	**Steel**						**670 Kg**
	1% of R.C.C.					670	
8	**wood work**						
	D	1	1.2		2.1	2.52	
	D1	1	0.91		2.1	1.911	**13.827 sq.m**
	D2	1	0.76		2.1	1.596	
	W	2	1.8		1.2	4.32	
	W1	2	1		1.2	2.4	
	W2	1	0.9		1.2	1.08	
9	**Glass work**						**1.56 sq.m**

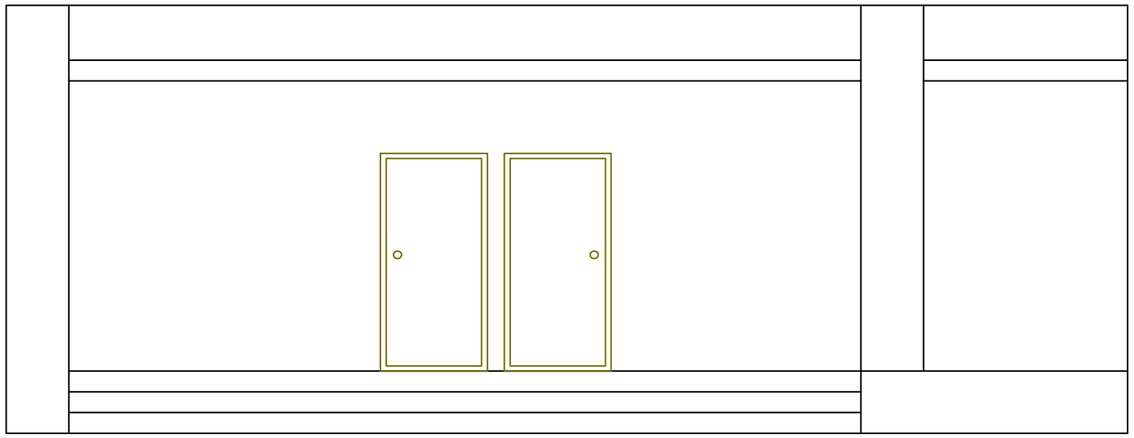
	W1	1	1		1.2	1.2	
	V	1	0.6		0.6	0.36	
10	**Internal plaster**						
	Ceiling	1				69.35	
	Wall	4	3.84		3	46.08	
		3	4		3	36	**151.71 sq.m**
		3	3.7		3	33.33	
		1	10.43		3	31.29	
		1	2.22		3	6.66	
		1	1.67		3	5.01	
						175.14	
	Deduction					23.427	
11	**Outer plaster**						
	wall		8		4.75	76	
		2	10.91		4.75	103.64	
		2	3.84		4.75	36.48	
	parapet top	2	8	0.23		3.68	
		2	10.91	0.23		5.018	**266.12 sq.m**
		2	3.84	0.23		1.766	
	parapet inside	2	7.54		1.15	17.342	
		2	10.45		1.15	24.035	
		2	3.61		1.15	8.303	
	chajja W	2	2.66	0.4	0.1	0.18	
	deduction					10.32	
12	**Flooring**					69.35	**69.35 sq.m**
13	**Skirting**						
	Wall	1	58.38			58.38	**52.83 m**
	deduction						

	D	1	1.2			1.2	
	D1	1	0.91			0.91	
	D2	1	0.76			0.76	
	O	1	0.68			0.68	
						5.55	

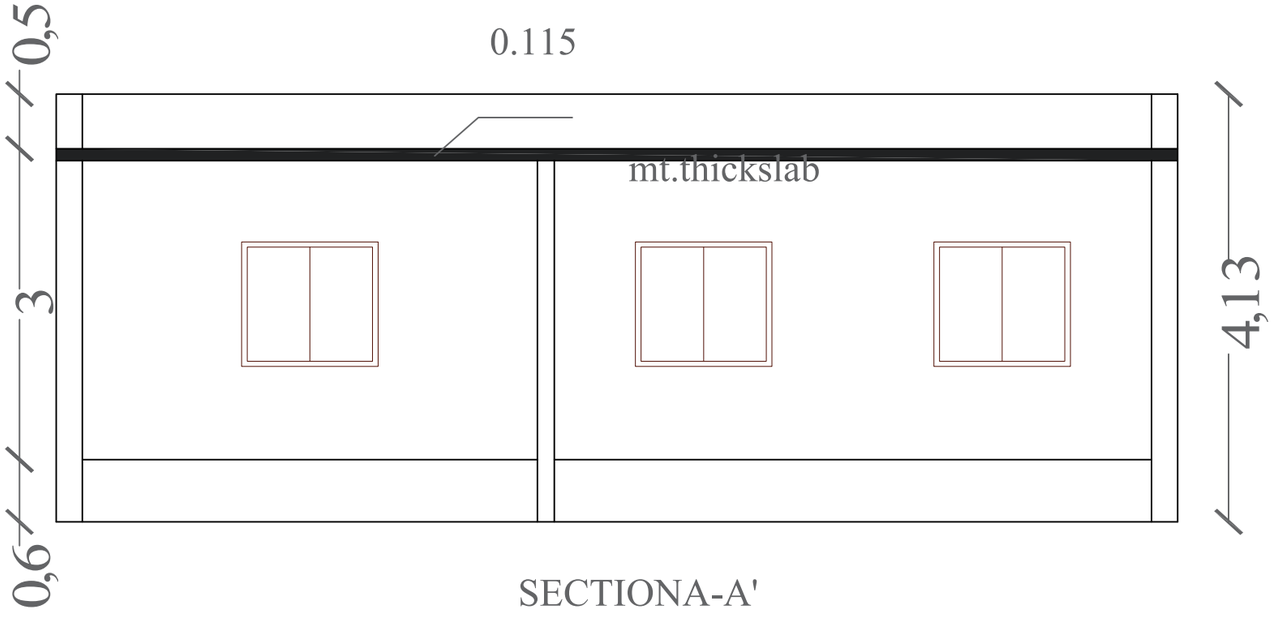
ABSTRACT SHEET					
Sr. no.	**Quantity**	**Description**	**Rate**	**Per**	**Amount**
			Rs.		**Rs.**
1	43.682	Earth excavation	150	m3	6553
2	8.308	P.C.C.	3900	m3	32402
3	27.894	Brick masonry upto plinth	5200	m3	145048.8
4	12.96	DPC	120	m2	1555.2
5	34.214	Brick masonry for super structure	4900	m3	167648.6
6	8.543	R.C.C. work	4300	m3	36734.9
7	670	Steel	60	Kg	40200
8	13.887	wood work	2000	m2	27774
9	1.56	Glass work	50	m2	78
10	151.71	Internal plaster	260	m2	39444.6
11	266.12	Outer plaster	310	m2	82497.2
12	69.35	Flooring	450	m2	31207.5
13	52.83	Skirting	50	m	2641.5
					613785.3
		ADD 3% CONTIGENCIES			18413.559
		ADD 2% LABOUR CHARGES			12275.706
					644474.565
***ALL ABOVE RATE FILLED MAY VARY DUE TO MARKET INFLATION**			**GRAND TOTAL**		**645000**

VISHWAKARMA YOJNA PHASE : VIII	
NEOTECH INSTITUTE OF TECHNOLOGY	
VILLAGE	: SUNDAN
STRUCTURE	: BAL MANDIR
NODAL OFFICER	: Prof. PIYUSH PRAJAPATI
STUDENTS	: MISTRY VRAJ (171170106007) : SOLANKI AAKASH (181173106040)

PLAN



FRONTELEVATION



SECTIONA-A'

VISHWAKARMAYOJNAPHASE:VIII
NEOTECHINSTITUTEOFTECHNOLOGY
VILLAGE SUNDAN
STRUCTURE BALMANDIR
NODALOFFICER : Prof. PIYUSHPRAJAPATI
STUDENTS :MISTRYVRAJ (171170106007) :SOLANKIAAKASH (181173106040)

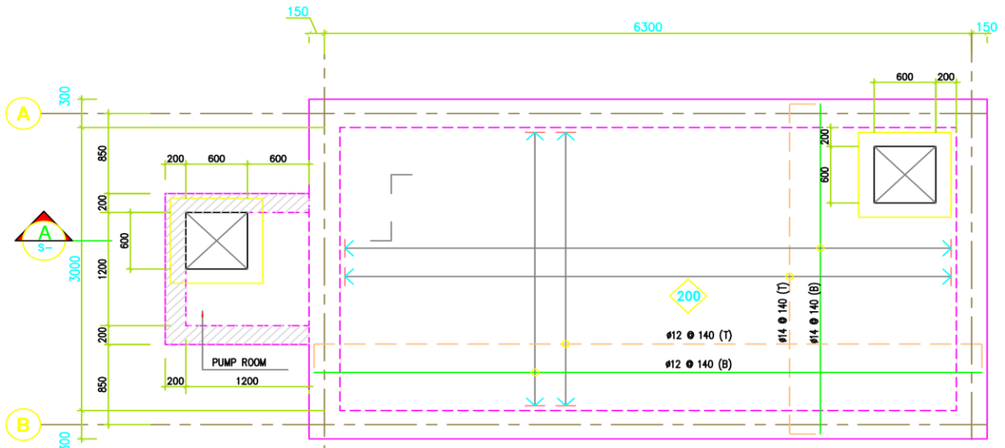
8.1.6 Underground Water Tank (63000 litres)

Quantity Sheet						
Sr. No.	**Description**	**No.**	**Length**	**Width**	**Height**	**Quantity**
1	Excavation for tank	1	7	3.2	3.8	85.12 m^3
						Total Quantity = 85.12 m^3
2	P.C.C. for base slab surface	1	7	3.1	0.15	3.255
						Total Quantity = 3.26 m^3
3	R.C.C. work (1:1.5:3)					
	Long wall	2	6	0.3	3.5	12.6
	Short wall	2	2.4	0.3	3.5	5.04
	Roof slab	1	6.5	3	0.2	3.9
	Base slab	1	6.5	3	0.5	9.75
						Total Quantity = 31.29 m^3
4	15 mm thick cement plaster on outer face of tank in CM(1:3)					
	Long wall	2	6	-	3.5	25
	Short wall	2	3	-	3.5	17.6
	Roof slab – top	1	6.5	3	-	22.31
	- Sides	2	6.5	-	0.12	1.26
	- sides	2	3	-	0.12	1.02
	Base slab - sides	2	6.1	-	0.15	1.83
	- sides	2	3	-	0.15	1.53
						Total Quantity = 70.55 m^3
5	12 mm thick cement plaster on inner face of tank in CM(1:3)					
	Long wall	2	5	-	2.5	25
	Short wall	2	4	-	2.5	20
	Roof slab	1	4.25	5.25	-	22.31
	Base slab	1	4.25	5.25	-	22.31
						Total Quantity = 89.62 m^3
6	Water proof layer inside tank					
	Long wall	2	5	-	2.5	25
	Short wall	2	4	-	2.5	20
	Roof slab	1	4.25	5.25	-	22.31
	Base slab	1	4.25	5.25	-	22.31
						Total Quantity = 89.62 m^3

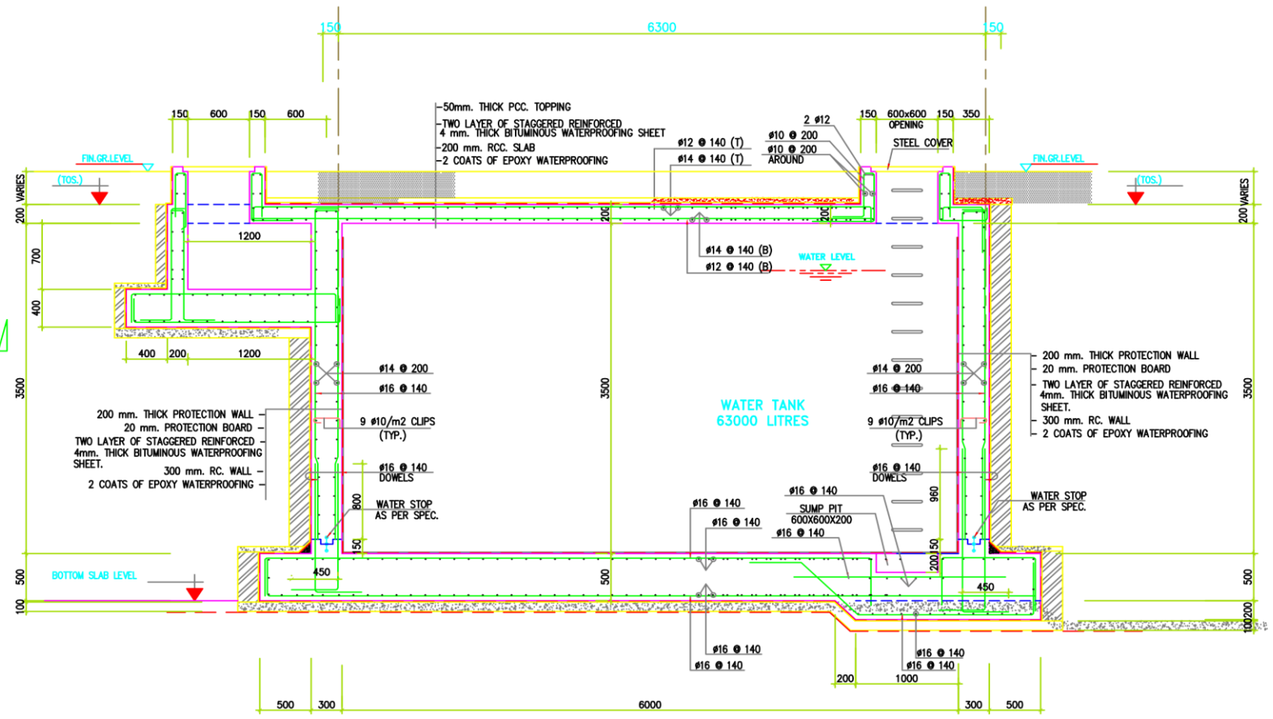
Abstract sheet

Item No.	Particulars	Quantity	Per	Rate	Amount
1	Excavation for tank	104.39	m^3	150	15658.5
2	P.C.C. for base slab surface	4.67	m^3	3480	16251.6
3	R.C.C. work (1:1.5:3)	31.29	m^3	29000	650000.0
4	15 mm thick cement plaster on outer face of tank in CM(1:3)	70.55	m^2	220	15521
5	12 mm thick cement plaster on inner face of tank in CM(1:3)	89.62	m^2	280	25093.6
6	Water proof layer inside tank	89.62	m^2	500	44810
				Total =	**7,68,037.59**

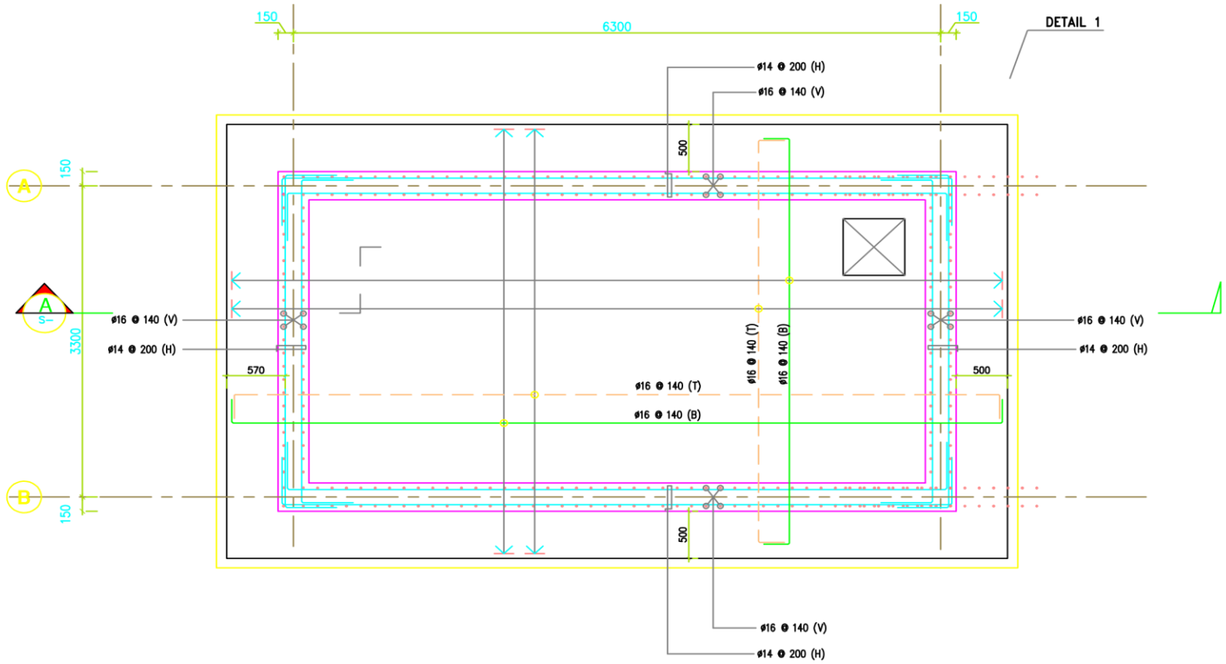
Total cost of underground water tank ≈ 7,70,000 Rs.



TOP PLAN OF UNDERGROUND WATER TANK



SECTION–A



BOTTOM PLAN OF UNDERGROUND WATER TANK

N O T E S :

1. CONCRETE GRADE M25
2. PCC GRADE M15
3. ALL DIMENSIONS ARE IN MM UNLESS SPECIFIED.
4. RECOMMENDED STEEL GRADE FE 415

VISHWAKARMA YOJNA PHASE : VIII	
NEOTECH INSTITUTE OF TECHNOLOGY	
VILLAGE	: SUNDAN
STRUCTURE	: UNDERGROUND WATER TANK
NODAL OFFICER	: Prof. PIYUSH PRAJAPATI
STUDENTS	: MISTRY VRAJ (171170106007) : SOLANKI AAKASH (181173106040)

Chapter : 9

9. Future Development of village (Part II Design)

- The study is aimed to know the basic scenario of village through techno economic survey and gap analysis form.
- Our design proposal illustrates that we are interested to provide economical services and facilities to the villagers.
- Our aim is to work according to the new upcoming town planning scheme in Sundan village.
- We would like to bring each possible facility like easy transportation, economic electricity (using renewable energy), adequate water supply, Public infrastructures, medical facility, Public sanitation.
- Our very next plan is to propose our design to the Talati officer and get approval to execute our design.
- Also, we would like to aware villagers by inform how these designs may benefit them in near future.
- Further, we are planning to propose the following designs in Part-II,

    1. Water Tank
    2. Pond Beautification
    3. Bus Stop
    4. Cremation Ground
    5. Upgradation of Dairy Building
    6. Community Hall (Reconstruction)

- We are proposing the given designs on the basis of the requirement of village. After Surveying the current condition of existing public buildings and a brief discussion with Sarpanch and Talati.
- There is no cremation place in the village and surrounding village also, the villagers have to go to some third village to cremate their deceased family member.

Chapter : 10

10. Conclusion

Vishwakarma Yojana is a Gujarat government project allotted to GTU in which we, the students of GTU who are involved in this project were allocated with a village in Anand district for Rurbanisation. By conducting physical visits & Surveys at Sundan, Vasad & Dashrath villages and performing the SWOT analysis, which helped us to know our strengths, weaknesses, opportunities & threats.

From this we analyzed problems and requirement of our allocated village and started finding the solution. From various thinking, research and group discussions we decided to prepare 6 design solutions of which all 6 were for civil facility. And at the end of semester, we are ready with these designs for the proposal.

Here, the key factor was to provide designs suitable to the village which was allocated to us, by keeping the aspects of Sustainability, Suitability and economical. This smart village development concept is not only depended on infrastructural development, but also requires the rural soul, the green environment to be kept intact.

If villages are smart and with sufficient development and facilities than the people will not migrate from villages to the city. So, the congestions and urban pressure can be alleviated and overall balanced growth of country becomes attainable. At that point the economic assessment and viability of certain infrastructure facilities should be evaluated. Providing amenities are not the only solution of migration but proper harmony and environment of growth and development should be available. The living standard of people should be enhanced. The goal of this project is to prevent migration of people from rural to urban area owing to lack of services and opportunities and lessen urban pressure by balancing both urban and rural region.

With the new industrialization trend and increasing globalization it is seen that the urbanization is also booming, people are moving towards cities in search of better life and amenities. Which is leading to the empty villages and extinction of villages. But with the help of this development governments will be able to provide a better livelihood to the villagers which will help in upbringing of lifestyle while keeping the rural areas alive.

Chapter : 11

11. References

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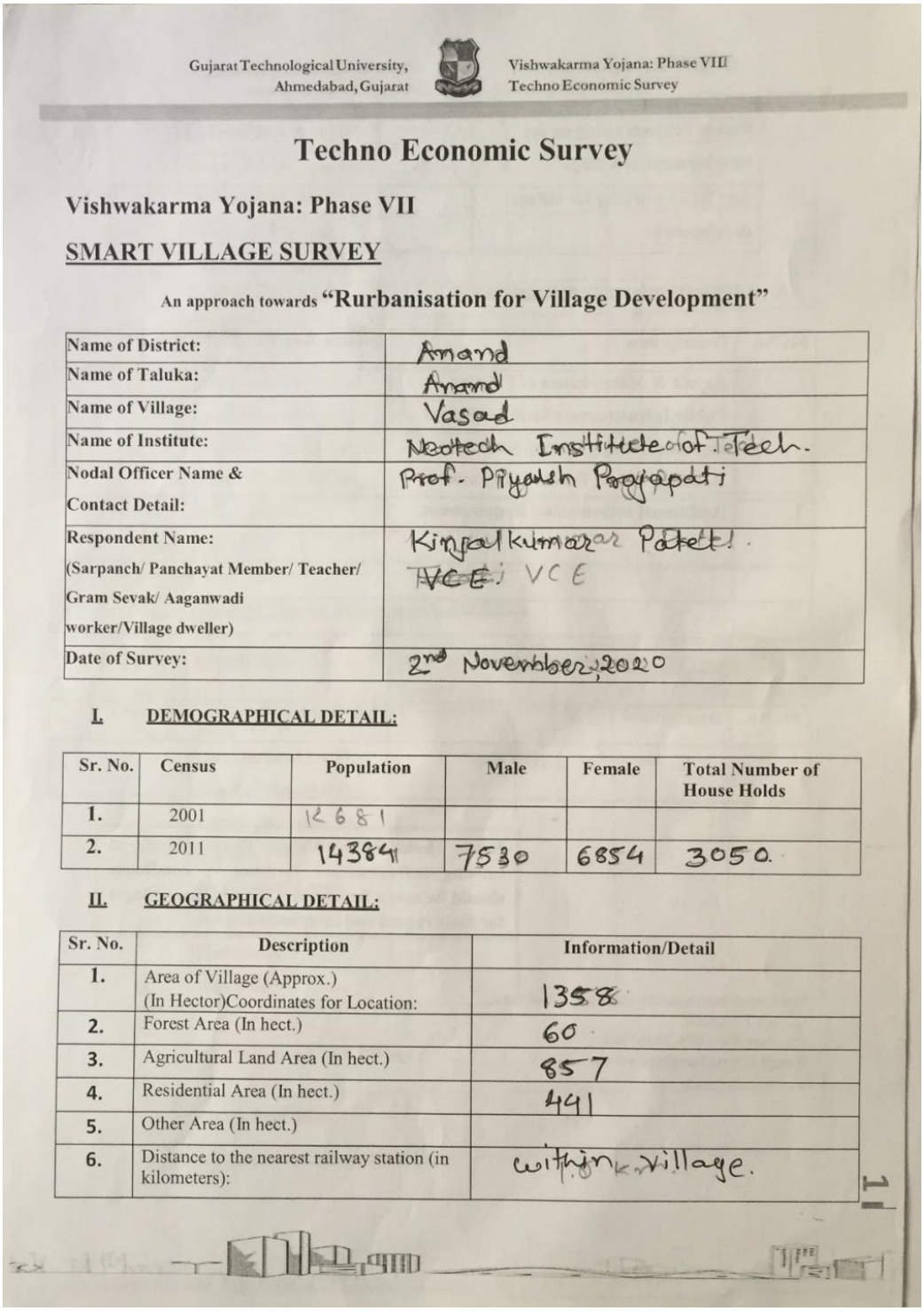
Chapter : 12

12.1 Scanned Copy (For Part-I), Original (For–Part-II) Smart Village (Gujarati) Survey Details



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VII

SMART VILLAGE SURVEY

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

Name of District:	Anand
Name of Taluka:	Anand
Name of Village:	Vasad
Name of Institute:	Neotech Institute of Tech.
Nodal Officer Name & Contact Detail:	Prof. Piyush Prajapati
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Kinjalkumar Patel. VCE
Date of Survey:	2nd November, 2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	12681			
2.	2011	14384	7530	6854	3050

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1358
2.	Forest Area (In hect.)	60
3.	Agricultural Land Area (In hect.)	857
4.	Residential Area (In hect.)	441
5.	Other Area (In hect.)	
6.	Distance to the nearest railway station (in kilometers):	within village.

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Vishwakarma Yojana: Phase VII
Techno Economic Survey

7.	Name of Nearest Town with Distance:	Anand 14 Kms - Vadodara 20 Km
8.	Distance to the nearest bus station (in kilometers):	Vasad Bus-Stand (GSRTC) 1 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. Farmer 2. Pulse Buisness. 3. Employee
Major crops grown in the village:	1. Tobeco 2. Banana 3. Cottem

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
1.	**PIPED WATER** Piped Into Dwelling Piped To Yard/Plot Public Tap/Standpipe Tube Well Or Bore Well	~ ✓ ✓	~ ✓ ✓		
2.	**DUG WELL** Protected Well Un Protected Well	— —			
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring Rainwater Tanker Truck Cart With Small Tank	— — ✓ — —			
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump Other(Specify)**Lake/ Pond**	 Lake(7).			

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Vishwakarma Yojana: Phase VII
Techno Economic Survey

Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank Yes	Capacity: 1.5 Lac Litre.			
	Underground Sump No	Capacity: –			
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE Yes 1 2 Drainag 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET				No pumping station open to river channel
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Y	✓		All RCC Roads.
	Main road	Yes	✓		
	Internal streets	Yes	✓		
	Nearest NH/SH/MDR/ODR Dist. in kms.	0.5 Km.	✓		
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Yes In Village	✓		
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes 1 Km.	✓		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	✓		
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes MGVCL	✓		

3

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Vishwakarma Yojana: Phase VII
Techno Economic Survey

	Power supply for Domestic Use	Available	✓		
	Power supply for Agricultural Use	Total- 8hr. 8hr	✓		Two times Powercut.
	Power supply for Commercial Use	✓	✓		
	Road/ Street Lights	✓	✓		
	Electrification in Government Buildings/ Schools/ Hospitals	✓	✓		
	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 No-2		✓	
	Location Condition	Good.			
	Community Toilet (With bath/ without bath facilities)	without Bath.	✓		
	Solid & liquid waste Disposal system available	Solid waste collection			D2D Collection Daily.
	Any facility for Waste collection from road	Yes.	✓		Routine

Suggestions if any:

H.	**Main Source of Irrigation Facility:**				
	TANK/POND	Pond		✓	Canal irrigation North side of village Private Irrigation in other part.
	STREAM/RIVER				
	CANAL	✓			
	WELL	✓			
	TUBE WELL.	✓			
	OTHER (SPECIFY)				

Suggestions if any:

I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	650/3500	✓		Majority Pucca Housing Seen.

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	Yes - 12.	✓		
	Sub-Centre	–			
	PHC Adas.	Adas.			
	BLOCK PHC	–			
	CHC/RH	✓ Yes	✓		
	District/ Govt. Hospital	Anand.			
	Govt. Dispensary	No			
	Private Clinic	Yes			
	Private Hospital/	Yes			
	Nursing Home	yes			
	AYUSH Health Facility	Yes			
	sonography /ultrasound facility	Yes.			
	If any of the above Facility is not available in village than approx. distance from village: ..10..kms.				
	Suggestions if any:				
K.	**Education Facilities:**				
	Aaganwadi/ Play group	✓	✓		
	Primary School	✓	✓		
	Secondary school	✓	✓		
	Higher sec. School	✓	✓		
	ITI college/ vocational Training Center	✓	✓		
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	✓	✓		Engl. College SNIT Present.
	If any of the above Facility is not available in village than approx. distance from village: ...10...kms.				

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Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)		Near Tower	Yes	
	Public Library (With daily newspaper supply: Y/N)			Yes	
	Public Garden	Dried out		Yes	
	Village Pond	Not Adequate		Yes	
	Recreation Center				
	Cinema/ Video Hall			Yes	
	Assembly Polling Station	At Edu. Campus		Yes	
	Birth & Death Registration	Adequate	At Panchayat	Yes	

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

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	Good	Rly. Station	Yes	
	Telecommunication Network/ STD booth	Good		Yes	
	General Market	Good		Yes	
	Shops (Public Distribution System)	Good - 5 No. 5		Yes	
	Panchayat Building	Good		Yes	
	Pharmacy/Medical Shop	Good		Yes	
	Bank & ATM Facility	V. Good		Yes	
	Agriculture Co-operative Society	V. Good		Yes	
	Milk Co-operative Soc.	V. Good		Yes	
	Small Scale Industries	V. Good		Yes	
	Internet Cafes/ Common Service Center/Wi Fi	Adequate.		Yes	
	Youth Club	-		No	
	Mahila Mandal	Good		Yes	

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Gujarat Technological University, Ahmedabad, Gujarat

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Techno Economic Survey

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

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

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

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks

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Gujarat Technological University, Ahmedabad, Gujarat

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Techno Economic Survey

1.	**Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other**	pavement block in water tank campus.	
2.	**Additional Information/ Requirement**		
3.	**During the last six months how many times CLEANING** ....weekly..... **FOGGING**.....Every...month..... **Drive was undertaken in the village?**	Routine	

IX. Smart Village / Heritage Details

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

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

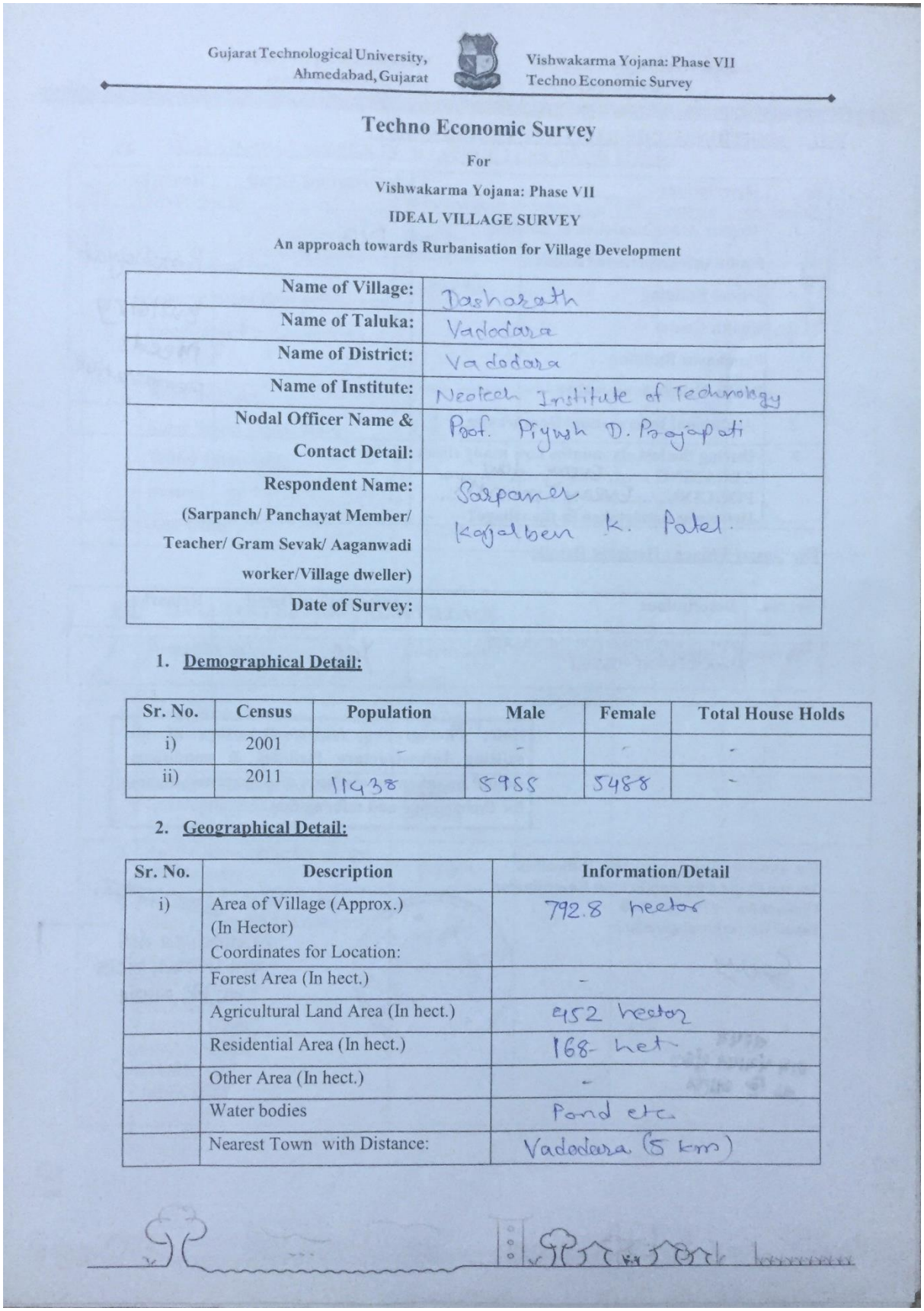
For Any Administration queries/ Difficulties:
Ms.Darshana Chauhan,Project Co-ordinator
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in

03/12/2020.
તલાટી કમ મંત્રી
ગ્રામ પંચાયત વાસદ
તા. જી. આણંદ.

સરપંચ
ગ્રામ પંચાયત વાસદ,
તા. જી. આણંદ

ગ્રામ પંચાયત વાસદ તા. જી. આણંદ

12.2 Scanned copy (For Part I), (Origenal for Part-II) Ideal Village Survey Details



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

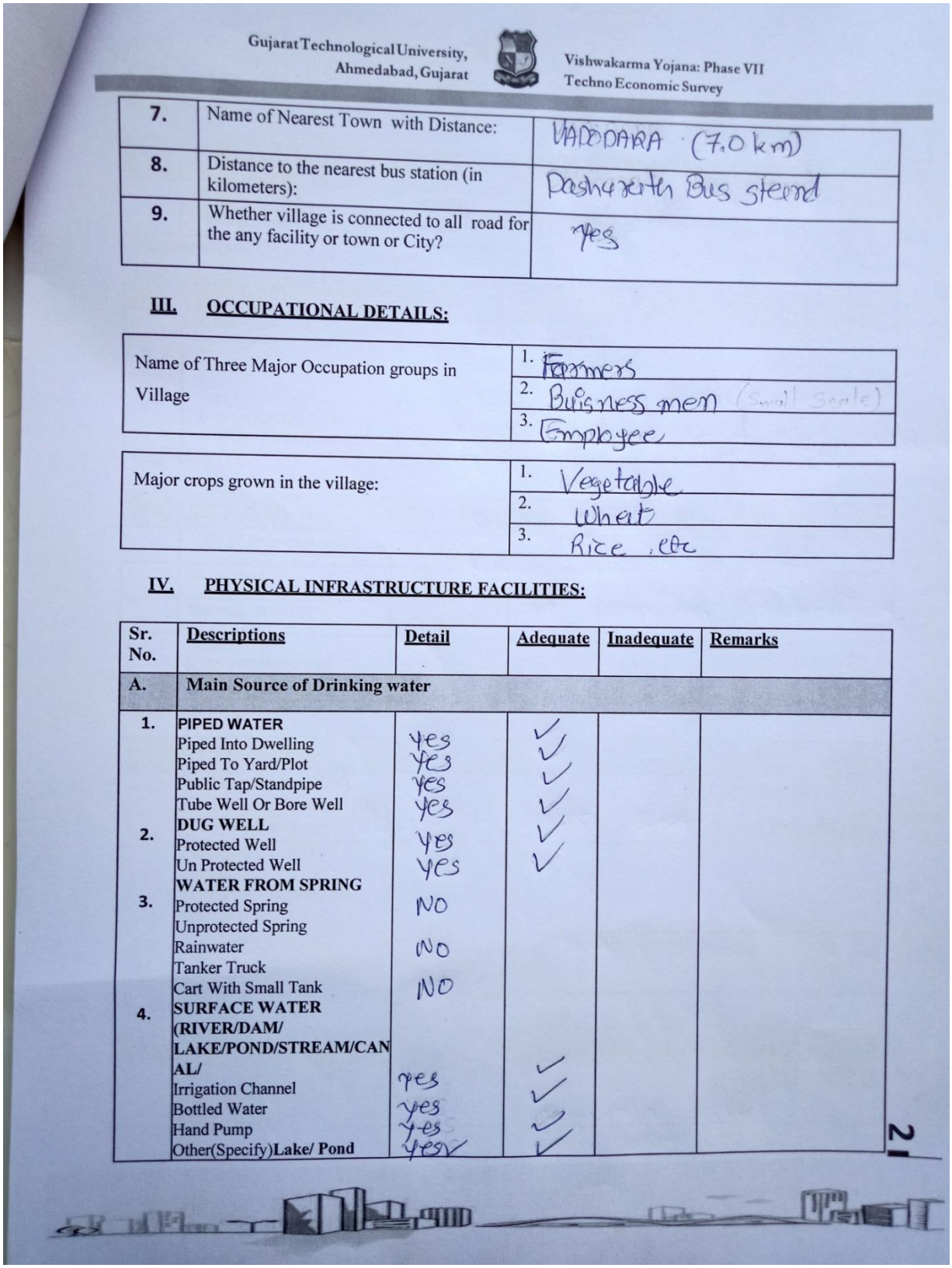
Name of Village:	Dashrath
Name of Taluka:	Vadodara
Name of District:	Vadodara
Name of Institute:	Neotech Institute of Technology
Nodal Officer Name & Contact Detail:	Prof. Piyush D. Prajapati
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sarpanch Kajalben K. Patel.
Date of Survey:	

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	-	-	-	-
ii)	2011	11438	5955	5488	-

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	792.8 heetor
	Forest Area (In hect.)	-
	Agricultural Land Area (In hect.)	452 heetor
	Residential Area (In hect.)	168 het
	Other Area (In hect.)	-
	Water bodies	Pond etc.
	Nearest Town with Distance:	Vadodara (5 km)



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
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7.	Name of Nearest Town with Distance:	VADODARA (7.0 km)
8.	Distance to the nearest bus station (in kilometers):	Pashayath Bus steand
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. Farmers 2. Buisness men (Small Scale) 3. Employee
Major crops grown in the village:	1. Vegetable 2. Wheat 3. Rice .etc

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

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Vishwakarma Yojana: Phase VII
Techno Economic Survey

Suggestions if any:

B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	250,000 ltr		
	Underground Sump	Capacity:	10Lakh ltr		Not working condition

Suggestions if any:

C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	Yes	✓		

Suggestions if any:

D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Pucca			
	Main road	Pucca			R.C.C.
	Internal streets	Pucca			
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH			0.2km

Suggestions if any:

E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Yes	✓		Chhayapuri Railway Station (3km)
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes	✓		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	✓		

Suggestions if any:

F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes	✓		More than 6hrs

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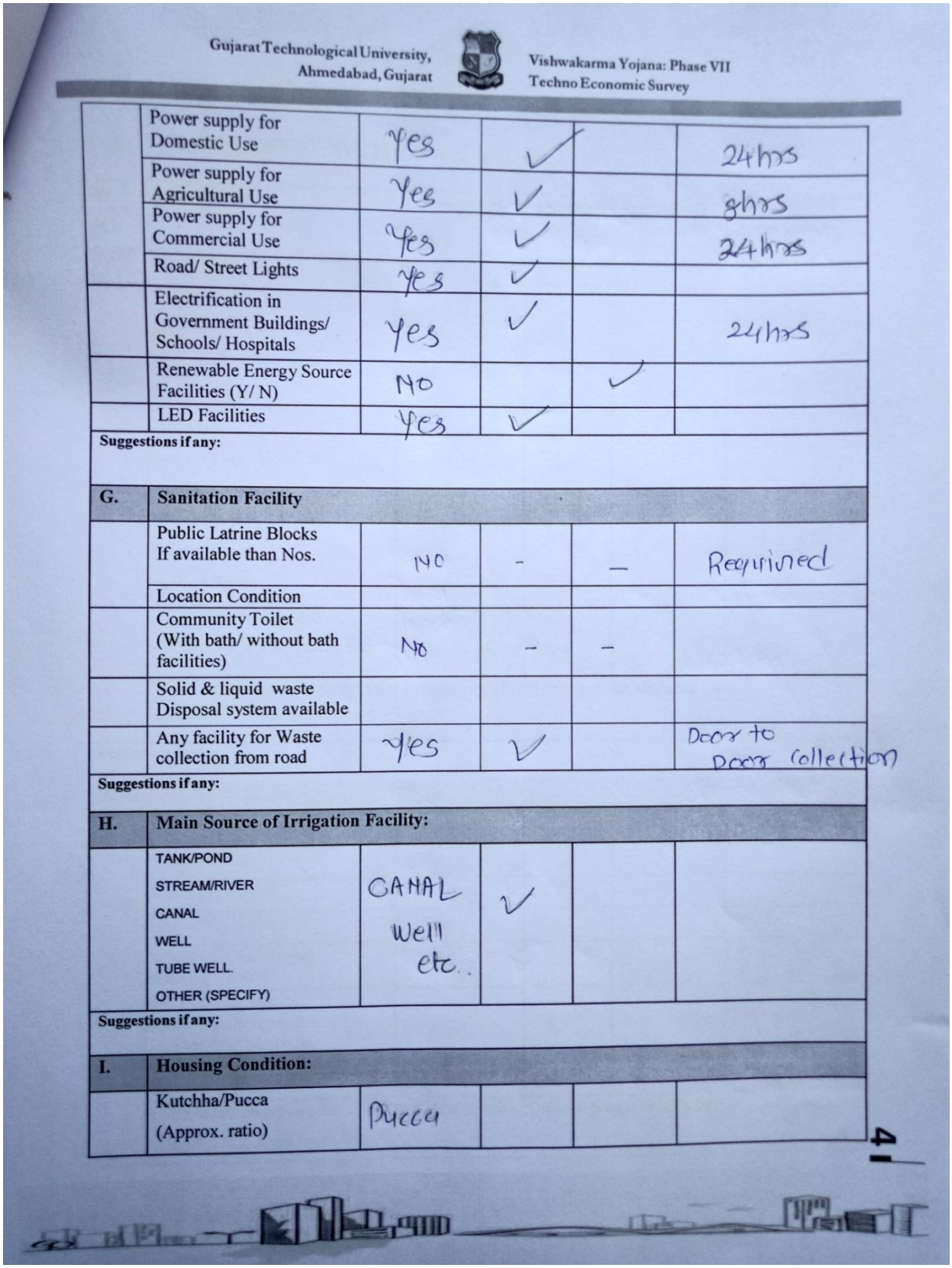
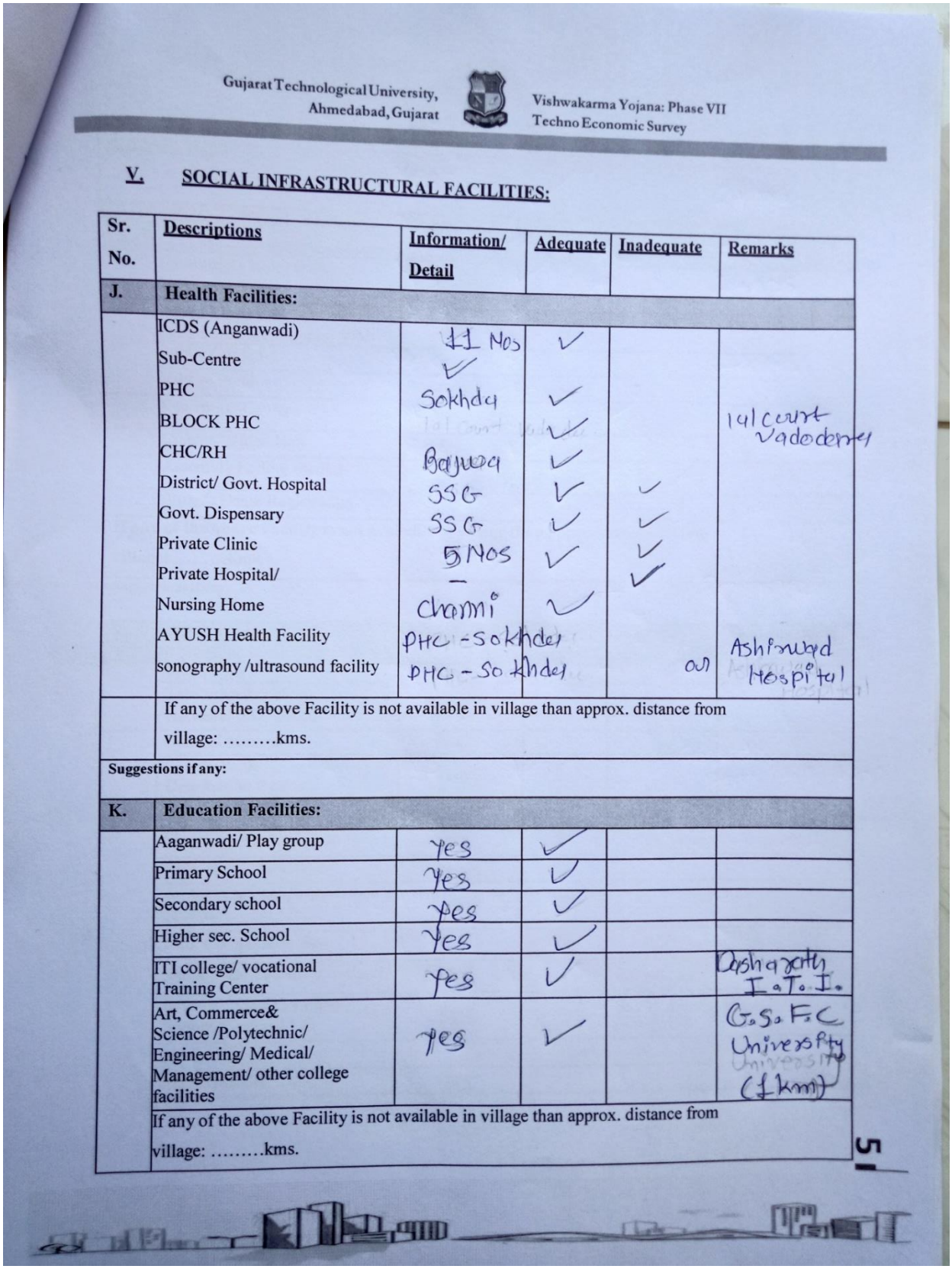


Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

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



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	11 Nos	✓		
	Sub-Centre	✓			
	PHC	Sokhda	✓		
	BLOCK PHC		✓		141 court Vadodara
	CHC/RH	Bajwa	✓		
	District/ Govt. Hospital	SSG	✓	✓	
	Govt. Dispensary	SSG	✓	✓	
	Private Clinic	5 Nos	✓	✓	
	Private Hospital/	—		✓	
	Nursing Home	Channi	✓		
	AYUSH Health Facility	PHC - Sokhda			Ashirwad Hospital
	sonography /ultrasound facility	PHC - Sokhda		✓	
	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	Yes	✓		
	Primary School	Yes	✓		
	Secondary school	Yes	✓		
	Higher sec. School	Yes	✓		
	ITI college/ vocational Training Center	Yes	✓		Dashaxath I.T.I.
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	Yes	✓		G.S.F.C University (1km)
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				

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Gujarat Technological University, Ahmedabad, Gujarat

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Techno Economic Survey

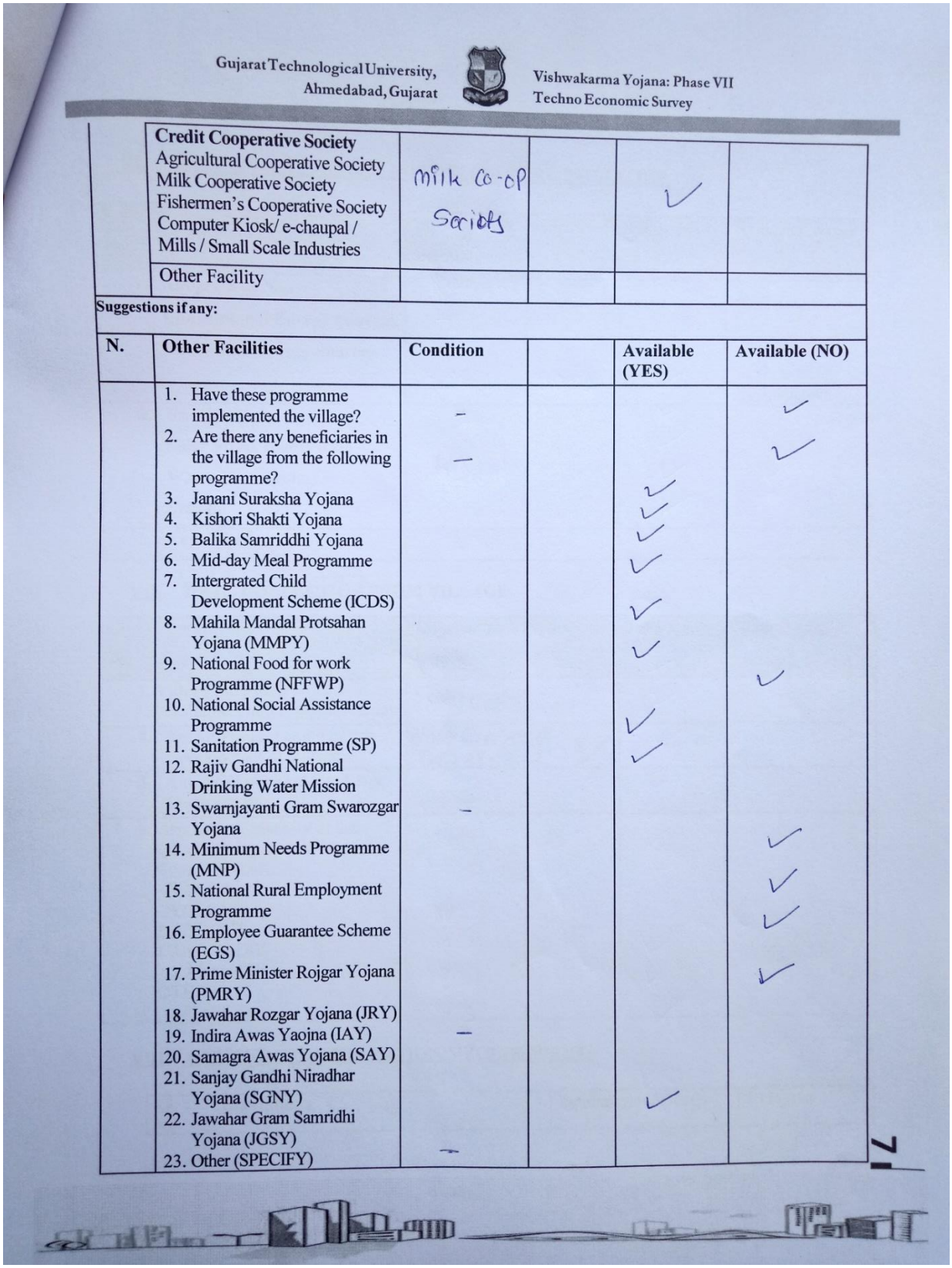
Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	Requiring Required			✓
	Public Library (With daily newspaper supply: Y/N)	–			
	Public Garden	–			
	Village Pond	Yes	3 pond	✓	
	Recreation Center	-		✓	
	Cinema/ Video Hall	No		✓	
	Assembly Polling Station	attached		✓	
	Birth & Death Registration			✓	

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	Yes		✓	
	General Market	Yes		✓	
	Shops (Public Distribution System)	Yes		✓	
	Panchayat Building	Yes		✓	
	Pharmacy/Medical Shop	Yes		✓	
	Bank & ATM Facility	Yes			
	Agriculture Co-operative Society	NO			✓
	Milk Co-operative Soc.	Yes		✓	
	Small Scale Industries	Yes		✓	
	Internet Cafes/ Common Service Center/Wi Fi	Yes		✓	
	Youth Club	NO			✓
	Mahila Mandal	Yes		✓	



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

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

Suggestions if any:

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

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

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

VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	Community Hall	-
2.	Additional Information/ Requirement		-
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	everyday monthly	-

IX. Smart Village / Heritage Details

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

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

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

સરપંચશ્રી
દશરથ ગ્રામ પંચાયત
તા.જી. વડોદરા.

K K Patel
સરપંચશ્રી
દશરથ ગ્રામ પંચાયત
તા. જી. વડોદરા.

તલાટી કમ મંત્રી
દશરથ ગ્રામ પંચાયત
તા. જી. વડોદરા.

(એનેક્ષર:- ૧)

અરજી ફોર્મ (પરિશિષ્ટ-અ)

ક્રમ	વિગત	માહિતી
૧	ગ્રામ પંચાયતનું નામ	દશરથ
૨	તાલુકાનું નામ	વડોદરા
૩	જિલ્લાનું નામ	વડોદરા
૪	પછાત તાલુકા પૈકી નું ગામ હોય તો વિગત	-
૫	કુલ વસ્તી (૨૦૧૧ વસ્તી ગણતરી મુજબ)	
	પુરૂષ	૫૯૫૫
	સ્ત્રી	૫૪૮૩
	કુલ	૧૧,૪૮૩
	અનુસુચિત જાતી	૧૯૮૨
	અનુસુચિત જન જાતી	૨૦૩૯
	અન્ય	-
૬	કુલ કુટુંબોની સંખ્યા	
૭	સાક્ષરતા દર	૮૦%
	પુરૂષ	-
	સ્ત્રી	-
૮	કુલ પ્રાથમિક શાળા	૩ + ૧ + ૧
૯	કુલ આંગણવાડી	૧૦
૧૦	પ્રાથમિક આરોગ્ય કેન્દ્ર	૧
૧૧	ગ્રામ પંચાયતના કુલ સભ્યો (સદસ્યો સહિત)	૧૫
૧૨	સરપંચનું નામ :- કમલેશ કુલ્પેશભાઈ પટેલ	
૧૩	સામાજિક ન્યાય સમિતિના ચેરમેનનું નામ:- મેઘવાળા હિતેશ કિશોરભાઈ	

સરપંચશ્રીની સહી

K. K Patel

સરપંચશ્રી

દશરથ ગ્રામ પંચાયત

તા. જી. વડોદરા.

દશરથ ગ્રામ પંચાયત ગ્રામ પંચાયતનું રાઉન્ડ સીલ તા. જી. વડોદરા

તલાટી કમ મંત્રીની સહી

તલાટી કમ મંત્રી

દશરથ ગ્રામ પંચાયત

તા. જી. વડોદરા.

પરિશિષ્ટ-બ

સ્પર્ધામાં ભાગ લેવા ગ્રામપંચાયતે નીચે મુજબના ધારા ધોરણોને ધ્યાને રાખીને વિગતો આધાર પુરાવા સહિત રજુ કરવાની રહેશે.

.....

૧. શિક્ષણ

ક્રમ	વિગત	માહિતી
૧	શાળા પ્રવેશ દર	358
	ગત વર્ષ નો પ્રવેશ દર	341
	ચાલુ વર્ષનો પ્રવેશ દર	351
૨	ડ્રોપ આઉટ પ્રમાણ	Nil
	ગત વર્ષનો ડ્રોપ આઉટ	Nil
	ચાલુ વર્ષનો ડ્રોપ આઉટ	Nil
૩	શિક્ષણ ગુણવત્તા સુધારણા આંક (A, B, C, D)	B

૨. આરોગ્ય

ક્રમ	વિગત	માહિતી
૧	જન્મ નોંધણી ની ટકાવારી	223
૨	મરણ નોંધણી ની ટકાવારી	—
૩	રસીકરણ ની ટકાવારી (૧૧ મહિનાથી ૨૩ મહિનાના બાળકો)	206
૪	ઇન્ફન્ટ બાળ મૃત્યુદર ની ટકાવારી	-
૫	માતા મૃત્યુદર ની ટકાવારી	-
૬	સંસ્થાકીય પ્રસુતિ ની ટકાવારી	223
૭	સ્ત્રી – પુરૂષ પ્રમાણ (√) કરવી	
	દર ૧૦૦૦ પુરૂષે ૯૭૫ કે તેથી વધુ સ્ત્રીઓ	
	દર ૧૦૦૦ પુરૂષે ૯૨૫ કે ૯૫૦ ની વચ્ચે	
	દર ૧૦૦૦ પુરૂષે ૯૨૫થી ઓછી	√

૩. સ્વચ્છતા

ક્રમ	વિગત	માહિતી
૧	૧૦૦% વ્યક્તિગત શૌચાલયની કામગીરી	હા
	કુલ ઘર	-
	વ્યક્તિગત શૌચાલય ધરાવતા ઘર	-
૨	શુધ્ધ પીવાના પાણીની વ્યવસ્થા (બે વાક્યમાં લખવું)	
	ગામનાં તમામ ઘર માં ઘરઘર પાણી પીવાની વ્યવસ્થા છે. હાલ પુરતુ પાણી GSFC માંથી લેવા માં આવે છે.	
૩	જાહેર સ્થળોની સ્વચ્છતા (હાલની વ્યવસ્થા બે વાક્યમાં)	
	સફાઈ કર્મચારી દ્વારા જાહેર સ્થળ ની સફાઈ નિયમિત કરવા માં આવે છે.	
૪	ડોર ટુ ડોર ધન કચરાના નિકાલની વ્યવસ્થા	હા
	કુલ ઘર	-
	આવરી લેવાયેલ ઘર	-
૫	સ્પર્ધા ના સમયગાળા દરમ્યાન ગામમાં કોઇ રોગચાળાનો બનાવ બનેલ છે ? (હા કે ના)	ના

૪. પંચાયત

ક્રમ	વિગત	માહિતી
૧	પંચાયત વેરો	
	ગત વર્ષની વસુલાત	૬,૮૫,૪૪૭
	ચાલુ વર્ષની વસુલાત	૪૩,૮૦,૩૮૦
૨	એરિયા બેઝ આકારણી લાગુ કરી છે ? (હા કે ના)	હા
૩	છેલ્લી ગ્રામસભામાં હાજરીની ટકાવારી	૪૦%
૪	છેલ્લી ગ્રામસભામાં મહીલા હાજરીની ટકાવારી	૪૦%
૫	ઇ-ગ્રામ મારફતે સુવિધાઓ	
		-
		-
		-
૬	છેલ્લા વર્ષમાં ગ્રામ પંચાયતની મળેલ બેઠકની સંખ્યા	૧૦

૫. વિશિષ્ટ સિદ્ધી

ક્રમ	વિગત	માહિતી
૧	મળેલ પુરસ્કારો (√) કરવી	
	સમરસ	-
	નિર્મળ ગામ પુરસ્કાર	-
	પાવન ગામ	-
	તીર્થગામ	-
	૧૦૦ ટકા બેન્ક ખાતા	હા
	ગૌરવ ગ્રામ સભા એવોર્ડ	-
	શ્રેષ્ઠ ગ્રામ પંચાયત એવોર્ડ	-
	અન્ય એવોર્ડ	-
	અન્ય વિગતો:-- -	

૬. કેન્દ્ર સરકારશ્રીની નીચે મુજબની યોજનાઓની વિગતો

ક્રમ	યોજનાનું નામ	માહિતી
૧	પ્રધાનમંત્રી સુરક્ષા વિમા યોજના	હા
૨	પ્રધાનમંત્રી જીવન જ્યોત વીમા યોજના	હા
૩	અટલ પેન્શન યોજના	હા
૪	સુકન્યા સમૃધ્ધી યોજના	હા

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દશરથ ગ્રામ પંચાયત
તા. જી. વડોદરા.

તલાટી કમ મંત્રીની સહી
તલાટી કમ મંત્રી
દશરથ ગ્રામ પંચાયત
તા. જી. વડોદરા.

ઠરાવનો નમૂનો (પરિશિષ્ટ-ક)

ઠરાવ નંબર-

ગ્રામપંચાયત ને સ્માર્ટ વિલેજ યોજના અંતર્ગત ચાલુ વર્ષ ---------- ની સ્માર્ટ વિલેજ સ્પર્ધામાં ભાગ લેવા અંગે નિયત અરજી ફોર્મની વિગતો વંચાણે લેવામાં આવી. જે અંગે ચર્ચા વિચારણા કરી તમામ ધારણે પૂર્ણ કરતી હોઇ દરખાસ્ત તાલુકા વિકાસ અધિકારીશ્રી ને મોકલી આપવાનું તેમજ આ માટે ગામની પસંદગી થયે મળનાર ગ્રાન્ટ માંથી કરવામાં આવેલ કામો અને પ્રાપ્ત કરેલ સંપત્તિની જાળવણી કરવા , પુરતી નાણાંકીય અને અન્ય બાબતોની વ્યવસ્થા કરવા ગ્રામ પંચાયત સંમત છે. તે અંગેની બાંહેધરી આપવા આથી ઠરાવવામાં આવે છે.

....

અરજીફોર્મના એનેક્ષર-૧ ના પરિશિષ્ટ-અ માં ભરવા અંગેની માર્ગદર્શક સુચનાઓ

ક્રમ	વિગત	માહીતી
૧	ગ્રામ પંચાયતનું નામ	- ગ્રામ પંચાયતનું નામ લખવું
૨	તાલુકાનું નામ	- આપના તાલુકાનું નામ લખવું
૩	જિલ્લાનું નામ	-આપના જિલ્લાનું નામ લખવું
૪	પછાત તાલુકા પૈકી નું ગામ હોય તો વિગત	- જો આપનો તાલુકો સરકારશ્રી દ્વારા ૪૮ પછાત તાલુકા તરીકે જાહેર કરવામાં આવેલ હોય તો તેની વિગત
૫	કુલ વસ્તી (૨૦૧૧ વસ્તી ગણતરી મુજબ)	- સેન્સસ ૨૦૧૧ ની વસ્તી ગણતરી મુજબ દરેક કોલમમાં સંખ્યા લખવી
૬	કુલ કુટુંબોની સંખ્યા	-ગામના કુલ કુંટુંબોની સંખ્યા લખવી
૭	સાક્ષરતા દર	-સેન્સસ ૨૦૧૧ ના આધારે દર્શાવવો
૮	કુલ પ્રાથમિક શાળા	-આપના ગામની કુલ પ્રાથમિક શાળાની સંખ્યા દર્શાવવી
૯	કુલ આંગણવાડી	-આપના ગામની કુલ આંગણવાડીની સંખ્યા દર્શાવવી
૧૦	પ્રાથમિક આરોગ્ય કેન્દ્ર	-આપના ગામના કુલ પ્રાથમિક આરોગ્ય કેન્દ્રની સંખ્યા દર્શાવવી
૧૧	ગ્રામ પંચાયતના કુલ સભ્યો (સદસ્યો સહિત)	-ગ્રામ પંચાયતના કુલ ચુંટાયેલા સભ્યો (સદસ્યો સહિત) ની સંખ્યા દર્શાવવી
૧૨	સરપંચનું નામ	-સરપંચશ્રીનું નામ અટક સાથે આખું દર્શાવવું
૧૩	સામાજિક ન્યાય સમિતિના ચેરમેનનું નામ	-સામાજીક ન્યાય સમિતિના ચેરમેનનું નામ અટક સાથે આખું દર્શાવવું
નોંધ- ફોર્મના અંતમાં ગામના સરપંચશ્રી અને તલાટી કમ મંત્રીની સહી-સિક્કા ફરજીયાત કરાવવા તથા રાઉન્ડ સીલ પણ કરવો.		

પરિશિષ્ટ-બ ભરવા અંગેની માર્ગદર્શક સુચનાઓ

૧. શિક્ષણ

ક્રમ	વિગત	માહીતી
૧	શાળા પ્રવેશ દર	-ગામની પ્રાથમિક શાળામાંથી માહિતી મેળવી દર્શાવવી
૨	ડ્રોપ આઉટ પ્રમાણ	-ગામની પ્રાથમિક શાળામાંથી માહિતી મેળવી દર્શાવવી
૩	શિક્ષણ ગુણવત્તા સુધારણા આંક (A, B, C, D)	-ગામની પ્રાથમિક શાળામાંથી માહિતી મેળવી દર્શાવવી

૨. આરોગ્ય

ક્રમ	વિગત	માહીતી
૧	જન્મ નોંધણી ની ટકાવારી	-ગામના તલાટી કમ મંત્રી પાસેથી માહિતી મેળવી દર્શાવવી
૨	મરણ નોંધણી ની ટકાવારી	-ગામના તલાટી કમ મંત્રી પાસેથી માહિતી મેળવી દર્શાવવી
૩	રસીકરણ ની ટકાવારી (૧૧ મહિનાથી ૨૩ મહિનાના બાળકો)	-પ્રાથમિક આરોગ્ય કેન્દ્ર/સામુહિક આરોગ્ય કેન્દ્રમાંથી માહિતી મેળવી દર્શાવવી
૪	ઇન્ફન્ટ બાળ મૃત્યુદર ની ટકાવારી	-પ્રાથમિક આરોગ્ય કેન્દ્ર/સામુહિક આરોગ્ય કેન્દ્રમાંથી માહિતી મેળવી દર્શાવવી
૫	માતા મૃત્યુદર ની ટકાવારી	-પ્રાથમિક આરોગ્ય કેન્દ્ર/સામુહિક આરોગ્ય કેન્દ્રમાંથી માહિતી મેળવી દર્શાવવી
૬	સંસ્થાકીય પ્રસુતિ ની ટકાવારી	-પ્રાથમિક આરોગ્ય કેન્દ્ર/સામુહિક આરોગ્ય કેન્દ્રમાંથી માહિતી મેળવી દર્શાવવી
૭	સ્ત્રી – પુરૂષ પ્રમાણ (√) કરવી	-સેન્સસ ૨૦૧૧ મુજબની વસ્તી ધ્યાને લઇ માહિતી દર્શાવવી

ક્રમ	વિગત	માહીતી
૧	૧૦૦% વ્યક્તિગત શૌચાલયની કામગીરી	-વ્યકિતગત શૌચાલયની કામગીરી ગામના તલાટી કમ મંત્રી પાસેથી માહિતી મેળવી દર્શાવવી
૨	શુધ્ધ પીવાના પાણીની વ્યવસ્થા (બે વાક્યમાં લખવું)	-ગામમાં પીવાના પાણીની વાસ્તવિક પરિસ્થિતિ હોય તે મુજબ લખવું
૩	જાહેર સ્થળોની સ્વચ્છતા (હાલની વ્યવસ્થા બે વાક્યમાં)	-જાહેર સ્થળોની સ્વચ્છતા અંગેની વાસ્તવિક પરિસ્થિતિ હોય તે મુજબ લખવું
૪	ડોર ટુ ડોર ધન કચરાના નિકાલની વ્યવસ્થા	-ઘરે ઘરેથી કચરાના નિકાલ માટેની શું વ્યવસ્થા કરેલ છે તે તલાટી કમ મંત્રી પાસેથી માહિતી મેળવી દર્શાવવી
૫	સ્પર્ધા ના સમયગાળા દરમ્યાન ગામમાં કોઇ રોગચાળાનો બનાવ બનેલ છે ? (હા કે ના)	-ગામના પ્રાથમિક આરોગ્ય કેન્દ્ર/ સામુહિક આરોગ્ય કેન્દ્ર/ તલાટી કમ મંત્રી પાસેથી માહિતી મેળવી દર્શાવવી

3. સ્વચ્છતા

૪. પંચાયત

ક્રમ	વિગત	માહીતી
૧	પંચાયત વેરો	-ગામના તલાટી કમ મંત્રી પાસેથી પંચાયત વેરો કેટલો નકકી કરેલ હતો તે તથા ચાલુ વર્ષે તેમજ ગત વર્ષે કેટલો વસુલવામાં આવેલ હતો તે દર્શાવવો
૨	એરિયા બેઝ આકારણી લાગુ કરી છે ? (હા કે ના)	-ગામના તલાટી કમ મંત્રી પાસેથી માહિતી મેળવી દર્શાવવી
૩	છેલ્લી ગ્રામસભામાં હાજરીની ટકાવારી	-ગામની કુલ વસ્તી ધ્યાને લઇ હાજર રહેલ ગ્રામજનોની સંખ્યાના આધારે
૪	છેલ્લી ગ્રામસભામાં મહીલા હાજરીની ટકાવારી	-ગામની કુલ વસ્તી ધ્યાને લઇ હાજર રહેલ ગ્રામજનોની સંખ્યાના આધારે
૫	ઇ-ગ્રામ મારફતે સુવિધાઓ	-ઇ-ગ્રામ મારફતે કઇ કઇ સુવિધાઓ ગામડામાં પુરી પાડવામાં આવે છે તે વિગતવાર દર્શાવવી
૬	છેલ્લા વર્ષમાં ગ્રામ પંચાયતની મળેલ બેઠકની સંખ્યા	-ગ્રામ પંચાયતના રજીસ્ટર પરથી છેલ્લા વર્ષમાં કેટલી પંચાયતની બેઠક મળી તે દર્શાવવું

૫. વિશિષ્ટ સિદ્ધી

આપના ગામને સમરસ, નિર્મળ ગામ પુરસ્કાર, પાવન ગામ, તીર્થગામ, ગૌરવ ગ્રામ સભા એવોર્ડ, શ્રેષ્ઠ ગ્રામ પંચાયત એવોર્ડ, ૧૦૦ ટકા બેંક ખાતા , અન્ય એવોર્ડ મળેલ હોય કે અન્ય કોઇ સિધ્ધીની વિગત હોય તો તેની વિગત દર્શાવવી.

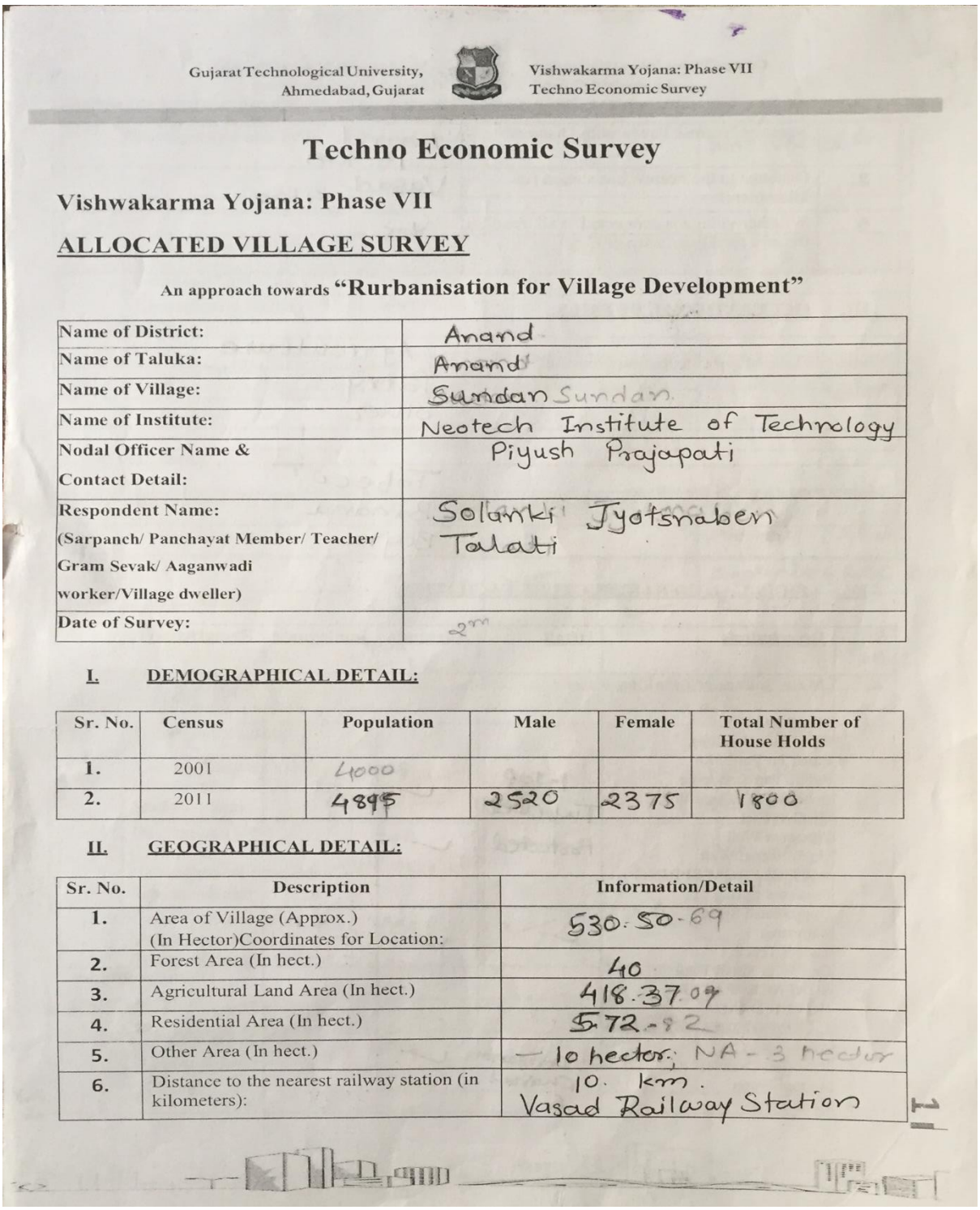
૬. કેન્દ્ર સરકારશ્રીની યોજનાઓની વિગતો

આપના ગામમાં પ્રધાનમંત્રી સુરક્ષા વિમા યોજના, પ્રધાનમંત્રી જીવન જ્યોત વીમા યોજના, અટલ પેન્શન યોજના, સુકન્યા સમૃધ્ધી યોજના અંતર્ગત ખોલવામાં આવેલ ખાતાની સંખ્યા દર્શાવવી.

ગ્રામ પંચાયતોનો ઠરાવ -

નિયત અરજી ફોર્મમાં દર્શાવ્યા મુજબ ઠરાવ કરી અરજીફોર્મ સાથે સામેલ રાખવો.

12.3 Scanned Copy (For Part-I), Original (For–Part-II) Allocated Village Techno-Economic Survey Form



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ALLOCATED VILLAGE SURVEY

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

Name of District:	Anand
Name of Taluka:	Anand
Name of Village:	Sundan Sundan
Name of Institute:	Neotech Institute of Technology
Nodal Officer Name & Contact Detail:	Piyush Prajapati
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Solanki Jyotsnaben Talati
Date of Survey:	2nd

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	4000			
2.	2011	4895	2520	2375	1800

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	530.50.69
2.	Forest Area (In hect.)	40
3.	Agricultural Land Area (In hect.)	418.37.09
4.	Residential Area (In hect.)	572.92
5.	Other Area (In hect.)	— 10 hector, NA - 3 hector
6.	Distance to the nearest railway station (in kilometers):	10 km. Vasad Railway Station

7.	Name of Nearest Town with Distance:	Anand 18 km.
8.	Distance to the nearest bus station (in kilometers):	Vasad 4 km.
9.	Whether village is connected to all road for the any facility or town or City?	Yes.

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Agriculture - 62 %. 2. Poltry 38 %. 3. other

Major crops grown in the village:	1. Tobeco 2. Bamana 3. Bajra.

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	- 1- tap. Tubewell.	✓		
2.	**DUG WELL** Protected Well Un Protected Well	Protected	✓		
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring				
	Rainwater Tanker Truck Cart With Small Tank	✓	✓		
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump	- Irrigation Channel 6	✓		

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	Other(Specify)**Lake/ Pond**	Lake-5		✓	Not usable.
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank 2	Capacity:	2	✓	
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1	✓ 1000 houses covered			
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	✓	✓		Asphalt 1.4km
	Main road	✓	✓		Asphalt + RCC 10km
	Internal streets	✓		✓	RCC
	Nearest NH/SH/MDR/ODR Dist. in kms.	Yes at 1km			
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	NO Vasad	✓		Nearest Station 5 km
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	NO Vasad	✓		Vasad Bus stand
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	✓		
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes. MGVCL mar.	✓		MGVCL

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	Power supply for Domestic Use	✓	✓		24 Hrs.
	Power supply for Agricultural Use	✓	✓		1200 connection
	Power supply for Commercial Use	—	—	—	No connection
	Road/ Street Lights	✓		✓	
	Electrification in Government Buildings/ Schools/ Hospitals	✓	✓		
	Renewable Energy Source Facilities (Y/ N)	NO.			
	LED Facilities	—	—		
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	1	✓		
	Location Condition	Working			
	Community Toilet (With bath/ without bath facilities)	without Bath		✓	
	Solid & liquid waste Disposal system available	No.		✓	
	Any facility for Waste collection from road	Yes.		✓	
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND				Irrigation canal
	STREAM/RIVER				
	CANAL		✓		
	WELL				Boring Forcing with use of sprinkler
	TUBE WELL.	✓			
	OTHER (SPECIFY)	Sprinkler.			
Suggestions if any:					Drip Irrigation
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	1134/17000			

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	6.			
	Sub-Centre	—			
	PHC Adas.	—			Adad. Supcenter
	BLOCK PHC	—			
	CHC/RH	yes			
	District/ Govt. Hospital	Anand			
	Govt. Dispensary	~~Yes~~ No.	✓		& public dispens Vasad
	Private Clinic	No			
	Private Hospital/	NO.			
	Nursing Home	NO			
	AYUSH Health Facility	yes			
	sonography /ultrasound facility	NO			
	If any of the above Facility is not available in village than approx. distance from village: ...10...kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	✓		✓	
	Primary School	✓	✓		609 students.
	Secondary school	~~No~~ ✓	✓		~~nearest~~ 180. ~~5 kms~~
	Higher sec. School	✓	✓		~~No~~ 67 students.
	ITI college/ vocational Training Center	~~No~~ Near - 5 km.	✓		nearest 5 km.
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	NO Nearest 10 kms.	✓		

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	If any of the above Facility is not available in village than approx. distance from village: 10-15 kms.				
Suggestions if any:					
L.	**Socio- Culture Facilities**	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	Not Adequat.	Beside Panchayat	Yes	
	Public Library (With daily newspaper supply: Y/N)				NO
	Public Garden				NO
	Village Pond	Not well		Yes	
	Recreation Center				NO
	Cinema/ Video Hall				NO
	Assembly Polling Station	Better	At edu. buildings	Yes	
	Birth & Death Registration Office	Good	At panchayat	Yes.	
If any of the above Facility is not available in village than approx. distance from village: .....kms.					
Suggestions if any:					
M.	**Other Facilities**	Condition	Location	Available (YES)	Available (NO)
	Post-office	Very Small		Yes	
	Telecommunication Network/ STD booth				NO
	General Market	Improper		Yes	
	Shops (Public Distribution System)	Good		Yes	
	Panchayat Building	Poor/good		Yes	
	Pharmacy/Medical Shop				NO
	Bank & ATM Facility			Yes	
	Agriculture Co-operative Society			Yes	
	Milk Co-operative Soc.			Yes	
	Small Scale Industries			Yes	
	Internet Cafes/ Common Service Center/Wi Fi	Cyber Cafes.		Yes	
	Youth Club				NO
	Mahila Mandal			Yes.	

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

Suggestions if any:

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

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy	Not			
2.	Recent Projects going on for Development of Village	~~Rise~~ Road			
3.	Any NGO working for village development	No.			
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	N.A. Applicable			

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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	No.	Panchayat Building needs Renovation.
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING .....Every day..... FOGGING.....Every month..... Drive was undertaken in the village?	cleaning Everyday Every 15 days	

IX. Smart Village / Heritage Details

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

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

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

તલાટી કમ મંત્રી
ગ્રામ પંચાયત, સુંદણ
તા. જિ. આણંદ

તલાટી
ગ્રામ પંચાયત સુંદણ
તા. જિ. આણંદ

12.4 Gap Analysis

Sundan Village Gap Analysis

Village Facilities	Planning Commission/UDPFI Norms	Village Name:	Sundan		
		Population: 4897			
		Existing	Required as per Norms	Smart Vilage Design	Gap
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	6	3		**0**
Primary School	Each Per 2500 population	1	1		**0**
Secondary School	Per 7,500 population	1	1		**0**
Higher Secondary School	Per 15,000 Population	1	1		**0**
College	Per 125,000 Population	0	0		**0**
Tech. Training Institute	Per 100000 Population	0	0		**0**
Agriculture Research Centre	Per 100000 Population	0	0		**0**
Skill Development Center	Per 100000 Population	0	0		**0**
Health Facility					
Govt/Panchyat Dispensary or Sub PHC or Health Centre	Each Village	1	1		**0**
Primary Health & Child Health Center	Per 20,000 population	0	1		**1**
Child Welfare and Maternity Home	Per 10,000 population	0	0		**0**
Multispeciality Hospital	Per 100000 Population	0	0		**0**
Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum pockets & kutcha house)	3	2		**1**
Physical Infrastructure Facilities					
Transportation		**Adequate / Inadequate**			
Pucca Village Approach Road	Each village	ADEQUATE			
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	Not Available	1		**Required**
Drinking Water (Minimum 70 lpcd)		**Adequate / Inadequate**			
Over Head Tank	1/3 of Total Demand	25000 Litre	60000		**60000 Litre**
U/G Sump	2/3 of Total Demand	NA	50000		**50000 Litre**
Drainage Network - Open		**Adequate / Inadequate**			
Drainage Network - Cover		Inadequate	0		
Waste Management System		Inadequate	Required Proper waste management system		Requried
Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	1	1		**Reconstruction Required**

community hall and Public Library	Per 15000 Population	0	1		**Requried**
Cremation Ground	Per 20,000 population	0	1		**Requried**
Post Office	Per 10,000 population	1	0		**1**
Gram Panchayat Building	Each individual/group panchayat	1	1		**Reconstruction Required**
APMC	Per 100000 Population	0	0		**0**
Fire Station	Per 100000 Population	0	1		**1**
Public Garden	Per village	0	1		**1**
Police post	Per 40,000Population	0	0		**0**
Shopping Mall		0	0		
Any Smart Village Facility					
Technology					
Milk Co-operative Society	Per 10,000 population	1	0		Proper Building Required
		ESR cap	0		
		Sump cap	0		
		Lat	0		

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

Sr.no.	Village Name	Branch	Part-I Design	Part-II Design
1	Bhaniyara	Civil Engineering	Post Office	School
			Public Toilet	Community Hall
			Gov. Dispensary	Library
			Bus Stop	Gov. Ration Shop
			Krishi Seva Kendra	Water Tank
			Lake Beautification	Rain water harvesting
2	Bahutha	Civil Engineering	Post Office	School
			Public Toilet	Dairy
			Library	Entrance Gate
			Community Hall	Bus stop
			Krishi Seva Kendra	Dhobi Ghat
			Panchayat Building	Bio-Gas Plant
3	Varsada	Civil Engineering	Post Office	Bank
			Public Garden	Police Station
			Community Hall	Lake Beautification
			Public Toilet	PHC Center
			Panchayat Building	School
4	Sundan	Civil Engineering	Public Toilet	School
			Public Garden	Water Tank
			Panchayat Building	Crematorium
			Bus Stand	Medical Store
			Aganvadi	Community Hall
5	Varnama	Civil Engineering	Animal Health Care Centre	Community Hall
			Public Toilet	Fire Safety Building
			Primary School	Police Station
			Post Office	Water Tank
			Bank	Bio-Gas Plant
			Aganvadi	Resort

12.6 Summary of Good Photographs in Table

Pachayat Building

Community Hall

Primary School

Water Tank

Gate

Meeting Hall

Village Lake

Dairy

Health &Wellness Center

Post Office

Ideal village: Dasharath

Village Lake

Water Tank

Primary Healthcare Centre

Primary school

I.T.I. Dasharath

Bank Dasharth

Bank Dashrath

Aanganwadi

PART- II

Chapter : 13

13 Future designs of the aspects (Feasibility, Construction, Operation and maintenance of various design options in Rural Areas along with cost with AutoCAD designs / planning with any software

13.1 Design Proposals

13.1.1 School Building

ABSTRACT SHEET					
Sr.No.	Items	Qty	Rate	Per	Amount
1	Excavation for foundation of periferrial compound wall of lake depth 1.2M in line & level	250	150	M3	35388
2	Providing and laying PCC for foundation prop. (1:4:8) 4" thick	25	4200	M3	80528
3	RCC work with (1:1½:3) M 20 grade	383.28	4500	M3	1724760
4	Yellow soil brought from outside and filling in plinth with reaming and watering properly	156.78	120	M3	18814
5	Providing and laying BK masonry 9" wall prop. (1:6) proper line and level.	244.84	4900	M3	1199716
6	Providing and laying BK masonry 4½" thick wall	34.2	715	M2	24453
7	Providing and laying BK masonry 4½" thick wall for parapet	162.5	820	M2	133250
8	Providing and laying PCC below flooring	78.38	4300	M3	337034
9	Tiles Floors	673.58	450	M2	303111
10	Plaster outside sand face	616.8	310	M2	201208
11	Plaster smooth inside	2468.2	260	M2	741732
12	colour work as per plaster quntity	3085.5	16	M2	49368
13	Providing and fixing of Urinal blocks	12	450	NOS.	4500
14	Providing and fixing of latrine blocks	20	700	NOS.	16900
15	Providing and fixing of wash basing	10	350	NOS.	3500
16	Providing and fixing wooden door	75.6	1600	M3	120960
17	Providing and fixing wooden Window	66.24	1500	M3	99360
18	Ventilation	5.76	1300	M3	7488
19	Providing and fixing of M.S. grill with black oil paint	66.24	1700	RM	112608
20	Providing and Laying Steel For RCC as per Specification And of grade Fe:415	21546	45	KG	954570

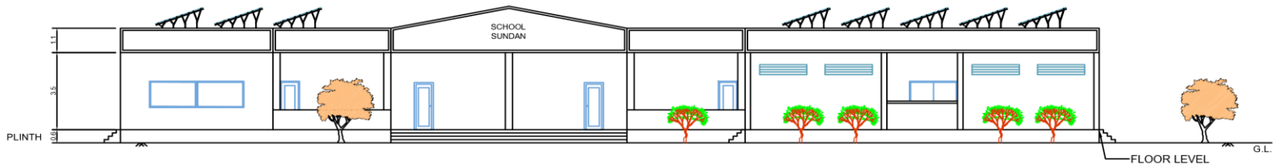
21	Providing And fixing centereing and shuttering in line and level	1425.15	200	M2	300030
					6809709
	ADD 3% CONTIGENCY AND 2% LABOUR RATE INFLATION				310485
	TOTAL				7220195
	ALL RATE MAY VARY DUE TO MARKET INFLATION				

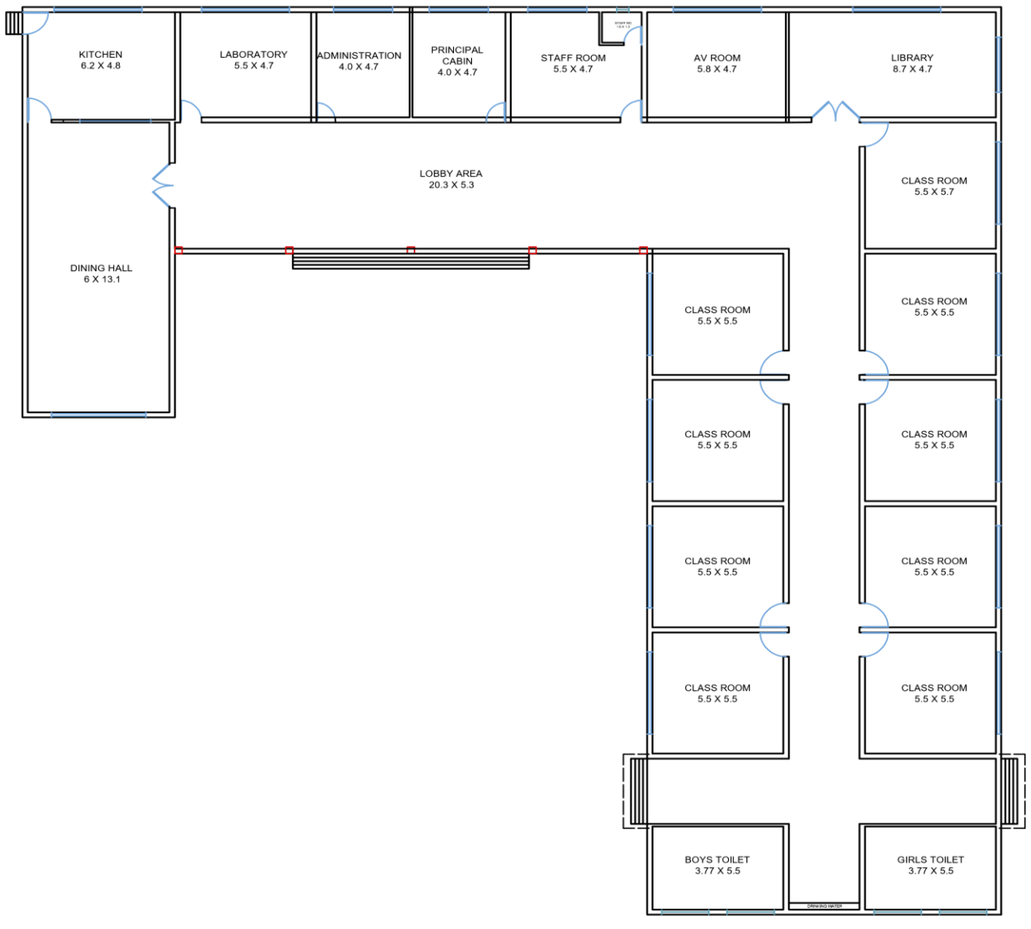
MEASUREMENT SHEET							
Sr.No.	Items	NO.	L	B	H	QTY	TOTAL
1	Excavation for foundation of peripheral compound wall of lake depth 1.2M in line & level						
	for column footing	23	2.2	2.2	1.7	189.244	189.25
2	Providing and laying PCC for foundation prop. (1:4:8) 4" thick	23	2	2	0.15	13.8	13.8
3	RCC work with (1:1½:3) M 20 grade						
	RCC footing Base	23	2	2	0.6	55.2	383.286
	RCC footing Trepezoidal	23	2	2	0.67	61.64	
	RCC column	23	0.6	0.23	7.6	24.1224	
	RCC Beam 1	24	6	0.23	0.6	19.872	
	RCC beam 2	9	7	0.23	0.6	8.694	
	RCC beam 3	3	18	0.23	0.6	7.452	
	RCC beam 4	24	6	0.23	0.6	19.872	
	RCC beam 5	18	6	0.23	0.6	14.904	
	RCC Slab	1	1018.62	1	0.15	152.793	
	RCC stair Case	4	5	1.5	0.15	4.5	
	RCC Landing	2	3	1.5	0.15	1.35	
	RCC Lintel	2	186.76	0.23	0.15	12.8864	
4	Yellow soil brought from outside and filling in plinth with reaming and watering properly						
	Class room 1	3	6	6	0.6	64.8	156.762
	Class room 2	1	6	6.53	0.6	23.508	
	Class room 3	2	6	5.73	0.6	41.256	
	Principal Cabin	1	4	4	0.6	9.6	
	Toilet	1	7.78	3.77	0.6	17.5984	
5	Providing and laying BK masonry 9" wall prop. (1:6) proper line and level.	2	186.76	0.23	3	257.729	244.842

deduction of lintel	2	186.76	0.23	0.15	12.8864	

6	Providing and laying BK masonry 4½" thick wall	1	38	1	0.9	34.2	34.2
7	Providing and laying BK masonry 4½" thick wall for parapet	1	180.45	1	0.9	162.405	162.5
8	Providing and laying PCC below flooring						
	Class room 1	6	6	6	0.15	32.4	78.3812
	Class room 2	2	6	6.53	0.15	11.754	
	Class room 3	4	6	5.73	0.15	20.628	
	Principal Cabin	2	4	4	0.15	4.8	
	Toilet	2	7.78	3.77	0.15	8.79918	
9	Tiles Floors						
	Class room 1	6	6	6	1	216	673.581
	Class room 2	2	6	6.53	1	78.36	
	Class room 3	4	6	5.73	1	137.52	
	Principal Cabin	2	4	4	1	32	
	Toilet	2	7.78	3.77	1	58.6612	
	Passage G.F.	1				64.44	
	Passage F.F.	1				86.6	
10	Plaster outside sand face						
		1	91.12	1	7.5	683.4	616.8
	deduction						
	Enterance	2	3	1	2.1	12.6	
	Windows	28	1.5	1	1.2	50.4	
	Ventilation	10	0.6	1	0.6	3.6	
11	Plaster smooth inside						2468.2
	Class room 1	6	24	1	3	432	
	Class room 2	2	25.06	1	3	150.36	
	Class room 3	4	23.46	1	3	281.52	
	Principal Cabin	2	16	1	3	96	
	Toilet	2	36.48	1	3	218.88	
	Passage Out side G.F.	1	75.71	1	3	227.13	
	Passage Out side F.F.	1	80.89	1	3	242.67	
	Parapet F.F.	2	38	1	0.9	68.4	
	Plaster on Ground to plinth	1	28.3	1	0.7	19.81	
	plaster on Steps	9	0.3	0.3	1	0.81	
	Plaster on ceiling						
	Class room 1	6	6	6	1	216	
	Class room 2	2	6	6.53	1	78.36	
	Class room 3	4	6	5.73	1	137.52	
	Principal Cabin	2	4	4	1	32	
	Toilet	2	7.78	3.77	1	58.6612	

	Passage Out side G.F.	1	75.71	1.8	1	136.278	
	Passage Out side F.F.	1	80.89	1.8	1	145.602	
	Deduction						
	D	10	1.2	1	2.1	25.2	
	D1	8	0.75	1	2.1	12.6	
	W	16	1.5	1	1.2	28.8	
	W1	3	1.2	1	1.2	4.32	
	Ventilation	8	0.6	1	0.6	2.88	
12	colour work as per plaster quntity						3085
13	Providing and fixing of Urinal blocks	10					10
14	Providing and fixing of latrine blocks	17					17
15	Providing and fixing of wash basing	10					10
16	Providing and fixing wooden door						
	D	20	1.2	1	2.1	50.4	75.6
	D1	16	0.75	1	2.1	25.2	
17	Providing and fixing wooden Window						
	W	32	1.5	1	1.2	57.6	66.24
	W1	6	1.2	1	1.2	8.64	
18	Ventilation	16	0.6	1	0.6	5.76	5.76
19	Providing and fixing of M.S. grill with black oil paint						
	W	32	1.5	1	1.2	57.6	66.24
	W1	6	1.2	1	1.2	8.64	
20	Providing and Laying Steel For RCC as per Specification And of grade Fe:415						
	RCC footing	1				1127	18546
	RCC column	1				3651	
	RCC Beam 1	1				2207	
	RCC beam 2	1				1157	
	RCC beam 3	1				678	
	RCC beam 4	1				2315	
	RCC beam 5	1				1783	
	RCC Slab	1				3895	
	RCC stair Case	1				801	
	RCC Landing	1				415	
	RCC Lintel	1				517	
21	Providing And fixing centering and shuttering in line and level	1				1525.16	





- NOTES :

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- ALL THE CONCRETE SHOULD BE MIXED IN PROPORTION OF M-2O GRADE OR AS MENTIONED.
- ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED AS PER IS CODE PROVISION.
- DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE , CORRECTION ALL DATA MUST BE CHECK BEFORE USE.

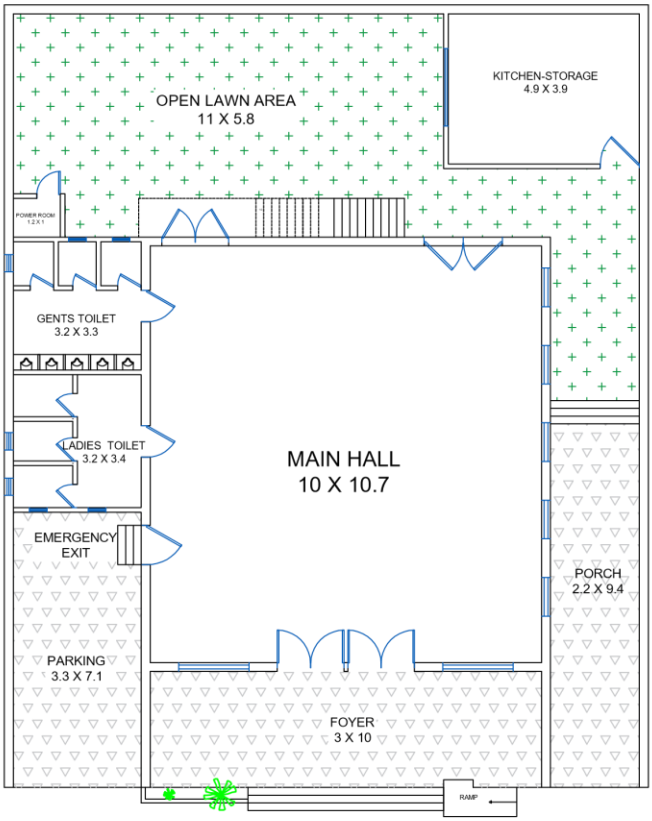
DESIGN :	SCHOOL
PREPARED BY :	VRAJ D. MISTRY AAKASHKUMAR SOLANKI
PROJECT NAME :	VISHWAKARMA YOJANA PHASE - 8 SUNDAN VILLAGE
INSTITUTE NAME :	NEOTECH TECHNICAL CAMPUS
UNIVERSITY NAME :	GUJRAT TECHNOLOGICAL UNIVERSITY

13.1.2 Community Hall

ABSTRACT SHEET					
Sr.No.	Items	Qty	Rate	Per	Amount
1	Excavation for foundation of periferrial compound wall of lake depth 1.2M in line & level	156	150	M3	23400
2	Providing and laying PCC for foundation prop. (1:4:8) 4" thick	11.4	4200	M3	47880
3	RCC work with (1:1½:3) M 20 grade	294	4500	M3	1323000
4	Yellow soil brought from outside and filling in plinth with reaming and watering properly	67.2	120	M3	8064
5	Providing and laying BK masonry 9" wall prop. (1:6) proper line and level.	131	4900	M3	641900
6	Providing and laying BK masonry 4½" thick wall	18.6	715	M2	13299
7	Providing and laying BK masonry 4½" thick wall for parapet	163	820	M2	133660
8	Providing and laying PCC below flooring	16.8	4300	M3	72240
9	Tiles Floors	133.83	450	M2	55224
10	Plaster outside sand face	231.98	310	M2	73914
11	Plaster smooth inside	877.2	260	M2	156072
12	color work as per plaster quantity	1509.8	16	M2	35757
13	Providing and fixing of Urinal blocks	6	450	NOS.	2700
14	Providing and fixing of latrine blocks	6	1000	NOS.	6000
15	Providing and fixing of wash basing	8	350	NOS.	2800
16	Providing and fixing wooden door	47.25	1600	M3	75600
17	Providing and fixing wooden Window	58.36	1500	M3	87540
18	Ventilation	4.32	1300	M3	5616
19	Providing and Laying Steel For RCC as per Specification And of grade Fe:415	8929	45	KG	381805
20	Providing And fixing centereing and shuttering in line and level	1642	200	M2	158400
					3105870
	ADD 3% CONTIGENCY AND 2% LABOUR RATE INFLATION				205294
	TOTAL				3311164
	ALL RATE MAY VARY DUE TO MARKET INFLATION				

MEASUREMENT SHEET							
Sr.No.	Items	NO.	L	B	H	QTY	TOTAL
1	Excavation for foundation of periferrial compound wall of lake depth 1.2M in line & level						
	for column footing	11	2.2	2.2	1.7	110.332	110.332
2	Providing and laying PCC for foundation prop. (1:4:8) 4" thick	11	2	2	0.15	11.4	11.4
3	RCC work with (1:1½:3) M 20 grade						
	RCC footing Base	11	2	2	0.6	45.6	294.071
	RCC footing Trapezoidal	11	2	2	0.67	50.92	
	RCC column	11	0.6	0.23	7.6	19.9272	
	RCC Beam 1	8	6	0.23	0.6	9.936	
	RCC beam 2	3	7	0.23	0.6	17.388	
	RCC beam 3	5	18	0.23	0.6	29.808	
	RCC beam 4	4	6	0.23	0.6	6.624	
	RCC Slab	1	574.66	1	0.15	86.199	
	RCC stair Case	1	5	1.5	0.15	4.5	
	RCC Landing	2	3	1.5	0.15	1.35	
	RCC Lintel	2	100.21	0.23	0.15	6.91449	
4	Yellow soil brought from outside and filling in plinth with reaming and watering properly						
	Hall	1	7.49	9.45	0.6	42.4683	67.2094
	Office	1	2.2	2.4	0.6	3.168	
	Toilet	2	1.52	2.48	0.6	4.52352	
	Kitchen	1	3.04	2.88	0.6	5.25312	
5	Providing and laying BK masonry 9" wall prop. (1:6) proper line and level.	2	100.21	0.23	3	138.29	131.375
	deduction of lintel	2	100.21	0.23	0.15	6.91449	
6	Providing and laying BK masonry 4½" thick wall	2	6.02	1	3	18.06	18.06
7	Providing and laying BK masonry 4½" thick wall for parapet	1	100.21	1	0.9	90.189	162.5
8	Providing and laying PCC below flooring						
	Hall	1	10	10.7	0.15	15.6171	18.8024
	Toilet	2	1.52	2.48	0.15	1.13088	
	Kitchen	1	3.04	2.88	0.15	1.31328	

9	Tiles Floors						
	Hall	2	7.49	9.45	1	141.561	233.83
	Toilet	8	1.52	2.48	1	30.1568	
	Kitchen	2	3.04	2.88	1	17.5104	
10	Plaster outside sand face						
		1	54.07	1	9	486.63	431.982
	deduction						
	Enterance	3	1.8	1	2.1	11.34	
	Windows	12	1.69	1	2.1	42.588	
	Ventilation	2	0.6	1	0.6	0.72	
11	Plaster smooth inside						1177.16
	Hall	2	7.49	9.45	4	566.244	
	Toilet	8	1.52	2.48	4	120.627	
	Kitchen	2	3.04	2.88	4	70.0416	
	Parapet F.F.	2	54.07	1	0.9	97.326	
	Plaster on Ground to plinth	1	28.3	1	0.7	19.81	
	plaster on Steps	9	0.3	0.3	1	0.81	
	Plaster on ceiling						
	Hall	2	7.49	9.45	1	141.561	
	Toilet	8	1.52	2.48	1	30.1568	
	Kitchen	2	3.04	2.88	1	17.5104	
	Deduction						
	D	2	2.4	1	3	14.4	
	D1	4	0.9	1	3	10.8	
	D2	14	0.75	1	2.1	22.05	
	W	4	1.69	1	2.1	14.196	
	W1	12	1.41	1	2.1	35.532	
	W2	8	0.9	1	1.2	8.64	
	Ventilation	12	0.6	1	0.6	4.32	
12	color work as per plaster quantity						1609.14
13	Providing and fixing of Urinal blocks	6					6
14	Providing and fixing of latrine blocks	10					10
15	Providing and fixing of wash basing	8					8
16	Providing and fixing wooden door						
	D	2	2.4	1	3	14.4	47.25
	D1	4	0.9	1	3	10.8	
	D2	14	0.75	1	2.1	22.05	
17	Providing and fixing wooden Window						
	W	4	1.69	1	2.1	14.196	58.368
	W1	12	1.41	1	2.1	35.532	
	W2	8	0.9	1	1.2	8.64	



- NOTES :

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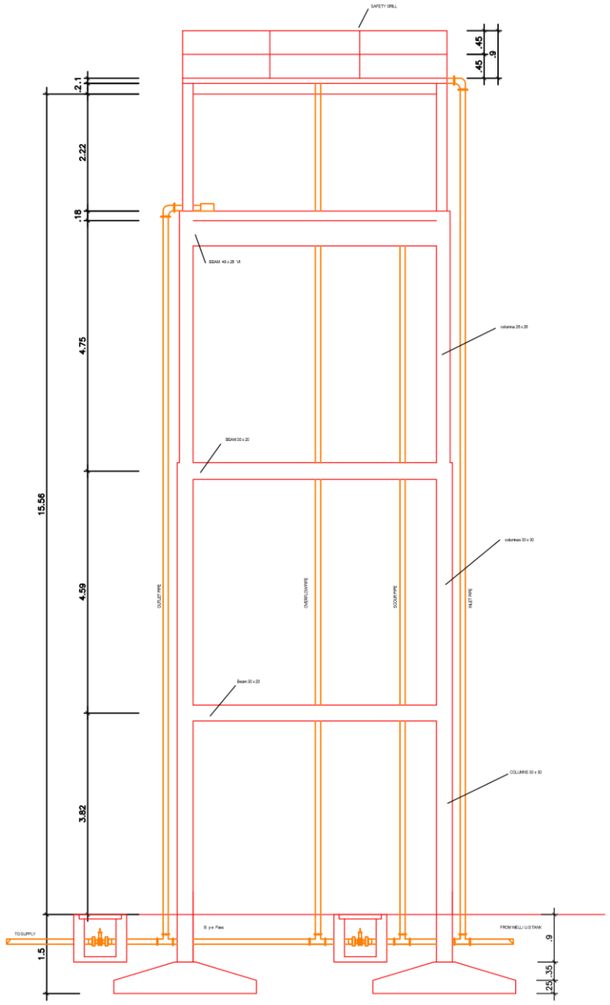
DESIGN :	COMMUNITY HALL
PREPARED BY :	VRAJ D. MISTRY AAKASHKUMAR SOLANKI
PROJECT NAME :	VISHWAKARMA YOJANA PHASE - 8 SUNDAN VILLAGE
INSTITUTE NAME :	NEOTECH TECHNICAL CAMPUS
UNIVERSITY NAME :	GUJRAT TECHNOLOGICAL UNIVERSITY

13.1.3 Water Tank

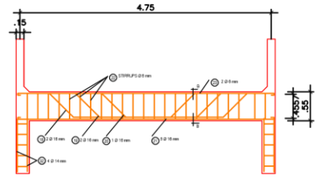
ABSTRACT SHEET					
Sr.No.	Items	Qty	Rate	Per	Amount
1	Excavation for foundation depth 4M in line & level	156	300	M3	40049
2	Providing and laying PCC for foundation prop. (1:4:8) 4" thick	5.40	4900	M3	29997
3	RCC work with (1:1½:3) M 20 grade	137.02	5600	M3	667520
4	Yellow soil brought from outside and filling in Trench with reaming and watering properly	121.68	120	M3	14601.6
5	Plaster outside sand face	500.52	350	M2	175182
6	colour work as per plaster quntity	500.52	25	M2	12513
7	Centering And Shuttering providing fixing and removal as per specification	558.5	240	M2	134040
8	Steel required for water Tank As per Specification And Specific Grade FE : 415	5498	48	KG	259904
9	Providing and fixing of M.S. railing with black oil paint	35	2200	RM	77000
10	Plumbing In Water Tank	1	100000	Aprrox.	80000
					1422599
	ADD 3% CONTIGENCY AND 2% LABOUR RATE INFLATION				76129.93
	TOTAL				1608609
	ALL RATE MAY VARY DUE TO MARKET INFLATION				

MEASUREMENT SHEET							
Sr.No.	Items	NO.	L	B	H	QTY	TOTAL
1	Excavation for foundation depth 4M in line & level	4	2.2	2.2	3.83	105.83	105.83
2	Providing and laying PCC for foundation prop. (1:4:8) 4" thick	4	2.2	2.2	0.15	5.34	5.34
3	RCC work with (1:1½:3) M 20 grade						
	For foundation pyramid base	4	2	2	0.6	16.6	
	For foundation pyramid top	4	2	2	0.678	20.5	

	For Column	4	0.6	0.23	12.12	9.0530 4	
	Ground Tie beam	4	0.6	0.23	0.3	0.4968	
	Intermediate Beam	12	0.6	0.23	0.3	1.4904	86.5
	RCC Base Slab	1	4.5	4.5	0.3	6.75	
	RCC Top Slab	1	4.5	4.5	0.15	3.35	
	RCC Side Wall (PADADI)	4	7	7	0.25	49	
4	Yellow soil brought from outside and filling in Trench with reaming and watering properly	4	2	2	3.38	56.68	56.68
5	Plaster outside sand face						
	water tank side	1	28	1	3	84	
	water tank top/ base	2	7	7	1	98	
	Beams	36	1.66	2.3	1	137.448	500.5208
	Column	9	12.12	1.66	1	181.0728	
6	color work as per plaster quantity						300.52
7	Centering And Shuttering providing fixing and removal as per specification						
	Footing	4	8	1	0.6	43.2	
	column	4	1.66	1	12.12	181.0728	
	Beams	16	1.44	1	2.3	158.976	558.4988
	water tank side	4	7	1	3	84	
	water tank top/ base	2	6.5	6.5	1	84.5	
8	Steel required for water Tank As per Specification And Specific Grade FE : 415						
	For Footing	1				223	
	For Column	1				1456	
	For Beam	1				1553	5405
	For RCC Wall	1				1567	
	For water tank Top/Base	1				897	
9	Providing and fixing of M.S. railing with black oil paint	1	35	1	1	35	35
10	Plumbing In Water Tank	1				1	1

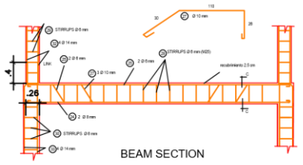


TANK ELEVATION
LONGITUDINAL SECTION



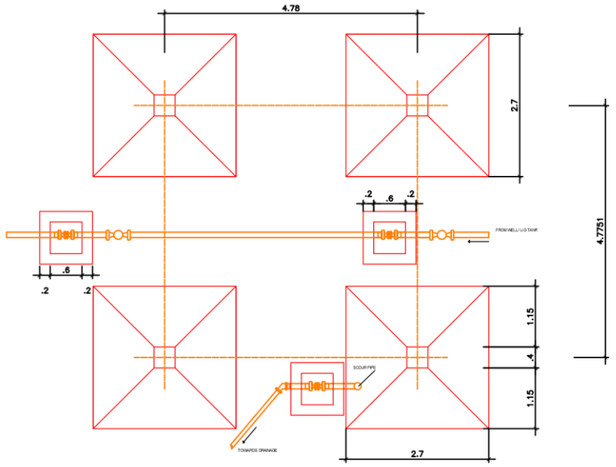
SECTION : BEAM VI

SECTION B - B

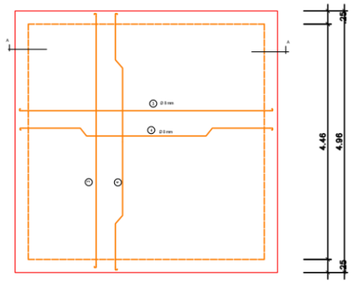


BEAM SECTION

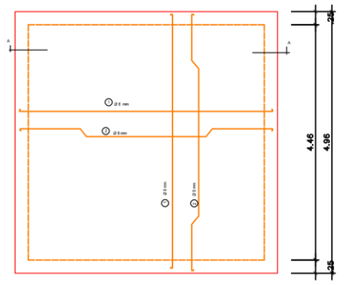
SECTION C - C



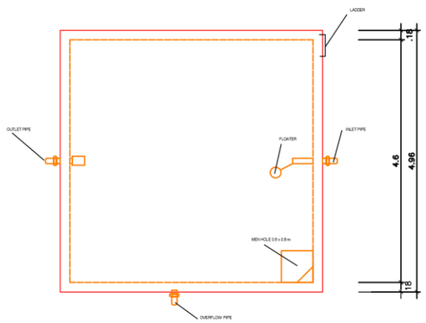
FOOTING DETAIL



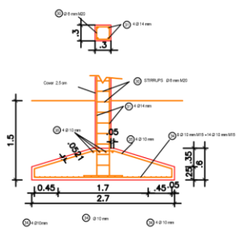
BOTTOM SLAB



TOP SLAB



PLAN



TYP. DETAIL OF ISOLATED FOOTING

- NOTES :

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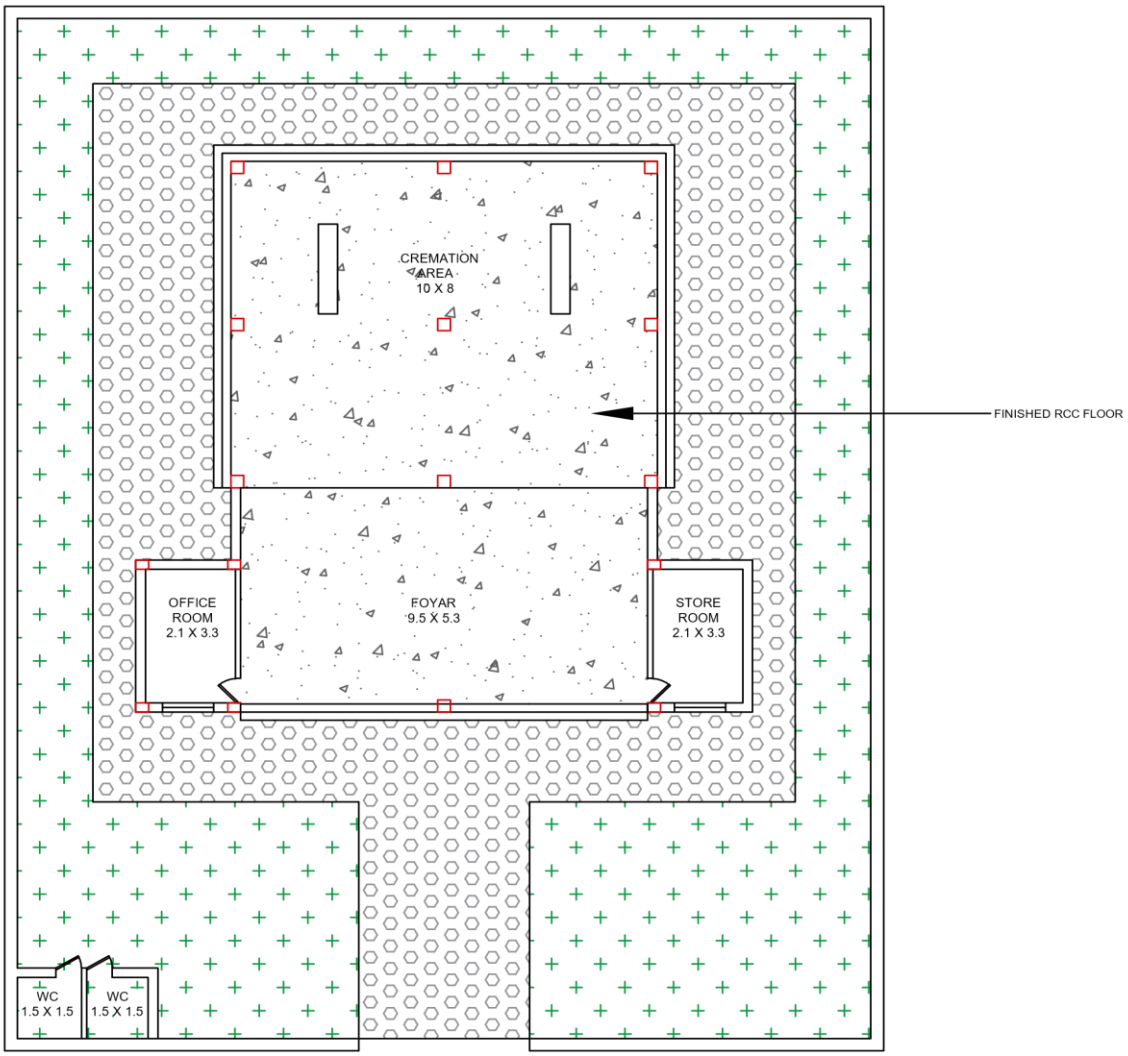
DESIGN NAME :	WATER TANK
PREPARED BY :	VRAJ D. MISTRY AAKASHKUMAR SOLANKI
PROJECT NAME :	VISHWAKARMA YOJANA PHASE - 8 SUNDAN VILLAGE
INSTITUTE NAME :	NEOTECH TECHNICAL CAMPUS
UNIVERSITY NAME :	GUJRAT TECHNOLOGICAL UNIVERSITY

13.1.4 Crematorium

ABSTRACT SHEET					
Sr.No.	Items	Qty	Rate	Per	Amount
1	Ritual Platform	2	29184	unit	58368
2	Office and store room	2.1x3.3x2	15497	m3	212,000
3	Paver block	50	622	m2	30,000
4	Compond wall	60	1500	per meter	90000
5	Foyer/waiting area				303,000
6	Fabricated Shade MS Pyre				120000
7	Lawn and Gardening	100 m2	500		50000
				Total	843368



- NOTES :

- ALL DIMENSIONS AND LEVELS ARE IN METER.
- ALL THE CONCRETE SHOULD BE MIXED IN PROPORTION OF M-2O GRADE OR AS MENTIONED.
- ALL CONCRETE SHALL BE MACHINE MIXED AND MACHINE VIBRATED AS PER IS CODE PROVISION.
- DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE , CORRECTION ALL DATA MUST BE CHECK BEFORE USE.

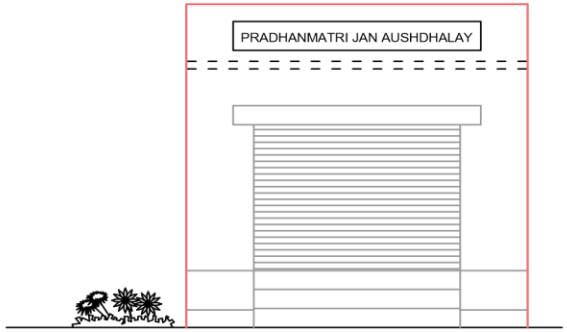
DESIGN :	CREMATORIUM
PREPARED BY :	VRAJ D. MISTRY AAKASHKUMAR SOLANKI
PROJECT NAME :	VISHWAKARMA YOJANA PHASE - 8 SUNDAN VILLAGE
INSTITUTE NAME :	NEOTECH TECHNICAL CAMPUS
UNIVERSITY NAME :	GUJRAT TECHNOLOGICAL UNIVERSITY

13.1.5 Medical Store

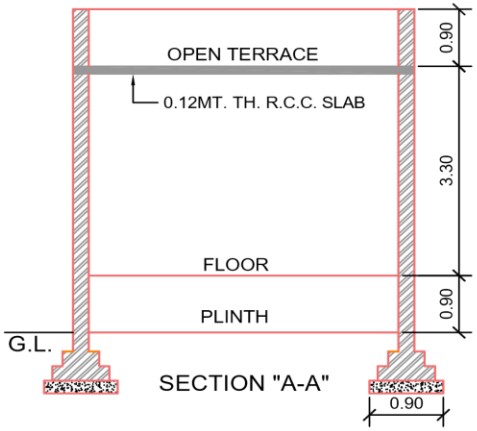
ABSTRACT SHEET					
Sr.No.	Items	Qty	Rate	Per	Amount
1	Excavation for foundation depth 1.2M in line & level	27.84	150	M3	4176
2	Providing and laying PCC for foundation prop. (1:4:8) 4" thick	7.185	3900	M3	28021.5
3	Providing and laying BK Masonry in (1:6) prop up to plinth level 9" wall	2.16	5200	M3	11232
4	RCC coping prop. (1:1½:3) M 20 grade 4" thick	0.76	4700	M3	3572
5	Providing and laying BK masonry 9" wall prop. (1:6) proper line and level.	13.99	4900	M3	68551
6	Providing and laying PCC below flooring	4.05	4300	M3	17415
7	Tiles Floors	33.75	450	M2	15187.5
8	RCC work with (1:1½:3) M 20 grade	0.69	5500	M3	3795
9	Providing and laying BK masonry 9" thick wall	2.28	550	M2	1254
10	Plaster outside sand face	60.63	310	M2	28095.3
11	Plaster smooth inside	80.41	260	M2	26886.6
12	colour work as per plaster quntity	194.045	16	M2	3104.72
13	Providing and fixing wooden window	4.32	1850	M2	7992
14	Providing and fixing of rolling shutter	6.3	1700	M2	10710
					134104.23
	ADD 3% CONTIGENCY AND 2% LABOUR RATE INFLATION				122052.32
	TOTAL				156809.55
	ALL RATE MAY VARY DUE TO MARKET INFLATION				

MEASUREMENT SHEET							
Sr.No.	Items	NO.	L	B	H	QTY	TOTAL
1	Excavation for foundation depth 1.2M in line & level						
	Wall	1	25.5	0.9	1.2	27.54	
	For steps	1	3	1	0.1	0.3	27.84
2	Providing and laying PCC for foundation prop. (1:4:8) 4" thick						
	Wall	1	25.5	0.9	0.3	6.885	
	For steps	1	3	1	0.1	0.3	7.185

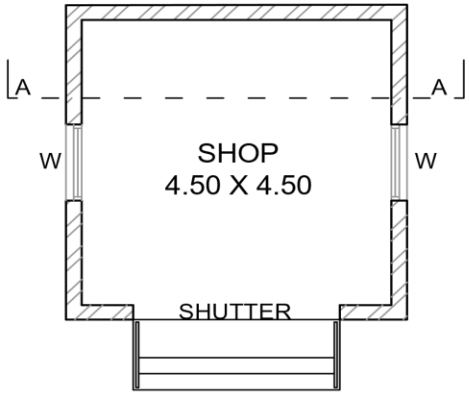
3	Providing and laying BK Masonry in (1:6) prop up to plinth level 9" wall						
	Wall	1	25.5	0.23	0.3	1.7595	
	Steps	3	2	0.3	0.15	0.27	
	steps	3	1	0.3	0.15	0.135	2.1645
4	RCC coping prop. (1:1½:3) M 20 grade 4" thick	1	25.5	0.3	0.1	0.765	0.765
5	Providing and laying BK masonry 9" wall prop. (1:6) proper line and level.	1	25.5	0.23	3	17.595	
	Deduction					0	
	R.S	1	3	0.23	2.1	1.449	
	D	1	1.2	0.23	2.1	0.5796	
	Lintel	1	25.5	0.23	0.1	0.5865	
	W	3	1.2	0.23	1.2	0.9936	
				Total		3.6087	13.9863
6	Providing and laying PCC below flooring	1	7.5	4.5	0.12	4.05	4.05
7	Tiles Floors						
	Shop	1	4.5	4.5	-	20.25	33.75
8	RCC work with (1:1½:3) M 20 grade						
	RCC lintel for 9" wall	1	25.5	0.23	0.1	0.5865	0.6945
	R.C.C. weather shed 3" thick	1	3.6	0.3	0.1	0.108	
9	Providing and laying BK masonry 9" thick wall	1	3.3	0.23	3	2.277	2.277
10	Plaster outside sand face	1	26.3	-	3.85	101.255	
	Deduction						
	R.S	1	3	-	2.1	6.3	
	W	3	1.2	-	1.2	4.32	
				Total		10.62	90.635
11	Plaster smooth inside	1	25.5	-	3	76.5	
	CELING	1	33.75	-	-	33.75	
	Deduction						
	D	1	1.2	-	2.1	2.52	
	W	3	1.2	-	1.2	4.32	103.41
12	colour work as per plaster quntity	1	1	1	1	194.045	194.045
13	Providing and fixing wooden window						
	W	3	1.2	-	1.2	4.32	4.32
14	Providing and fixing of rolling shutter	1	3		2.1	6.3	6.3



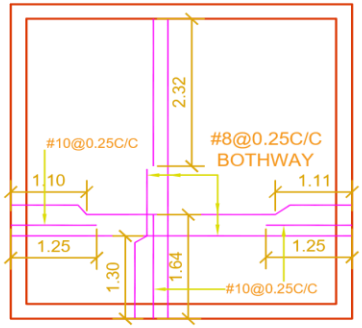
ELEVATION



SECTION "A-A"



PLAN



SLAB DETAIL

DESIGN :	GENERIC MEDICAL STORE
PREPARED BY :	VRAJ D. MISTRY AAKASHKUMAR SOLANKI
PROJECT NAME :	VISHWAKARMA YOJANA PHASE - 8 SUNDAN VILLAGE
INSTITUTE NAME :	NEOTECH TECHNICAL CAMPUS
UNIVERSITY NAME :	GUJRAT TECHNOLOGICAL UNIVERSITY

Chapter : 14

14. Technical Options with Case Studies

14.1 Civil Engineering

14.1.1 Advanced Earthquake Resistant

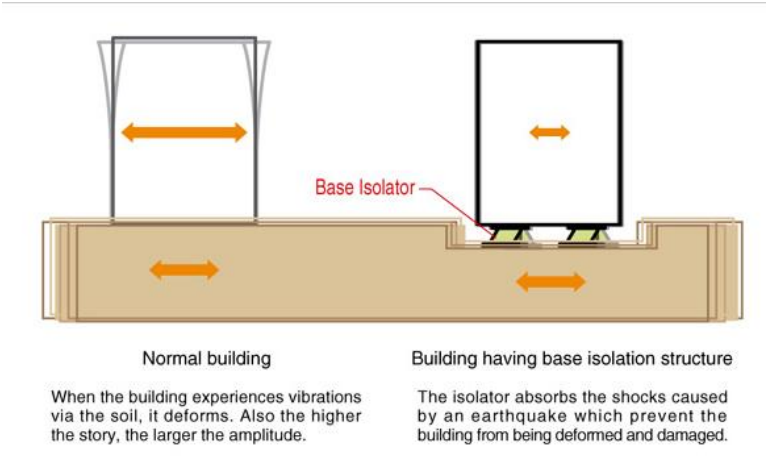
Earthquake-resistant structures are structures designed to safeguard buildings from earthquakes. While no structure can be totally immune to damage from earthquakes, the purpose of earthquake-resistant building is to design structures that fare better during seismic activity than their conventional equivalents. According to building standards, earthquake-resistant structures are intended to survive the strongest earthquake of a particular probability that is expected to occur at their location. Currently, there are numerous design philosophies in earthquake engineering, making use of experimental results, computer simulations and observations from prior earthquakes to deliver the required performance for seismic danger at the site of interest.

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

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

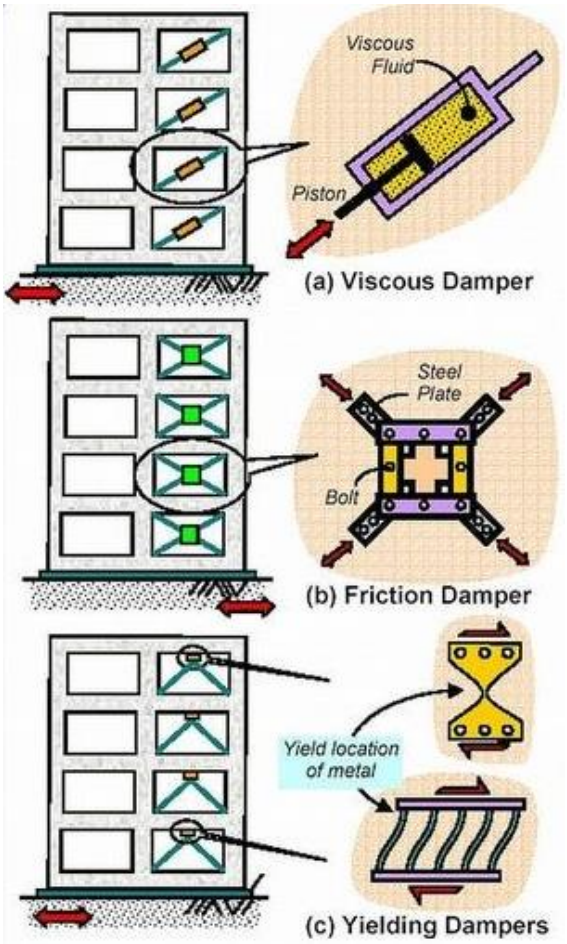
1.Base Isolation 2. Energy Dissipation Devices

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



The amplitude of seismic vibrations is reduced to one-half to one-fifth.
The whole building is isolated from the ground, so all the floors from the first to the top have the same superior level of safety and a good living environment. With earthquakes exerting tensile forces on buildings, buildings that have many stories or irregular shapes may not be suitable for base isolation.

2. **Energy Dissipation Devices:** The second of the major new techniques for improving the earthquake resistance of buildings also relies upon damping and energy dissipation, but it greatly extends the damping and energy dissipation provided by lead-rubber bearings. As we've said, a certain amount of vibration energy is transferred to the building by earthquake ground motion. Buildings themselves do possess an inherent ability to dissipate, or damp, this energy. However, the capacity of buildings to dissipate energy before they begin to suffer deformation and damage is quite limited. The building will dissipate energy either by undergoing large scale movement or sustaining increased internal strains in elements such as the building's columns and beams. Both of these eventually result in varying degrees of damage.



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

14.1.2 Seismic Retrofitting of Buildings

Seismic Retrofitting Techniques are required for concrete constructions which are vulnerable to damage and failures by seismic forces. In the past thirty years, moderate to severe earthquakes occurs around the world every year. Such events lead to damage to the concrete structures as well as failures. Thus, the aim is to Focus on a few specific procedures which may improve the practice for the evaluation of seismic vulnerability of existing reinforced concrete buildings of more importance and for their seismic retrofitting by means of various innovative techniques such as base isolation and mass reduction. So Seismic Retrofitting is a collection of mitigation technique for earthquake engineering. It is of utmost importance for historic monuments, areas prone to severe earthquakes and tall or expensive structures.

It is the modification of existing structures to make them more resistant to seismic activity, ground motion, or soil failure due to earthquakes. The retrofit techniques are also

applicable for other natural hazards such as tropical cyclones, tornadoes, and severe winds from thunderstorms.

Need for Seismic Retrofitting:

- To ensure the safety and security of a building, employees, structure functionality, machinery and inventory
- Essential to reduce hazard and losses from non-structural elements.
- predominantly concerned with structural improvement to reduce seismic hazard.
- Important buildings must be strengthened whose services are assumed to be essential just after an earthquake like hospitals.

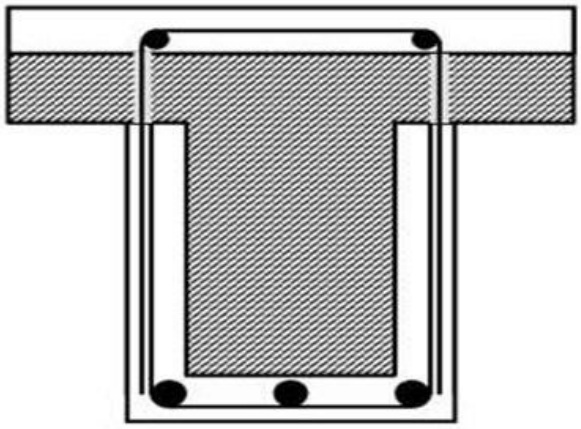
Local Retrofitting Technique

➢ **Types of Jacketing:**

1. Steel jacket
2. Reinforced Concrete jacket
3. Fibre Reinforced Polymer Composite (FRPC) jacket

➢ **Purpose for jacketing:**

1. To increase concrete confinement
2. To increase shear strength
3. To increase flexural strength



Beam Jacketing

Fig.

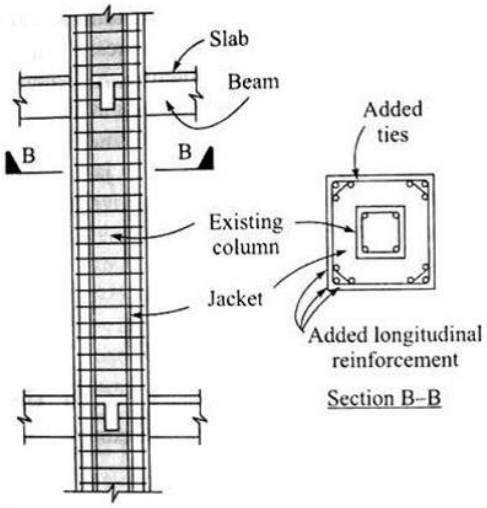


Fig. Jacketing of column

➢ **Advantages of Base Isolation**

- Isolates Building from ground motion – Lesser seismic loads, hence lesser damage to the structure, -Minimal repair of superstructure.
- Building can remain serviceable throughout construction.
- Does not involve major intrusion upon existing superstructure

➢ **Disadvantages of Base Isolation**

- Expensive
- Cannot be applied partially to structures unlike other retrofitting
- Challenging to implement in an efficient manner

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

ADVANCED CONSTRUCTION TECHNIQUES – NECESSITY

- The building construction activity, especially the residential and commercial complex is highly labour intensive with very little mechanization. Approximately 35% of the total construction cost is spent on labour.
- The labourers have their limitations and may fail to meet the time limits. The quality of workmanship, too, differs from person to person. Hence, quality standards cannot be maintained. Wastage of material is considerably high as it is handled and utilized manually.
- The objective of the construction organizations should be 'speed and economy'. This cannot be achieved with labour oriented advanced construction techniques.
- Only studying and adopting modern industrial techniques and equipment is the solution. By this, one can save material, reduce labour expenses, and increase the speed of work, leading to the economy in construction.
- Though the scope of the subject is vast, in this chapter we shall discuss only the advanced techniques to be used in advanced construction techniques activities.

EQUIPMENT USED FOR SMALL AND MEDIUM CONSTRUCTION WORK

The equipment with proven utility in building construction may be as listed below

- Chain and pulley block.
- Grouting pumps.
- Sprayers for painting work.
- Portable hand drilling machines.
- Horizontal trolleys, wheelbarrows.
- Pumps.
- Vibrators for compaction of concrete, surface vibrators.
- Auto ramming concrete block machine.
- Sand washing machine.
- Vertical lifts, hoists, winches.
- M.S. tubular scaffolding, and formwork.
- Concrete mixers.

ADVANCE CONSTRUCTION MATERIALS

Building material is any material which is used for a construction purpose. Many naturally occurring substances, such as clay, sand wood and rocks, even twigs and leaves have been used to construct buildings. Apart from naturally occurring materials, many man-made products are in use, some more and some less synthetic. Light weight construction materials can be a great choice when it comes to building a home. New technology has also made building with metal more practical than in previous human history. Most high-rise buildings and sky scrapers are built with steel or other metal frames. Plastics are another widely used modern building material. Formed of polymers, plastics are easily melded while in the liquid state. Compared to metal and many other materials, plastic is very light in weight and relatively low in cost. Plastic is often used to make pipes and to decorate the interior of buildings. Many modern buildings use glass, not only for windows, but often as the primary exterior building material. Glass skyscrapers and other structures have become quite popular due to their aesthetic appeal.

Advance materials used in construction nowadays:

- Ferro Cement Units
- Precast Waffle Units
- Filler Slabs Precast
- Brick Arch Panel System
- Composite Ferro Cement System
- Hollow Concrete Blocks
- Lato Blocks
- Under Reamed Pile Foundation
- Stabilized, Compressed earth Blocks

Technology continues to create new building materials with exceptional properties. For example, sea-creation is a construction material made from minerals found in sea water. Composite materials are made by combining different types of building materials together. These materials combine organic and inorganic components. One material act as a type of “adhesive” that binds the other components together. The “hard” components are usually glass, carbon or boron fiber. Composites are known for combining light weight with strength and durability. Cement composites bind together wood or similar materials like paper, fiberglass and natural fibers in a cement paste. These composites can be placed into molds to create pre-shaped building components.

14.1.4 Engineering Aspects of Soil mechanics - Environmental Impact Assessment

Soil mechanics is a branch of soil physics and applied mechanics that describes the behaviour of soils. It differs from fluid mechanics and solid mechanics in the sense that soils consist of a heterogeneous mixture of fluids (usually air and water) and particles (usually clay, silt, sand, and gravel) but soil may also contain organic solids and other matter. Along with rock mechanics, soil mechanics provides the theoretical basis for analysis in geotechnical engineering, a subdiscipline of civil engineering, and engineering geology, a subdiscipline of geology. Soil mechanics is used to analyse the deformations of and flow of fluids within natural and man-made structures that are supported on or made of soil, or structures that are buried in soils. Example applications are building and bridge foundations, retaining walls, dams, and buried pipeline systems. Principles of soil mechanics are also used in related disciplines such as geophysical engineering, coastal engineering, agricultural engineering, hydrology and soil physics.

As the name Soil Mechanics implies the subject is concerned with the deformation and strength of bodies of soil. It deals with the mechanical properties of the soil materials and with the application of the knowledge of these properties to engineering problems. In particular it is concerned with the interaction of structures with their foundation material. This includes both conventional structures and also structures such as earth dams, embankments and roads which are their-selves made of soil.

In engineering field all the soil mechanics studies are used to determine very important factors such as:

- lateral earth pressure
- bearing capacity of soil
- slope stability analysis

These studies always help a civil engineer to design and construct better structures and indirectly these studies help in risk mitigation too because if we know beforehand how the soil mass is going to behave, we can take precautionary measures at the time of construction itself.

Soil or soil deposit may be defined as all naturally occurring, loose/uncemented/weakly cemented/relatively unconsolidated mineral particles, organic or inorganic in character, lying over the bed rock which is formed by weathering (disintegration) of rocks. If the products of weathering remain at their original location, they constitute residual soil and the products are transported and deposited at different locations due to gravity, wind, water and glaciers, they are known as transported soils. During transportation, the size and shape of particles undergo vast changes and the particles may be sorted out into various soil ranges such as boulders, pebbles, gravels, sands, silts and clays. The basic thing is to identify and classify the soil on the basic of some preliminary tests and then to study its immediate and long-term behaviour under application of loads based on some classified in-situ and lab tests in order to furnish adequate soil data to the designer to decide the appropriate depth and type of foundation for the proposed structure.

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

Sustainable Water Supply System:

Sustainable water supply systems should provide adequate water quantity and appropriate water quality for a given need, without compromising the future ability to provide this capacity and quality. Water systems in the realm of sustainable development may not literally include the use of water, but include systems where the use of water has traditionally been required. Examples include waterless toilets and waterless car washes, whose use helps to alleviate water stress and secure a sustainable water supply.

Accessing the sustainability features in water supply, that is to say, the three-fold goals of economic feasibility, social responsibility and environmental integrity, is linked to the purpose of water use. Sometimes, these purposes compete when resources are limited; for example, water needed to meet the demands of an increasingly urban population and those needs of rural agriculture. Water is used for drinking as a survival necessity, in industrial operations (energy production, manufacturing of goods, etc.), domestic applications (cooking, cleaning, bathing, sanitation), and agriculture. Sustainable water supply is a component of integrated water resource management, the practice of bringing together multiple stakeholders with various viewpoints in order to determine how water should best be managed. In order to decide if a water system is sustainable, various economic, social and ecological considerations must be considered.

Waste water- Sewerage System :

As sewerage systems have been developed over the last two centuries, they have of necessity been constructed in the spaces between the buildings which they serve. The largest and most accessible area has obviously been the highway network which has developed over the same time period as the communities which they service. Consequently, the oldest and often structurally suspect roads tend to have the oldest and most structurally suspect sewers running beneath them. Strategic roads passing directly through a city are also likely to be the most convenient collection point for local sewers and hence often carry main collector or interceptor sewers beneath them. There is therefore a direct comparison between the interruption of the sewer network and the interruption of the highway network following a collapse of a major sewer.

The current practice of sewerage system in India uses manholes and sewer lines as collection and transport to the treatment plant. However, with year- on-year increase in population, the system results in higher operational and maintenance costs, despite reasonable efficiency under Indian conditions. The lower occupancy of population causes a reduction in the fully-fledged layout systems and gives rise to many hazards to the environment because of poor transport conditions resulting in poor operational schemes. The current per capita water supplies are not even sufficient to meet the minimum per capita demand of 135 L to satisfy the self-cleaning velocity in the sewer lines, and the conventional sewerage systems are not capable of meeting required efficiency. It is estimated that about 38,254 million litters per day of wastewater is generated in tier 1 and tier 2 cities, which cover about 31% of the total sewage generation considering both sewered and unsewered areas.

Case Study: Water supply in Nava Raipur City through SCADA based water management

Nava Raipur Atal Nagar is a greenfield, planned city and part of Ministry of Housing & Urban Affair's (MoHUA) Smart Cities Mission. Being a greenfield city, it is endowed with state of art technology and software applications that equip it for intelligent city management services. Some of the initiatives by the city include : Electricity, telecommunication, water management.
Use of Information and Communications Technology (ICT) solutions like SCADA to monitor water availability, quality and meet the city's demands. This case study focuses on how the city has deployed SCADA to study water utilities management, ensure uninterrupted and quality water supply, centrally maintain hydraulic parameters and early restoration of the services in case of an outage event.
Employing data centric tools, technology and planning provides insights into quantitative and qualitative development indicators, makes way for informed policy making, measurable performance indicators, facilitates meaningful collaborations and improves overall governance.

Laying Down Systems for Intelligent Water Supply Management :

Nava Raipur Atal Nagar is a greenfield city which was created after the formation of the new state of Chhattisgarh in 2000. Being a planned city, Nava Raipur has access to many opportunities for planned growth.
The city's master plan 2031 makes note of the opportunity to plan ahead for a growing population, in a way that enhances quality of life of its citizens. Future forward planning for water access & quality is a critical aspect of this vision. The city introduced SCADA based water management, to overcome challenges in the management, operation and maintenance of the erstwhile water distribution infrastructure.
Some of these challenges pertaining to water management included:

- Lack of insights into the amount of water consumed by different groups/household units/ industries in the city.
- No data available on water leakage and the amount of water lost.
- Requirement of large human resource for maintenance and operation at every header and every section.
- The water supply system was completely human resource driven which made it difficult to regularly check and maintain water quality parameters for all underground reservoirs.
- Valves had to be adjusted manually to maintain adequate pressure and water flow.
- Lack of a single platform for consolidating all data and taking informed decisions.

Keeping this in mind, the city has upgraded the existing water management system with SCADA to improve efficiency through a 24x7 pressurized water supply, real time monitoring, automatic water reading and an automatic billing software.

Implementation of SCADA system.

1. **Automation of Water Intake**: At water intake level from the river, the water pumping system has been automated which gives data on the number of charges of pumps, pressure applied, nd flow of water. This helps to understand the amount of water pumped from the river every day.

2. **Water Treatment:** At the water treatment plant (WTP), water goes through a sand filtration process. Water quality analyzers and sensors have been installed to check the quality of data such as hardness, turbidity, chlorine and pH levels. The water quality data generated is verified through SCADA and accordingly the water is chemically dosed and treated with lime and alum by the on-field staff. After water is treated, and before it is delivered to the city, water quality is checked again. Losses of water from the intake well to the WTP plants are calculated by using time of operation of each pump set.

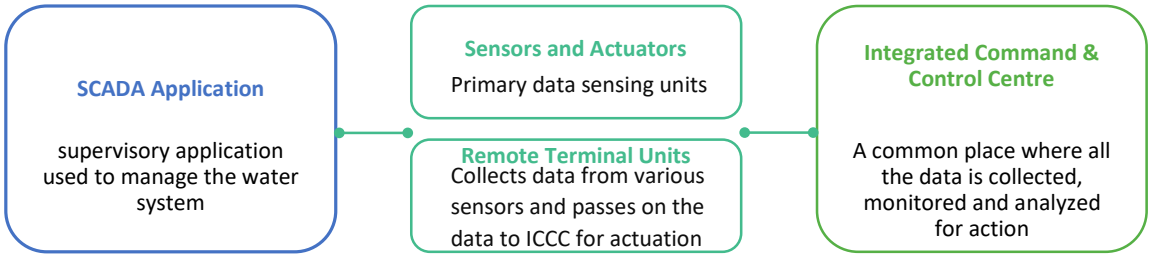
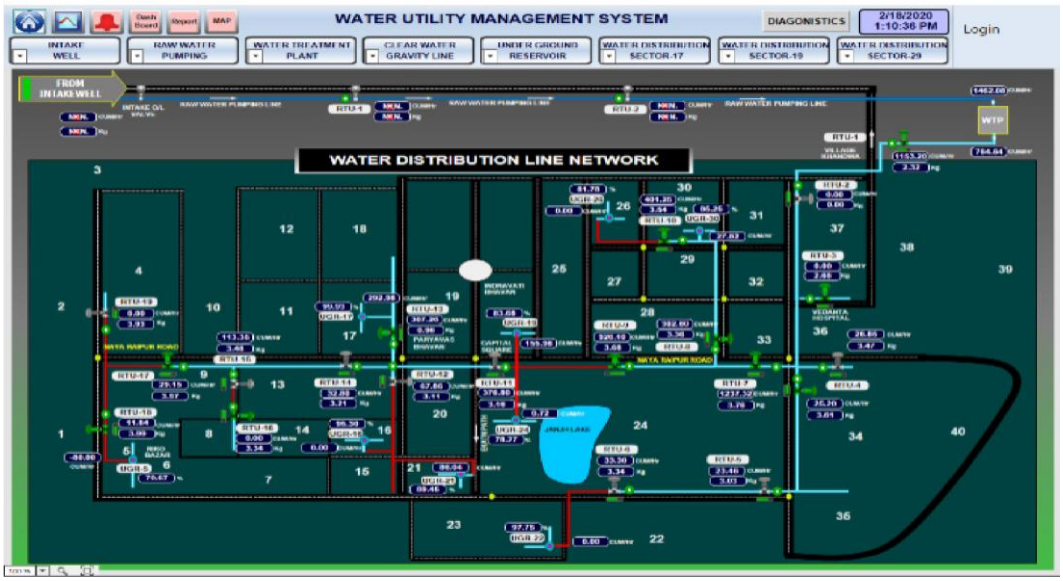


Figure : Overview of SCADA System



3. **Pressure Management:** From the intake well, a 51 km long distribution line has been installed with hydraulic parameter measures at two distinct locations to measure the pressure and flow of the water. The system can manage pressure across the entire network. Pressure at every head of the water pipeline is analyzed to know the pressure at a particular time and take appropriate steps to save water from leakage. Upon detecting the pressure of water, the system can recommend changes in the setting of the pressure regulating devices to the operator at Integrated Command and Control Center (ICCC).

4. **Water Distribution**: From the water treatment plant, water reaches 31 underground water reservoirs through gravity lines installed. From the underground water reservoirs, the water is pumped to the distribution network and to different sectors. The district has been divided into district metered area (DMA).1 The entire process has been automated. The existing gravity and distributions lines were leveraged for this. With the introduction of SCADA based water management, wall and flow meters were installed in the existing lines. The water distribution lines which have 19 important points where hydraulic parameters such as pressure flow can be measured through remote terminals units (RTUs). By managing the control walls, flow and pressure at a given location can be remotely controlled through ICCC. At underground reservoir, there are parameters for quality to check the quality of water being supplied to the citizens.

5. **Water Consumption:** Water consumption is measured for each sector. Daily MIS report is generated which leverages the flow meter and flow control wall analyzers in the distribution line to determine the consumption of a given area. The data collected provides transparency which allows for improved water allocation. If there are changing trends in the data such as increased consumption in a given month then that is followed up with further research to determine the cause. Many a times this measure the water consumption using radio frequency (RF) technology. This also allows for the water bills to be generated for the exact amount of consumption.

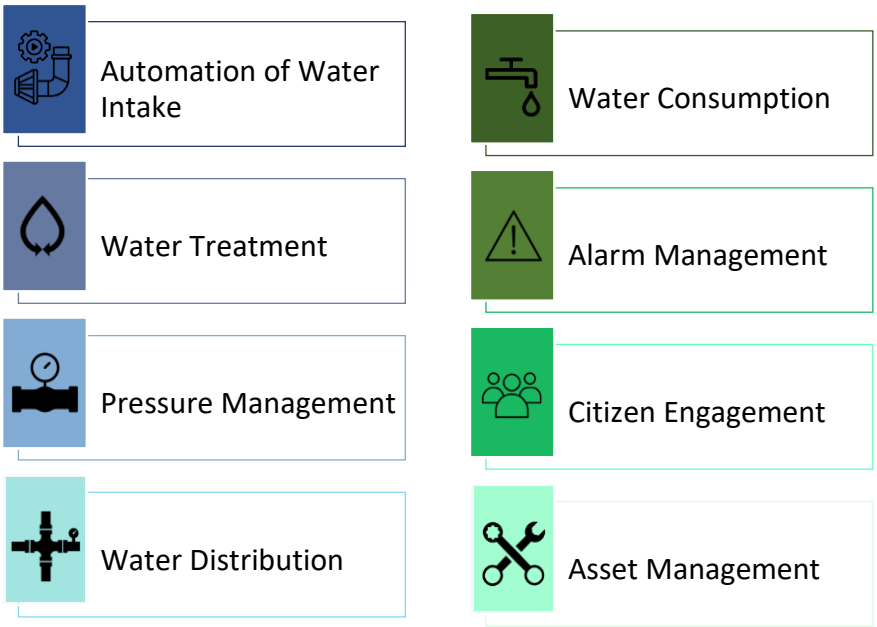


Figure : SCADA Based Water Management

6. **Alarm Management**: The system is able to identify any anomalies in the operation of the water network such as: faulting in the meter, unusual water consumption, zone boundary breach, unreported operations, bursts and leakages. The anomalies are reported to the operator at ICCC in real time. Once the alarm is generated at the ICCC, the data is analyzed by the operator and once the anomaly is finalized then the corrective course of action is taken.

7. **Citizen Engagement:** Via e-governance which deploys a mobile application, citizens can directly engage with the authority to check water bills generated, pay bills, request for a new water connection. A helpline number has been established where consumers can call to register complaints related to water distribution, water leakage or water connectivity. Once the problem is identified and authenticated, technicians are assigned for resolution.

Impact Of this System:

- ❖ Automation of Water Management System

• SCADA water management system has resulted in complete automation of data collected, replacing manual data collection.

- ❖ Better Water Allocation

• Through the analyzers in the distribution line, it is possible to measure the water consumption. Increased transparency of water usage has resulted in better water allocation. It has also resulted in water conservation by about 20%.

- ❖ Improved Management

• Regular monitoring has resulted in preventive maintenance improving overall water quality.

• Improved accountability within the city administration through real-time assessment, planning & management of water.

• Enhanced decision making through business analytics, reporting and tools.

• Underground reservoirs operate in an auto mode. If the water level in the reservoirs becomes too high, the water inlet valve automatically closes resulting in prevention of water wastage.

- ❖ Inter Department Coordination

• Coordination amongst urban local body departments such as electricity, PHED etc. has improved as a result of this implementation.

Conclusion

By collecting real time data on water pressure, it's been possible for the city to manage the water flow- this coupled with analysis of water consumption in different sectors has resulted in water conservation. For any citizen related service, it is imperative for the city to engage its citizens and encourage their participation. The e-governance component allows the citizens to access information related to water services, raise complaints, and pay bills from a mobile application.

Chapter : 15

15. Smart and/or Sustainable features of Chapter 8 & 13 designs, Impact on society. With doing small changes, Period, Amount Expenditure and Benefit –

Sr. no	Design name	Amount	Benefits	Benefits after immediate basis -one year
8.4	Public Toilet	460,080	It will enable maintenance of proper hygiene in village. Public toilets should be available everywhere.	Provides place for needy people as well as roaming people so that public littering can be further decreased.
8.5	Public Garden	430,416	The Garden helps people to spend their leisure time in the green environment.	It provides a recreational environment for the local people; it can also be improved as a tourist attraction place if developed further with attractive rides.
8.6	Panchayat Building	1,008,320	It is a building that provides villagers to every service from government.	New building will enable for easy access and a better infrastructure which will increase the productivity.
8.7	Bus Stand	504,155	Provision for a better connectivity.	It will ease the mode of transportation for villagers and by that will increase connectivity with other village.
8.8	Bal Mandir	48,657	It provides a playful and learning environment for children of 3-5 years of age.	Younger children will have a better environment for their development and learning.

8.9	U/G Water Tank	8,596,176	It will be helpful for storage of water which will increase the water supply capacity of the village and to keep up with increasing demand of the future and will allow supply of water 24x7.	In future increasing demand can be fulfilled with this extra storage.
13.1.1	School	6,520,195	The new building will help students to learn in a better environment with new infrastructure which will increase attention of students and spacious classroom will also comfort them while learning.	It will be very helpful for the villager as they will have a proper building for schooling of their children.
13.1.2	Community Hall	4,311,164	Community hall will help organizing local community gatherings, meetings, marriages etc.	It will enable a well condition infrastructure for organizing indoor events.
13.1.3	Water Tank	1,808,729	It provides more water supplies for village and farm. Water storage for emergency situation.	Water supply can be increased in the village.
13.1.4	Crematorium	7,50,000	As per Indian customs after death dead body of deceased is cremated ats per the rituals.	Will reduce the distance people have to cut when a relative dies, currently there is only one crematorium available at distance of three villages.
13.1.5	Medical Store	253000	It will allow villagers access to basic medical facility.	Villagers will not have to travel for basic medical supply, it will allow them to get all in the village.

Chapter : 16

16. Survey by Interviewing with Talati and/or Sarpanch

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Survey with Interviewing

SURVEY BY INTERVIEWING WITH TALATI AND/OR SARPANCH

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

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

CHAPTER- 16

Sr.	Questions	Yes/No	Remarks
1	What are the sources of income in village?	Yes	Tax collection
2	What are the chances of employment in village?	No	
3	What are the special technical facilities in village?	No	
4	Is any debt on village dwellers?	Yes	Bank loans.
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?	Yes	
10	Are village people aware about child vaccination and done to each and every child as per norms?	Yes	
11	Women help line number information is provided to village people?	No	
12	Is water scarcity in village? How many days per year?	No	
13	Is village under any debt?	No	
14	Is any serious issue due to debt from bank or any person happened in village?	No	
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	No	
16	Is any death of patient occurred due to unavailability of medical facility in village?	No	
17	How many disabled (physically challenged) is observed in village? Provide list with Male/female/girl/boy with age and type of disability and reason of disability.	Yes.	
18	Is village improvement is observed in comparative scenario from past to present?	Yes	
19	Is any unavoidable difficulty village people are facing? Any natural calamity is there?	No	
20	Life Living standard of girls and women is appreciated and uplifted in village?	Yes.	

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

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

સરપંચ
ગ્રામ પંચાયત સુંદણ
તા. જિ. આણંદ.

ગ્રામ પંચાયત, સુંદણ
તા. જિ. આણંદ

Chapter: 17

17. Irrigation / Agriculture Activities and Agro Industry, Alternate Technics and Solution

Agricultural activity" means any activity used in the production of food and fiber, including farming, feedlots, grazing livestock, poultry raising, dairy farming, and aquaculture activities.

Small-scale farmers produce food for 70% of the global population. Yet, they are some of the world's poorest and most food insecure people. Alternatives to conventional farming should be embraced to improve subsistence farmers' yields and to ensure adequate food production for the growing global population. The stark reality, according to the International Food Policy Research Institute, is that the world needs to produce more food with fewer resources.

Agroecology, a farming approach that mimics natural ecosystems, is an alternative method that can produce more food using fewer resources. Small-scale farmers in Africa have used agroecology to more than double crop yields within 3 to 10 years of implementation, according to the UN special rapporteur on the right to food. Farmers also use agroecology to improve soil fertility, adapt to climate change, and reduce farming input costs.

Benefits of sustainable agriculture for the environment and our wellbeing

Unlike intensive agriculture, sustainable farming has a great potential for benefiting the environment and preserving natural resources. It does so by following natural cycles, recycling nutrients and water, while omitting excessive use of agricultural chemicals.

Sustainable agriculture strives to help the environment by:

- Reducing agricultural runoff;
- Preventing pollution of lakes and rivers;
- Saving water;
- Naturally maintaining soil fertility by recycling nutrients on farm;
- Enhancing carbon sequestration by soils and perennial vegetation;
- Promoting energy efficiency of farming operations;
- Decreasing emissions of air pollutants and greenhouse gases;
- Creating habitats for pollinators and beneficial insects;
- Ensuring welfare of farm animals but also providing space for the respectful coexistence with native wildlife

1. Permaculture :

Permaculture is a design system that applies principles that are found in nature to the development of human settlements, allowing humanity to live in harmony with the natural world. Permaculture principles and ethics can be applied to almost any area of living, including local economies, energy systems, water supplies, housing systems, and food production.

Foundational to producing food through permaculture is intention, design, and "working smarter not harder" to banish waste and to create efficient systems.

2. Urban agriculture :

The need to localize our food system requires that we grow food much closer to home, including in cities. Since most of the global population is predicted to live in cities in the future, there is a tremendous opportunity for urban agriculture to make a significant positive impact moving forward when it comes to how we produce our food around the world.

Today, many innovative and sustainable growing techniques are already being used in cities, including backyard farms and gardens, community gardens, rooftop farms, growing crops in urban greenhouses, indoor hydroponic farms, and perhaps even growing food inside urban farm towers someday.

3. Polycultures and crop rotation:

Both of these techniques are trying to mimic natural principles to achieve the best yields.

Polyculture farming involves growing multiple crop species in one area. These species are often complementary to each other and aim at producing greater diversity of products from one plot while fully utilizing available resources. High biodiversity makes the system more resilient to weather fluctuations, promotes balanced diet and applies natural mechanisms to preserve soil fertility.
Crop rotation is based on growing a series of different types of crops in the same area in sequential seasons. The planned rotation may vary from a growing season to a few years or even longer periods. It is one of the most effective agricultural control strategies that is used in preventing the loss of soil fertility.

Chapter : 18

18. Social Activities – Any Activates Planned by Students

Amid this pandemic situation villages people have been affected very much, as they lack of knowledge of certain virus's danger, unawareness about vaccination program, importance of the vaccination in fighting COVID. Therefore, we planned to visit the village and aware people about the free vaccination by gov. and also, we told them about the importance of the vaccine.

Discussed that how the vaccine fights with the virus and there is no harm related with the vaccine.

Social Activities by Student :

Interacted with Talati and Sarpanch of the village :

We interacted with the Talati regarding current vaccination drive in the village. We suggested few of our ideas to achieve 100 % vaccination target as soon as possible.

As per the records they covered nearly 40% of population of the village in 45+ age category and afterward they were not given the centre for vaccination so the speed of vaccination was slowed down due to that.

Further we discussed their planning and strategies in case of the third wave approaching.

Asked 18+ villagers to get vaccinated : The response from the young villagers was very positive we also showed them how to access the Arogya Setu App. Also, helped them to register on the CO-WIN Portal to get vaccinated. Helped them and others to book vaccination appointments.

Chapter : 19

19. SAGY Questionnaire Survey form with the Sarpanch Signature

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: Sundan

b. Block: _____

c. District: Anand

d. State: Gujarat

e. Lok Sabha Constituency: Anand

f. Number of Wards in the Gram Panchayat: 10

g. Number of Villages in the Gram Panchayat: 1

h. Names of Villages:

Sundan

Demographic Information

Number of Households _____ Total Population _____ Male _____ Female _____

SC HHs 50 ST HHs – OBC HHs 250 Other HHs 1600

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	
b.	Nearest Primary Health Centre (PHC)		Adas.
c.	Nearest Community Health Centre (CHC)		Vadod.
d.	Nearest Post Office	Yes	
e.	Nearest Bank Branch (Any)	Yes.	
f.	Nearest Bank with CBS Facility	Yes	
g.	Nearest ATM	Yes	
h.	Nearest Primary School	Yes	
i.	Nearest Middle School	Yes	
j.	Nearest Secondary School	Yes	
k.	Nearest Higher Secondary School / +2 College	Yes	
l.	Nearest Graduate College		Vasad.
m	Nearest ITI / Polytechnic Centre		Vasad.
n	Kisan Seva Kendra		Anand

1

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

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

IV. Sports Facilities in the Gram Panchayat

a. Number of Play Grounds in the GP: Total 3 Public 1 Private 2

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

V. Education, ICDS

a. Number of Angan Wadi Centres: 6

b. Number of villages without Angan Wadi Centres —

Names of such villages: —

c. Schools (Number)

Primary Private: ___ Primary Govt.: 1

Middle Private: ___ Middle Govt.: —

Secondary Private: ___ Secondary Govt.: 1

Higher Secondary Private: 1 Higher Secondary Govt: ___

VI. Public Distribution System

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

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	Sundan	
b.	Hand Pump Coverage in Villages:	Covered ✓ / Not Covered		
c.	Coverage under Covered Drains:	Covered ✓ / Not Covered	Whole household covered.	
d.	Coverage under Open Drains:	Covered ✓ / Not Covered	Minor open drains in Sundan.	
e.	Villages with Household Electricity Connection (Numbers)	Connected ✓ / Not Connected		

VIII. Land and Irrigation

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

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

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

IX. Parameters relating to Households & Institutions

		Number
a)	Number of eligible Households for pension (old age, widow, disability)	387
b)	Number of Households receiving pension (old age, widow, disability)	400
c)	Number of eligible Households who are not receiving pension	150
d)	Number of Households eligible for Ration Card	400
e)	Number of eligible HHs having ration cards	1700
f)	Number of households covered under RSBY (Rashtriya Swasthya Bima Yojana)	
g)	Number of HHs covered under AABY (Aam Aadmi Bima Yojana)	
h)	Number of active Job Card holders under MGNREGA	650
i)	Number of Job Card holders who completed 100 days of work during 2013-14	500
j)	Number of shops selling alcohol	0
k)	Number of BPL families	400
l)	Number of landless households	30
m)	Number of IAY beneficiaries	150
n)	Number of FRA[2] beneficiaries	
o)	Number of Community Sanitary Complexes	3
p)	Number of Households headed by single women	387
q)	Number of Households headed by physically handicapped persons	15
r)	Total number of Persons with Disability in the village	50
s)	Number of SHGs	
t)	Number of active SHGs	
u)	Number of SHG Federations	
v)	Number of Youth Clubs	—
w)	Number of Bharat Nirman Volunteers	—

Name and Signature of Surveyor and Respondent'

Surveyor	સરપંચ ગ્રામ પંચાયત સુંદણ PRI Respondent (Preferably Gram Panchayat Chairperson)	તલાટી કમ મંત્રી ગ્રામ પંચાયત, સુંદણ 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

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Sundan Gram Panchayat: Sundan Ward No ____

Block: ____ District: Anand

State: Gujrat L S Constituency: Anand

1. Family Identity and Size

Name of Head of Household	Arvindbhai Babubhai Solanki							Male/ Female	M
SECC Survey ID		Family Size	10	Over 18	7	6 to 18	2	Under 6	1

2. Category & Entitlement Details (Tick as appropriate)

Social Category[1]	4	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		Yes 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]
Arvindbhai Solanki	56	M	N	Y	ITI	Y	Y	N
Sarojben Solanki	55	F	N	Y	SSC	Y	Y	N
Harikhaben Solanki	53	F	N	Y	01	Y	Y	
Jayeshkumar Solanki	29	M	N	Y	08	Y	Y	N
Kalpeshkumar Bharatbhai	24	M	N	Y	05	Y	Y	N

3. Children from 6 years and up to 18 years

Name	Age	Sex M/F/O	Disability Y/N	Marital Code*	Level of Education: Code#	Going to School /College (Y/N)	Current Class	Computer Literate Y/N
Riyaben Solanki	15	F	N	No	SSC	Y	10th	Yes
Darshan Solanki	13	M	N	NO	8th	Y	8th	Yes
Yash Solanki	04							

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 Immunised Y/N	Mother's Age at the time of Child's Birth
Yash Solanki	4	M	No	Y	Y		Y	22

[1] Scheduled Caste 1, Scheduled Tribe 2, Other Backward Castes 3, Other 4

[2] Enter the BPL Survey round being used in the Gram Panchayat for identification of BPL Families (e.g. 1997/2002/2011)

[3] Marital Status Not Married – 1, Married – 2, Widowed – 3, Divorced/Separated – 4

[4] Level of Education Not Literate – 01, Literate – 02, Completed Class 5 - 03, Class 8th – 04, Class 10th 05, Class 12th 06, ITI Diploma 07, Graduate 08, Post Graduate/Professional – 09 (write the highest level applicable)

[5] No Pension – 0, Old Age Pension – 1, Widow Pension – 2, Disability Pension – 3, Other Pension – 4 (mention)

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

5. Hand washing

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

6. Use of Mosquito Net

Children: Yes / No Adults: Yes / No

7. Do members take Regular Physical Exercise

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

8. Consumption of Tobacco

	Smoking	Chewing
Adults	No	No
Children	No	No

9. House & Homestead Data

Own House: Yes / No	No. of Rooms: 8
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	1 km
Open Well(Public / Private)	Yes / No	1 km.
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	26 gunthe	2. Cultivable Area	26 Gunthe
3. Irrigated Area	26.	4. Uncultivable Area	26 Gunthe

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	2 ✓
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
Banana		
Tobbeco.		700 kg
Bajara		600 kg

17. Livestock Numbers

Cows: 6	Bullocks: —	Calves:
Female Buffalo: 1	Male Buffalo: —	Buffalo Calves: 3
Goats/ Sheep: —	Poultry/ Ducks: —	Pigs: —
Any other: Type —		No. —
Shelter for Livestock: Pucca / Kutcha / None		
Average Daily Production of Milk(Litres): 12 litere.		

18. What games do Children Play

video games, Kabadi, hide-seek

19. Do children play musical instrument (mention)

No.

Schedule Filled By: Vraj mistry.
Principal Respondent: Sarpanch
Date of Survey:

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: Sundan.

b. Ward Number: _____

c. Gram Panchayat: Sundan

d. Block: _____

e. District: Anand

f. State: Gujarat

g. Lok Sabha Constituency: Anand

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

i. Names of Habitations / Hamlets:

Demographic Information

Number of Households_____ Total Population_____ Male _____ Female _____

SC HHs_____ ST HHs_____ OBC HHs_____ Other HHs_____

II. Access to Infrastructure/Amenities etc.

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

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

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	Yes (School)	
m	Common Service Centre	Yes.	
n	Veterinary Care Centre	-	Anand

ii. Road Connectivity

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

If 3 mention the name of the habitations not covered: partial, New society.

iv. Coverage of Habitations under Waste Management System

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

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

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

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

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

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

v. Coverage of Habitations under Electrification

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

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

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

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

vi. Sports Facilities in the Village

a.Number of Play Grounds in the Village (minimum size 200 square meters): 3.

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

vii. Education, ICDS

a. Number of Anganwadi Centres: 6.

c. Schools (Number)

Primary Private: 0 Primary Govt.: 1

Middle Private: - Middle Govt.: -

Secondary Private: 0 Secondary Govt.: 1

Higher Secondary Private: 1 Higher Secondary Govt: _____

2

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	850
2	Number of active Job Card holders who have completed 100 days of work	500
3	Number of shops selling alcohol	–
4	Number of BPL families	400
5	Number of landless households	35
6	Number of IAY beneficiaries	150
7	Number of FRA beneficiaries	–
8	Number of common sanitation complexes	3
9	Number of SHGs	–
10	Number of active SHGs	–
11	Existence of SHG Federation in the Village (Yes / No)	–
12	Number of Youth Clubs	–
13	Number of Bharat Nirman Volunteers	–

Name and Signature of Surveyor and Respondent'

Surveyor	PRI Respondent (Preferably a ward member from a ward that is fully or partially covered under the Village)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey
	સરપંચ ગ્રામ પંચાયત સુંદણ તા. જિ. આણંદ	તલાટી કમ મંત્રી Official Respondent, સુંદણ તા. જિ. આણંદ	

Chapter : 20

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

Gmail

Vraj Mistry <vrajdmistry@gmail.com>

For Review: Detail Project Report Vishwakarma Yojna - Phase VIII
1 message

Vraj Mistry <vrajdmistry@gmail.com> 9 August 2021 at 09:28
To: collector-and@gujarat.gov.in, po-and@gujarat.gov.in, ddo-and@gujarat.gov.in
Cc: aakashsolanki1998@mail.com

Respected Sir/Madam,

We are students of Neotech Institute of Technology, Vadodara affiliated to theGujarat Technological University (GTU). The university is allotted an important and prestigious project of Vishwakarma Yojna by the Government of Gujarat through the Commissionerate of Technical Education. In which students survey various villages and propose designs for various amenities to cater public demand and development of the village making them ideal for improving the village life.

As a part of Vishwakarma Yojana we completed all the survey of village and Gap-Analysis and provided designs for development of Sundan village (Ta. Di.- Andnd). We request you to give your valuable feedback and reviews on the submitted report.

We are very thankful for your time and consideration.

Regards

Vraj Mistry & Aakshkumar Solanki
Degree Civil Engineering Department
Neotech Institute of Technology, Vadodara
Gujarat Technological Department
vrajdmistry@gmail.com
Mo. :+91 9016774188

Vishwakarma Yojana-VIII Sundan Village.pdf
20079K

Chapter : 21

21. Comprehensive report for the entire village

Vishwakarma Yojana is one of the many initiatives made by Gujarat Government towards Rurbanisation, which is allotted to GTU as a pilot project. All the students and faculty members involved in this project visit several villages and make a survey report. Then on the basis of survey they Re-imagine and Re-design the whole infrastructure of the village and students use their skills to prepare a detailed project report as a part of their Final Year Project showcasing their ideas for the development of village and a positive support towards Rurbanisation.

For the development of the rural area of State considering intellectual development and sociocultural development, Government of Gujarat has started a rural development program "Vishwakarma Yojana" and it being run along with Gujarat Technological University. Where the opportunity of planning is been given to team of Nodal officers and Students of civil and electrical engineering branch of diploma engineering and degree engineering from various institutes under university. Students are designing and proposing the basic infrastructure and urban facilities to the allotted village which would help to minimize many current issues like modernization, etc.

A concept that will be utilized successfully when preparing for the future of a community entails preceding the planning process with an activity aimed to generate vision of the future for the Vishwakarma Yojana.

The purpose of Vishwakarma Yojana phase - VIII is to improve the livelihood of the rural areas to its certain degree close to the standard of an ideal village located in the nearby location of that particular District. It is an excellent government initiative to enhance the rural areas at economical cost with good workability and effectiveness throughout its usage. The project aims to strengthen the physical, social as well as socio-cultural features of the village by installing and improvising various infrastructures concerning minimal or least changes to its rural soul. A rural development **ideology must, if it is to be effective, devote deeper and more concentrated attention to the function of local rural location** as we strive to find answers to the persistent issues of population imbalance and the disintegration of the rural localities.

This endeavor is proven as highly knowledge acquiring and exciting for us. After conducting this project, we have learnt that the development of villages is equally vital as urban region for country ‘s overall progress. The village requires certain infrastructure facilities to make village a better place we have tried our best by applying our technical knowledge in this project by presenting designs for some basic amenities, which necessary. By this project, we have learned so many things; it was the excellent experience of village culture, and environment. Rural development is a process of qualitative and quantitative adjustments to improve conditions in rural regions.

The goal of Vishwakarma Yojana is to give a complete roadmap of Rurban Development of village with detailed project report ready to implement. To fulfill these objectives detailed data are collected such education, health facility, transportation services, roads, water facility ,electricity, sanitation and drainage, population, the coming plans for developing villages, and standard of living of that village like how many people are below poverty line, banking, telecom, public garden, children park, village pond, public library, solar energy, and then to provide a better way ongoing schemes central or state government or other funding agencies.

Rural development aims to enhance rural communities' livelihoods in an equal and sustainable way, both socially and ecologically, via improved access to resources (natural, physical, human, technological and social capital), and services, and control over productive assets that enable them to enhance their livelihoods on a sustainable and balanced basis.

The goal of this study is to identify the role rural regions and country towns play in the persistence of, or many times unfortunately, the breakdown of local character and place. The insights provided in this study apply to most sorts of rural regions in many different places. The primary thesis of this work is that wherever sustainable rural communities exist, the government, professional planners, and people inside must focus their energy on the immediate place-they must make the word "local" mean something if we are ever to be successful in the preservation and maintenance of "local community." disintegration of the countryside.

We are presenting our best ideas for the betterment of the village like better infrastructures, cleaner environment, improved road networks, even though there are paved roads in the village but still it need certain upgradation for the improvement, drainage, and many problems that are realized during the survey of the village and complaints presented by the locals. Hope we might provide them with pleasant and healthy environment with wealth with sustainable resources. The students of the Vishwakarma Yojana are attempting to offer their best and provide our villages of the Gujarat and countrywide to present an improved India overall.

The objective behind this project is to define the role villages and small towns play in the persistence of, or often time regretfully, the dissolution of local character and place. The facts included in this study apply to most types of rural settings in many different locales. The basic premise of this work is that wherever viable rural settlements exist, the government, professional planners, and citizens therein must focus their resources on the immediate place-they must make the word "local" mean something if we are ever to be successful in the retention and sustenance of rural community."

We prepared a clear layout with the sole aim of urbanization of rural areas of India, the goal is to develop the entire nation by working at the grass root level. This will not only help citizen to give better facilities but also will also improve the quality of life in the rural areas.
With all the data available and by surveying and analysing both the data we concluded our proposal of design and estimation of various infrastructure. We also have given the differences that can be made with the proposed designs and how it can affect the harmony of the people living and using the facilities.

The following Designs have been proposed by us for the development of the Sundan village:

1. Public Toilet
2. Bal Mandir
3. Panchayat Building
4. Bust Stand
5. U/G Water Tank
6. Public Garden
7. School
8. Community Hall
9. Water Tank
10. Crematorium
11. Medical Store (Generic Medical Store)