DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII
AN APPROACH TOWARDS RURBANISATION
VARSADA Village,
VADODARA District.

PREPARED BY

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COLLEGE NAME
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PROF.PIYUSH D PRAJAPATI

YEAR: 2020-2021

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmedabad– 382424 Gujarat.

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Chandkheda, Ahmedabad– 382424 Gujarat.

CERTIFICATE

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

Detail Project Report for

VILLAGE VARSADA,

DISTRICT VADODARA

Under

VISHWAKARMA YOJNA: VIII

In partial fulfillment of the project offered by

GUJARATTECHNOLOGICALUNIVERSITY, CHANDKHEDA

During the academic year 2020- 2021.

This project work has been carried out by the maunder our super visional guidance.

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ABSTRACT

"My vision is to urbanize rural areas with a rural soul and providing all urban amenities that big cities have."

THE SOUL OF INDIA LIVES IN ITS VILLAGES.
-Mahatma Gandhi

A smart village known about its citizen, available resources, applicable service, and schemes. It known what it needs and when its needs. The concepts of smart village is making village self-sufficient in respect of their needs. This paper presents the development of village as they enjoy a high standard living. This paper presents the development of the village providing by basic facilities in a hasty manner from past literature.

We select the village Varsada as a Vishwakarma Yojana which is located in Vadodara district Gujarat state. The Varsada village is 30km from Vadodara. Total population of Varsada as per censes 2019 is 3810 and total houses are 732. The area of Varsada village in hectare is (approx.) 3149.57. Most of villagers are occupied in agriculture activity for their livelihood.

As per Vishwakarma Yojana phase the proposal is to develop the Varsada village in all aspects. The infrastructure required for developing the village to reduce migration of villagers and increases in living standard. Maintenance of roads, hospitals, rain water harvesting, pond beautification, transportation facility, awareness of technology.

By observing the present condition the future scope for village would be of public garden, solar system, drainage facility, by providing the education facility we increase the literacy rate of village, by these facilities the village environment will be better and can be as smart village.

Key Words: Rain water harvesting, Pond beautification, Medical facility, Modern emanates, Development, Environment, Infrastructure, Bio gas plants, Good Transportation e.g. Bituminous roads.

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ABBREVIATIONS

SHORT NAME	FULL NAME
PHC	PRIMARY HEALTH CENTRE
LWM	LIQUID WASTE MANAGEMENT
GP	GRAM PANCHAYAT
DO	DESOLVED OXYGEN
HDP	HIGH DENSITY PIPE
NIRD	NATIONAL INSTITUTE OF RURAL DEVLOPMENT
CBRI	CENTRAL BUILDING OF RESEARCH INSTITUTE
CSS	CENTRAL SPONSORED SCHEME
TVYFSE	TRAINING VILLAGE & YOUTH FOR SELF EMPLOYMENT
ABR	ANAEROBIC BAFFLAD REACTOR
TDO	TALUKA DEVELOPMENT OFFICER
O&M	OPERATION AND MAINTANENCE
IRDP	INTEGRATED RURAL DEVELOPMENT PROGRAM
DDO	DISTRICT DEVELOPMENT OFFICER
NSSO	NATIONAL SAMPLE SURVEY ORGANISATION
PO	POST OFFICE
CDW	CROSS DRAINAGE WORKS
SLM	SOLID WASTE MANAGEMENT
SLWM	SOLID LIQUID WATE MANAGEMENT
SBA	SWACHH BHARAT ABHIYAN

CHAPTER: 1

1 Ideal village visit from Vadodara district of Gujarat state

1.1 Background

Virod is a village located in Vadodara district in the state of Gujarat, India. The village is located at about 5 km from the Vadodara. The village follows the Panchayati raj system. The village has undergone a transformation under the panchayat. There has been use of new and advanced technology in education. This village has Wi-Fi connection for all people. Efforts have been made for the empowerment of women and increasing security in the village. Some of the facilities provided by the panchayat include local mineral water supply, sewer & drainage project, a healthcare center, banking facilities and toll-free complaint reception service.

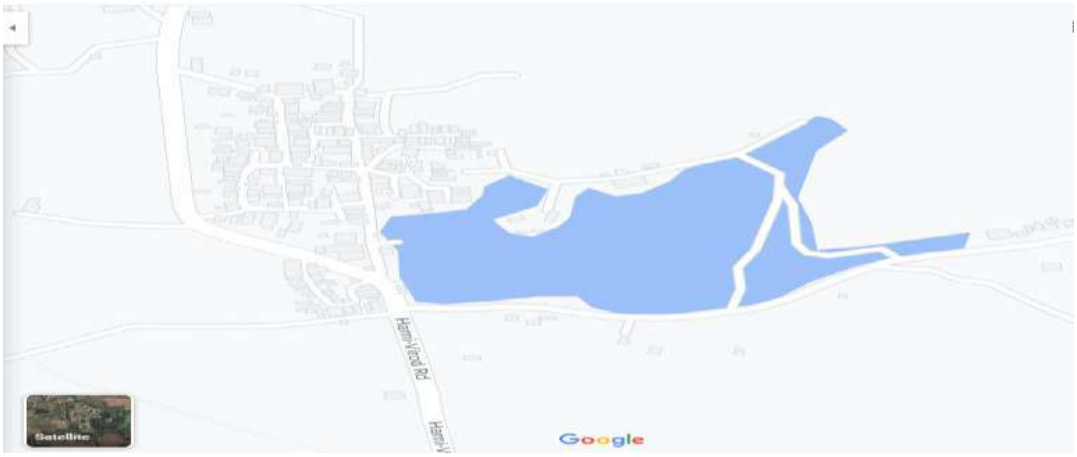

Fig 1.1: satellite map of Virod

Fig. 1.2: Map of Virod

Study Area Location

Detail	MALE	FEMALE	TOTAL
Population	1289	1172	2461
Child (0-6)	155	142	297
Schedule Caste	92	66	158
Schedule Tribe	533	473	1006
Literacy	95.5%	87.2%	91.2%

Table 1.1Village Overview

Block/Tehsil	VIROD
District	VADODARA
State	GUJARAT
Area	1341hec
Population	2461
House hold	506

Table 1.2: Study of Location

1.2 Concept: Ideal Village

1.2.1 Objectives

An ideal Indian village will be so constructed as to lend itself to perfect sanitation. It will have cottages with sufficient light and ventilation built of a material obtainable within a radius of five miles of it. The village lanes and streets will be free of all avoidable dust.

Create a healthy and environmentally sustainable community.

Improve pedestrian and traffic safety within the village.

Increase economic development.

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

Virod is a village located in Vadodara district in the state of Gujarat, India

Introduction: - 26% of the ground covers built.

The study intends to integrate GIS with village development. The main aim of the study is based on the concepts of smart villages and mainly focuses on various innovative measures that can be taken so as to head the village development in a self-sustaining direction using GIS. Taking a case of Pun sari, the study intends to represent how a smart village in India can be used as an example to further improve the existing village situation using various kinds of technological approaches such that the villages can lead towards a futuristic smart rural development.

1.2.3 The Idea of model/smart village

There is sufficient evidence to suggest that the village was one of the important settlements in ancient India. The rig Veda talks about the gram to which various families owed their allegiance.

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

Conclusion: - An ideal village makes all possible provision for the all-round development of her people. It is our main duty that we should lift every village of India to much higher level. The idea of an ideal village will certainly help us in discharging our duty.

Challenges: - Today after many efforts by government, rural India lacks any basic amenities like water, sanitation, social infrastructure etc.

Due to this lack of basic amenities, people from rural areas feel the need of migrating to urban areas imposing a great pressure on urban area.

Due to lack of opportunities in agriculture sector there is a tendency of people to change their occupation and it is leading to a loss in agriculture production.

Lack of transparency of governance.

There is lack of awareness amongst the rural population regarding government programmers which are indeed for their betterment and due to this fact they are unable to get the benefits which the government intends to provide for rural development.

There is a strong need of social infrastructure in rural areas for the development of people.

Proposals: -Virod is a model village which has all the urban infrastructure facilities present in its rural context. In this process it hasn't lost its rural characteristics like farming (agriculture) and high end community participation. it explains to us about the blend between technology and rural development and bring it at par with urban areas of the country in order to have a balance growth in the entire city. For intervening in the physical and social aspects for development, various initiatives have been proposed using gigs as an analysis tool. Thus the study is an approach to introduce options in the form of smart initiatives which are a way forward to future of rural development after studying Virod village.

Other important features of the village include.

- Use of solar power for agricultural purposes
- Accidental Insurance cover to one member of every household
- Air-conditioned primary schools with no dropout

- Bus facility for all households
- Focus on behavioral change through campaigns and awareness drives. For this purpose, 120 loudspeakers have been installed in different parts of the village.

1.2.4 Ancient history civil concept about Indian village/ other countries perspective about and its view development

Mohenjo-Daro has a planned layout with rectilinear buildings arranged on a grid plan. Most were built of fired and mortared brick; some in corporate sun-dried mud-brick and wooden superstructures. The covered area of Mohenjo-Daro is estimated at 300 hectares. The Oxford Handbook of Cities in World History offers a "weak" estimate of a peak population of around 40,000The sheer size of the city, and its provision of public buildings and facilities, suggests a high level of social organization. The city is divided into two parts, the so-called Citadel and the Lower City. The Citadel – a mud-brick mound around 12 metres (39 ft) high – is known to have supported public baths, a large residential structure designed to house about 5,000 citizens, and two large assembly halls. The city had a central marketplace, with a large central well. Individual households or groups of households obtained their water from smaller wells. Waste water was channelled to covered drains that lined the major streets. Some houses, presumably those of more prestigious inhabitants, include rooms that appear to have been set aside for bathing, and one building had an underground furnace (known as a hypocaust), possibly for heated bathing. Most houses had inner courtyards, with doors that opened onto side-lanes.
Some buildings had two stories.

1.3 Detail Study of ideal/Smart village with photographs

Physical & demographical growth

• As being ideal village, this village have physical needs as a social community need share also satisfied, there is Door to door water supply was provided which were used for daily uses. They also provide a drinking water once in a day by regular time and handpump system. Their street roads were made of R.C.C. material, paver blockand bituminous pavement road and it was reached at their home. They were using dumping area to collect all waste or garbage. They have no plant of solid waste treatment plant so; they throw the solid waste at a dumping zone which was nearby their village. They have also provided open and underground drainage system which connected by drainage stream. They have no plant of sewage treatment plant.

Smart village (Dhaniyavi) & Ideal village (Virod)

Smart village photo survey

Fig 1.3 ATM

Fig 1.4 1, 00,000lit Water tank

Fig 1.5 road widening

Fig 1.6 construction of road

Fig 1.7 reconstruction of temple

Fig 1.8 Lake

Ideal village Photo survey

Fig 1.9 Agricultural pond

Fig 1.10 road maintenance

Fig 1.11 Housing condition

Fig 1.12 Aanganwadi

Fig 1.13 old community hall

Fig 1.14 School

Fig 1.15 Primary school

Fig 1.16 Old bus stop condition

68.9% of our population lives in rural areas (Census 2011). Though number is expected to fall in the coming years, it is still estimated that more than half of our population would be rural even in 2050.

- Despite there being several past initiatives by governments at all levels – Central, State and Local – in the past, the level of improvement has not kept pace with the rising aspirations among Indians.
- On most development parameters, there is still a significant gap between rural and urban India. One reason for the failure of rural development schemes has been the lack of a holistic focus on the village as a unit. Separate flagship schemes targeting different sectors such as health (NRHM), education (SSA) and livelihood (NREGA, NRLM) have been launched in the past, but met with limited success. The "Model Village" concept could address these challenges comprehensively.

1.4 SWOT analysis for ideal village

Strengths

- Centre of Vadodara Golden Bridge high way is the main advantage.
- Bigger than any other nearer town or village.
- Cloth market of Virod village is main hub for the nearer village.

Weaknesses

Improve the smart features of the village. Drainage facilities and water logging are should be avoided.

Opportunities

Opportunities: market (especially for cloth market)

Urbanization

Useful opportunities can come from such things as:

- Changes in technology and markets on both a broad and narrow scale.
- Changes in government policy related to your field.
- Changes in social patterns, population profiles, lifestyle changes, and so on.
- Local events.

Threats

- Obstacles: government policies are not working properly.
- Competitors are very less for ideal village like Virod.
- Changing technology threatening ideal village position because of technology evolving.

1. Analysis is a strategic planning method used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business venture.
2. It involves specifying the objective of the business venture or project and identifying the internal and external factors that are favorable and unfavorable to achieving that objective.
3. SWOT analysis provides a framework for visioning by helping the planners to identify and priorities the organization's GOALS and to further identifies the strategies of achieving that.
4. A tool that identifies the Strengths, Weaknesses, Opportunities and Threats of an organization.
5. Specifically, SWOT is a basic, straightforward model that assesses what an organization can and cannot do as well as its potential opportunities and threats.
6. The method of SWOT analysis is to take the information from an environmental analysis and separate it into internal (strengths and weaknesses) and external issues (opportunities and threats).
Once this is completed, SWOT analysis determines what may assist the firm in accomplishing its objectives, and what obstacles must be overcome or minimized to achieve desired results.

1.5 Future prospects

- For planning them village as green villages.
- Audio visual interfaces for all applications
- Equipment that can withstand harsh environments.
- More Increasing Renewable Energy in villages
- Provide More Smart System with their own soul of village facilities like religion social physical and sustainable facilities.

1.6 Benefits of the visits

- Provided Proper response from the gram Panchayat and did the very healthy convection about the Ideal village feature.
- More renewable energy source and providing village own sustainable infrastructure.
- Can able to know different types of the facilities infrastructure likes Physical social; social cultural sustainable and repair and maintain ace related and also know about the basic facilities about the village which have to provide for every poor villages.

- With solid and liquid waste management system with proper treatment method provide proper solution such as recycle of recycling processes of waste management. More renewable energy source and providing village own sustainable infrastructure.

1.7 Civil Aspects required in ideal village/ smart village

1) The village development is having facilities like Physical infrastructure, Educational infrastructure, health centre, etc.
2) The roads are required to maintain and repairs.
3) Water supply facilities are good.
4) Physical development of peoples of village.
5) Awareness against irrigation development, yojana's, etc.

Physical growth of village

Sr.no	census	population	Male	female	House holders
1	2001	389	167	222	64
2	2011	2461	1289	1172	506

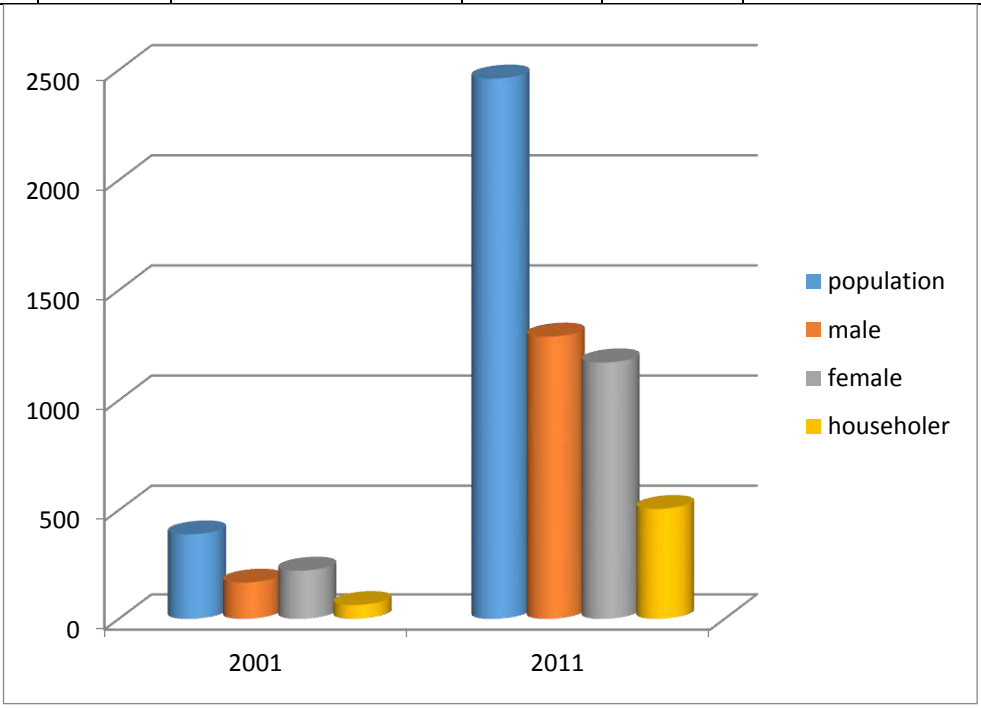

Table 1.3 physical diagram growth of village

CHAPTER 2

Literature Review

2.1 Introduction to Rural and Urban

Urban

- The urban area is surrounding a developed area or developed city in the reference of good facility to human being.
- Urban areas are created and further developed by the process of urbanization. Measuring the extent of an urban area helps in analyzing population density and urban sprawl, and in determining urban and rural populations.
- The urban areas are good developed and having good facility of houses, commercial buildings, roads, bridges, and railways. “Urban area” can refer to towns, cities, and suburbs.
- The nation’s economy saw a rise due to industrial revolution and the invention of new technologies increased the standard of living of people living in urban areas.
- Invention of new techniques and development of facility increases standard of living.

Fig 2.1(A): Urban

Rural

- Rural area is a geographical place which is located outside of towns and cities.
- Rural areas are also known as ‘countryside’ or a ‘village’ in India. It has a very low density of population. In rural areas, agriculture is the chief source of livelihood along with fishing, cottage industries, pottery etc.

- Typical rural areas have a low population density and small settlements. Agricultural areas are commonly rural, though so are others such as forests.
- Different countries have varying definitions of "rural" for statistical and administrative purposes.
- The National Sample Survey Organization (NSSO) defines 'rural' as follows:
- An area with a population density of up to 400 per square kilometer,
- Villages with clear surveyed boundaries but no municipal board,
- A minimum of 75% of male working population involved in agriculture and allied activities.

Fig 2.1(B): Rural

2.2. Importance of the rural development

Rural development is important not only for the majority of the population residing in a rural area but the growth of rural activities is necessary to stimulate the speed of overall economic expansion of the nation.

Rural development is pretended to be noticeable importance in the country today than in the olden days in the process of the evolution of the nation. It is a strategy trying to obtain improved rural creation and productivity, higher socio-economic equality, and ambition, stability in social and economic development.

The primitive task is to decrease the famine roughly about 70 percent of the rural population, implement sufficient and healthy food. Later, serve fair equipment of clothing and footwear, a clean environment and house, medical attention, recreational provision, education, transport, and communication.

2.3 Ancient Villages / Different Definition of: Rural area / Village

- Rural area can be defined as area which has a 70% of total male population works along with agricultural department.
- Rural areas also known as village in India. Rural areas have a low density of population. The main occupation of villagers is covered by agricultural zone. The quest to discover the real rural India still continues in great earnest. Almost every economic agency today has a definition of rural India.

2.4 scenario urban village growth of India

Percentage Share of Total Population by Residence

INDIA PROFILE

`	Population 2011			Percentage Decadal Growth (Persons) 2001 2011		
	Total	Rural	urban	total	rural	**urban**
India	1,210,193,422	833,087,6623	377,105,760	17.64	12.18	**31.80**
Gujarat	**60,383,628**	**34,670,817**	**25,712,811 1**	**19.17**	**9.23**	**35.83**

Table 2.1 Population in India & Gujrat

2.5 Scenario: Rural / Urban India & Gujarat as per Census 2011 population

The Indian population census 2011 covered a number of parameters during the survey. These parameters include population, growth rate in population, rate of literacy, density of population, sex ratio and child sex ratio.

Population size	60439692
Population size (Males)	31491260
Population size (Females)	28948432
Population size (Rural)	34694609
Population size (urban)	25745083
Population size (Rural Males)	17799159
Population size (Urban Males)	16895450
Population size (Urban Females)	13692101
Population density (Total, Persons per sq. km)	308

Table 2.1 Census of India 2011

2.6 Rural Development Issues Condemns Measurement

- At the outset, I would like to thank the Indian Society of Agricultural Economics for giving me an opportunity to address this esteemed gathering of academics and professionals. I am humbled at the thought that my predecessors have, without exception been economists and thinkers of great eminence. And therefore I, a career banker, whose only qualification is a passion for the subject, have no option but to approach my address in a spirit of awe and humility. Describing India, the All-India Rural Credit Survey (AIRCS) had said, "India is essentially Rural India and Rural India is virtually the cultivator, the village handicraftsman and the agricultural laborer." Rural India, where 70 per cent of all Indians live, still depends heavily on agriculture. However, it is increasingly becoming diversified market with a strong demand for credit for agriculture and nonagricultural purposes, savings, insurance and money transfers.
- There is no gainsaying the fact that the formal institutional structure needs revamping to improve the efficiency of the credit delivery system in rural areas. In the case of co-operatives, the Vaidyanathan Committee has concluded that having regard to its outreach and potential, recapitalization could be undertaken so that the credit channels for agricultural credit which are presently choked could be declogged. The Committee has, however, made it clear that recapitalization should only be considered if it is preceded by legal and institutional reforms by State Governments aimed at making co-operatives democratic and vibrant institutions run according to sound business practices, governance standards and regulated at the upper tiers by the RBI.
- The recommendations of the Vaidyanathan Committee have been accepted by the Government of India and are in the process of receiving the approval of states. The Long Term Structure is under similar examination by Vaidyanathan Committee II. In so far as commercial banks are concerned, competition and search for higher returns is driving these banks to look for profitable avenues and activities for lending such as financing of contract farming, extending credit to the value chain, financing traders and other intermediaries, etc.

2.7 Various infrastructure of guideline with the norms for village for village for different infrastructure facilities

- The Rural Development measures Future policy will be built around the three thematic axes. For each axis a range of measures will be available. In the new Regulation, conditions under which the measures can be implemented have been streamlined and simplified.
- Member States establish, at national or regional level, their rural development programmes choosing those measures that suit the needs of their rural areas best and taking into account the priorities and strategy chosen in the National Strategy Plans on rural development.

- Shri. Narendra Modi has announced a project called Rurbanisation and selected 50 towns for it.
- With the availability of urban infrastructure the rural settlement will grow a bit more and it can then be turned into a municipal corporation. This will automatically qualify the rural area as an urban without the need to build new cities or expanding a few metropolises.
- India like any other emerging economy or a developed one will one day become a fully urbanized society.
- However, it can use "Rurban" concept to present to the world a template of benign urbanization where the citizens are offered a chance to set the pace of change and arrive at different stages of urbanization when they deem fit. It is said that you can't resist an idea whose time has come but you can surely ease the pain that is attendant to the introduction of an idea.

2.9 Project / Schemes by Gov. / Privet sector

Project / Schemes by government sector:-

1. Integrated Rural Development Programme (IRDP)
2. Training Rural Youths for Self-Employment (TRYSEM)
3. Food for Work Programmed (FWP)

National Rural Employment programmer (NREP)

On the pattern of MNREGS, the central government is trying hard to bring a bill in the monsoon session (2013) to provide guarantee for food to the poor people, although it has already issued an ordinance in this regard.

4. Rural Landless Employment Guarantee Programme (RLEGP)

5. Jawahar Rozgar Yojana (JRY)

It was launched on 3rd December, 2005. The main objective of this scheme was fast track development of cities across the country. It was focused special Lyon developing efficient urban infrastructure service delivery mechanism, community participation and accountability of urban local bodies and other agencies toward citizen.

6. Antyodaya Yojana

Sansad Adarsh Gram Yojana Gram Panchayat

Sanad Adarsh Gram Yojana is a rural development programmed broadly focusing upon the development in the villages which includes social development, cultural development and spread motivation among the people on social mobilization of the village community. The programmed was launched by the Prime Minister of India Narendra Modi on the birth anniversary of Jaya prakash Narayan, on 11October2014.

The plan

Sanad Adarsh Gram Yojana was initiated to bring the member of parliament of all the political parties under the same umbrella while taking the responsibility of developing physical and institutional infrastructure in villages and turn them into model villages. Under this scheme, each Member of Parliament needs to choose one village each from the constituency that they represent, except their own village or their in-law's village and fix parameters and make it a model village by 2019.

Thereafter, they can take on two or three more villages and do the same by the time the next general elections come along in 2019, and thereafter, set themselves tenyear- long village or rural improvement projects. Villages will be offered smart schools, universal access to basic health facilities and Pucca housing to homeless houses.

7. Sradhan Mantri Adarsh Gram Sadak Yojana (PMAGSY)

It focuses on integrated development of 100 villages with a 50 per population of SCs.

8. National Rural Livelihood Mission

CHAPTER: - 3

3 Smart Cities / Village Concept as per your Idea and its Visit Civil Concept

3.1 Concepts, Definitions and Practices

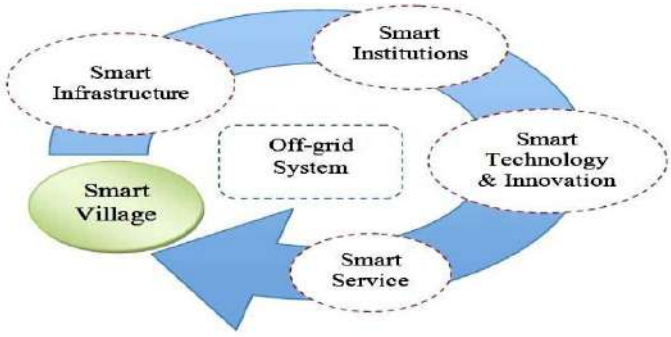

Fig 3.1: Smart Village Concept

A smart city is an urban area that uses different types of electronic data collection sensors to supply information which is used to manage assets and resources efficiently. This includes data collected from citizens, devices, and assets that is processed and analyzed to monitor and manage traffic and transportation systems, power plants, water supply networks, waste management, law enforcement, information systems, schools, libraries, hospitals, and other community services.

The smart city concept integrates information and communication technology (ICT), and various physical devices connected to the network (the Internet of things or Iot) to optimize the efficiency of city operations and services and connect to citizens. Smart city technology allows city officials to interact directly with both community and city infrastructure and to monitor what is happening in the city and how the city is evolving.

Definition

Smart city may be a city which has been provided with all types of facilities such as Educational facilities, Health facilities, Infrastructure, communication, internet services, Transportation facilities, sanitation facilities with improved method of disposal (waste management), etc.

We define a Smart City as a city which uses information and communication technologies so that it's critical infrastructure as well as. Its components public services provided are more interactive, efficient and so that citizens can be made more aware of them. Smart village is genernourally basic concept for the treating their people providing the basic facilities of which providing the people who lives in city.

3.2 Vision Goals standards and performance measurement indicators

Smart City Development Vision-

Goals-Activities :-In the approach of the Smart Cities Mission, the objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions. The focus is on sustainable and inclusive development and the idea is to look at compact areas, create a replicable model which will act like a light house to other aspiring cities. The core infrastructure elements in a smart city would include:

- Adequate water supply,
- Assured electricity supply,
- Sanitation, including solid waste management,
- Efficient urban mobility and public transport,
- Affordable housing, especially for the poor,
- Robust IT connectivity and digitalization,
- Good governance, especially e-Governance and citizen participation,
- Sustainable environment

Smart Cities Standards:-

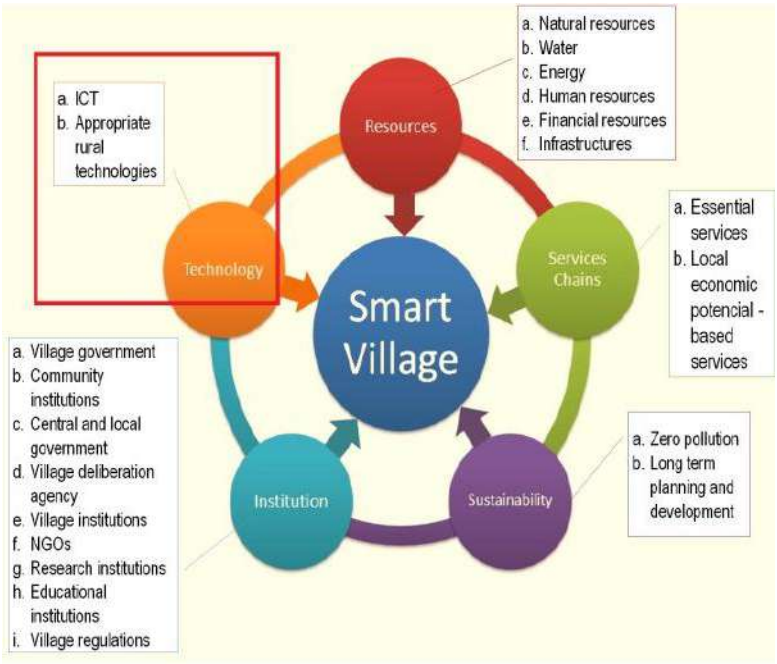

Fig 3.2 Smart City Elements

Effective governance and efficient delivery of services.

International and Local targets, benchmarking and planning.

Informed decision making and policy formulation.

Transparency and open data for investment attractiveness.

A reliable foundation for use of big data and the information explosion to assist cities in Building core knowledge for city decision-making, and enable comparative insight.

- Evaluate the impact of infrastructure projects on the overall performance of a city.

ECONOMY:-Gross Domestic Product (GDP) for the City (Core Indicator)
General:-Gross Domestic Product (GDP) is an indicator of overall production activity and level of economic growth of a city, or a country, state or district.
Core Indicator:-Requirements GDP is the sum of gross value added of all resident producer units plus that part of taxes, less subsidies, on products, which is not included in the valuation of output.

Data source Central Statistical Organization
(CSO) in the Ministry of Statistics and Programme Implementation (MoSPI), compiles the National and State level GDP, while the District level data is compiled by State Directorates of Economics and Statistics. Population data is available through the decennial Census.

General:-The number of businesses per 100 000 can inform a city's level of economic activity and economic performance. It provides one indication of the overall business climate in a jurisdiction, and attitudes towards entrepreneurship. Strong entrepreneurial activity is closely associated with a dynamic and growing economy. The number of businesses is also used to inform competitiveness of a city and reflects both the number of new businesses created and the survival of existing businesses.
Supporting Indicator Requirements The number of businesses per 100 000 population shall be calculated as the total number of businesses in a city (numerator) divided by one 100000^{th} of the city's total population (denominator). The result shall be expressed as the number of businesses per 100 000 population. Businesses shall refer to companies or enterprises. The enterprise is the smallest combination of legal unit, that is, an organizational unit producing goods or services. Business can either be categorized as simple (one operating entity) or complex (multiple operating entities)
EDUCATION:-Percentage of Female School-aged Population Enrolled in Schools (Core Indicator) General Education is one of the most important aspects of human development. This indicator addresses the issue of educational opportunity, by indicating how wide spread formal education is in the city among school-aged population. Reporting on the differential enrolment by gender is consistent with the Sustainable Development Goals (Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all). The Right to Free & Compulsory Education Act 2009 provides a justiciable legal framework that entitles all children between the ages of 6-14 years free and compulsory admission, attendance and completion of

elementary education. It provides for children's right to an education that is based on principles of quality, equity and nondiscrimination

3.3 Technological Options

There are key technologies that make a smart city work. Here are the top six:

- Smart energy
- Smart transportation
- Smart data
- Smart infrastructure
- Mobility

3.4 Road map and safe guards

A Brief Introduction to District Heating and District Cooling Sustainable heating and cooling for cities

Over the past decades, Stockholm and Sweden have reduced CO2 emissions and increased resource efficiency, while maintaining high and sustainable economic growth. A major part of the recipe for success has been the development of the Infrastructure for district heating and cooling. The district heating and cooling networks cover the Greater Stockholm Area. A set of large production plants, where waste and biomass are utilized to simultaneously produce heat and electricity, form the basis of district heating supply. In addition, sea water, chillers and a range of large heat pumps supply the district cooling network. All in all, these systems make for a virtually unmatched large scale solution to the challenge of sustainability, cost efficiency and security of supply.

3.5 Issues and challenges

1) **Retrofitting existing legacy city infrastructure to make it smart:** There are a number of latent issues to consider when reviewing a smart city strategy. The most important is to determine the existing city's weak areas that need most 100-per-cent distribution of water supply and sanitation. The integration of formerly isolated legacy systems to achieve citywide efficiencies can be a significant challenge.

2) **Financing smart cities:** The High-Power Expert Committee (HPEC) on Investment Estimates in Urban Infrastructure has assessed a per-capital investment cost (PCIC) of Rs 43,386 for a 20year period. Using an average figure of 1 million people in each of the 100 smart cities, the total estimate of investment requirements for the smart

city comes to Rs 7 lakh crore over 20 years (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 need to see how these projects will be financed as the

majority of project need would move through complete private investment or through PPPs (publicprivate partnership).

3) **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.

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

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

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

3.6 Smart Infrastructure

Fig3.3 smart city define

'Smart infrastructure' and 'smart' systems are currently hot topics under discussion by government, the media and others. 'Smart' meters are about to be rolled out across the UK and 'smart' cars are already on sale. In the future 'smart'.

Definition of smart infrastructure: - A smart system uses a feedback loop of data, which provides evidence for informed decision-making. The system can monitor measure, analyses, communicate and act, based on information captured from sensors. Different levels of smart systems exist.

Energy:-Monitoring, remote control and automation are increasingly being implemented across the industry, which, coupled with the energy market and regulatory framework, make the networks relatively advanced in world terms. Smartness is key to facilitating a high level of cooperation and interaction between consumers, generators and network.

Water: - Infrastructure has historically been 'dumb', relying on the operation of the laws of gravity, assisted by human or animal labour. Motor driven pumps have adapted such systems to unhelpful topography.

Transport:-Twenty years ago, aviation, shipping and land transport each had its own navigation technologies. Ships did not use landing systems deployed by aviation; aircraft did not use zebra crossings and traffic lights. But increasingly, the same satellite navigation is serving them all.

Land transport: - Land transport includes motorways, roads, trains and trams. The road system is an open system; the rail system is substantially a closed system. Those are fundamental differences in the transport equation and therefore have different requirements and challenges when it comes to smarter infrastructure.

3.7 Cyber Security

Cyber-attacks have transformed the risk landscape

It's important to remember that cyber security is a citywide issue and not just a technology risk. Since many opportunities for it will arise through technological integration and collaboration, which will

Continue to increase in complexity — this complexity breeds risk. A standard approach to risk management assumes that the trust boundary is already defined. What is missing in the risk-focused and techno-centric approach is everything related to the management of trust, i.e., the new functions and processes, and the new policies and structures required to expand the risk boundary.

Risk Landscape: - To effectively manage the risks in a Smart City, it is important to clearly define the limits of that ecosystem. We also needs to decide what we are willing to manage within those limits: is it just the risks faced by groups of people that are in the city itself, or should we also try to influence the mitigation of risks faced by people/data outside the limits defined.

Smart government: - Government is the best place to start with managing issues surrounding smart infrastructure and creating the right environment for investment in smarter technologies. Government needs to be sensitive in its procurement decisions and recognize that smarter infrastructure, although possibly more expensive in the short term, will deliver more for the nation in the future. Government could, for example, mandate that major infrastructure projects should include a data capture element. Without this kind of procurement approval criterion, there is a chance that providers will continue to overlook the importance of data capture. In return for investment, the UK will get better infrastructure and skills that can be exported to boost economic growth.

3.8 Retrofitting redevelopment Greenfield development district cooling Cradle to cradle design

This means designing products that can be fully reclaimed or recycles into new products at the end of the products lifecycle almost everything invar equipment can be recycling or reclaimed at end of its life including the refrigerant used.

District Cooling and Heating / Green Building

A Brief Introduction to District Heating and District Cooling Sustainable heating and cooling for cities

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in all, these systems make for a virtually unmatched large scale solution to the challenge of sustainability, cost efficiency and security of supply.

District heating and cooling - How does it work?

District energy, both heating and cooling, tie together the energy generating sources in a city with buildings and facilities having a need of heating and/or cooling. Instead of each building having its own heating or cooling system, the energy is delivered to several buildings in a larger area from a central plant. The water based distribution system guarantees that heat and cooling arrive safely to the end users. With district heating, energy is saved overall, as it takes advantage of resources that would otherwise not be have been used, making it an efficient and sustainable solution to satisfy the local heat and cooling demand in a city.

3.9 strategic options for fast development

The strategic components of area-based development in the Smart Cities Mission are city improvement, city renewal and city extension plus a Pan-city initiative in which Smart Solutions are applied covering larger parts of the city. Below are given the of the three models of Area-based smart city development they are as follows:

1) Retrofitting will introduce planning in an existing built-up area to achieve smart city objectives, along with other objectives, to make the existing area more efficient and
   live able in Retro fitting, an area consisting of more than 500 acres will be identified by the city in consultation with citizens.

2) 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 in consultation with citizens.

3) Greenfield developments could be located either within the limits of the ULB or within the limits of the local Urban Development Authority.

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

More than 90% of the population has access to drinking and 60 %of the population has access basic sanitation. And the challenges faced by India urban water and sanitation areas Follow:

- Creating consensus on sector governance and institutional arrangements.
- Developing and testing service provider models that have characteristics of well-Run public companies for different market segments Is the main challenges faced by India urban and sanitation.
- Improving financial sustainability of providers.
- The first is that the data bank for people seeking to information.
- The documentation can be used for communities or individuals for payment for the transfer of technology.
- Data bank will serve an important function of establishing community knowledge firmly in the public domain.

3.11 Initiatives in village development by local self-government

The overriding intention of these two Articles is that powers and authority may be so devolved as to enable Panchayat and Municipalities to function as institutions of self-government. For this, they may also be empowered to prepare local plans for economic development and social justice and to implement schemes/perform functions including those listed in the relevant Schedules. Local Governance Though 15 years have gone by, the progress of devolution of powers and responsibilities to local governments at various levels is poor and uneven. A survey of the present status of devolution reveals the following position:

3.12 Smart Initiatives by District Municipal Corporation

Fig 3.4 Smart objectives as government

Once called the dirtiest city in India, Vadodara achieved a remarkable transformation in less than two years after the plague of December 1994 owing to improved municipal management and strong leadership. Following the outbreak of the plague in the outskirts of the city, the Vadodara Municipal Corporation (VMC) launched a

seven-point action plan that involved the government, NGOs, civil society, and private sector.

1. Operation Clean-Up: In May 1995, with a new elected government in place and a new CEO in charge, a major drive was launched for slum improvement and solid waste management (VWM). Simultaneously, the city administration was totally revamped, staff and equipment redistributed, and contracting for solid waste collection and street cleaning initiated.

2. SMC's initiatives: Vadodara Municipal Corporation (VMC) worked to implement an integrated system through rehabilitation of existing sanitary staff, asset utilization and superior technologies. VMC implemented part of the system through JNNURM funds and part with public-private partnership (PPP). The VWM project aimed to reinforce primary and secondary collection, transportation, and development of transfer stations (TS) and sanitary landfill site. VMC pioneered 'time place movement' wherein collection vehicles move in accordance with the time schedule with areas of coverage and number of units allotted. The 6 TS handle the entire 1,400 TPD of waste generated in Vadodara.

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

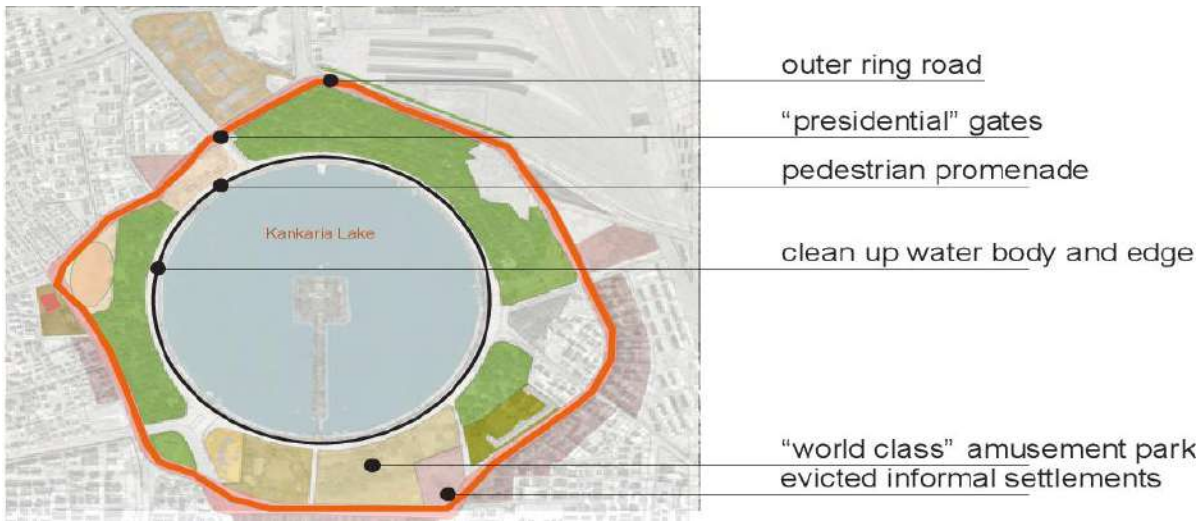


Fig 3.6 Lake development by Government

Located in the heart of Ahmedabad, the Kankaria Lake has always been one of the often-visited spots in Ahmedabad and has been a part of Ahmedabad's history since the 15th century. The lake and the surrounding areas drew families from all over the city as well as its surrounding areas and the sight of families relaxing and enjoying quality time together has never been rare in this landmark. Yet, over the years the development in around the Lake could not keep pace with the number of people visiting the area due to which cleanliness, environment or adequate facilities at the Lake suffered immensely. All this changed when Shri Narendra Modi dawned the mantle of the Chief Minister of Gujarat. He became determined to alter the face of the Lakefront and turn it into a world-class spot that not only draws people from all over the world but also offers something exciting to people across all age groups.

3.14 How to implement other Countries smart villages projects in Indian village contact (Regarding Environment, Employment)

Environment Smart villages will be stewards of the environment aided by technologies to monitor key environ mental indicators such as forest health, water quality, soil conditions and changes to the landscape. They will also reduce pressure on deforestation through the use of efficient cook stoves to decrease the need for traditional biomass energy sources such as charcoal, a key driver of unsustainable forest use.

Smart villages will host community-run recycling facilities ranging from those equipped to recycle wastewater and organic waste from agro-processing, to next-generation facilities for the recycling of e-waste include energy-storage and generation technologies such as batteries and solar panels. Depending on geographical endowments, some smart villages will be able to operate as regional ecotourism hubs, an activity that can improve the welfare and connectivity of rural and urban communities.

The aim of the 'Scalable Architecture for Smart Villages' project is Large-scale rural urban migration in countries across the world poses housing, On the other hand, given that India alone is home to reflect on their personal and community aspirations and create an environment that fosters change.

CHAPTER 4

4 About Varsada village

4.1 Introduction

Fig 4.1 Varsada satellite image

Varsada village is mainly known for two places

1. Varsada temple
2. Varsada Lake.

- Varsada village is at distance of 19kms via NH48 from a Vadodara.
- Varsada is connected to all national highways.
- Total population of village 3156 according to census 2011.
- Male 1622 Female 1534.
- Varsada surpanch name:-Ambubhai j Solanki
- Total number of primary school: - 2
- Anganvadi: - 3
- No major Health care center.

Varsada has received "SWARNIM GRAM PURASKAR"

Particulars	Total	Male	Female
Total No. Of Houses	758	-	-
Population	3,156	1,622	1,534
Child (0-6)	326	172	154
Schedule Caste	368	184	184
Schedule Tribe	791	394	397
Literacy	86.36 %	92.21 %	80.22 %
Total Workers	1,237	1,003	234
Main Worker	1,038	-	-
Marginal Worker	199	75	124

Table 4.1 2011 census details of Varsada

- The total geographical area of village is 695.02 hectares.
- Varsada has a total population of 3,156 peoples.
- There are about 758 houses in Varsada village.
- Vadodara is nearest town to Varsada which is approximately 19km away.
- Water resources 50000 liters overhead tank with small underground sump.
- Most of the people are labours, farmers, with some of shop owner.
- External water source's a Lake.

Connectivity of Varsada

Public Bus Service: - Available within village
Private Bus Service: - Available within <5 km distance
Railway Station: -Available within <5 km distance

Nearby Villages of Varsada

- Patarveni, Hansapura
- Rabhipura, Mastupur Gamdi
- Fatepura, Kandkoi
- Karali, Meghaku
- Itola
- Lakodara dethan

4.1.1 Introduction about Varsada village

Fig 4.2 Varsada entry gate

Varsada village is mainly known for two places
1. Village temple
2. Varsada Lake
Also they have a collect awarded for swarnim gramya puraskar in 2010.
There people mainly doing two works 1 is majorly 70 percent villagers do farming, 2 other doing poetry farm with their own shops.

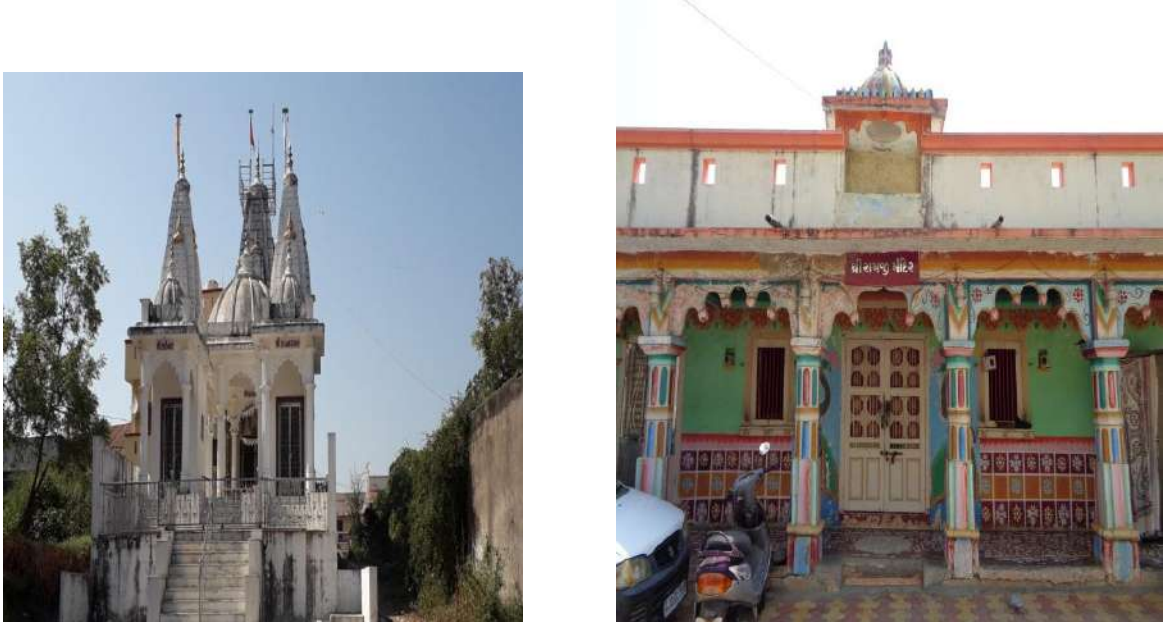


Fig 4.3 Varsada temple

Fig 4.4 Varsada Lake

4.1.2 Study justification / need of the study

The village society is characterized as a highly static society and village people excessively immobile. However, this kind of common understanding has undergone a tremendous change with the introduction of Five-Year Plans and the revolution in mass media. The earlier village life, which did not have any political and economic power, has now acquired adult franchise, democracy and accelerating transformation. During the last five decades, rural societies have witnessed massive changes. The village life today has reached a stage, where the glamour of urban life has made inroads in villages. It is in this context; we shall now evaluate and assess the significance of rural sociology.

Formation of Class and Transformation of Power: The relevance and significance of rural sociology is largely due to political transformation and the resultant class formation. The implementation of Five-Year Plans and the emergence of green revolution have given rise to new class formation. This uneven development has resulted in conflict and contradiction at village level, besides giving rise to communalism and bringing non-secular into power.

Impact of Panchayati Raj: Yet another reason for the significance of rural sociology is that of the new power given to Panchayati Raj. The structure and functioning of Panchayati Raj and the policy of reservation to the scheduled castes and scheduled tribes have led to transformation in village life. This needs the application of scientific approach to the comprehension of village community.

Changing Eco-system and Environmental Dilemma: The forest and forest land is passing through environmental erosion. The debate on development and sustainable environment has assumed new significance in the country. It is argued that plans of development should not be made at the cost of environmental degradation and disequilibrium in eco-system.

Multi-Ethnicities: India is a land of diversities and it is essential here to understand the village life thoroughly. It is here that the branch of rural sociology assumes crucial importance.

NGOs and their Role: NGOs (Non-Governmental Organizations) occupy a pivotal role in the implementation of developmental plans. With the decentralization of power, the role of NGOs in the developmental process has substantially increased. Though the NGOs are not the professional holders of the knowledge of rural sociology, they definitely apply the perspective of rural sociology for the study of village life.

4.1.3 Study Area

- Water bodies like canal and pond is available in the village.
- Nearest town with 19 km from the Varsada village.
- In the village 80% people is attached with the farming.
- 20% people attached with industrial jobs.
- Primary and secondary schools available in the village.
- Anganwadi also available in the village.
- Higher secondary schools and collage is available nearby 30 km.
- Bus facilities and rickshaw facilities available in the village.
- **50% house in the village is concrete house in the village.**

4.1.4 Objective of study

- The main objective of our of project work are
- To study the existing elements of village Varsada
- To identify the problems of the “village “Varsada”.
- To analysis existing social and physical utilities, public and semi-public buildings as well as infrastructure.
- To Design and planning for village Varsada.

4.1.5 Scope of the Study

- Implement sustainable rural development programs related to health, agriculture, land, renewal energy sources technology, water and environment based on resources and comparative advantages of the working area.
- Improve living standard of rural people by helping them develop their skill and implementing income generating activities in close coordination with national organizations.
- To provide a comparative analysis of the economic, social and environmental context for rural development.
- To provide recommendations for better targeting and better monitoring and evaluation, in policy making.

4.1.6 Methodology Frame Work for development of your village

- The study frame work of our village divided in three phases, Preliminary survey, analysis, design. In preliminary survey there are two approaches one is direct and second is indirect.
- We first done indirect study of village through using various online sources and official websites of Gandhinagar district.
- Then we visit the village on primary bases and to collect the data as per techno economic survey form prescribed by university.
- Then we come at the second phase of project, the analysis. We analyze the information collected and come to decide the road map of development of village.
- biogas plant, construction of paver block road and solid waste collection.

4.1.7 List of Objects Available related to Civil

Fig 4.5 Architecture design

Not any objects available related to civil but as a architected view,
There is a great architecture and designing house in the village.
Old design since 1945 reconstruction of the house seems look beautiful.

4.1Varsada village Study Area Profile

4.2.1 Study Area Location

- Varsada village is at distance of 19kms via NH48 from a Vadodara.
- Varsada is connected to all national highways.
- Total population of village 3156 according to census 2011.
- Male 1622 Female 1534.
- The total geographical area of village is 695.02 hectares.
- Varsada has a total population of 3,156 peoples.
- There are about 758 houses in Varsada village.
- Vadodara is nearest town to Varsada which is approximately 19km away.
- Water resources 50000 liters overhead tank with small underground sump.
- Most of the people are labours, farmers, with some of shop owner.
- External water source's a Lake.

4.2.2 Base Location Map

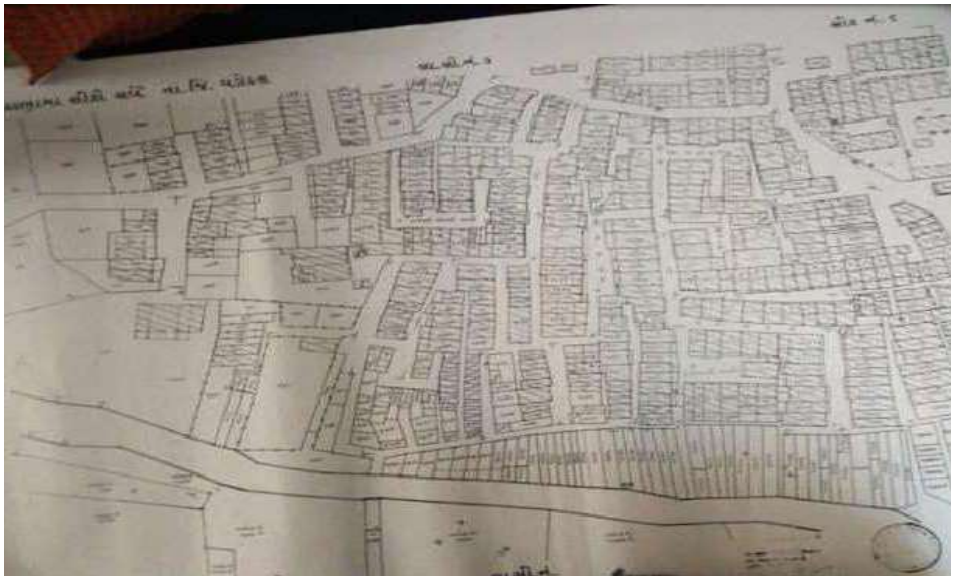


Fig 4.6 Base map

4.2.3 Physical and demographical growth

Sr.no	census	population	Male	female	House holders
1	2001	3,156	1622	1534	758

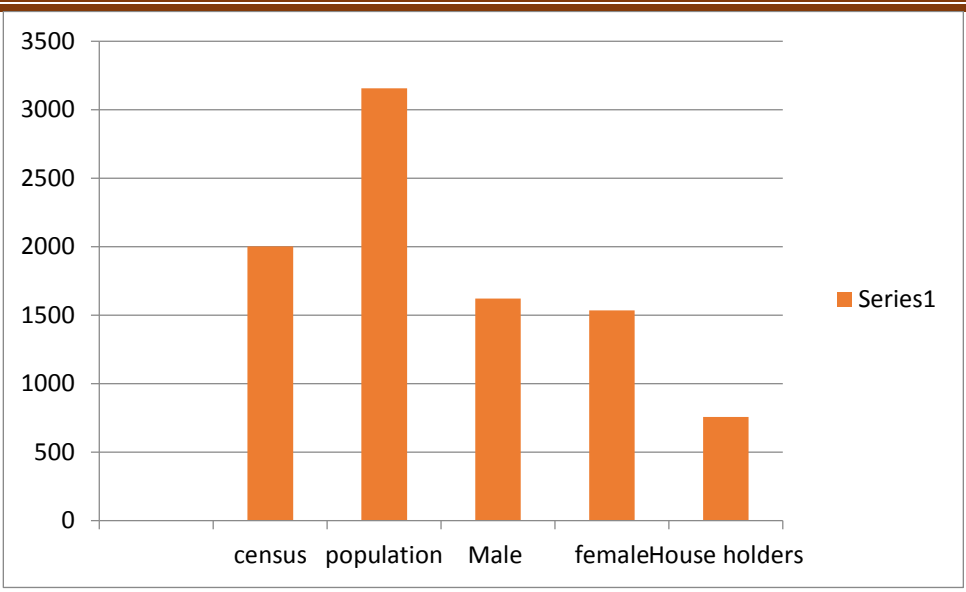


Table 4.1 physical growth of village

4.2.4 Economical profiles\bank

Name of Three Major Occupation groups in Village:

1. Agriculture work.
2. Employers.
3. Animal Husbandry

The village doesn't have any better facilities regarding infrastructure but has good electrification system which distributed 24*7 hours for domestic use and 8 hours for agricultural use. Village does not have good drainage system because there is blocked drainage and most people use soaks pit system other then it.

4.2.5 Actual problems faced by villagers and smart solution

Varsada village, no facility of animal excreta due to this night urinal the gases and dirtiness are created in the road of village. During rainy season these are flow through the village and create various decease. For that problem we conclude a solution of bio gas plant and small-scale natural fertilizer storage.

4.2.6 Social Scenario

People are not knowing about that basic facility provide by government. Also, in the village basic crop are grown are 'cotton', 'tuvar' and Arenda. Village people are not that much connected with technology and digitalization. People basic income is connected with their agriculture product value and on dairy product. People are also connected with another village and stay connected with culture.

4.2.7 Migration reason trends

Because the Varsada village is far from city area so the people can effort the transportation, facilities like city, that's the reason of people migration.

4.2 Data Collection Varsada villages

4.3.1 Methods for data collection

- For primary data collection.
- Self-survey of village
- Physical inspection in the village.
- Interaction with the villagers.
- Interaction with school principal, teachers, and head of sahkari Mandali.
- For secondary data collection.
- Census 2011 reports and other reports published by different Ministries of the Government.
- Journals, Magazines and periodicals.
- Statement of villagers.
- Published reports of Central and State Governments and local bodies.

4.3.2 Primary survey details

Collect the information of respective DDO, TDO, Sarpanch/ Talati of your district / Village. Information of DDO, TDO & other details are available on respective District Panchayat's website. And also, the village has own booklet of whole data include in booklet. The booklet is known as village profile. And also, the other the smart village form is given to fill.

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

There are about 700 families as per the information from gram panchayat and census 2011. Village consist population of 2682 out of which 1362 are male and 1317 are female. In area wise average size of house is 150sq.mt.

Geo-Tagging of House

There are about 700 houses out of which 689 are residing.

4.3.4 No of Human being in One House

In village generally each family consist average 4 to 5 member

4.3.5 Material available locally in the village and material out sources by the village

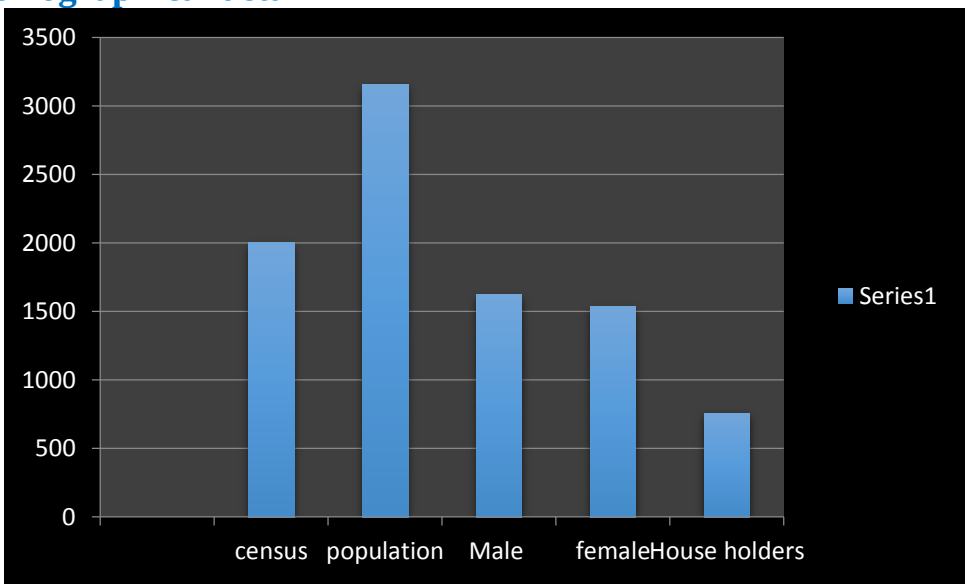
There is only brick is locally used. Because there is brick manufacturing site is available. Also avialble cement, sand, brick, clay.

4.3.6 Geographical details

Sr.no	census	population	Male	female	House holders
1	2001	3,156	1622	1534	758

In Varsada village most of people are connected with agricultural, Labour Work. Major crops grown in village are Sugarcane, Banana, etc. Other villagers are mostly self-employ.

4.3.7 Demographical detail



4.3.8 Occupational details

Major occupation groups in villages are given below.

1. Agricultural
2. Farm labour
3. Animal activities
4. Shops owner
5. Farming

4.3.9 Agriculture scenario organic farming fishery

Total land used in agricultural works	150hects.
Total population including works	500
Total organic land in village	150hects.

4.3.10 Physical infrastructure facilities manufactures hub/ Ware house

Water supply:

There is 24 hours water supply in the village. The water is distributed by the local water treatment plant which is located in ajwa.

Bank:

There is no bank in Varsada village.

Post office:

There is one post office working condition in village.

Manufacturing HUB/ Warehouses

There are not very big industries located near the village.

But the highway side small garage and ware houses are available.

4.4 Infrastructure Details (With Exiting Photograph)

4.4.1 Drinking water management facilities

Drinking Water Management Facilities

Fig 4.7 overhead tank capacity 50,000liter

Overhead tank 50,000liter capacity main source of water.

Generally a person requires 135lits per daily basis uses. In that village number of people living nearly 4000.

So as per calculation 5,40,000 liters water required for village so it's not fill full.

4.4.2 Drainage work network

There is underground type drainage in village. But the condition of the drainage is not well. The drainage pipelines are blocked and water is leaked in nala. And all solid wastage of village is dump around the nala of the drainage.

4.4.3 Transportation & Road Network

Good all weather road is available in all over village. And it make door to door connectivity .internal street is made up of paver block and external street which joint state highway is made up of R.C.C.

Fig 4.8 Road networks

4.4.4 Housing condition

All houses are pucca house and constructed by modern methodology and material like brick, RCC, blocks etc. all houses are newly constructed. Also a government housing (GHB) scheme is available nearby the area.

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

Social Infrastructure Facilities

Like Gram Panchayat etc. available in village.

Sr.no	Description	Availability or nearby area
1	Anganwadi	2Nos.
2	Sub-center	0Nos
3	Primary health center	No
4	Government hospital	12 km Vadodara

4.4.6 Existing condition of public buildings.

The post office building condition is not well.

• The Panchayat building's condition is not very bad and not good.

• The community hall's structure is not available in village. All meeting and get to gather will arrange on 2ndfloor of panchayat building.

• The Public library a Milk Co-operative Society is in good condition in village.

• The primary school and Anganvadi condition are not well; the primary school is generally empty in working days.

4.4.7 Technology mobile/Wi-Fi/internet usage details

There is not proper mobile towers and concavity available there in the village.

4.4.8 Sports activities as gram panchayat

There are no major grounds for sports activities.

4.4.9 Social cultural facilities public garden parks play grounds, ponds, and other recreation

Village Pond/lake

In village the pond is available in village. The pond is little bit dirty.

4.4.10 Other Facilities

Some facilities may require to be developed in village like, library, pick up stand, village pond etc.

Gam Panchayat have their own building in good condition.

E-Gram facility is available in village

About 430 L.P.G. connections in village

4.6 Existing institution like village details report

Some facilities may require to be developed in village like, library, pick up stand, village pond etc.

4.6.1 Sustainable Infrastructure Facilities & Repair & Maintenance

Only solar street light is available in village. No any other sustainable sources are available.

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

All existing government buildings are in good condition.

Any other details

- Gram Panchayat have their own building in good condition,
- E-Gram facility is available in village ,
- About 430 L.P.G. connections in village.

Fig 4.9 Temple of Varsada

Fig 4.10 Panchayat house

Fig 4.11 water tank

Fig 4.12 entry gate

Fig 4.13 Attractive design of house

Fig 4.14 Bus stop

Fig 4.15 Ramji Temple

Fig 4.16 School

Fig 4.17 Anganwadi or post office

Fig 4.18 Pond

Fig 4.19 Primary school

Fig 4.20 Meeting with talati of village

Fig 4.21 School condition

CHAPTER 5

5 Concept of civil

5.1.1 Advance construction techniques

Fig 5.1 Road widening

The construction industry is repeatedly criticized for being inefficient and slow to innovate. The basic methods of construction, techniques and technologies have changed little since Roman times. But the application of innovation in the construction industry is not straight forward. Every construction project is different, every site is a singular prototype, construction works are located in different places, and involve the constant movement of personnel and machinery. In addition, the weather and other factors can prevent the application of previous experience effectively. The term '**advanced construction technology**' covers a wide range of modern techniquesand practices thatencompassthelatest developments in mat erials technology, design procedures, quantitysurveying, facilitiemanagement, s ervices, structural analysis and design, and management study.

- Automated systems.
- Intelligent building management systems
- Energy efficiency measures

5.1.2 Soil Liquefaction

Soil liquefaction, also called **earthquake liquefaction**, ground failure or loss of strength that causes otherwise solid soil to behave temporarily as a viscous liquid. The phenomenon occurs in water-saturated unconsolidated soils affected by seismic *S* waves (secondary waves), which cause ground vibrations during earthquakes. Although earthquake shock is the best known cause of liquefaction, certain construction practices, including blasting and soil compaction and vibro flotation (which uses a vibrating probe to change the grain structure of the surrounding soil), produce this phenomenon intentionally.

Poorly drained fine-grained soils such as sandy, silt and gravelly soils are the most susceptible to liquefaction.

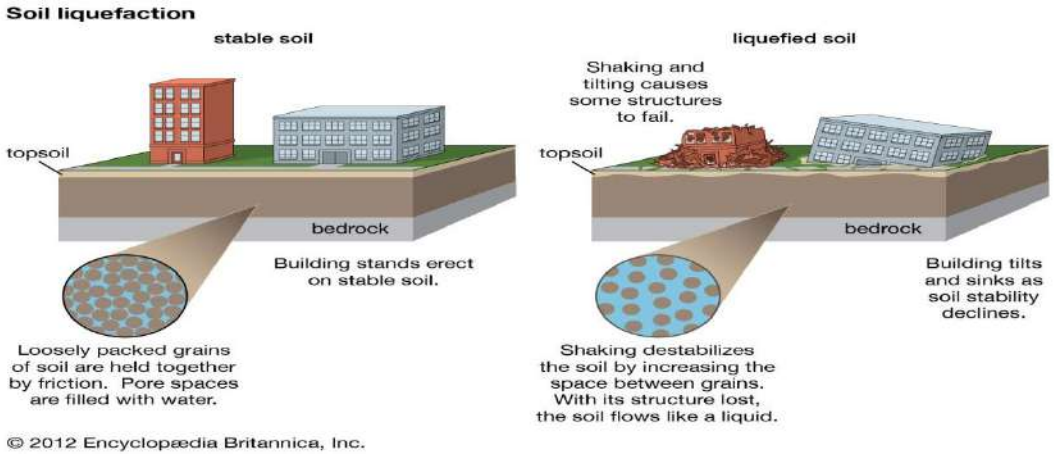


Fig 5.2 Soil liquefaction

Granular soils are made up of a mix of soil and pore spaces. When earthquake shock occurs in waterlogged soils, the water-filled pore spaces collapse, which decreases the overall volume of the soil. This process increases the water pressure between individual soil grains, and the grains can then move freely in the watery matrix. This substantially lowers the soil's resistance to shear stress and causes the mass of soil to take on the characteristics of a liquid.

Buildings constructed on loose soil pitch and tilt easily when liquefaction occurs, since the soil no longer supports the structures' foundations. In contrast, structures anchored to bedrock or stiff soils in earthquake-prone areas suffer less damage, because less vibration is transmitted through the foundation to the structure above. In addition, buildings anchored to bedrock have a reduced risk of pitching and tilting. One of the most severe episodes of liquefaction in modern times occurred in China during the Tangshan earthquake of 1976. Some scientists estimate that an area of more than 2,400 sq. km (about 925 sq. miles) was subjected to severe liquefaction, which contributed to the extensive damage that took place in the southern part of the city. The liquefaction of the soft lake sediment upon which central Mexico City was built amplified the effects of the 1985 earthquake, the epicenter of which was located hundreds of miles away. In addition, the liquefaction of the ground beneath the Mission and Market districts in San Francisco during the 1906 earthquake caused several structures to pitch and collapse. These districts were built on poorly filled reclaimed wetlands and shallow-water areas.

5.1.3 Sustainable Sanitation

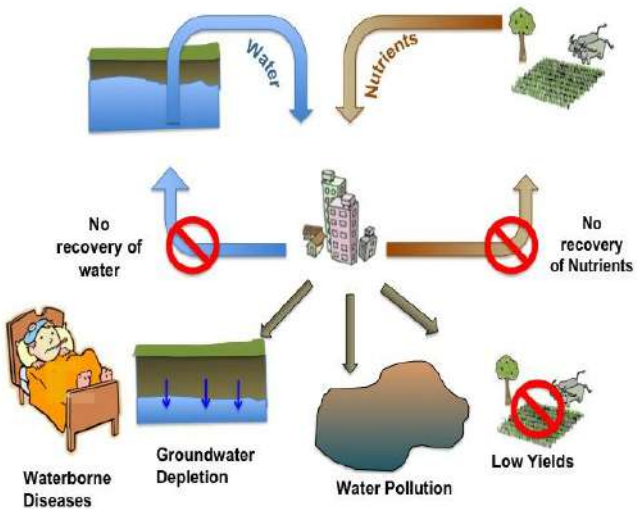


Fig 5.3 Sustainable sanitation

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

Health poorly handled faecal sludge poses high health risks (much spillage and no personal protective equipment for the workers)

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

Environment and natural resources

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

Technology and operation

Technology and operation aspects incorporate the functionality and the ease with which the system can be constructed, operated and monitored using the available human resources (e.g. the local community, technical team of the local utility etc.). It also concerns the suitability to achieve an efficient substance flow management from a technical point of view. Furthermore, it evaluates the robustness of the system, its vulnerability towards disasters, and the flexibility and adaptability of its technical elements to the existing infrastructure, to demographic and socio-economic developments and climate change.

Finance and economics

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

Socio-cultural and institutional aspects

Socio-cultural and institutional aspects take into account the socio-cultural acceptance and appropriateness of the system, convenience, system perceptions, gender issues and impacts on human dignity, the contribution to subsistence economies and food security, and legal and institutional aspects.

5.1.4 Transportation infrastructure

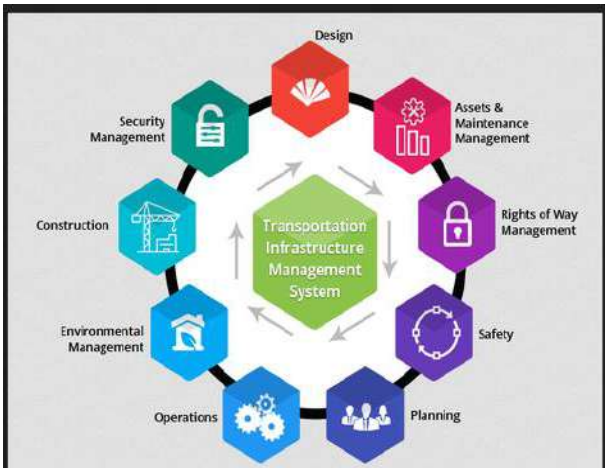


Fig 5.4 transportation infrastructure works

Asset management in transport infrastructure, financial viability of transport engineering projects/ Life cycle Cost Analysis, Life-Cycle Assessment and Sustainability Assessment of transport infrastructure/ Infrastructures financing and pricing with equity appraisal, operation optimization and energy management/ Low-Volume roads: planning, maintenance, operations, environmental and social issues/

Public-Private Partnership (PPP) experience in transport infrastructure in different countries and economic conditions/ Airport Pavement Management Systems, runway design and maintenance/ Port maintenance and development issues, technology relating to cargo handling, landside access, cruise operations/ Infrastructure Building Information Modelling (I-BIM) / Pavement design and innovative bituminous materials/ Recycling and re-use in road pavements, environmentally sustainable technologies/ Stone pavements, ancient roads and historic railways/ Cementations stabilization of materials used in the rehabilitation of transportation infrastructure.

5.1.5 Vertical farming

Fig 5.5 Vertical farming

Despoiler and his students came up with a design of a skyscraper farm that could feed 50,000 people. Although the design has not yet been built, it successfully popularized the idea of vertical farming. Current applications of vertical farming coupled with other state-of-the-art technologies, such as specialized LED lights, have resulted in over 10 times the crop yield than would receive through traditional farming methods.

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

Vertical farming technologies face economic challenges with large start-up costs compared to traditional farms. In Victoria, Australia, a “hypothetical 10 level Vertical farm” would cost over 850 times more per square meter of arable land than a traditional farm in rural Victoria. Vertical farms also face large energy demands due to the use of supplementary light like LEDs. Moreover, if non-

renewable energy is used to meet these energy demands, vertical farms could produce more pollution than traditional farms or greenhouses.

5.1.6 Corrosion Mechanism, presentation & repair measures of RCC structure

Fig 5.6 Condition of roads

It is a matter of serious concern of us the civil Engineers, that in some countries, the repair activities of structure done today account for nearly half the total annual expenditure on total construction activities. Such a state of affairs is of great concern mainly for two reasons. Firstly, concrete is, in essence a proven, durable & mostly maintenance free material. We have barged into a repair activity without adequate preparation. Persons involved in repair/rehabilitation need to be better civil engineers. In fact, epair/rehabilitation/retrofitting activity is a much more advanced application of science and technology involved in civil engineering, which is the most difficult challenge to engineers. We need to opt for new techniques and materials to resolve these difficulties. We have enough options to select from various construction chemicals, minerals, methods for repairs/rehabilitations, the economics etc.

The durability of concrete structures is influenced by various factors, for example, ecological presentation, electrochemical responses, mechanical stacking, affect harm and others. Of all of these, consumption of the fortification is likely the primary driver for the disintegration of steel strengthen cement (RC) structures. Consumption administration is ending up progressively important because of the developing number of maturing foundation resources (e.g. spans, burrows and so on.) and the expanded prerequisite for impromptu upkeep with a specific end goal to keep these structures operational all through their outline life (and usually, past).The primary RC repair, restoration and recovery approaches by and large utilized can be extensively arranged under and ordinary, b) surface medications, c) electrochemical medicines and d) outline arrangements. The overall point of this examination was to recognize the key consumption administration strategies and embrace exact examinations concentrated on full-scale RC structures to explore their long haul execution.

To accomplish this, singular research bundles were recognized from the above expansive five approaches for repair, substitution and recovery. Structural repairs to the actual load-bearing structural members are often missed. Rather structural distress is camouflaged and buried beneath finishes.

1) Patch repairs and nascent anodes, 2) Impressed Current Catholic Protection, 3) Galvanic Catholic 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.

5.1.7 Sewage Treatment plant

Fig 5.7 Sewage treatment plant

It includes physical, biological and sometimes chemical processes to remove pollutants. Its aim is to produce environmentally safe sewage water, called effluent, and a solid waste, called sludge or bio solids, suitable for disposal or reuse.

Reuse is often for agricultural purposes, but more recently, sludge is being used as a fuel source.

Water from the mains, used by manufacturing, farming, houses (toilets, baths, showers, kitchens, sinks), hospitals, commercial and industrial sites, is reduced in quality as a result of the introduction of contaminating constituents. Organic wastes, suspended solids, bacteria, nitrates, and phosphates are pollutants that must be removed. To make wastewater acceptable for reuse or for returning to the environment, the concentration of contaminants must be reduced to a safe level, usually a standard set by the Environment Agency.

Sewage can be treated close to where it is created (in septic tanks and their associated drain fields or sewage treatment plants), or collected and transported via a network of pipes and pump stations to a municipal treatment plant. The former system is gaining popularity for many new ECO towns, as 60% of the cost of mains sewerage is in the pipework to transport it to a central location and it is not sustainable. It is called 'Decentralisation' of sewage treatment systems.

The job of designing and constructing sewage works falls to environmental engineers. They use a variety of engineered and natural systems to meet the

required treatment level, using physical, chemical, biological, and sludge treatment methods.

The result is cleaned sewage water and sludge, both of which should be suitable for discharge or reuse back into the environment. Sludge, however, is often inadvertently contaminated with many toxic organic and inorganic compounds and diseases and the debate is raging over the safety issues. Some pathogens, for example, 'Prion' diseases (CJD or 'Mad Cow Disease is a Prion disease) cannot be destroyed by the treatment process.

Anaerobic Sewage Treatment

Aerobic Sewage Treatment

The effluent produced by this process is non-polluting and can be discharged to a watercourse Conventional sewage water treatment involves either two or three stages, called primary, secondary and tertiary treatment.

CASE STUDY ON SEWAGE TRATMENT PLANT

Abstract; - It includes physical, biological and sometimes chemical processes to remove pollutants. Its aim is to produce environmentally safe sewage water, called effluent, and a solid waste, called sludge or bio solids, suitable for disposal or reuse. Reuse is often for agricultural purposes, but more recently, sludge is being used as a fuel source.

INTRODUCTION

Across the globe water shortage is a concerned issue. According to survey 2 out of 10 people don't have access to drinking water. Meanwhile the sewage treatment plant is a kind of redemption to meet the gap of available water and consumed one. Discharge of wastewater directly in water bodies is a general practice in India. Water released by industries and household practices after use for various purposes is termed as sewage. Generally, sewage through such origins has 99% water and 1% sediments and colloidal material.

Sewage treatment is a process of removing harmful contaminants from the water and making it available for the future need. This contaminant mainly consists of the house hold sewage and industrial sewage. The treatment is done in three process namely primary process, secondary process and tertiary process. The efficiency of STP and go up to 85%-90% in best cases and particularly speaking of Delawas efficiency range is between 75%-80%.

This research paper deals with the comparative study of Delhi STP and Delawas STP. According to the survey Jaipur receive basic (pH >7) kind of sewage to be treated than Delhi. The pH range of the inlet at the Jaipur has an

average value of 7.36, whereas Delhi has pH of about 6.37. Considering other parameters of the Jaipur STP namely TDS (Total Dissolved Solids), TSS (Total Suspended Solids), BOD (Biological Oxygen Demand) and COD (Chemical Oxygen Demand) have efficiency in range of 50%, 57.7%, 37.25% and 60.48% respectively. It is very clear that the after treating 62.5 MLD of sewage water, results are considerable but not very promising. On the other hand, percentage results of Delhi STP are 85.3%, 98.47%, 97.85%, 95.75%. The results of the Delhi STP are very relying as because the advancement of the technology is very welcome over there. This research paper is statically comparing the two STP following the same methodology yet producing so different results. Obviously, Jaipur STP requires much accuracy because in this growing world we should focus on sustainable development and follow every possible path to follow the ideology of reuse and recycle.

The salient features of STP are given below in table

CALCULATION			
Flow rate	Popln x LPCD	21600	L/d
Quantity of water supplied		21.6	m3/d
Quantity of wastewater generated		80%	
Quantity of wastewater generated	80% of water supply	17.28	m3/d
Assume peak factor		1.3	times
Total quantity of wastewater generated	WW generated x 1.3	22.46	m3/d
RESULT			
Quantity of wastewater generated		22.46	m3/d
		22464	l/d
		0.022	MLD
		25	m3/d
Consider future expansion and peak demand		2	times
Taken		50	m3/d

RESEARCH METHODOLOGY Study was started with identification of general infrastructure problems in Jaipur and Delhi. Turns out that the treatment of waste water generation is major problem in both the cities. After identification of the problem, the aim, objectives and the methodology were framed. Firstly, the study is carried out for geographical conditions and existing sewage conditions of cities. Primary and secondary data is collected from several sources.

1. Inlet is the place where all the sewage of the city is collected for the further treatment of turning this waste water in a usable form.

2. Initially the water is sent for coarse screening to separate out the waste of big size example plastic bags, cans, bottles etc.

3. Collecting Channel is the place where water is stored after the screening so that the stable water can be pumped up.

4. In Pumping the water is pumped up with the help of pipes of various diameter varying from 32mm to 75mm.

5. Fine Screening is the step which involves the removal of fine impurities from the sludge. This step is important because removing the fine impurities like jute bags, scrap of plastic, hairs, threads etc. will reduce the cost of treatment.

6. The sewage water from screen chamber flows to grit chamber, where coarse particles of sand, ash and clinkers, egg shells, bone clips and inert materials are removed by method of Grit Separation.

7. The sewage water from grit chamber flows to primary clarifier where sedimentation of settleable solids takes place. Primary clarifier also reduces the organics load on secondary treatment units.

8. The sewage water from primary clarifier flows to aeration tank, where the sewage containing waste organic matter is aerated and microorganisms metabolize the soluble and suspended organic matter.

9. The waste water from aeration tank flows to secondary settling tank, where separation of biological sludge takes place. The efficient separation of the biological sludge is necessary for ensuring final effluent quality and also for return of adequate sludge to maintain the MLSS level in the aeration tank.

10. The Primary sludge Digestion is the step in which anaerobic sludge digestion takes place.

CONCLUSION The idea of STP is very promising step that each city should plant. It gives us the liberty to reuse the sewage water. By using the STP, water is available for variety of uses like it can be discharged easily to any water bodies, can be used for irrigation and cultivation purpose and what not. STP also develops biogas which is used to make different form of energy available for government, specifically mentioning, Jaipur STP produces electricity of 12-19 kWh. Moreover, production of methane also contributes to the unavoidable advantage of STP. The idea of waste to vitality is the prime concern that draws

the attention. In Jaipur STP the water is discharged to the canal which is running all over the city and finally ends up in a water body. Further this water is used for irrigation purpose. The sludge generated from the secondary treatment process is used as manure besides this, the production of biogas is enough for running the plant and also available for the government uses. Jaipur STP lacks the tertiary treatment process which makes it suppressing in terms of efficiency than Delhi STP. But still Jaipur STP is a very effectively treating sewage of Jaipur.

Parameters	Eq tank	FM	CF	SDB	RGF	Dis
Cost for cement	16402	1144	76380	49118	119824	5411
Cost for sand	4001	279	18629	11980	29225	1320
Cost of coarse aggregate	10779	669	82527	34648	88031	2523
Cost of Brick	10152	214	27420	16898	21261	3849
Cost of Pipe	500	500	500	1500	1000	1000
Cost of painting	5000	2500	10000	7500	5000	2500
Mason	5600	4200	9800	7000	8400	5600
Male helper	4000	3000	7000	5000	6000	4000
Female helper	3200	2400	5600	4000	4800	3200
Estimated cost	59633	14906	237856	137644	283542	29402
Contractors profit	5963	1491	23786	13764	28354	2940
Total Estimated Cost	65597	16397	261641	151408	311896	32342
				Sum Total (Rs)		839281

Wastewater discharged into the environment may cause harmful effects if not treated properly. For the treatment of wastewater, proper sewage treatment plant has to be designed. However, estimation of the proposed design is very much important to identify the total cost for the proposed unit to avail the fund. The area available for STP unit at Bearys institute of technology campus is having the contour value of 91.5 m to 92.5 m. Area available for the sewage treatment is 399.81 m^2 with 300 m^2 expandable. The cost estimation for cement was found to be Rs. 1,19,824 for Rapid gravity filter and Rs. 76,380for clariflocculator unit. However, cost of sand was calculated Rs. 29225 for Rapid gravity filter with coarse aggregate Rs. 88031. Total Cost of construction for Equalization tank was estimated as Rs. 65597 with Flash mixer of Rs. 16397, Sludge drying bed Rs. 151408, Rapid gravity filter of Rs. 311896, Disinfection tank of Rs. 32342 and clariflocculator of Rs. 261641. Total estimated cost of construction of STP was calculated as Rs. 839281.

E – Waste disposal / Any West disposal

Fig 5.6 E waste

Rapid growth of the electronic manufacturing volume, market, and rapid change in technology resulting in new product Complexity of electronic products, which requires special approach in recycling

Use of rare and precious metals and compounds, many of which should be recovered.

1. presence of toxic chemicals and other substances of environmental concern
2. opportunities of efficient material and component reuse
3. Electronics recycling, computers for instance, is essentially a process of breaking down the final product back to components (some of which can be reused) and initial raw materials (such as copper, gold, silver, other metals, plastics). Because of significant load of technological product with heavy metals and toxic compounds (e.g., mercury, cadmium, lead, flame retardants), discarded electronics are classified as *hazardous waste*. Hence, recycling also requires strict measures of environmental safety.

Local / Out Source of Energy

Biogas (e.g., landfill gas/wastewater treatment digester gas)

Wind side is the best site to generate the electricity. Local governments can lead by example by generating energy on–site.

CHAPTER: - 6

6 Swatchhta Bharat Abhiyan (Clean India)

6.1 Which type of swatchhta needed in your village explaining Existing, Situation with photograph.

There is no need of swatchhta in our allocated village because there is no waste in our village and regular check by the Surpanch.

Fig 6.1Swachta Abhiyan

6.2 Guidelines for the process of the implementation in your village with photograph

6.2 Students safai reli in village

- The Swachh Bharat Mission is split into two sub Missions Swachh Bharat Mission (Gramin) and Swachh Bharat Mission (Urban).
- Swachh Bharat Mission (Gramin), Gram Panchayats and ZillaParishads will work on war footing to make sure that all households in all villages have functional water supply and toilet facilities. Productiv of night soil as bio-fertilizers is also on the cards.
- Implementation of SBM (G) is proposed with 'District's the base unit, with the goal of creating ODF GPs. The District Collectors/Magistrates/CEOs of Zilla Panchayat are expected to

lead the Mission themselves, so as to facilitate district wide planning of the Mission and optimum utilization of resources. The Baseline Survey data of 2013 collected by States and entered on the IMIS of MDWS by 31.1.2015 will be considered as the base for States where the survey is complete. For other States the data entered on completion of the Survey will be taken as the base data.

- A project proposal shall be prepared by the District, scrutinized and consolidated by the State Government into a State Plan. The State Plan with district wise details will be shared with the Government of India (Swachh Bharat Mission-Ministry of Drinking Water and Sanitation). This Plan will include a 5 year Plan along with 5 independent Annual Plans which merge into the 5 year Plan. These plans shall be approved by the Ministry each year.
- On the basis of formative research and consultation rounds, the State shall develop a tailor-made Communication Strategy, a Communication Plan, and material and will train community mobilisers to use these tools
- The provision of Incentives for individual household latrine units to the rural households is available to States that wish to provide the same. This may also be used to maximize coverage so as to attain community outcomes. States will have flexibility regarding the utilization of the Incentive. Incentives, if given, may be to the Individual households or where the community model is necessarily adopted to trigger the demand in GPs/Blocks/Districts, the community as a whole or as a combination of both. Since the Incentive for one IHHL is Rs. 11957, the State will be eligible to receive the entire amount (shared between the Central and State Governments).

CHAPTER: - 7

7 Villages due to Covid -19

7.1 Taken steps in allocated village related to existing situation with photograph

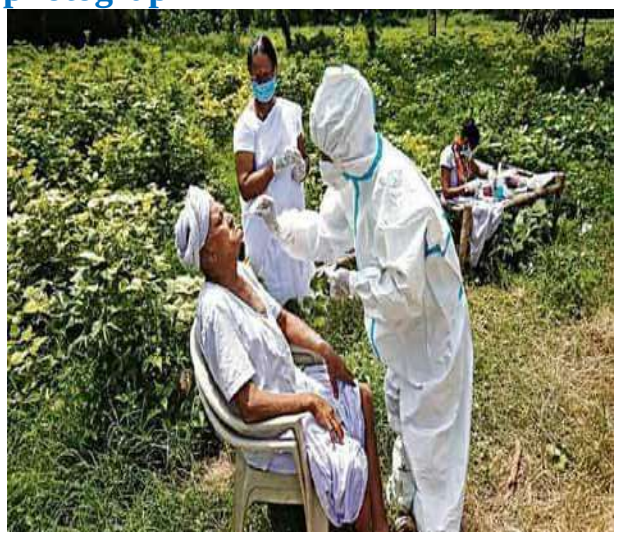


Fig 7.3 Covid tests rapidly

Fig 7.4 Awareness of Covid

In a COVID 19 pandemic there are lots of difficulties faced by villagers. There are nearly 70positive cases come on the first starting period of COVID 19. But there are not proper facilities for the villager's patients were traded. In that cases day by day increase the villagers gone 5km far from village for the checkup.
All the roads are 2-3 times sanitizing the whole village in a day.
In lockdown period there villagers facing many challenges like a money problem.
In lock down time there is no entry are allowed in the village all the roads are closed for our sliders of village .surpanch and health workers spared awareness about the Covid situation what they should taking care for the not getting effected from virus

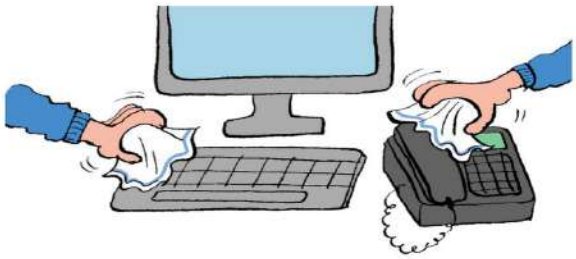
Awareness about COVID 19 transmission and protective measures.

- Clean your hands often.
- Cough or sneeze in your bent elbow not your hands.
- Avoiding touching your eyes, nose and mouth.
- Limit social gathering and time spent in crowded places.
- Avoid close contact with someone ho someone who is sick.
- Clean and disinfect frequently touched objects and surfaces.

Prevent COVID-19 spread in your workplace

CSIR-CCMB

Adapted from https://www.who.int/docs/default-source/coronaviruse/getting-workplace-ready-for-covid-19.pdf



Wipe surfaces and objects with disinfectant regularly.

Staff and visitors should have access to places where they can wash their hands with soap and water. Put sanitizing hand rub dispensers in prominent places, and have them regularly filled.

Cover face with the bend of elbow or a tissue if they cough or sneeze.

Keep surgical face masks and /or paper tissues available at your workplaces, for those who develop a runny nose or cough at work, along with closed bins for hygienically disposing them.

Consult national travel advice before going on business trips.

Stay at home even for mild cough and low grade fever (37.3°C and above).

CHAPTER: - 8

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

8.1 Observation and brief write up about the existing deign

As per our study and analysis, we adopt six designs for our village,

- Post office
- Public Garden
- Community Hall
- Public Toilet(for both male and female)
- Reconstruction of Gram panchayat building
- Bus stop

Post office: - The post office's benefits are Post Office Savings Account. 5-Year Post Office Recurring Deposit Account (RD) Post Office Time Deposit Account (TD) Post Office Monthly Income Scheme Account (MIS) Senior Citizen] Savings Scheme (SCSS) 15 year Public Provident Fund Account (PPF) National Savings Certificates (NSC) etc.

Public Garden

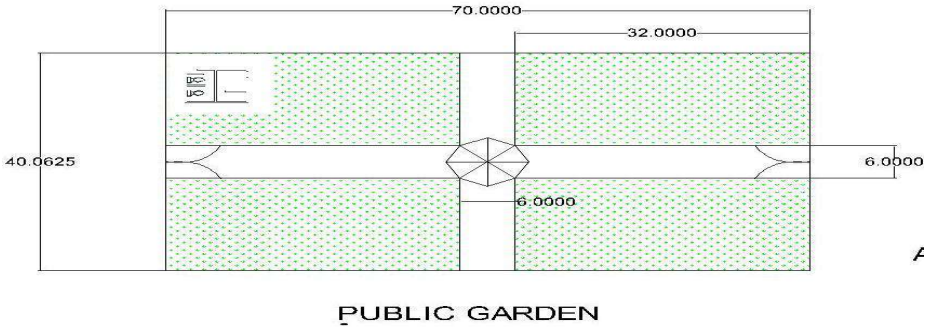


Fig 8.1 Public garden

Public garden is an institution that maintains collections of plants for the purposes of public education and enjoyment, in addition to research, conservation, and higher learning. It must be open to the public and the garden's resources and accommodations must be made to all visitors. Public gardens are staffed by professionals trained in their given areas of expertise and maintain active plant records systems.

Community Hall

The community hall is useful in many function like marriage in village, Important meeting in village.

Fig 8.2 community hall

Public Toilet (for both male and female)

- The public toilet is very useful component in our life. The biggest benefits of public toilet are sanitation in village, cleanness of village.

Reconstruction of Gram panchayat building

- It's not good or bad condition but there surpanch recommended to us the reconstruct the Gram panchayat.

Suggestions / Benefit of the Villagers about new path technology / Designs proposed by the students

- At last of this Techno Economic Survey after going through all the facilities and data it can be concluded that sudden improvements are required in some of the facilities provided and some facilities are still required to be provided.
- The post office's benefits are Post Office Savings Account. 5-Year Post Office Recurring Deposit Account (RD) Post Office Time Deposit Account (TD) Post Office Monthly Income Scheme Account (MIS) Senior Citizen] Savings Scheme (SCSS) 15 year Public Provident Fund Account (PPF) National Savings Certificates (NSC) etc.
- The public toilet is very useful component in our life. The biggest benefits of public toilet are sanitation in village, cleanness of village.
- The community hall is useful in many function like marriage in village, Important meeting in village.

Sustainable design/ Repair & Maintenance of existing Infrastructures (Civil) Planning proposal of Post Office

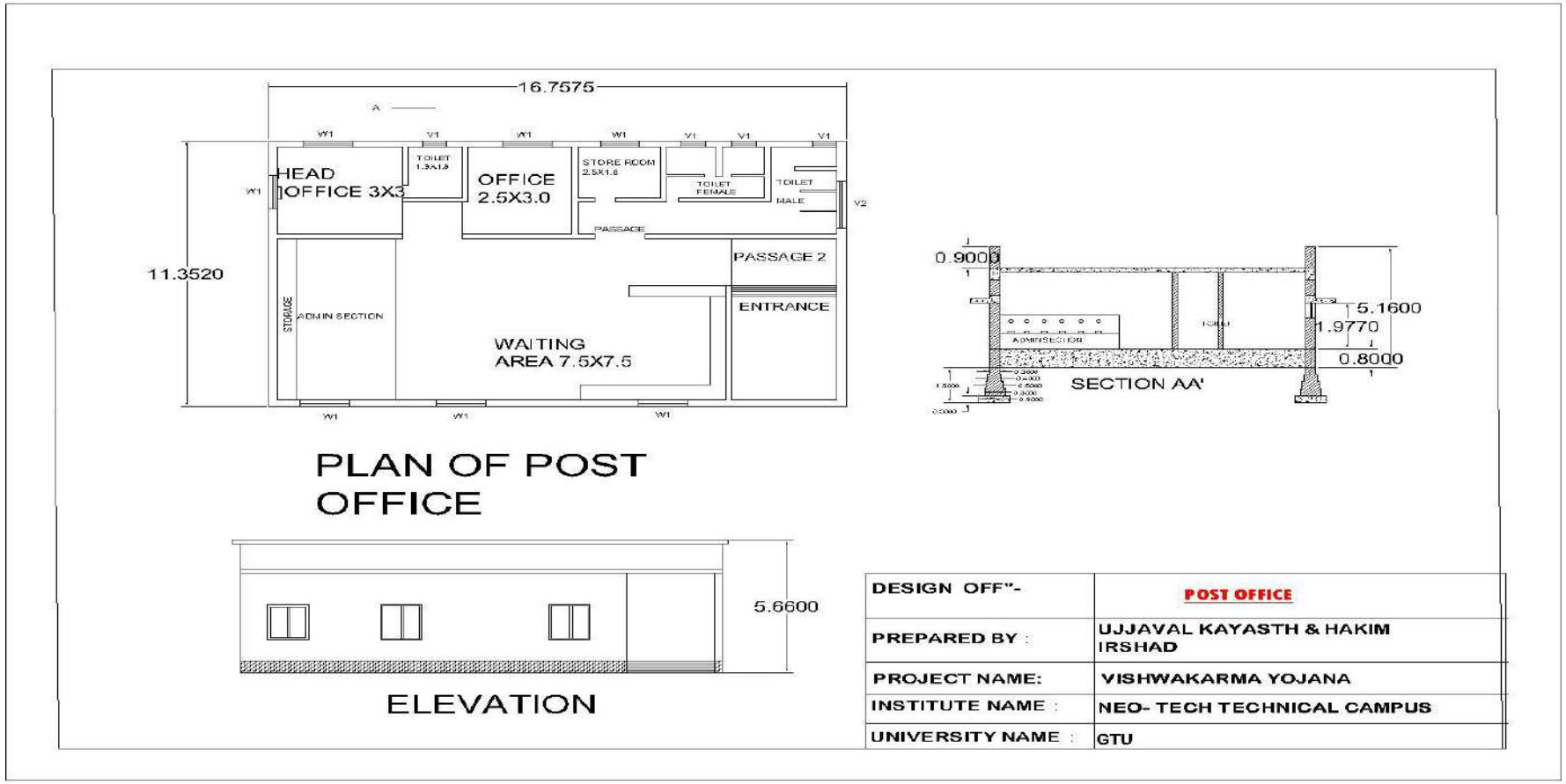


Fig 8.1 post office

MEASURMENT SHEET

No	ITEM DESCRIPTION	No	L(M)	W(M)	H(M)	QUANTITY	TOTAL
1	Excavation for foundation	1	70.95	0.9	1.5	95.78 m^3	95.78 m^3
2	Foundation concrete used in P.C.C [1:3:6]	1	70.95	0.9	0.3	19.16 m^3	19.16 m^3
3	Brick masonary used in cement mortar [1;4] for Foundation upto plinth						
	0.6m offset	1	73.62	0.6	0.3	13.25 m^3	33.49 m^3
	0.5m offset	1	74.55	0.5	0.3	11.18 m^3	
	0.4m offset	1	75.45	0.4	0.3	9.05 m^3	
4	Earth filling						
	Admin section	1	2.9	5.15	0.48	7.17 m^3	39.43
	Waiting area	1	7.5	5	0.48	18.00 m^3	
	Head office	1	3	3	0.48	4.32 m^3	
	Head office toilet	1	1.3	1.8	0.48	1.12 m^3	
	Office	1	1	1.75	0.48	0.84 m^3	
	Female toilet	1	1.9	2.1	0.48	1.92 m^3	
	Male toilet	1	1.28	3	0.48	1.84 m^3	
	Passage 2	1	5.57	0.9	0.48	2.41 m^3	
	Passage 1	1	2.1	1.8	0.48	1.81 m^3	
5	DPC	1	10.32	0.3		3.10 m^3	3.10 m^3
6	R.C.C work for slab	1	13.02	8.6	0.15	16.80 m^3	16.80 m^3
7	P.C.C work for floor base in superstructure						
	Admin section	1	2.6	5.12	0.015	0.20 m^3	2.64 m^3
	Waiting area	1	7.27	2	0.075	1.09 m^3	
	Head office	1	2.7	2.7	0.075	0.55 m^3	
	Head office toilet	1	1	1.5	0.075	0.11 m^3	
	store room	1	0.7	1.45	0.075	0.08 m^3	

	female toilet	1	1.6	1.8	0.075	0.22 m^3	
	Male toilet	1	0.98	2.7	0.075	0.20 m^3	
	Passage 2	1	5.27	0.6	0.075	0.24 m^3	
	Passage 1	1	1.8	1.5	0.075	0.20 m^3	
8	2^{nd} classs brick work (1:4) upto slab level	1	76.35	0.3	3.81	87.27 m^3	73.92 m^3
	Deduction						
	Window						
	W1	7	1.6	0.3	3.81	12.80 m^3	
	Ventilation						
	V1	3	0.6	0.3	0.5	0.27 m^3	
	V2	1	1.87	0.3	0.5	0.28 m^3	13.35 m^3
9	C.C WORK						
	1) Slab	1	13.02	8.6	0.15	16.80 m^3	27.10 m^3
	2)lintel	1	76.35	0.3	0.3	6.87 m^3	
	3)Chajja	1	76.35	0.3	0.15	3.44 m^3	
10	R.c.c steel quantity		weig ht 2046. 37 kg			#VALUE!	
11	Providing Glazed tiles Dado upto lintel level						
	Toilet head office	1	6.2		2.3	14.26 m^3	46.46 m^3
	toilet female	1	6.8		2.3	15.64 m^3	
	toilet male	1	7.2		2.3	16.56 m^3	
12	Parapet wall	1	70.95	0.3	0.9	19.16 m^3	19.16 m^3
13	prviding laying of mosaic tiles on footing						
	Waiting area	1	7.5			7.5 m	26.07 m
	Admin section	1	2.9			2.9 m	
	Head office	1	3			3 m	
	Office	1	2.5			2.5 m	
	store room	1	2.5			2.5 m	

	Passage 1	1	5.57			5.57 m	
	Passage 2	1	2.1			2.1 m	
14	Smooth Plaster 12mm thick CM (1:6)						
	(A)Ceiling						
	Admin section	1	2.9	5.15		14.935 m^2	106.6 m^2
	Waiting area	1	7.5	7.5		56.25 m^2	
	Head office	1	3	3		9 m^2	
	Head office toilet	1	1.3	1.8		2.34 m^2	
	Office	1	2.5	3		7.5 m^2	
	Female toilet	1	1.9	2.1		3.99 m^2	
	Male toilet	1	1.28	3		3.84 m^2	
	Passage 2	1	5.57	0.9		5.013 m^2	
	Passage 1	1	2.1	1.8		3.78 m^2	
	(B)Wall						
	Admin section	1	2.5		2.3	5.75 m^2	203.3 m^2
	Waiting area	1	16.1		2.3	37.03 m^2	
	Head office	1	12		2.3	27.6 m^2	
	Head office toilet	1	6.2		2.3	14.26 m^2	
	Office	1	11		2.3	25.3 m^2	
	Store room	1	8.1		2.3	18.63 m^2	
	Female toilet	1	7.36		2.3	16.928 m^2	
	Male toilet	1	6.8		2.3	15.64 m^2	
	Passage 1	1	6.6		2.3	15.18 m^2	
	Passage 2	1	11.74		2.3	27.002 m^2	
	Deduction						#####
	Window						
	W1	7	1.6	0.3	3.81	12.80 m^2	13.35 m^2
	Ventilation						
	V1	3	0.6	0.3	0.5	0.27	
	V2	1	1.87	0.3	0.5	0.28	

ABSTRECT SHEET

ITEM NO	ITEM DESCRIPTION	QUANTITY	RATE	PER	AMOUNT (RS)
1	Excavation work	95.8	130		12451
2	Foundation concrete	19.2	827	M	15845
3	RCC Work total	16.8	300	M	5040
4	Steel	2046	48	M	98226
5	DPC	3.1	2400	M	7440
6	Concrete work	10.4	4000	M	41600
7	2^{nd} class brick work	73.9	850	M	62832
8	Earth filling	39.4	50	M	1972
9	Brick masonry up to plinth	67	800	M	53568
10	P.C.C at floor base	2.64	2800	M	7392
11	Glazed tiles	46.5	120	Sq.Feet	5575
12	Mosaic tiles	25.1	120	M	3017
13	Mosaic tiles	312	30	M	9359

Lump Sump Cost=325000
+10%Contracter profit=32,500
+5%Extra charges like water, cable,
=16,250

Final Cost=3, 73,750Rs.

Sustainable Design

2. Public Garden:

A public garden is an institution that maintains collections of plants for the purposes of public education and enjoyment, in addition to research, conservation, and higher learning. It must be open to the public and the garden's resources and accommodations must be made to all visitors. Public gardens are staffed by professionals trained in their given areas of expertise and maintain active plant records systems.

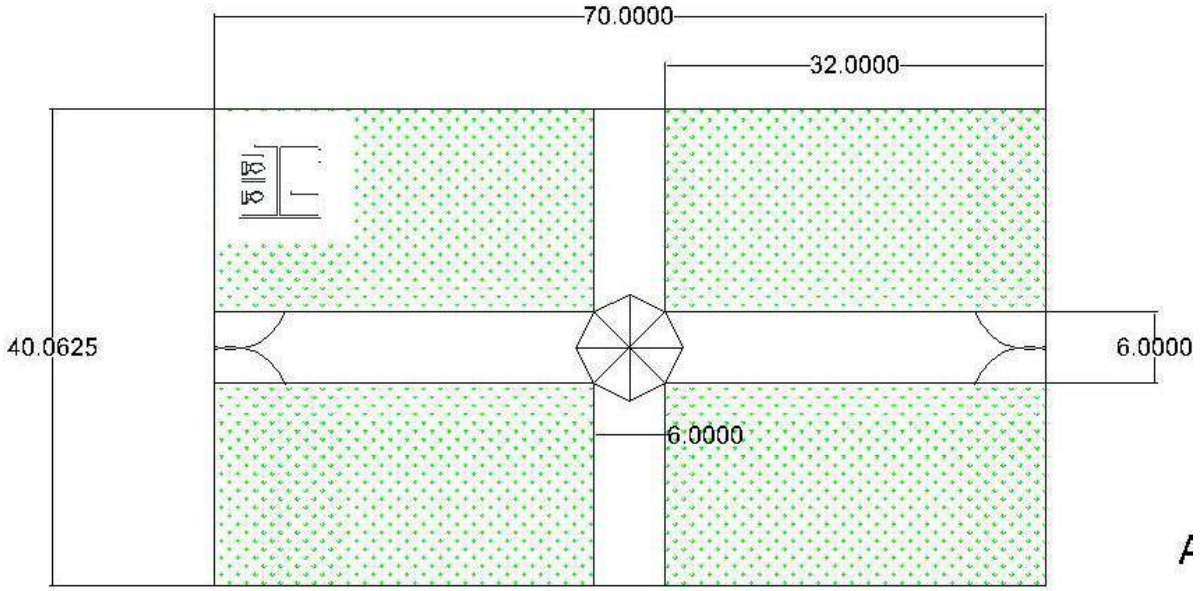


Fig 8.4 public garden

PUBLIC GARDEN

Many related entities are part of American Public Gardens Association or benefit from member organizations. These entities include: Botanical gardens, arboreta, cemeteries, zoological gardens, sculpture gardens, college and university campuses, historic homes, urban greening organizations, natural areas, and city/county/state/federal parks. A public garden is an institution that maintains collections of plants for the purposes of public education and enjoyment, in addition to research, conservation, and higher learning. It must be open to the public and the garden's resources and accommodations must be made to all visitors. Public gardens are staffed by professionals trained in their given areas of expertise and maintain active plant records systems.

ITEM NO	NO	LENGTH	WIDTH	HEIGHT	QUANTITY
brick masonryperiphery wall L=160m	1	160	0.3	1	48
For bathroom foundation	1	7.587	0.9	0.3	2.048
1st step	1	7.587	0.6	0.3	1.366
2nd step	1	7.587	0.5	0.2	0.759
3rd step	1	7.587	0.4	0.3	0.910
4th step	1	7.587	0.3	2.6	5.918
					58.72m^2

COSTING:

Gardening: Nilgiri=25*4=100 Rs.
Galgota=25*4=100 Rs.
Barmasi=25*4=100 Rs.

Grass seeds= 14792 Rs.
(Approx. 8.70kg seeds of grass require.)

Generally 1700 Rs. Per 1kg for 1200 sqft req.
So area for grass is about 10441sqft
Blocks: 518m2 area 20 Rs. Per sqft 5575.71 sqft areas to be covered with blocks 111514Rs.

Bathroom: Bathroom tiles 200 Rs m^2 Area 14.32 m2 =2864 Rs.
For flush door: 1400 Rs with fitting Toilet tub: 300 Fixtures: 200(water tab)+500(flush valve)=700 Wash basin=250
Materials for 1:6 brick work

Cement: 1/7 * 19.33
=1.63/0.035 =78 bags Approx.
80 bags Sand: 6/7 *19.33
=16.56

ABSTRACT SHEET

MATERIAL	QUANTITY	RATE	PER	AMOUNT
Bricks	29285	4000	1000	117140000
Sand	16.56	800	M^3	13248
Blocks	5575.7	80	M^2	446056.8
Cement	80	300	Bag	24000
sundries				50
			total	117623355
Labour	0			
Male coolie	8	300	Day	2400
Female coolie	6	280	Day	1680
Bhistie	2	200	Day	400
Sundries				50
Excavation work	50.112	130	M^3	6515
Foundation concrete	12.53	827	M^3	10362
RCC Work total	7.9	300	M^3	2370
Steel	5967.6	48	KG	286445
2^{nd} class brick work	32	850	M^3	27200

Material+ labor cost= 270483
1.5% Water charges = 4057.245
Total=274540.25
Rs Toilet cost=5214
Rs Gardening cost=15092 Rs

TOTAL COST OF THE GARDEN= 3,03,723 Rs.

3. Social design of community hall

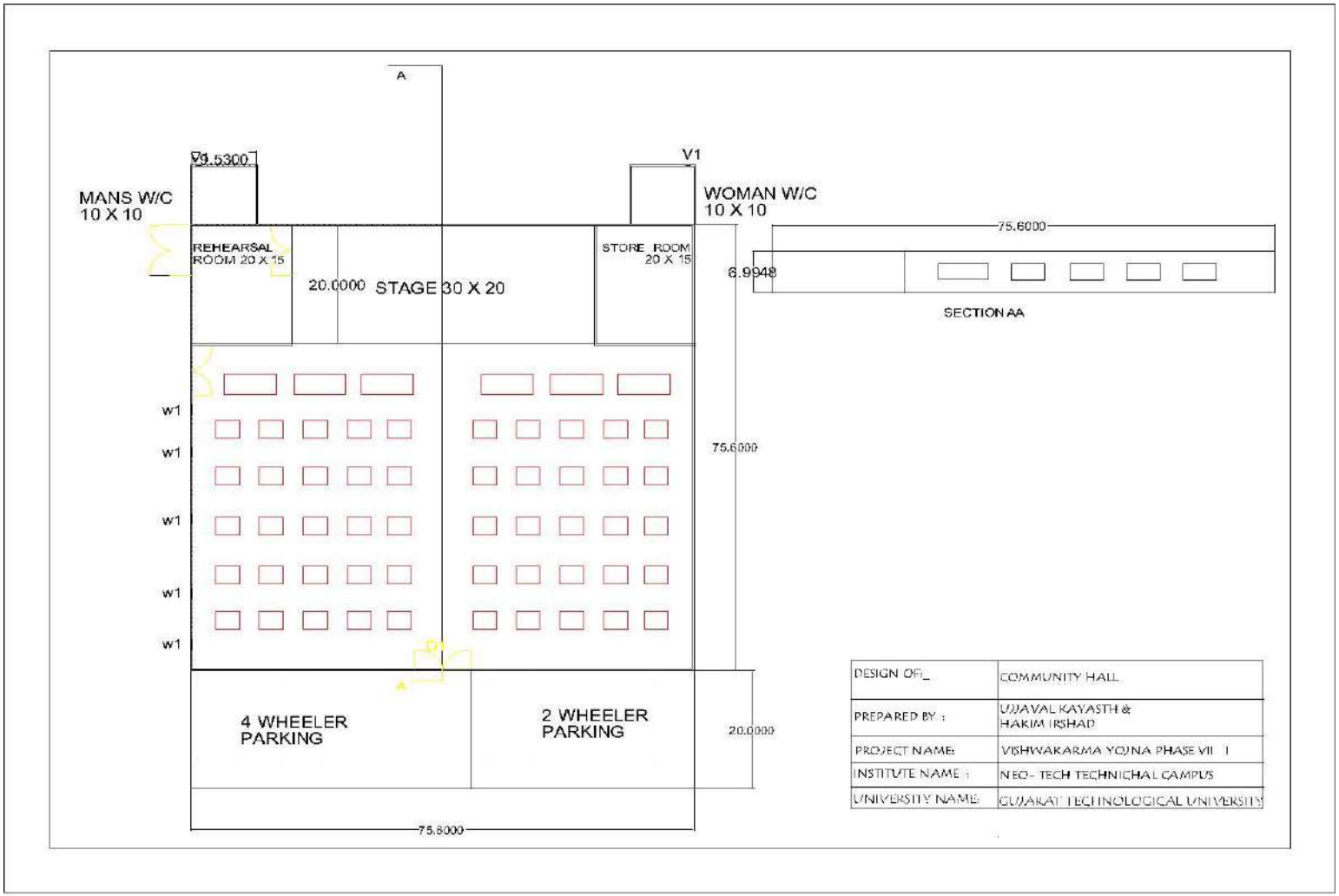


Fig 8.5 Community Hall

MEASUREMENT SHEET

Item Description	NO	Size
DOOR	4	1.8*2.10
VENTILATION	2	0.60*0.60
WINDOW	5	1.10*1.40

No	ITEM DESCRIPTION	no	L(M)	W(M)	H(M)	QUANTITY	TOTAL
1	Excavation for foundation	1	378.9	0.9	1.5	511.5 m^3	511.5 m^3
2	Foundation concrete used in P.C.C [1:3:6]	1	378.9	0.9	0.3	102.3 m^3	102.3 m^3
3	Brick masonary used in cement mortar [1;4] for Foundation upto plinth	1	379.5	0.9	0.3	102.5 m^3	236.67 m^3
	0.6m offset	1	379.7	0.6	0.3	68.3 m^3	
	0.5m offset	1	378.9	0.4	0.75	113.7 m^3	
	0.4m offset	1	378.5	0.3	0.9	102.2 m^3	
4	Earth filling						
	Hall	1	55	75	0.6	2475.0 m^3	3111 m^3
	Store room	1	22	15	0.6	198.0 m^3	
	Stage	1	22	15	0.6	198.0 m^3	
	Rehearsal room	1	20	20	0.6	240.0 m^3	
5	Brick work upto salblevel deduction	1	228.42	0.3	5.1	349.5 m^3	349.05 m^3
	D1	4	55	75	0.3	1237.5 m^3	
	W1	5	22	15	0.3	99.0 m^3	
	V1	2	20	15	0.3	90.0 m^3	
6	RCC slab	1	75	75		5625.0 m^2	5625 m^2
7	Perapet wall	1	75	75	0.6	3375.0 m^3	3375 m^3

8	Providing fixing shutter doors,Vantilation including frame						
	D1	4	1.01		2.1	8.484 m^2	17.61 m^2
	W1	5	0.74		0.78	2.886 m^2	
	V1	2	4		0.78	6.24 m^2	
9	Smooth plaster 12mmthick (A Ceiling)						
	Hall	1	75	75		5625 m^2	6685 m^2
	Store room	1	22	15		330 m^2	
	Stage	1	22	15		330 m^2	
	Rehearsal room	1	20	20		400 m^2	
	(B WALL)						
	Hall	1	60		5.1	306 m^2	1366.8 m^2
	Store room	1	74		5.1	377.4 m^2	
	Stage	1	74		5.1	377.4 m^2	
	Rehearsal room	1	60		5.1	306 m^2	
	Total Deduction					87.57 m^2	2299 m^2
10	Marble flooring						
	Hall	1	75	55		4125 m^2	4785 m^2
	Store room	1	22	15		330 m^2	
	Stage	1	22	15		330 m^2	

ABSTRACT SHEET

ITEM NO	ITEM DESCRIPTION	QUANTITY	RATE	PER	AMOUNT(Rs)
1	Excavation work	511.5	130	M^3	66495
2	Foundation concrete	102.3	827	M^3	84602.1
3	RCC Work total	5625	300	M^3	1687500
4	Steel	19431	48	KG	932688
5	2^{nd} class brick work	349.48	850	M^3	297058
6	Earth filing	3111	50	M^3	155550
7	Brick masonry up to plinth	236.75	800	M^3	189400
8	Smooth plaster	2299	40	M^2	91960
9	Tiles Work	4785	52	M^2	248820
					3754073.1

Lump Sump Cost=37,50,000
+10%Contracter profit=375000
+5%Extra charges like water, cable, transport=187500

FINAL COST OF COMMUNITY HALL=43,12,500

SOCIAL DESIGN OF PUBLIC TOILET

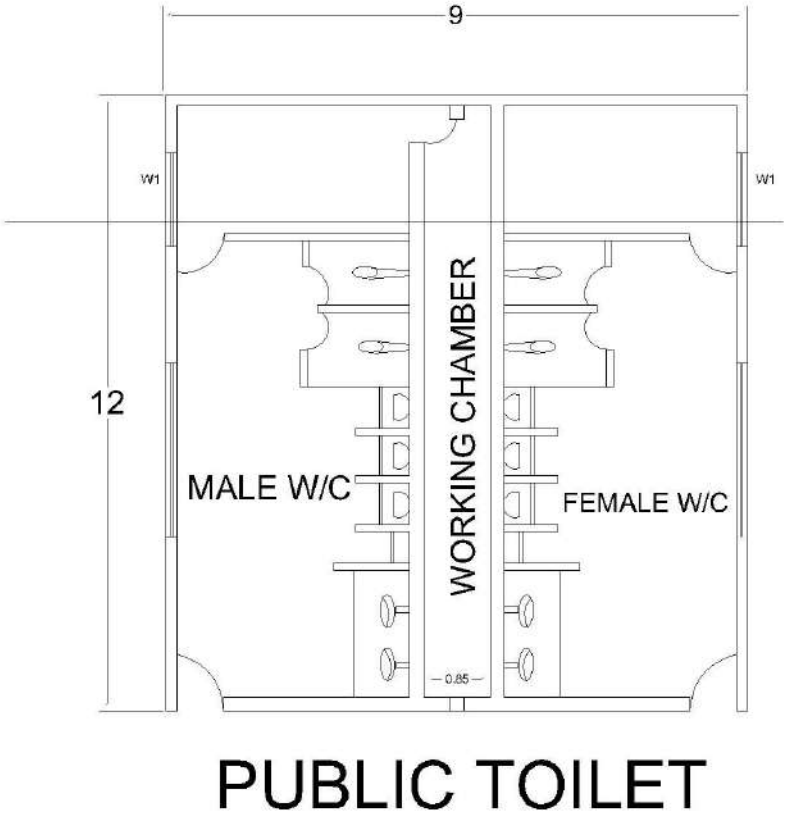


Fig 8.8 Public toilet

ITEM NO	ITEM DESCRIPTION	No	LENGTH(M)	WIDTH(M)	HEIGHT(M)	QUANTITY	TOTAL
1	Excavation for foundation	1	46.48	0.9	1.2	50.20 m^3	50.2 m^3
2	Foundation concrete used in P.C.C [1:3:6]	1	46.48	0.9	0.3	12.55 m^3	12.55 m^3
3	Brick masonary used in cement mortar [1;4] for Foundation upto plinth						
	0.6m offset		47.44	0.6	0.3	8.54 m^3	26.125 m^3
	0.5m offset		48.6	0.4	0.3	5.83 m^3	
	0.4m offset		49.08	0.3	0.75	11.04 m^3	
4	Earth filling						
	Male W/C		20.38		0.45	9.17 m^2	21.34 m^2
	Female W/C		20.38		0.45	9.17 m^2	
	W/C working chamber		6.66		0.45	3.00 m^2	
5	Brickwork upto slab level	1	49.08	0.23	3.08	34.77 m^3	
	D1	4	1.01	0.23	2.1	0.49 m^3	
	W1	6	0.74	0.23	0.78	0.13 m^3	
	brick work total		34.76-2.74			32.04 m^3	32.04 m^3
6	RCC slab	1	8.07	6.53	0.15	7.90 m^3	7.9 m^3
7	Providing fixing shutter doors vantilaters						
	D1	4	1.01		2.1	8.48 m^2	
	W1	6	0.74		0.78	3.46 m^2	11.94 m^2
8	CC work	1	8.07	6.53	0.15	0.98 m^3	7.9 m^3
9	Glazed tiles						
	Male W/C	1	2.6	7.84		20.38	40.7

						m^2	m^2
	Female W/C	1	2.6	7.89		20.51 m^2	
10	Smooth plastering						
	(A)Celling						
	Male W/C	1	2.6	7.84		20.38 m^2	47.42 m^2
	Female W/C	1	2.6	7.84		20.38 m^2	
	W/C working chamber	1	0.85	7.84		6.66 m^2	
	(B)Wall						
	Male W/C	1	20.86		3.08	64.25 m^2	182.15 m^2
	Female W/C	1	20.86		3.08	64.25 m^2	
	W/C working chamber	1	17.36		3.08	53.47 m^2	

ABSTRACT SHEET

ITEM NO	ITEM DESCRIPTION	QUANTITY	RATE	PER	AMOUNT(Rs)
1	Excavation work	50.112	130	M^3	6515
2	Foundation concrete	12.53	827	M^3	10362
3	RCC Work total	7.9	300	M^3	2370
4	Steel	5967.6	48	KG	286445
5	2^{nd} class brick work	32	850	M^3	27200
6	Earth filing	21.34	50	M^3	1067
7	Brick masonry up to plinth	26.125	800	M^3	20900
8	Glazed tiles	40.7	120	Sq.feet	4884
9	Smooth plaster	229.5	40	M^2	9180
10	total bricks	54000	6.5	no	351000
11	cement bag	400	300	bag	120000
12	Sand	15	700	tone	10500
					850423

Lump sump cost=8, 50,000
+10% contractor profit= 85000
+5% extra charges like water, electricity, transport=42500

Total cost of public toilet= 9, 77,500.

SOCIAL DESIGN OF GRAM PANCHAYAT

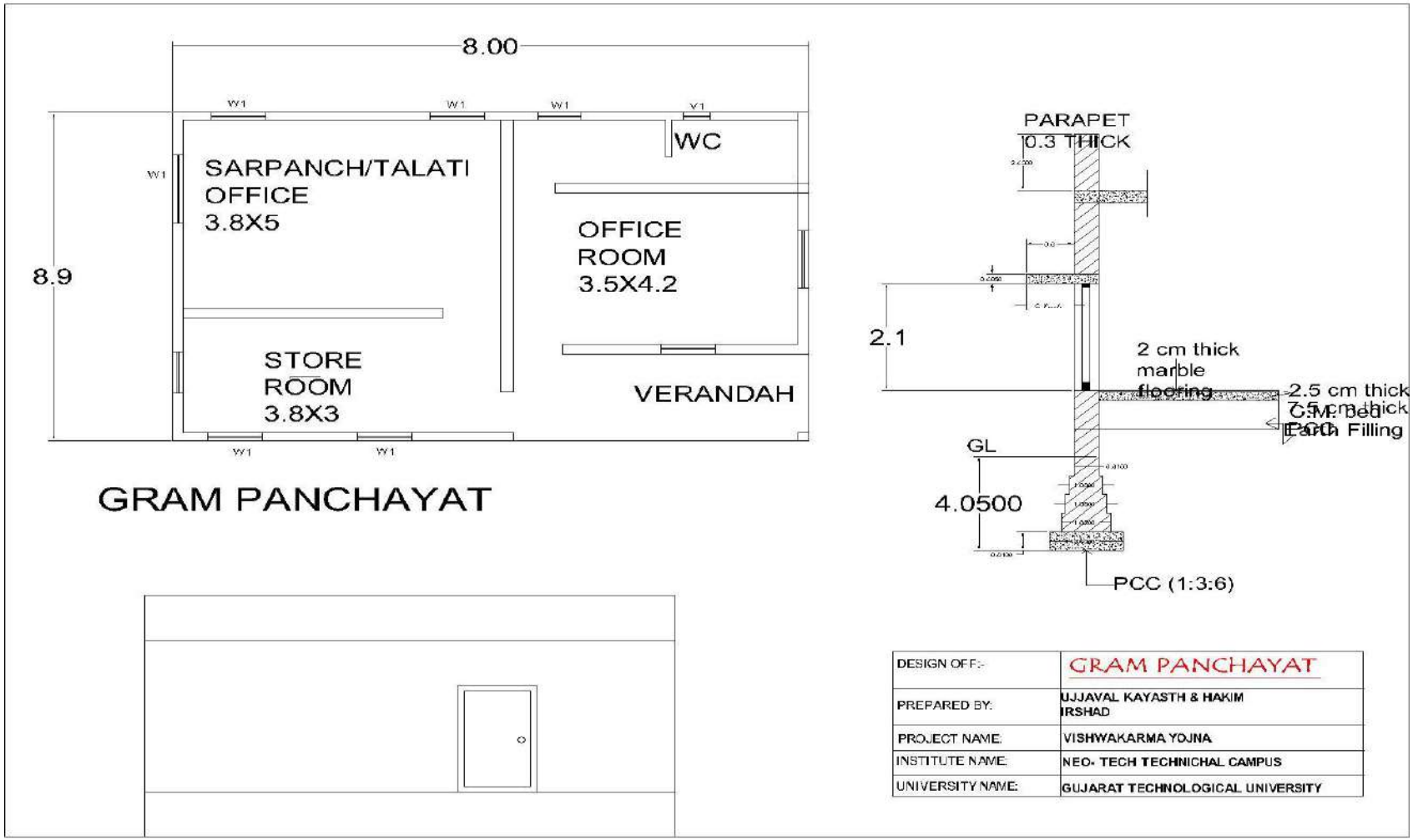


Fig 8.10 Gram panchayat

ITEM NO	ITEM DESCRIPTION	NO	LENGTH(M)	WIDTH(M)	HEIGHT(M)	QUANTITY	TOTAL
1	Excavation for foundation	1	51.5	0.9	1.5	69.525 m^3	69.25 m^3
2	Foundation concrete used in P.C.C [1:3:6]	1	51.5	0.9	0.2	9.27 m^3	9.27 m^3
3	Brick masonry used in cement mortar [1;4] for Foundation upto plinth						
	0.6m offset	1	52.1	0.6	0.3	9.378 m^3	23.523 m^3
	0.5m offset	1	52.3	0.5	0.3	7.845 m^3	
	0.4m offset	1	52.5	0.4	0.3	6.3 m^3	
4	Earth filling work up to plinth						
	surpanch offc.	1	3.8	5	0.55	10.45 m^3	53.12 m^3
	Store room	1	3.8	3	0.55	6.27 m^3	
	Office room	1	3.5	4.2	0.55	8.085 m^3	
	wc	1	3.5	1.8	0.55	3.465 m^3	
	Verandah	1	3.5	2	0.55	3.85 m^3	
5	DPC At plinth level	1	52.5	0.4		21 m^2	21 m^2
6	Brick masonry in superstructure	1	52.7	0.3	3	47.43 m^3	47.43 m^3
	Decution						
	D1	4	1.1	0.3	2.1	0.693 m^3	1.557 m^3
	W1	6	1.8	0.3	1.4	0.756 m^3	
	V1	1	0.6	0.3	0.6	0.108 m^3	
7	Lintel Quantity deduction						

	D1	4	1.7	0.3	0.15	0.0765 m^3	0.2385 m^3
	W1	6	2.4	0.3	0.15	0.108 m^3	
	V1	1	1.2	0.3	0.15	0.054 m^3	
	actual brick masonry		47.43-1.008				39.04 m^3
8	RCC slab	1	7.6	8.3	0.1	6.308 m^3	6.3 m^3
9	Brickwork in parapet wall						
	horizontal	1	7.6	0.3	0.9	2.052 m^3	4.131 m^3
	vertical	1	7.7	0.3	0.9	2.079 m^3	2.079 m^3
10	Plaster work						
	89urpanch offc.						
	Horizontal	2	3.8		5	38 m^2	76 m^2
	Vertical	2	3.8		5	38 m^2	
	Store room						
	horizontal	2	3.8		3	22.8 m^2	45.6 m^2
	vertical	2	3.8		3	22.8 m^2	
	Office room						
	horizontal	2	3.5		4.2	29.4 m^2	58.8 m^2
	vertical	2	3.5		4.2	29.4 m^2	
	WC						
	horizontal	2	3.5		1.8	12.6 m^2	25.2 m^2
	vertical	2	3.5		1.8	12.6 m^2	
	Varandah						
	horizontal	2	3.5		2	14 m^2	28 m^2
	vertical	2	3.5		2	14 m^2	
	Deduction						
	D1	3	1.1		2.1	6.93 m^2	16.38 m^2
	W1	0.5	1.8		1.4	1.26 m^2	

	V1	0.5	0.6		0.6	8.19 m^2	
	Total Plaster						225.41 m^2

ABSTRACT SHEET

ITEM NO	ITEM DESCRIPTION	QUANTITY	RATE	PER	AMOUNT
1	Excavation work	69	130	M^3	9003
2	Foundation concrete	9.3	827	M^3	7666
3	RCC Work total	55	500	M^3	27595
4	Steel	2365	48	M^3	113520
5	Brickmasonary upto superstructure	49	3500	M^3	170905
6	Earth filing	53	50	M^3	2656
7	Brick masonry up to plinth	47	800	M^3	37944
8	DPC	21	2400	M^2	50400
9	Smooth plaster	225	40	M^2	9016
10	2mm thick marbel	55	500	M^2	27595
11	Cement	450	300	BAG	135000
12	Sand	16	700	TONE	11200
					602500

Lump sump cost=6, 03,000

+10% contractor profit= 60, 300

+5% extra charges like water, electricity, transport=30, 150

Final Cost of Gram panchayat office = 6, 93 ,450

Social design of BUS STOP IN VARSADA VILLAGE

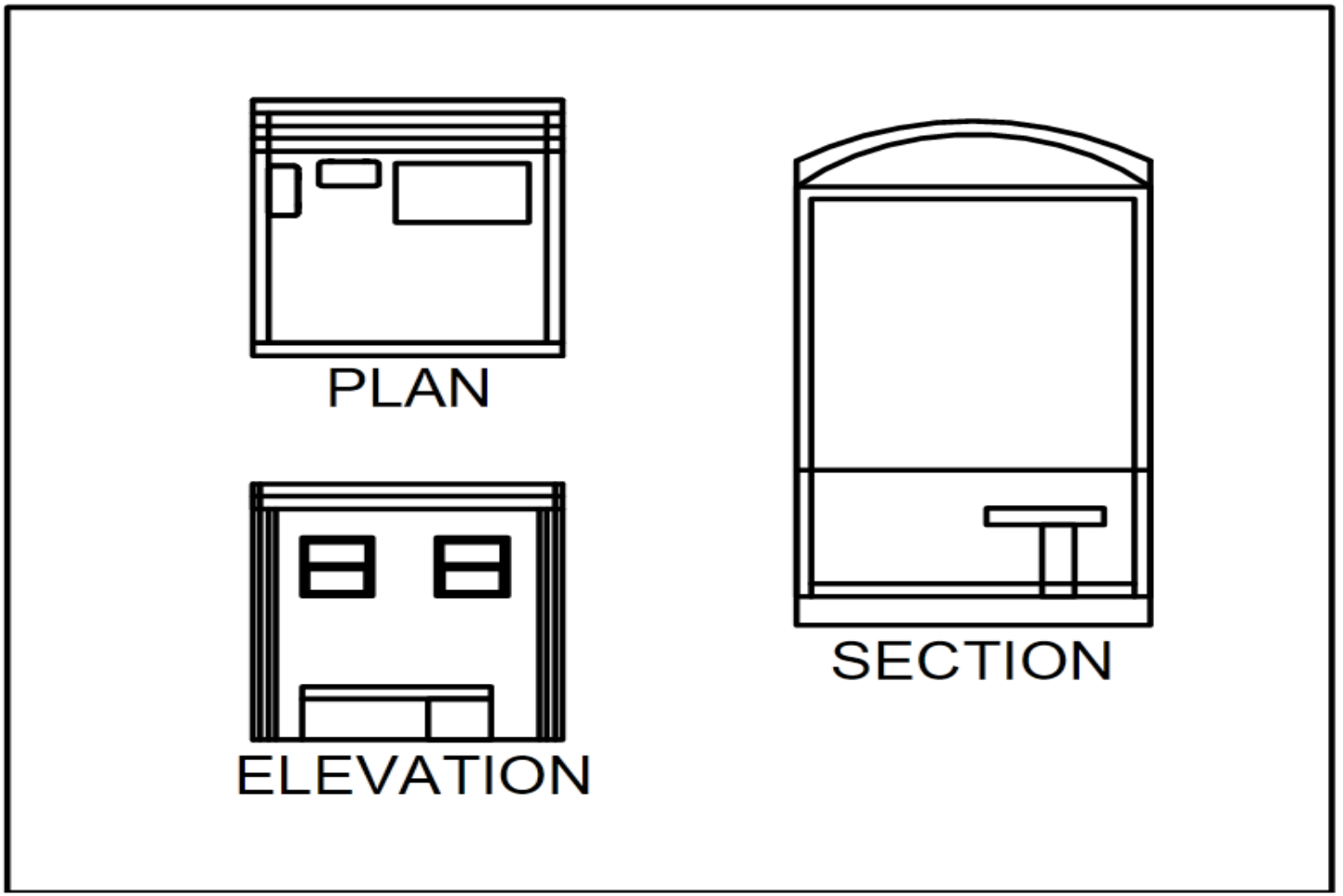


Fig 8.11 BUS STOP of Varsada village

Measurement sheet

ITEM NUMBER	DESCRIPTION	QUANTITY	RTAE	PER	AMOUNT
1	Stainless Steel Waiting bench(160*52*72*)cm	3	3000	Nos	9000
2	Paver blocks	17.5	25	Sqm	500
3	Exterior Steel bus stop shelter	17	2900	Sqm	50,000

Add 2% water charges	1190
Add 10% contracters profit	5950
Contingencies 5%	2975
TOTAL COST =	**69,615**

CHAPTER: - 9

9 Future Development of the Village (for the PART-II Design)

- The study is aimed to know the basic scenario of village through techno economic survey and gap analysis done.
- Through our study we will try to make a master development plan of the village.
- Our master development plan might be including provisions of all the facilities suggest by us, and then we focus on the improvement in the existing facilities. Our aim is to work according to new upcoming T.P. scheme in Varsada village.
- In next part we will design Rainwater Harvesting, PHC, Anganwadi, Maintenance of Library, Bio gas plant, Circle (4rasta).
- Also our focus will be making of sustainable or green village to Varsada.
- This study frame work can enable to local bodies of Varsada village to approach the various Govt. schemes.
- As major facilities are already available in village, few facilities are required which we suggest. One this all basic facilities are available in Varsada Village, then we should focus on making the village smarter by adopting various technology.
- In new designs proposed by as, we should focus on regular maintenance of these facilities. Because due to lack of maintenance peoples will avoid to use and hence it become obsolete.
- For maintenance purpose we should provide a maintenance plan which is economical and effective. It can be done by villagers them self.
- In this way with coordination between various Government agencies, we can develop Varsada village in better way as other smart or model villages.

CHAPTER; - 10

10.1 Conclusion (Entire Village Project)

Summary of Socio-cultural design:

- In sociocultural infrastructure we can design community hall with gram panchayat which is very useful for the village.
- To improve life standard of people.
- Increase communication facility.

Summary of Overall design:

- To improve life standard of people.
- Improve water supply facility &irrigation system of village.
- Development of proper drainage system.
- The system of solid waste management should be properly developed. Proposals for solar lights each and every area should be made possible By the survey which we had conducted, we have finalized some problems in village and solve by designing the physical infrastructure as overhead water tank & solid waste management, social infrastructure as sanitary facility of village, sustainable development and road facilities with Gram-Panchayat at village.
- By providing these facilities to village we can improve the living standard of village people. The migration will be decreases & the growth of country will be increases.

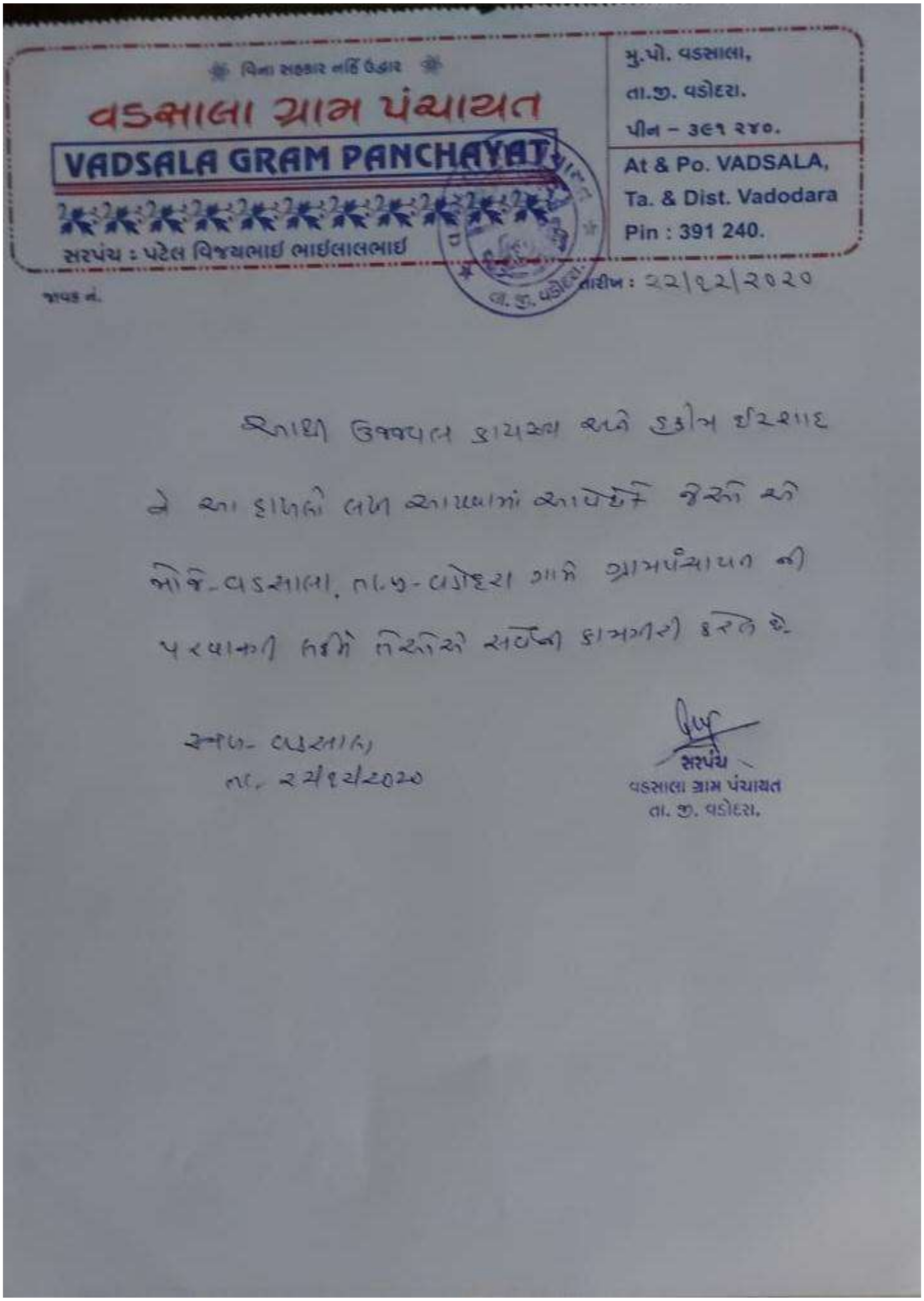
CHAPTER 11

Various books referred.
Solid waste disposal system book by LUDWIG SASSE (online).
SOR of R & B department of Ahmadabad.
Rate from market survey done in Vadodara region.

Various official websites used.

- Various official websites used.
- www.censusindia.gov.in
- www.rural.nic.in
- www.sagy.gov.in
- www.swaniti.in
- www.biotec-Asia.com
- https://panchayat.gujarat.gov.in
- National institute of urban affairs (www.niug.org)
- www.unohabitat.org
- www.giftgujarat.in
- www.solarsystem.nasan.gov
- www.mdws.nic.in (ministry of drinking water and sanitation government of India)
- www.gujaratgov.in
- GPCB (Gujarat Pollution Control Board)
- MPCB (Maharashtra Pollution Control Board)
- www.cag.gov.in www.gujarattourism.in
- http://moud.gov.in
- https://www.wikipedia.org/

CHAPTER 12



વિના સહકાર નહિં ઉદ્ધાર

વડસાલા ગ્રામ પંચાયત

VADSALA GRAM PANCHAYAT

સરપંચ : પટેલ વિજયભાઈ ભાઈલાલભાઈ

મુ.પો. વડસાલા,
તા.જી. વડોદરા.
પીન – ૩૯૧ ૨૪૦.

At & Po. VADSALA,
Ta. & Dist. Vadodara
Pin : 391 240.

જાવક નં.

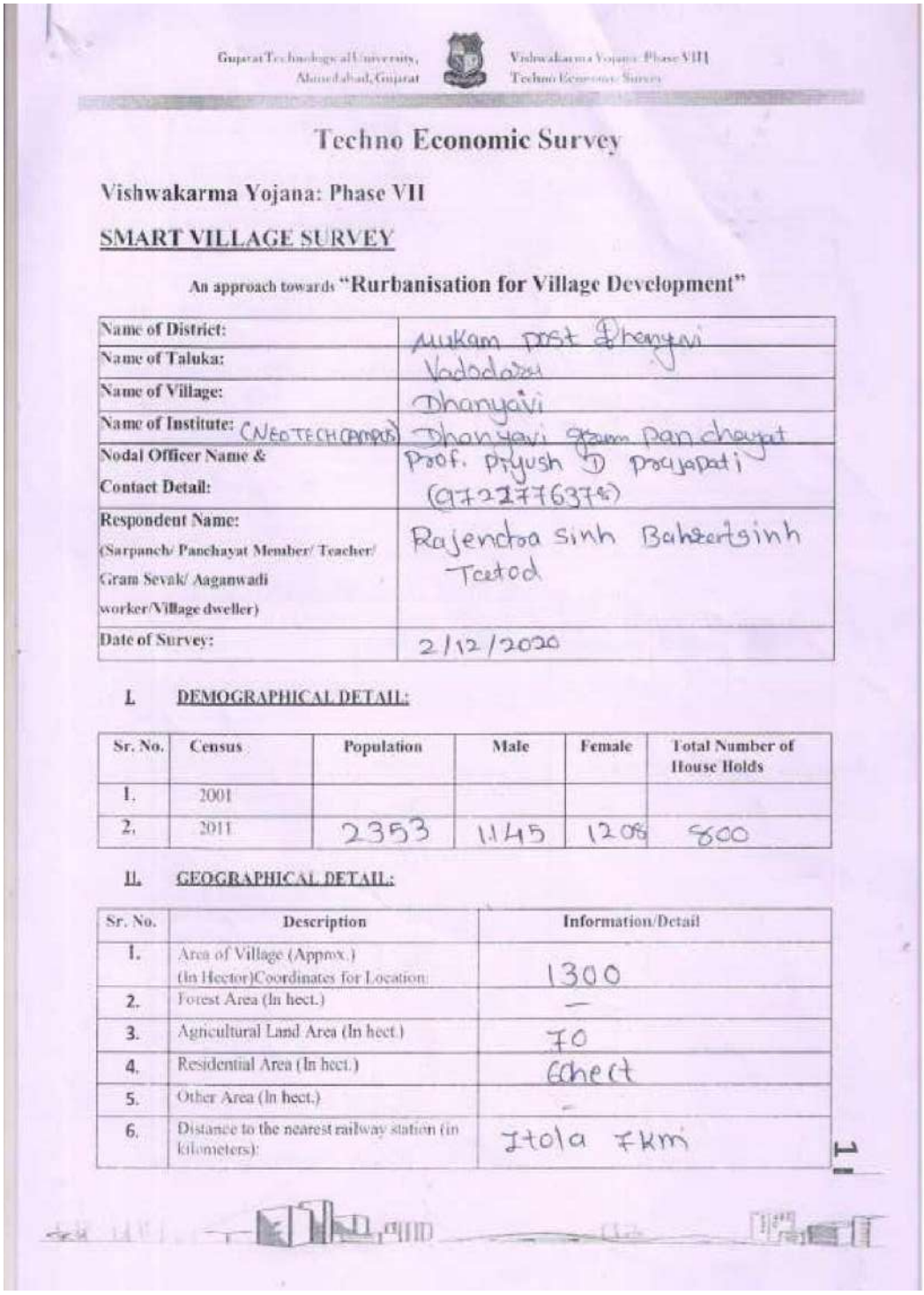
તારીખ : ૨૨/૧૨/૨૦૨૦

આથી ઉજ્જવલ કાપડિયા અને ફકીર ઈરશાદ ને આ દાખલો લખી આપવામાં આવે છે કે જેઓ એ મોજે-વડસાલા, તા.જી-વડોદરા ગામે ગ્રામપંચાયત ની પરવાનગી લઈને નિરીક્ષણ સર્વેની કામગીરી કરેલ છે.

સ્થળ- વડસાલા
તા. ૨૨/૧૨/૨૦૨૦

સરપંચ
વડસાલા ગ્રામ પંચાયત
તા. જી. વડોદરા.

SMART VILLAGE SURVEY (DHANIYAVI)



Gujarat Technological University, Ahmedabad, Gujarat — Vishwakarma Yojana: Phase VIII, Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VII

SMART VILLAGE SURVEY

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

Name of District:	Amkam post Dhaniyavi
Name of Taluka:	Vadodara
Name of Village:	Dhaniyavi
Name of Institute: (NEOTECH CAMPUS)	Dhaniyavi gram Panchayat
Nodal Officer Name & Contact Detail:	Prof. Piyush D Prajapati (9727177637)
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Rajendra sinh Bahadursinh Teetod
Date of Survey:	2/12/2020

I. **DEMOGRAPHICAL DETAIL:**

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	2353	1145	1208	800

II. **GEOGRAPHICAL DETAIL:**

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1300
2.	Forest Area (In hect.)	–
3.	Agricultural Land Area (In hect.)	70
4.	Residential Area (In hect.)	60hect
5.	Other Area (In hect.)	–
6.	Distance to the nearest railway station (in kilometers):	Itola 7km

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

7.	Name of Nearest Town with Distance:	Vadodara 11Km
8.	Distance to the nearest bus station (in kilometers):	POR 4Km
9.	Whether village is connected to all road for the any facility or town or City?	Good (PUCCA)

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Farmers
	2.	labours
	3.	Owner of Shops

Major crops grown in the village:	1.	Bajri
	2.	Jowar
	3.	Paddy

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		✓		
2.	**DUG WELL**				
	Protected Well	yes			
	Un Protected Well				
3.	**WATER FROM SPRING**				
	Protected Spring				
	Unprotected Spring	yes			
	Rainwater				
	Tanker Truck				
	Cart With Small Tank				
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/**				
	Irrigation Channel	yes	✓		
	Bottled Water	NO			
	Hand Pump	yes	✓		
	Other(Specify)**Lake/ Pond**				

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Suggestions if any:						
B.	**Water Tank Facility**					
	Overhead Tank	Capacity:	✓			1 (45,000)
	Underground Sump	Capacity:				
Suggestions if any:						
C.	**The Type of Drainage Facility**					
	A. UNDERGROUND DRAINAGE 1 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	Yes	✓			
Suggestions if any:						
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**					
	Village approach road	✓	✓			Black Topped PUCCA
	Main road	✓	✓			PUCCA
	Internal streets	✓	✓			RCC Road
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH48	✓			PUCCA
Suggestions if any:						
E.	**Transport Facility**					
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	NO	✓			
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes	✓			
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Auto Rickshaw	✓			
Suggestions if any:						
F.	**Electricity Distribution**					
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes	✓			VMBL

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	Power supply for Domestic Use	Yes			
	Power supply for Agricultural Use	Yes			
	Power supply for Commercial Use	Yes			
	Road/ Street Lights	Yes			
	Electrification in Government Buildings/ Schools/ Hospitals	Yes			
	Renewable Energy Source Facilities (Y/ N)	Yes	✓		Solar
	LED Facilities	Yes	✓		Some working
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	Yes			(1) block
	Location Condition	Good			
	Community Toilet (With bath/ without bath facilities)	NO			
	Solid & liquid waste Disposal system available	Yes			Tempo, Lari (3 Kmaway)
	Any facility for Waste collection from road	Yes			
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND				
	STREAM/RIVER				
	CANAL	✓	✓		
	WELL		✓		
	TUBE WELL	✓			
	OTHER (SPECIFY)	✓	✓		
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Yes	✓		80% PUCCA 20% KUCHA

V. SOCIAL INFRASTRUCTURAL FACILITIES:

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

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Techno Economic Survey

Suggestions if any:

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

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

Suggestions if any:

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

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Vishwakarma Yojana: Phase VIII
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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	Good		yes	
	Other Facility				

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village?				NO
	2. Are there any beneficiaries in the village from the following programme?			✓	NO
	3. Janani Suraksha Yojana	working		✓	
	4. Kishori Shakti Yojana	working			
	5. Balika Samriddhi Yojana				
	6. Mid-day Meal Programme				
	7. Intergrated Child Development Scheme (ICDS)	working		✓	
	8. Mahila Mandal Protsahan Yojana (MMPY)	working		✓	
	9. National Food for work Programme (NFFWP)				
	10. National Social Assistance Programme			✓	
	11. Sanitation Programme (SP)	working		✓	
	12. Rajiv Gandhi National Drinking Water Mission	working			
	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)	working			
	19. Indira Awas Yaojna (IAY)			✓	
	20. Samagra Awas Yojana (SAY)				
	21. Sanjay Gandhi Niradhar Yojana (SGNY)	working			
	22. Jawahar Gram Samridhi Yojana (JGSY)	working		✓	
	23. Other (SPECIFY)				

17

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

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

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		
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	cleanning daily fogging more month	

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

સરપંચ
ઘનીયાવી જુથ ગ્રામપંચાયત
તા.જી.વડોદરા

(એનેક્ષર:- ૧)

અરજી ફોર્મ (પરિશિષ્ટ-અ)

ક્રમ	વિગત	માહિતી
૧	ગ્રામ પંચાયતનું નામ	Dhanyavi gram panchayat
૨	તાલુકાનું નામ	Mukam post Dhanyavi
૩	જિલ્લાનું નામ	vadodara
૪	પછાત તાલુકા પૈકી નું ગામ હોય તો વિગત	–
૫	કુલ વસ્તી (૨૦૧૧ વસ્તી ગણતરી મુજબ)	
	પુરૂષ	1145
	સ્ત્રી	1208
	કુલ	2353
	અનુસુચિત જાતી	196
	અનુસુચિત જન જાતી	390
	અન્ય	
૬	કુલ કુટુંબોની સંખ્યા	
૭	સાક્ષરતા દર	
	પુરૂષ	88-18
	સ્ત્રી	79-43
૮	કુલ પ્રાથમિક શાળા	1
૯	કુલ આંગણવાડી	3
૧૦	પ્રાથમિક આરોગ્ય કેન્દ્ર	1
૧૧	ગ્રામ પંચાયતના કુલ સભ્યો (સદસ્યો સહિત)	
૧૨	સરપંચનું નામ :- Rajendrasinh Bahrotsinh TATOD	
૧૩	સામાજિક ન્યાય સમિતિના ચેરમેનનું નામ:-	

સરપંચ
ધનીયાવી જુથ ગ્રામપંચાયત
તા.જી.વડોદરા

તલાટી કમ મંત્રીની સહી
ધનીયાવી જુથ ગ્રામપંચાયત
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	
	ગત વર્ષ નો પ્રવેશ દર	124
	ચાલુ વર્ષનો પ્રવેશ દર	237
૨	ડ્રોપ આઉટ પ્રમાણ	-
	ગત વર્ષનો ડ્રોપ આઉટ	-
	ચાલુ વર્ષનો ડ્રોપ આઉટ	-
3	શિક્ષણ ગુણવત્તા સુધારણા આંક (A, B, C, D)	C

૨. આરોગ્ય

ક્રમ	વિગત	માહિતી
૧	જન્મ નોંધણી ની ટકાવારી	૧૦૦ %
૨	મરણ નોંધણી ની ટકાવારી	૧૦૦%
3	રસીકરણ ની ટકાવારી (૧૧ મહિનાથી ૨૩ મહિનાના બાળકો)	
૪	ઇન્ફન્ટ બાળ મૃત્યુદર ની ટકાવારી	
૫	માતા મૃત્યુદર ની ટકાવારી	
૬	સંસ્થાકીય પ્રસુતિ ની ટકાવારી	
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	

3. સ્વચ્છતા

ક્રમ	વિગત	માહિતી
૧	૧૦૦% વ્યક્તિગત શૌચાલયની કામગીરી	હા
	કુલ ઘર	૯૦૦ 60%.
	વ્યક્તિગત શૌચાલય ધરાવતા ઘર	[illegible] 600 ઘરો
૨	શુધ્ધ પીવાના પાણીની વ્યવસ્થા (બે વાક્યમાં લખવું)	
	પુરતા પ્રમાણમાં વ્યવસ્થિત બે ટાંકી બનાવવામાં આવેલ છે.	
3	જાહેર સ્થળોની સ્વચ્છતા (હાલની વ્યવસ્થા બે વાક્યમાં)	
	સ્વચ્છતા જળવાય છે.	
૪	ડોર ટુ ડોર ધન કચરાના નિકાલની વ્યવસ્થા	
	કુલ ઘર	600
	આવરી લેવાયેલ ઘર	600
૫	સ્પર્ધા ના સમયગાળા દરમ્યાન ગામમાં કોઇ રોગચાળાનો બનાવ બનેલ છે ? (હા કે ના)	ના

૪. પંચાયત

ક્રમ	વિગત	માહિતી
	પંચાયત વેરો	
૧	ગત વર્ષની વસુલાત	60%.
	ચાલુ વર્ષની વસુલાત	૯૦%.
૨	એરિયા બેઝ આકારણી લાગુ કરી છે ? (હા કે ના)	ના
3	છેલ્લી ગ્રામસભામાં હાજરીની ટકાવારી	૫૦%.
૪	છેલ્લી ગ્રામસભામાં મહીલા હાજરીની ટકાવારી	૨૦%.
૫	ઇ-ગ્રામ મારફતે સુવિધાઓ	
	જન્મ-મરણ દાખલા, ૭/૧૨, ૮અ/ના	
	ઉતારા, લાઈટ બીલ, [illegible]	
૬	છેલ્લા વર્ષમાં ગ્રામ પંચાયતની મળેલ બેઠકની સંખ્યા	૪ મીટીંગ

૫. વિશિષ્ટ સિદ્ધી

ક્રમ	વિગત	માહિતી
૧	મળેલ પુરસ્કારો (√) કરવી	
	સમરસ	હા
	નિર્મળ ગામ પુરસ્કાર	ગાડ મારેલ છે ,હા
	પાવન ગામ	નથી
	તીર્થગામ	નથી
	૧૦૦ ટકા બેન્ક ખાતા	૭૦-૮૦ %
	ગૌરવ ગ્રામ સભા એવોર્ડ	નથી
	શ્રેષ્ઠ ગ્રામ પંચાયત એવોર્ડ	નથી
	અન્ય એવોર્ડ	ના
	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

સરપંચશ્રીની સહી
સરપંચ
ઘનીયાવી જુથ ગ્રામપંચાયત
તા.જી.વડોદરા

તલાટી કમમંત્રી
ઘનીયાવી જુથ ગ્રામપંચાયત
તા.જી.વડોદરા

ઠરાવનો નમૂનો (પરિશિષ્ટ-ક)

ઠરાવ નંબર-

ગ્રામપંચાયત ને સ્માર્ટ વિલેજ યોજના અંતર્ગત ચાલુ વર્ષ ૨૦૨૦-૨૧ ની સ્માર્ટ વિલેજ સ્પર્ધામાં ભાગ લેવા અંગે નિયત અરજી ફોર્મની વિગતો વંચાણે લેવામાં આવી. જે અંગે ચર્ચા વિચારણા કરી તમામ ધારણો 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.

IDEAL VILLAGE SURVEY (Virod)

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

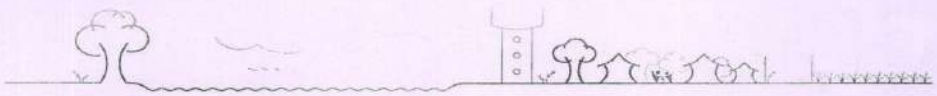
Name of Village:	Virod
Name of Taluka:	Vadodara
Name of District:	Vadodara
Name of Institute:	Neo-tech Institute of tech
Nodal Officer Name & Contact Detail:	Prof. Piyush D. Prajapati (9722776378)
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Vidhyaben Nazambhai Thakor
Date of Survey:	9/11/2020

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	2128	167	222	64
ii)	2011	2461	1289	1172	506

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	1341
	Forest Area (In hect.)	–
	Agricultural Land Area (In hect.)	100
	Residential Area (In hect.)	8 hect
	Other Area (In hect.)	–
	Water bodies	6 Pond
	Nearest Town with Distance:	Vadodara (12km)

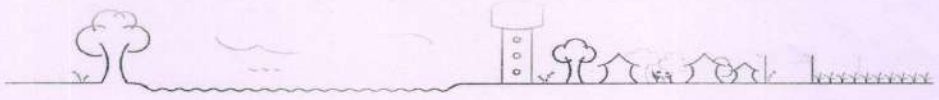


3. **Occupational Details:**

Name of Three Major Occupation groups in Village	1.	Farmer
	2.	Businessmen
	3.	labours

4. **Physical Infrastructure Facilities:**

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated)	yes	✓		
	• RO Water	–	–		
	• Well (Covered/ Uncovered)	yes	✓		
	• Hand pumps	yes	✓		
	• Tube well/ Borehole	yes	✓		
	• River/ Canal/ Spring/ Lake/ Pond	yes	✓		
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	30,000 lit		
	Underground Sump	Capacity:	30,000 lit		
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)	yes	✓		
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	closed	–	–	–
	If Open than Pucca / Kutchcha	–	–	–	–
	Whether drain water is discharged directly in to Water bodies/ Sewer plants	–	–	–	
Suggestions if any:					



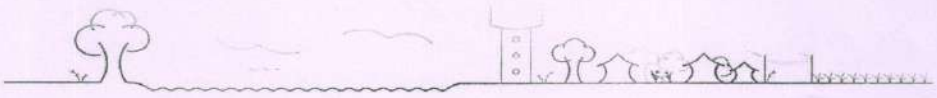
E.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	No			
	Main road	yes	✓		Pucca
	Internal streets	yes	✓		Pucca
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH-48 4km			
Suggestions if any:					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No			Dashavath Village (9km)
	Bus station (Y/N) Condition: (If No thân Nearest Bus Station---Kms)	yes			
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	yes			
Suggestions if any:					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	yes	✓		
	Power supply for Domestic Use	yes	✓		
	Power supply for Agricultural Use	yes	✓		
	Power supply for Commercial Use	yes	✓		
	Road/ Street Lights	yes	✓		

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

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks

K.	**Health Facilities:**				
	Sub center/ PHC/ CHC /Government Hospital/ Child welfare & Maternity Homes (If Yes than specify No. of Beds) Condition:	Sub-centre			
	Private Clinic/Private Hospital/ Nursing Home	–			
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					
L.	**Education Facilities:**				
	Aaganwadi/ Play group	yes	✓		1
	Primary School	yes	✓		3
	Secondary school	No			
	Higher sec. School	No			
	ITI college/ vocational Training Center	No			
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	yes			
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					
M.	**Socio- Culture Facilities**				
	Community Hall (With or without TV) Location:	yes	✓		



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

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

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

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

7. **Data Collection From Village**

Village Base Map **Available: ~~Hard Copy/Soft Copy~~**	

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

8. **Additional Information/ Requirement:**

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

9. **Smart Village Proposal Design**

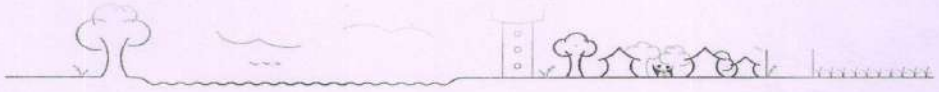
Sr. No.	Descriptions	Information/ Detail	Remarks
1.			

તલાટી કમ મંત્રી
વિરોદ ગામ પંચાયત
તા. જિ. વડોદરા.

વિરોદ ગામ પંચાયત
તા. જિ. વડોદરા.

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

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



(એનેક્ષર:- ૧)

અરજી ફોર્મ (પરિશિષ્ટ-અ)

ક્રમ	વિગત		માહિતી
૧	ગ્રામ પંચાયતનું નામ		વિરોદ
૨	તાલુકાનું નામ		વડોદરા
3	જિલ્લાનું નામ		વડોદરા
૪	પછાત તાલુકા પૈકી નું ગામ હોય તો વિગત		
૫	કુલ વસ્તી (૨૦૧૧ વસ્તી ગણતરી મુજબ)		
		પુરૂષ	૨૨૭૨
		સ્ત્રી	૨૨૮૬
		કુલ	૪૫૫૮
		અનુસુચિત જાતી	૬૫
		અનુસુચિત જન જાતી	૪૭૩
		અન્ય	
૬	કુલ કુટુંબોની સંખ્યા		૫૦૫
૭	સાક્ષરતા દર		
		પુરૂષ	૯૫.૮૯
		સ્ત્રી	૮૭.૦૯
૮	કુલ પ્રાથમિક શાળા		૨
૯	કુલ આંગણવાડી		3
૧૦	પ્રાથમિક આરોગ્ય કેન્દ્ર		CH.C Sub centre
૧૧	ગ્રામ પંચાયતના કુલ સભ્યો (સદસ્યો સહિત)		૭
૧૨	સરપંચનું નામ :- વિદ્યાબેન ભારતભાઈ ઠાકોર		
૧૩	સામાજિક ન્યાય સમિતિના ચેરમેનનું નામ:- કેશનભાઈ શંકરભાઈ વહોલા		

સરપંચશ્રીની સહી

V.N.T
સરપંચ
વિરોદ ગ્રામપંચાયત
તા.જી.વડોદરા

ગ્રામ પંચાયતનું
રાઉન્ડ સીલ

વિરોદ ગ્રામ પંચાયત
તા. જી. વડોદરા

તલાટી કમ મંત્રીની સહી

Chaudhari
તલાટી કમ મંત્રી
વિરોદ ગ્રામ પંચાયત
તા. જિ. 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	
	ગત વર્ષ નો પ્રવેશ દર	79.16
	ચાલુ વર્ષનો પ્રવેશ દર	84.61%
૨	ડ્રોપ આઉટ પ્રમાણ	
	ગત વર્ષનો ડ્રોપ આઉટ	14
	ચાલુ વર્ષનો ડ્રોપ આઉટ	—
૩	શિક્ષણ ગુણવત્તા સુધારણા આંક (A, B, C, D)	B

૨. આરોગ્ય

ક્રમ	વિગત	માહિતી
૧	જન્મ નોંધણી ની ટકાવારી	24
૨	મરણ નોંધણી ની ટકાવારી	20
૩	રસીકરણ ની ટકાવારી (૧૧ મહિનાથી ૨૩ મહિનાના બાળકો)	24
૪	ઇન્ફન્ટ બાળ મૃત્યુદર ની ટકાવારી	1
૫	માતા મૃત્યુદર ની ટકાવારી	0
૬	સંસ્થાકીય પ્રસુતિ ની ટકાવારી	24
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	
	કુલ ઘર	
	વ્યક્તિગત શૌચાલય ધરાવતા ઘર	
૨	શુધ્ધ પીવાના પાણીની વ્યવસ્થા (બે વાક્યમાં લખવું)	
૩	જાહેર સ્થળોની સ્વચ્છતા (હાલની વ્યવસ્થા બે વાક્યમાં)	
૪	ડોર ટુ ડોર ઘન 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	૫૩૩૯૩૫/-
	ચાલુ વર્ષની વસુલાત	૧૩૯૪૮૫/-
૨	એરિયા બેઝ આકારણી લાગુ કરી છે ? (હા કે ના)	હા
૩	છેલ્લી ગ્રામસભામાં હાજરીની ટકાવારી	૫૧%
૪	છેલ્લી ગ્રામસભામાં મહીલા હાજરીની ટકાવારી	૨૫%
૫	ઇ-ગ્રામ મારફતે સુવિધાઓ	
		જાવક દાખલા, ૭/૧૨
		(૪ નકલ જન્મ મરણનોંધલો)
૬	છેલ્લા વર્ષમાં ગ્રામ પંચાયતની મળેલ બેઠકની સંખ્યા	

૫. વિશિષ્ટ સિદ્ધી

ક્રમ	વિગત	માહિતી
૧	મળેલ પુરસ્કારો (√) કરવી	
	સમરસ	
	નિર્મળ ગામ પુરસ્કાર	
	પાવન ગામ	
	તીર્થગામ	
	૧૦૦ ટકા બેન્ક ખાતા	
	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	ઈ
૨	પ્રધાનમંત્રી જીવન જ્યોત વીમા યોજના	ઈ
૩	અટલ પેન્શન યોજના	–
૪	સુકન્યા સમૃધ્ધી યોજના	ઈ

V.N.T

સરપંચશ્રીની સહી

વિરોદ ગ્રામપંચાયત
તા.જી.વડોદરા

Dhaudheeri

તલાટી કમ મંત્રીની સહી

વિરોદ ગ્રામ પંચાયત
તા. જિ. 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 ધારણો 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.

ALLOCATED VILLAGE SURVEY (Varsada)

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VII

ALLOCATED VILLAGE SURVEY

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

Name of District:	Vadodara
Name of Taluka:	Vadodara
Name of Village:	VARSADA
Name of Institute:	NEO-TECH TECHNICAL CAMPUS
Nodal Officer Name & Contact Detail:	Pathiyus Prajapati D 9722776378
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sholanki Ambubhai Jethabhai
Date of Survey:	16/12/2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	3156	1622	1534	758

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	692 hec.
2.	Forest Area (In hect.)	575 hec
3.	Agricultural Land Area (In hect.)	—
4.	Residential Area (In hect.)	
5.	Other Area (In hect.)	15 hec.
6.	Distance to the nearest railway station (in kilometers):	Itola (4.00) Km

7.	Name of Nearest Town with Distance:	Vadodara
8.	Distance to the nearest bus station (in kilometers).	3.00 KM from Post
9.	Whether village is connected to all road for the any facility or town or City?	NH 48

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	farmers
	2.	workers
	3.	ખેડૂત ગરીબ

Major crops grown in the village:	1.	ડાંગર
	2.	ઘઉં
	3.	કપાસ

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
1.	**PIPED WATER** Piped Into Dwelling Piped To Yard/Plot Public Tap/Standpipe Tube Well Or Bore Well	YES	✓		
2.	**DUG WELL** Protected Well Un Protected Well	–	–		
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	YES	✓		

	Other(Specify)Lake/ Pond	YES	✓		
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	50,000lit	✓	
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE -1	YES	✓		
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	YES	✓		
	Main road	NO	–		
	Internal streets	YES	✓		
	Nearest NH/SH/MDR/ODR Dist. in kms.	NH48	✓		
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	4.0KM (JTOLA)	✓		
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	3KM (POR)	✓		
	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	✓		

Gujarat Technological University, Ahmedabad, Gujarat — Vishwakarma Yojana: Phase VIII — Techno Economic Survey

	Power supply for Domestic Use	YES	✓		
	Power supply for Agricultural Use	NO	–		Solar system Required
	Power supply for Commercial Use				
	Road/ Street Lights	NO	–	–	
	Electrification in Government Buildings/ Schools/ Hospitals	Yes	✓		
	Renewable Energy Source Facilities (Y/ N)	NO	–		
	LED Facilities	NO	–		
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	NO			
	Location Condition				
	Community Toilet (With bath/ without bath facilities)	NO			
	Solid & liquid waste Disposal system available	YES			
	Any facility for Waste collection from road	NO			
Suggestions if any:	Public Toilet avaulable ~~for~~ (but No in Use)				
H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL. OTHER (SPECIFY)	Khungal			
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	70%	✓	–	

V. SOCIAL INFRASTRUCTURAL FACILITIES:

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

	If any of the above Facility is not available in village than approx. distance from village: ...3....kms. (Vadodara)
Suggestions if any:	

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

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	NOT Good		✓	
	Telecommunication Network/ STD booth	NO			✓
	General Market	NOT More			✓
	Shops (Public Distribution System)				
	Panchayat Building				
	Pharmacy/Medical Shop	—	—	—	✓
	Bank & ATM Facility	—	—	—	✓
	Agriculture Co-operative Society	—	—	—	✓
	Milk Co-operative Soc.	Some			✓
	Small Scale Industries	—			
	Internet Cafes/ Common Service Center/Wi Fi	—			✓
	Youth Club	—			✓
	Mahila Mandal	—			✓

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

Suggestions if any:

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

7

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

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

18

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	NOT YET	
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	Every day cleanning	

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

સરપંચ
વડસાલા ગ્રામ પંચાયત
તા. જી. વડોદરા.

(એનેક્ષર:- ૧)

અરજી ફોર્મ (પરિશિષ્ટ-અ)

ક્રમ	વિગત	માહિતી
૧	ગ્રામ પંચાયતનું નામ	VARSADA
૨	તાલુકાનું નામ	VADODARA
૩	જિલ્લાનું નામ	VADODARA
૪	પછાત તાલુકા પૈકી નું ગામ હોય તો વિગત	—
૫	કુલ વસ્તી (૨૦૧૧ વસ્તી ગણતરી મુજબ)·	
	પુરૂષ	૨૬૨૨
	સ્ત્રી	૨૪૩૪
	કુલ	૩૧૫૬
	અનુસુચિત જાતી	(368) ૩૬૮
	અનુસુચિત જન જાતી	(791) ૭૯૧
	અન્ય	૧૮૯૭
૬	કુલ કુટુંબોની સંખ્યા	૭૫૮
૭	સાક્ષરતા દર	
	પુરૂષ	
	સ્ત્રી	
૮	કુલ પ્રાથમિક શાળા	૦૨
૯	કુલ આંગણવાડી	૦૩
૧૦	પ્રાથમિક આરોગ્ય કેન્દ્ર	—
૧૧	ગ્રામ પંચાયતના કુલ સભ્યો (સદસ્યો સહિત)	૧૧
૧૨	સરપંચનું નામ :- શ્રીમતી સંજુલાબેન જગદીશભાઈ	
૧૩	સામાજિક ન્યાય સમિતિના ચેરમેનનું નામ:-	

સરપંચશ્રીની સહી

વડસાલા ગ્રામ પંચાયત
તા. જી. વડોદરા.

ગ્રામ પંચાયતનું
રાઉન્ડ સીલ

તલાટી કમ મંત્રીની સહી

વડસાલા 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	
	ગત વર્ષ નો પ્રવેશ દર	
	ચાલુ વર્ષનો પ્રવેશ દર	
૨	ડ્રોપ આઉટ પ્રમાણ	
	ગત વર્ષનો ડ્રોપ આઉટ	
	ચાલુ વર્ષનો ડ્રોપ આઉટ	
૩	શિક્ષણ ગુણવત્તા સુધારણા આંક (A, B, C, D)	

૨. આરોગ્ય

ક્રમ	વિગત	માહિતી
૧	જન્મ નોંધણી ની ટકાવારી	૧૦૦%
૨	મરણ નોંધણી ની ટકાવારી	૧૦૦%
૩	રસીકરણ ની ટકાવારી (૧૧ મહિનાથી ૨૩ મહિનાના બાળકો)	૧૦૦%
૪	ઇન્ફન્ટ બાળ મૃત્યુદર ની ટકાવારી	[redacted]
૫	માતા મૃત્યુદર ની ટકાવારી	૦%
૬	સંસ્થાકીય પ્રસુતિ ની ટકાવારી	૧૦૦%
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	

3. સ્વચ્છતા

ક્રમ	વિગત	માહિતી
૧	૧૦૦% વ્યક્તિગત શૌચાલયની કામગીરી	૧૦૦%
	કુલ ઘર	૧૦૯૫
	વ્યક્તિગત શૌચાલય ધરાવતા ઘર	૧૦૯૫
૨	શુધ્ધ પીવાના પાણીની વ્યવસ્થા (બે વાક્યમાં લખ્યું)	
	—	
૩	જાહેર સ્થળોની સ્વચ્છતા (હાલની વ્યવસ્થા બે વાક્યમાં)	
	—	
૪	ડોર ટુ ડોર ધન કચરાના નિકાલની વ્યવસ્થા	
	કુલ ઘર	૧૦૯૫
	આવરી લેવાયેલ ઘર	૧૦૯૫
૫	સ્પર્ધા ના સમયગાળા દરમ્યાન ગામમાં કોઇ રોગચાળાનો બનાવ બનેલ છે ? (હા કે ના)	ના

4. પંચાયત

ક્રમ	વિગત	માહિતી
૧	પંચાયત વેરો	
	ગત વર્ષની વસુલાત	૬૪,૧૩,૬૧૦/-
	ચાલુ વર્ષની વસુલાત	૨૦,૨૨,૬૦૧/-
૨	એરિયા બેઝ આકારણી લાગુ કરી છે ? (હા કે ના)	ના
૩	છેલ્લી ગ્રામસભામાં હાજરીની ટકાવારી	૩૫%
૪	છેલ્લી ગ્રામસભામાં મહીલા હાજરીની ટકાવારી	૬૪%
૫	ઇ-ગ્રામ મારફતે સુવિધાઓ	
		- ૭/૧૨, ૮-અ ની નકલ
		- જન્મ મરણના દાખલા
૬	છેલ્લા વર્ષમાં ગ્રામ પંચાયતની મળેલ બેઠકની સંખ્યા	૨૨

૫. વિશિષ્ટ સિદ્ધી

ક્રમ	વિગત	માહિતી
૧	મળેલ પુરસ્કારો (√) કરવી	
	સમરસ	
	નિર્મળ ગ્રામ પુરસ્કાર	
	પાવન ગ્રામ	
	તીર્થગામ	
	૧૦૦ ટકા બેન્ક ખાતા	
	ગૌરવ ગ્રામ સભા એવોર્ડ	
	શ્રેષ્ઠ ગ્રામ પંચાયત એવોર્ડ	
	અન્ય એવોર્ડ	૨-પરિવાર ગ્રામ પુરસ્કાર
	અન્ય વિગતો:--	

૬. કેન્દ્ર સરકારશ્રીની નીચે મુજબની યોજનાઓની વિગતો

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

સરપંચશ્રીની સહી

વડસાલા ગ્રામ પંચાયત
તા. જી. વડોદરા.

તલાટી કમ મંત્રીની સહી

વડસાલા 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 ધારણો 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.

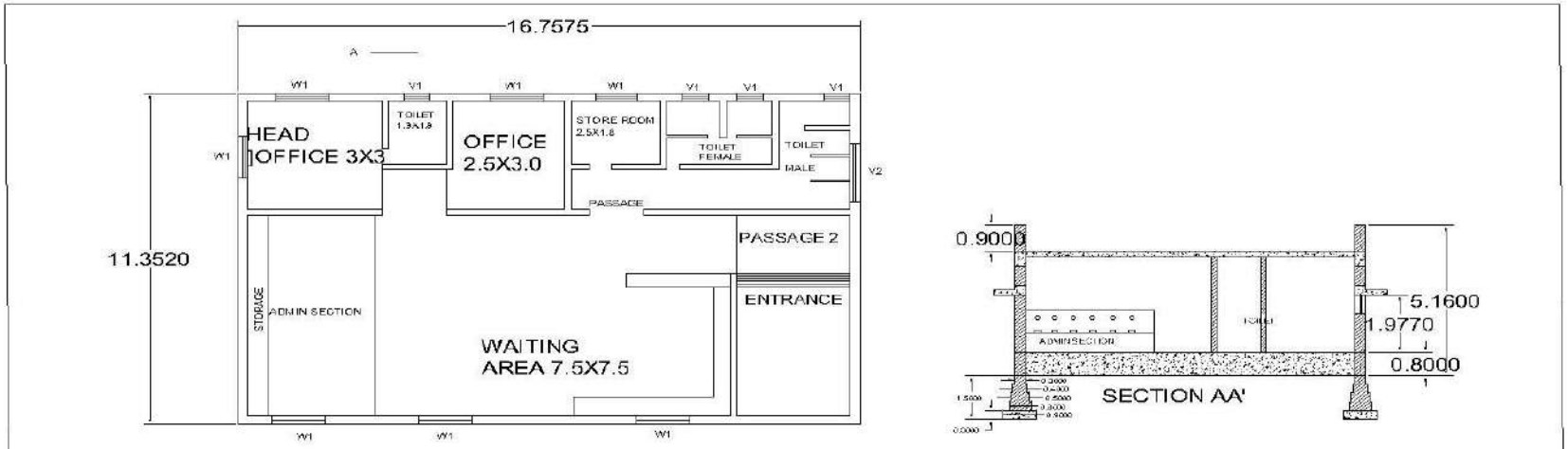
12.4 Gap Analysis

Village Facilities	Planning Commission/UDPFI Norms	Village Name:			
		Population:			
		Existing	Required as per Norms	Smart Vilage / Cities / Heritage Future Projection Design	Gap
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	2	1		**-1**
Primary School	Each Per 2500 population	2	1		**-1**
Secondary School	Per 7,500 population	0	0		**0**
Higher Secondary School	Per 15,000 Population	0	0		**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	0	0		**0**
Primary Health & Child Health Center	Per 20,000 population	0	0		**0**
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)	1	0		**0**

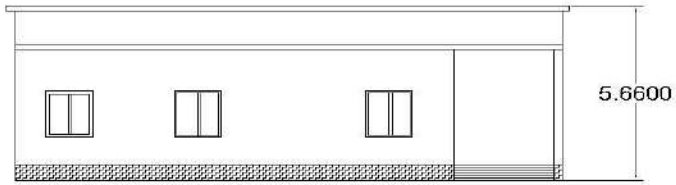
Physical Infrastructure Facilities					
Transportation		**Adequate / Inadequate**			
Pucca Village Approach Road	Each village	Adequate	1		
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	Adequate	1		
Drinking Water (Minimum 70 lpcd)		**Adequate / Inadequate**			
Over Head Tank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

12.5 Summary details of all the village design in table form as part 1 & and Part 2

Sr.no.	Village Name	Branch	Part-I Design	Part-II Design
1	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
2	Bhaniyara	Civil Engineering	Post Office	School
			Krishi Seva Kendra	Community Hall
			Bus Stop	Library
			Gov. Dispensery	Gov. Ration Shop
			Lake Beautification	Water Tank
			Public Toilet	Panchayat Building
3	Varsada	Civil Engineering	Post Office	Bank
			Public Garden	Police Station
			Community Hall	Lake Beautification
			Public Toilet	PHC Center
			Bus stop	School
			Panchayat Building	Dairy
4	Sundan	Civil Engineering	Public Toilet	School
			Public Garden	Crematorium
			Panchayat Building	Lake Beautification
			Road Pavement	Dairy
			U/G Water Tank	Community Hall
			Aaganwadi	Fire Safety Building
5	Varnama	Civil Engineering	Animal Health Care Center	Police Station
			Public Toilet	Water Tank
			Primary School	Bio-Gas Plant
			Post Office	Resort
			Bank	Lake Beautification
			Aaganwadi	Fire Safety Building

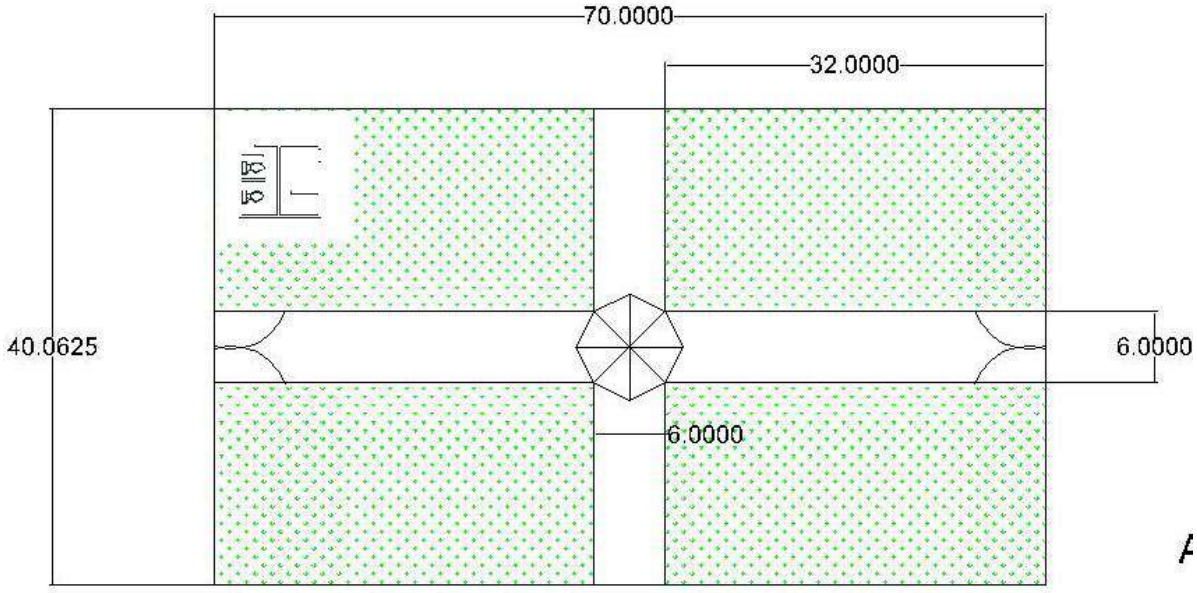


PLAN OF POST OFFICE

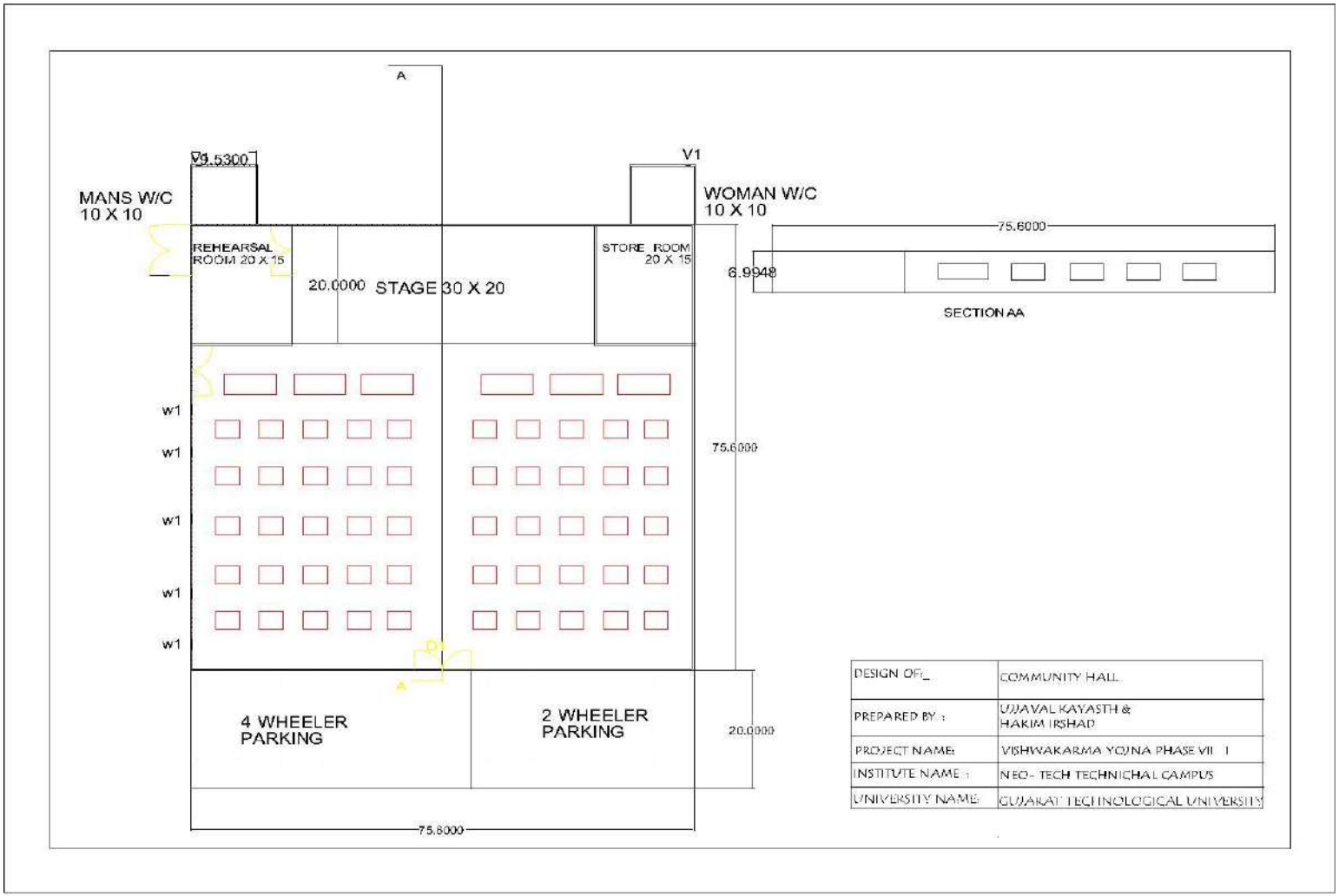


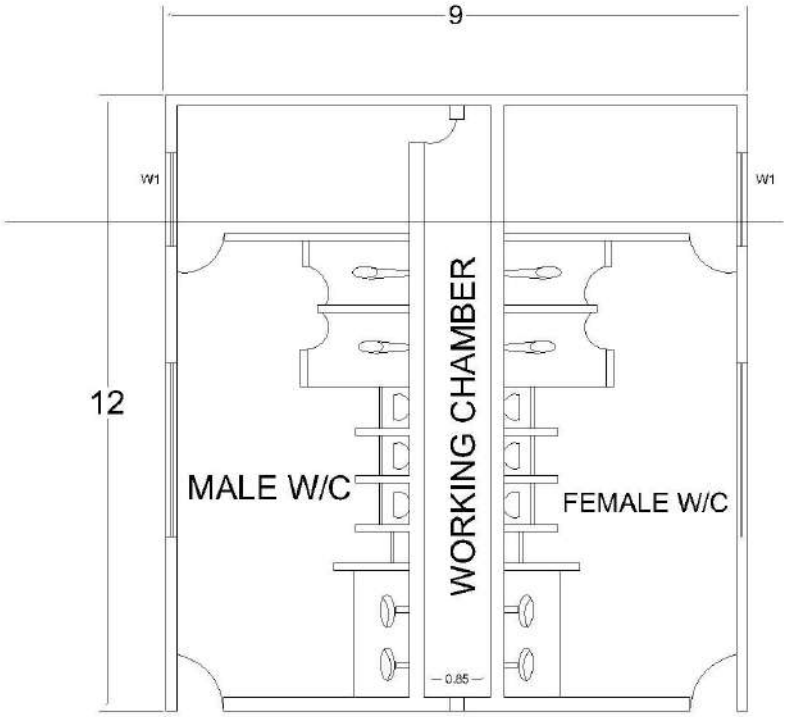
ELEVATION

DESIGN OFF"-	POST OFFICE
PREPARED BY :	UJJAVAL KAYASTH & HAKIM IRSHAD
PROJECT NAME:	VISHWAKARMA YOJANA
INSTITUTE NAME :	NEO- TECH TECHNICAL CAMPUS
UNIVERSITY NAME :	GTU

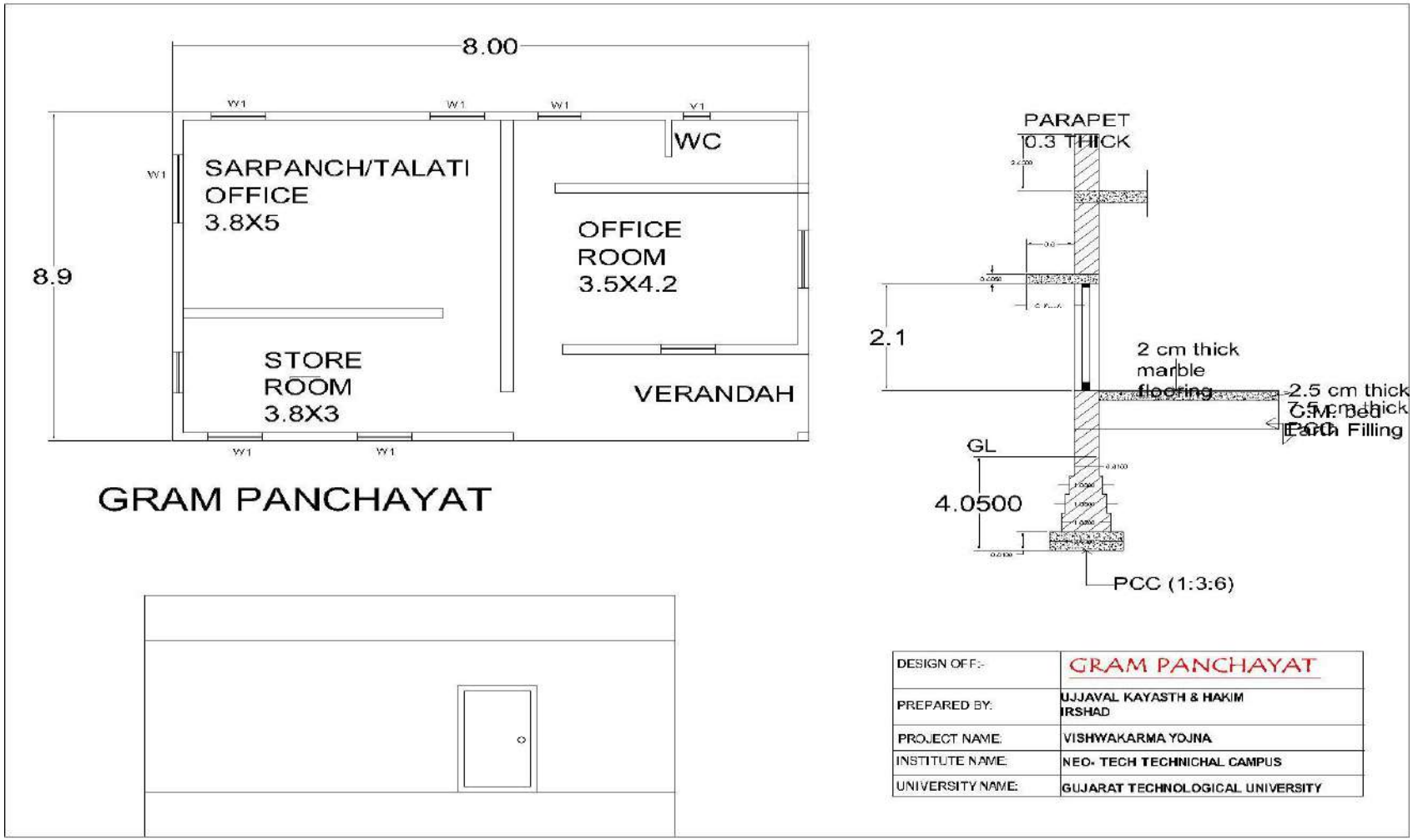


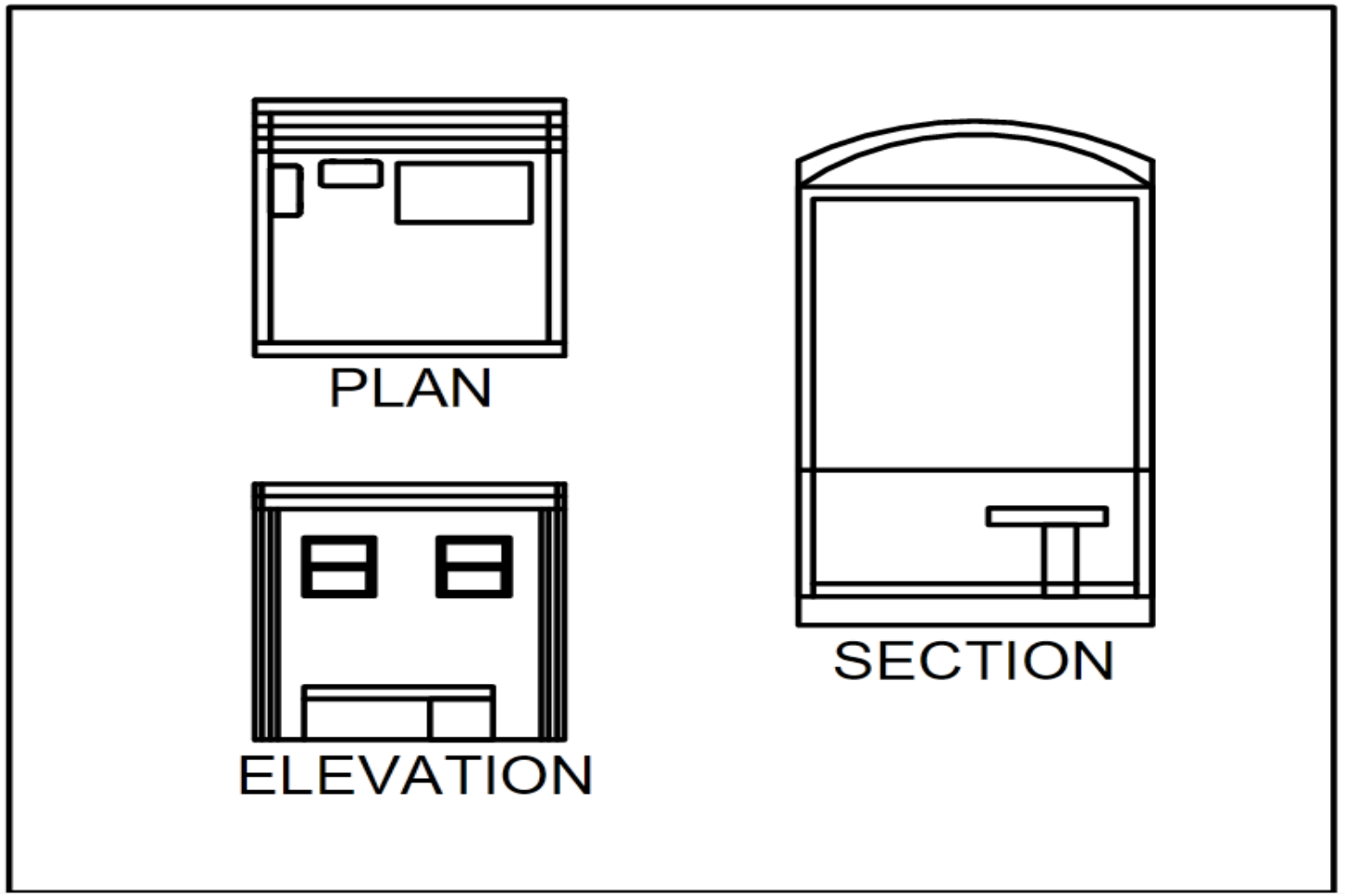
PUBLIC GARDEN


A
V1
MANS W/C
10 X 10
WOMAN W/C
10 X 10
REHEARSAL
ROOM 20 X 15
20.0000 STAGE 30 X 20
STORE ROOM
20 X 15
75.6000
6.9948
SECTION AA
w1
w1
w1
w1
w1
75.6000
4 WHEELER
PARKING
2 WHEELER
PARKING
20.0000
75.6000
DESIGN OF: COMMUNITY HALL
PREPARED BY : UJJAVAL KAYASTH & HAKIM IRSHAD
PROJECT NAME: VISHWAKARMA YOJNA PHASE VIII
INSTITUTE NAME : NEO- TECH TECHNICHAL CAMPUS
UNIVERSITY NAME: GUJARAT TECHNOLOGICAL UNIVERSITY



PUBLIC TOILET


8.00
W1
W1
W1
W1
WC
W1
SARPANCH/TALATI
OFFICE
3.8X5
OFFICE
ROOM
3.5X4.2
8.9
STORE
ROOM
3.8X3
VERANDAH
W1
W1
GRAM PANCHAYAT
PARAPET
0.3 THICK
2.1
2 cm thick
marble
flooring
2.5 cm thick
C.M. bed
Earth Filling
GL
4.0500
PCC (1:3:6)
DESIGN OFF:- GRAM PANCHAYAT
PREPARED BY: UJJAVAL KAYASTH & HAKIM IRSHAD
PROJECT NAME: VISHWAKARMA YOJNA
INSTITUTE NAME: NEO- TECH TECHNICHAL CAMPUS
UNIVERSITY NAME: GUJARAT TECHNOLOGICAL UNIVERSITY


PLAN
ELEVATION
SECTION

12.7 Summary of good photograph in table format (village visits, ideal village, Smart village or any other)

Smart village photo survey

ATM

1, 00,000 lit Water tank

Road widening

construction of road

Reconstruction of Temple

Lake

Ideal village Photo survey

Agricultural pond

road maintenance

Housing condition

Aanganwadi

Old community hall

School

Primary school

Old bus stop condition

12.8 Village Interaction Report with the photograph as a report format: -

Meeting with Varsada Talalti & Surpanch

CHAPTER: - 13

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

13.1 Design Proposals

As per basis of gap analysis sheet we decided to give six designs for future palling of the village as compare to the smart village.

- Pond beautification
- Bank
- School building renovation
- Local police station
- Dairy parlor
- Primary health care center.

POND BEAUTIFICATION: - Conservation of urban/ rural ponds so as to prevent their further degradation and ensure their wise use for the benefit of local communities for recreational purposes. The Water bodies will function as spaces for development of open space greenery which provide for a range of micro natural habitats for flora and fauna. Enhancing natural beauty and providing a green space for enriching the spiritual, 2 aesthetic and social lives of dwellers.

BANK: - The banking is give back to the community. Local banks provide personalize experience. Small banks are more flexible and gave a chance to their people for startup loans. They create jobs for local people. Village banking is a micro created methodology whereby financial services are administered locally rather than centralized in a formal bank.

SCHOOL BUILDING RENOVATION: -

Varsada village have only one primary school building which is not in good condition so we have decide to reconstruction of primary school building. And they have not proper teachers staff.

LOCAL POLICE STATION: - A police station is a building which serves to accommodate police officers and other members of staff. These buildings often contain offices and accommodation for personnel and vehicles, along with locker rooms, temporary holding cells and interview/interrogation rooms.

DAIRY PARLOR: - In the village there is a lot of agriculture activities but there is no proper place for collecting the milk and etc. items. This can create new business idea in village.

PRIMARY HEALTH CENTER:-

Varsada village have not any primary health center their people have to travel 12km for the any medical emergencies.

PHC is the first contact point between village community and the medical officer.

The PHCs were envisaged to provide an integrated curative and preventive health care to the rural population with emphasis on preventive and primitive aspects of health care. The PHCs are established and maintained by the State governments under the Minimum Needs Programme (MNP)/ Basic Minimum Services (BMS) Programme.

As per minimum requirement, a PHC is to be manned by a medical officer supported by 14 paramedical and other staff. Under NRHM, there is a provision for two additional staff nurses at PHCs on contract basis. It acts as a referral unit for 6 Sub Centres and has 4-6 beds for patients. The activities of PHC involve curative, preventive, primitive and family welfare services.

SOCIAL DESIGN OF POND BEAUTIFICATION

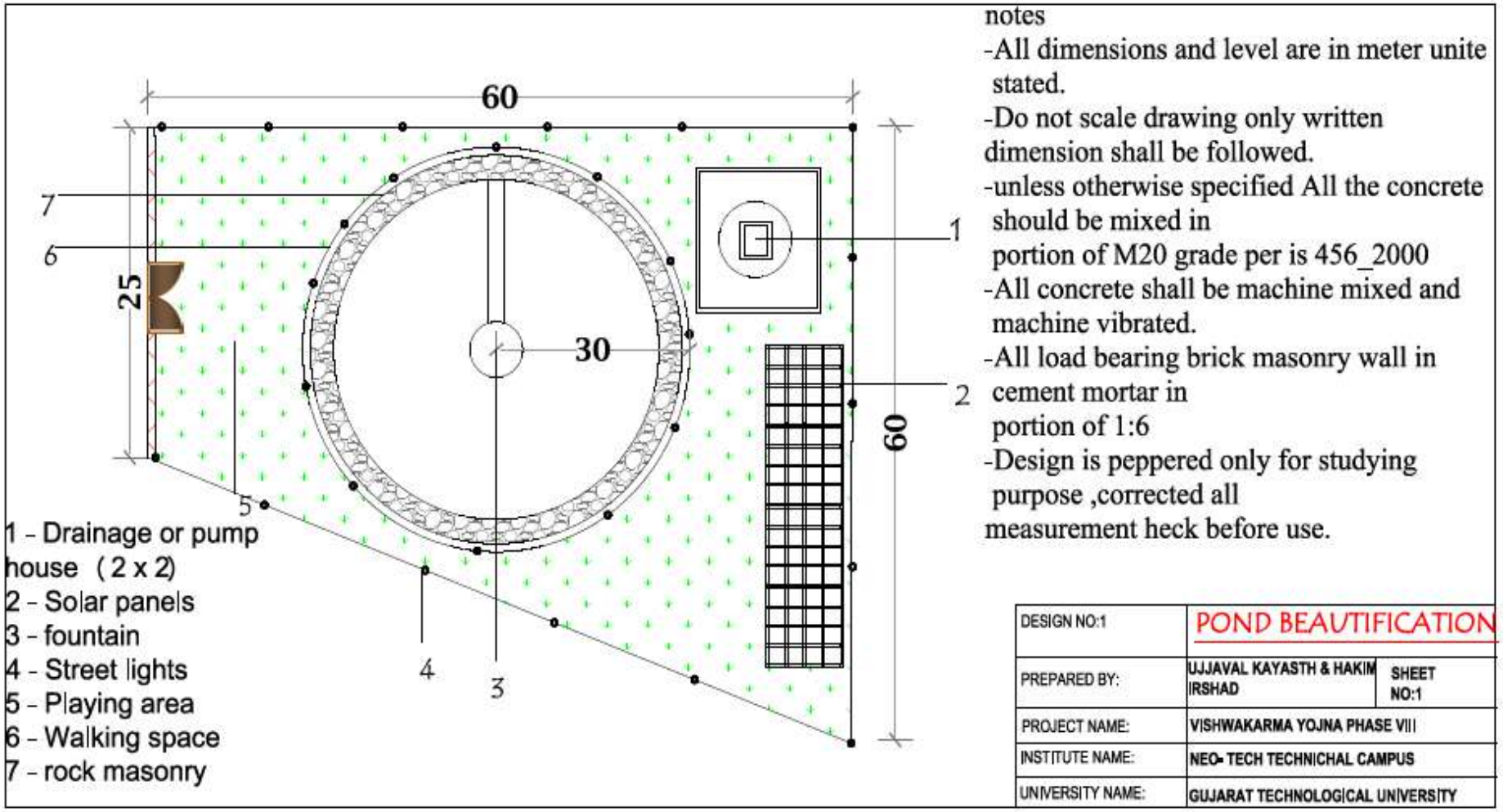


Fig 13.1 Design of pond beautification

MEASURMENT SHEET

Sr. No.	Item description	No.	Length (m)	Width(m)	Height (m)	Total Quantity
1	Providing Site Clearance etc. Complete	1	24	24	1	576 Sq. M.
2	Providing iron jali in periphery Boundary wall	1	60	60	2.1	7560 Sq. M.
3	Providing walking track in garden periphery	1	30	3	-	90 Sq. M.
4	Providing sand pit in Garden	1	10	10	-	100 Sq. M.
5	Paver Block	1	30	3	-	90 Sq. M.
6	Providing RCC seating benches in garden	10	0	0	0	10 Nos.
7	Providing Iron strip Gate	1	0	0	0	1 Nos.
8	Providing Tigard plants in periphery of garden	59	0	0	0	59 Nos.
9	Steel railing around the lake	1	30 dia	-	-	30

ABSTRECT SHEET

Sr. No.	Item description	Total Quantity	Rate	Total Amounts
1	Providing Site clearance etc. complete	576 Sq. M.	8	2688/-
2	Providing iron jali in periphery Boundary wall	7560 Sq. M.	150	925000/-
3	Providing walking track in garden periphery	Sq. M.	0	0
4	Providing sand pit in garden	100 Sq. M.	0	0
5	Paver Block	90	72	6480
6	Steel railing	30 dia	20	45324
7	Providing RCC seating benches in garden	10 Nos.	1200	12000/-
8	Providing Iron strip Gate	1 Nos.	900	900/-
9	Providing Tigard plants in periphery of garden	59 Nos.	500	29500/-
	Total Amounts:			1021892
	Contractor's profit 10%			102189
	Total construction cost			1124081/-

SOCIAL DESIGN OF BANK

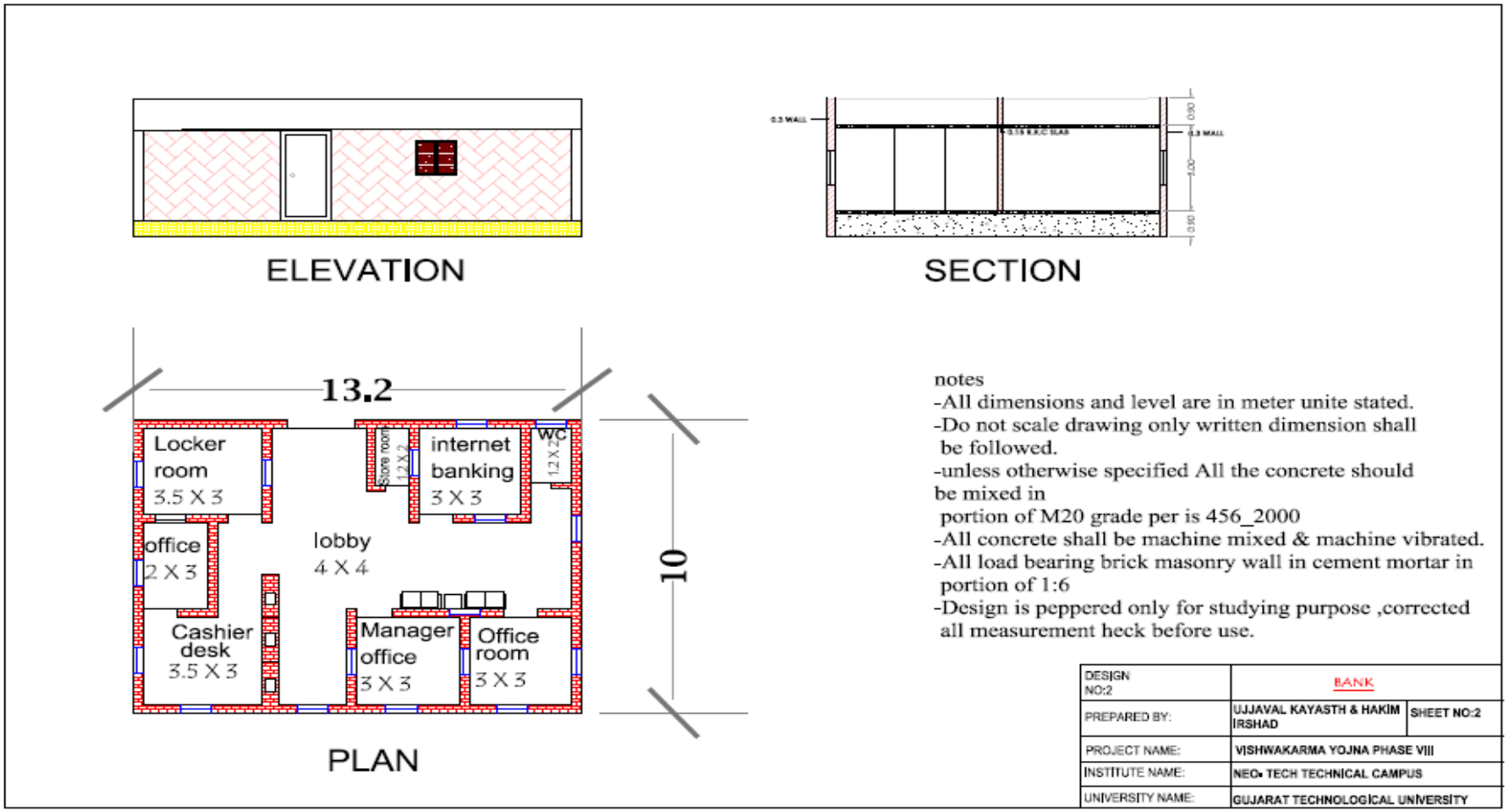


Fig 13.2 Design of bank

Bank Estimation

QUANTITY SHEET

Sr. No.	Item Description	No.	Length (m)	Width/ Breadth (m)	Height/ Depth (m)	Quantity	Unit
1	**Earthwork in Excavation in Foundation:**						
	Footing (0.9m x 0.9m)	16	2.100	2.100	1.100	**77.62**	**cu m**
	Depth From GL = 0.6 + 0.9 + 0.6						
	0.6 =Extra For working space						
					Total Qty=	**77.62**	**cu m**
2	**Footing PCC**						
	Footing (0.9m x 0.9m)	16	0.900	0.900	0.075	**0.97**	**cu m**
	Thickness = 0.075						
					Total Qty=	**0.97**	**cu m**
3	**Footing RCC**						
	Base(0.9m x 0.9m)	16	0.900	0.900	0.450	**5.83**	**cu m**
	Thickness = 0.450						
					Total Qty=	**5.83**	**cu m**
4	**Column up to Plinth Level RCC**						
	Column	16	0.230	0.230	0.600	**0.51**	cu m
					Total Qty=	**0.51**	**cu m**
5	**Back-filling**						
5.a	**Back-filling In Footing**						
	Excavation Area	16	2.100	2.100	1.100	77.62	cu m
	Deduction						
	Footing P.C.C	-16	0.900	0.900	0.075	-0.97	cu m
	Footing RCC	-16	0.900	0.900	0.450	-5.83	cu m
	Footing Column	-16	0.230	0.230	0.600	-0.51	cu m
					5.a Total Qty=	**70.30**	**cu m**
5.b	**Plinth Beam Back filling**						
	Plinth area out to out	1	13.200	10.000	0.600	79.20	cu m
	Deduction						
	L-1	-4	13.200	0.230	0.600	-7.29	cu m
	L-2	-4	10.000	0.230	0.600	-5.52	cu m
	L-3	-2	1.500	0.115	0.600	-0.21	cu m

					5.b Total Qty=	**66.19**	**cu m**
					5.a + 5.b Total Qty=	**136.49**	**cu m**
6	**Plinth Beam RCC**						
	Beam (230 mm x 600 mm)						
	L-1	4	13.200	0.230	0.600	7.29	cu m
	L-2	4	10.000	0.230	0.600	5.52	cu m
	L-3	2	1.500	0.115	0.600	0.21	cu m
					Total Qty=	**0.00**	**cu m**
7	**Grae Slab RCC**						
	Plinth area out to out	1	13.200	10.000	0.100	13.20	cu m
					Total Qty=	**13.20**	**cu m**
8	**Column Up to Slab Level RCC**						
	Column	16	0.230	0.230	2.770	2.34	cu m
					Total Qty=	**2.34**	**cu m**
9	**Brick Masonry**						
	230 mm thick wall Brick Masonry						
	Long Wall	5	9.500	0.230	2.770	30.26	cu m
	Shot wall-1	4	9.200	0.230	2.770	23.45	cu m
	Deduction						
	Column	16	0.230	0.230	2.770	2.34	cu m
	Window W1	-10	1.800	0.230	1.200	-4.97	cu m
	Window W2	-6	1.500	0.230	1.200	-2.48	cu m
	Door D	-7	1.200	0.230	2.100	-4.06	cu m
	Vent	-1	0.900	0.230	0.600	-0.12	cu m
					Total Qty 230 mm Thick Wall=	**44.42**	**cu m**
	115 mm thick wall Brick Masonry						
	Bath Room	2	1.500	0.115	2.650	0.91	cu m
	Parapet Wall						
	Long Wall	2	9.500	0.115	0.900	1.97	cu m
	Shot Wall	2	9.200	0.115	0.900	1.90	cu m
					Total Qty 115 mm Thick Wall=	**4.79**	**cu m**
15	**Out Side Plaster**						
	Front Side	2	13.200		3.600	95.04	Sq.m.
		2	10.000		2.180	43.60	Sq.m.
	Deduction						

	Door MS	-1	1.200		1.200	-1.44	Sq.m.
	Window W 1	10	1.800		1.000	18.00	Sq.m.
	Vent V1	-1	0.900		0.600	-0.54	Sq.m.
	Deduction						
	Window W 1	-6	1.500		1.200	-10.80	Sq.m.
	Parapet Wall						
	Long Wall	2	13.200		1.115	29.44	Sq.m.
	Shot Wall	2	10.000		1.000	20.00	Sq.m.
		Total Out Side Plaster Qty =				**193.30**	**Sq.m.**

ABSTRACT SHEET

ITEM NO	ITEM DESCRIPTION	QUANTITY		RATE	PER	AMOUNT(RS)
1	EARTH EXCAVATION	17.6		130.000	CU.M	2288.00
2	FOOTING PCC AND RCC	8.4		827.000	CU.M	7000.00
3	EARTH FILLING	11.200		50.000	CU.M	560.00
4	PLINTH BEAM	7.98		90.000	CU.M	1000.00
5	STEEL	1256		55.000	KG	69000.00
6	BRICK MASONARY	43		800.000	CU.M	34400.00
7	SMOOTH PLASTER	18		40.000	CU.M	720.00
8	CEMENT	234		330.000	CU.M	77220.00
9	SAND	22		600.000	TONE	13200.00
10	TOTAL BRICK	28000		6.500	NOS	182000.00
11	GLAZED TILES	26		120.000	SQ.FEET	3120.00
				LUMSUM COST=		390508.00
				CONTRACTOR PROFIT=		39050.00
				EXTRA CHARGES=		19500.00
				TOTAL COST=		449000.00

SOCIAL DESIGN OF SCHOOL BUILDING RENOVATION

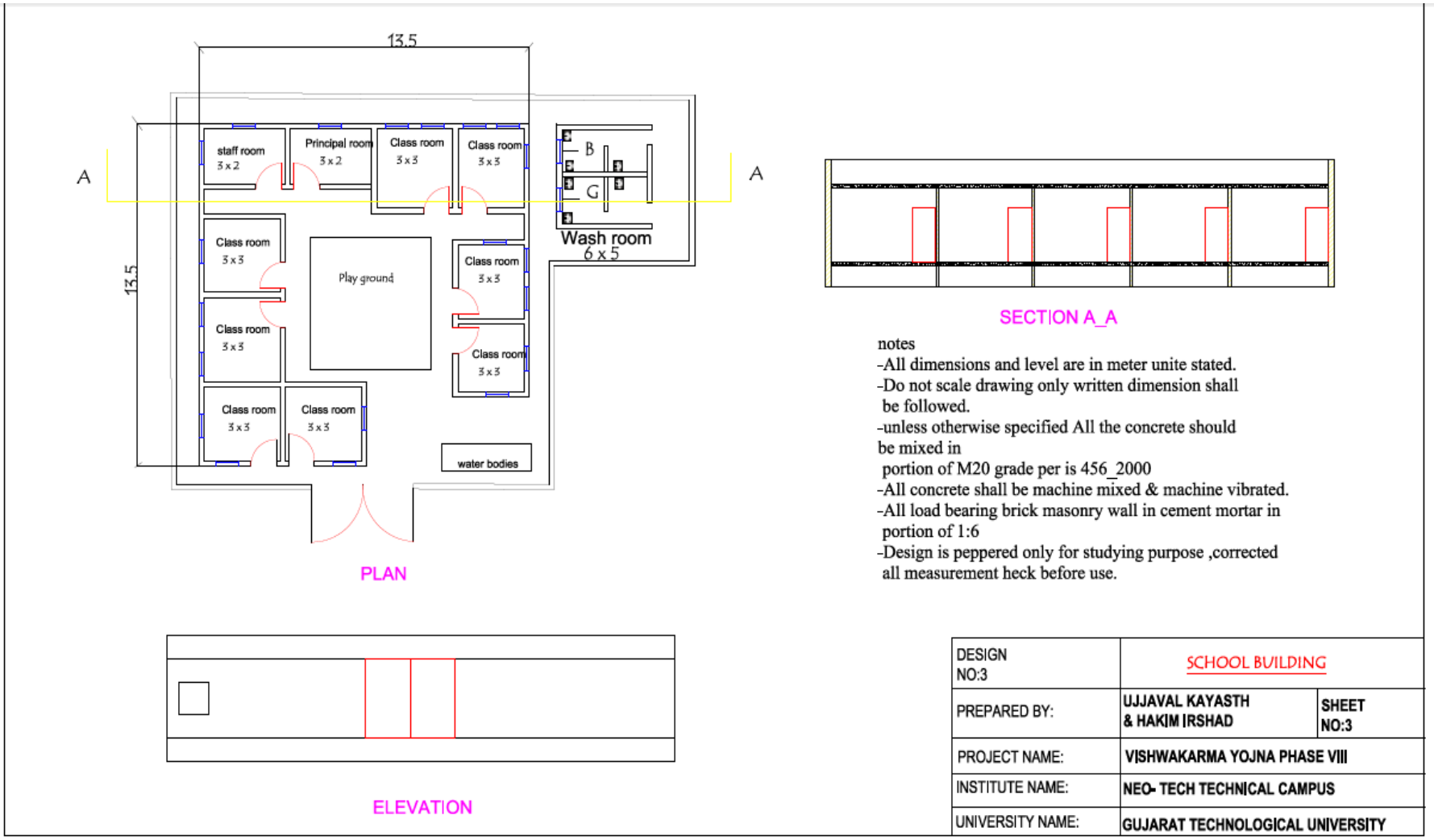


Fig 13.3 School building

School Building Estimation

QUANTITY SHEET

Sr. No.	Item Description	No.	Length (m)	Width/ Breadth (m)	Height/ Depth (m)	Quantity	Unit
1	**Earthwork in Excavation in Foundation:**						
	Footing (0.9m x 0.9m)	20	2.100	2.100	1.100	**97.02**	**cu m**
	Depth From GL = 0.6 + 0.9 + 0.6						
	0.6 =Extra For working space						
					Total Qty=	**97.02**	**cu m**
2	**Footing PCC**						
	Footing (0.9m x 0.9m)	20	0.900	0.900	0.075	**1.22**	**cu m**
	Thickness = 0.075						
					Total Qty=	**1.22**	**cu m**
3	**Footing RCC**						
	Base(0.9m x 0.9m)	20	0.900	0.900	0.450	**7.29**	**cu m**
	Thickness = 0.450						
					Total Qty=	**7.29**	**cu m**
4	**Column up to Plinth Level RCC**						
	Column	20	0.230	0.230	0.600	**0.63**	cu m
					Total Qty=	**0.63**	**cu m**
5	**Back-filling**						
5.a	**Back-filling In Footing**						
	Excavation Area	20	2.100	2.100	1.100	97.02	cu m
	Deduction						
	Footing P.C.C	-20	0.900	0.900	0.075	-1.22	cu m
	Footing RCC	-20	0.900	0.900	0.450	-7.29	cu m
	Footing Column	-20	0.230	0.230	0.600	-0.63	cu m
					5.a Total Qty=	**87.88**	**cu m**
5.b	**Plinth Beam Back filling**						
	Plinth area out to out	1	13.500	13.500	0.600	109.35	cu m
	Deduction						
	L-1	-5	13.500	0.230	0.600	-9.32	cu m
	L-2	-5	13.500	0.230	0.600	-9.32	cu m
	L-3	-2	1.500	0.115	0.600	-0.21	cu m

					5.b Total Qty=	**90.51**	**cu m**
					5.a + 5.b Total Qty=	**178.39**	**cu m**
6	**Plinth Beam RCC**						
	Beam (230 mm x 600 mm)						
	L-1	5	13.200	0.230	0.600	9.11	cu m
	L-2	5	10.000	0.230	0.600	6.90	cu m
	L-3	2	1.500	0.115	0.600	0.21	cu m
					Total Qty=	**0.00**	**cu m**
7	**Grae Slab RCC**						
	Plinth area out to out	1	13.500	13.500	0.100	18.23	cu m
					Total Qty=	**18.23**	**cu m**
8	**Column Up to Slab Level RCC**						
	Column	20	0.230	0.230	2.770	2.93	cu m
					Total Qty=	**2.93**	**cu m**
9	**Brick Masonry**						
	230 mm thick wall Brick Masonry						
	Long Wall	5	13.500	0.230	2.770	43.00	cu m
	Long Wall	5	13.500	0.230	2.770	43.00	cu m
	Deduction						
	Column	20	0.230	0.230	2.770	2.93	cu m
	Window W1	-17	1.800	0.230	1.200	-8.45	cu m
	Window W2	-3	1.500	0.230	1.200	-1.24	cu m
	Door D	-10	1.200	0.230	2.100	-5.80	cu m
	Door D1	-2	2.100	0.230	2.100	-2.03	cu m
	Vent	-2	0.900	0.230	0.600	-0.25	cu m
					Total Qty 230 mm Thick Wall=	**71.18**	**cu m**
	115 mm thick wall Brick Masonry						
	Bath Room	2	1.500	0.115	2.650	0.91	cu m
	Parapet Wall						
	Long Wall	2	13.500	0.115	0.900	2.79	cu m
	Shot Wall	2	13.500	0.115	0.900	2.79	cu m
					Total Qty 115 mm Thick Wall=	**6.50**	**cu m**
15	**Out Side Plaster**						
	Front Side	2	13.500		3.600	97.20	Sq.m.
		2	13.500		2.180	58.86	Sq.m.

	Deduction						
	Door MS	-1	1.200		1.200	-1.44	Sq.m.
	Window W 1	-17	1.800		1.000	-30.60	Sq.m.
	Door D1	-2	2.100		2.100	-8.82	Sq.m.
	Vent V1	-2	0.900		0.600	-1.08	Sq.m.
	Deduction						
	Window W 2	-3	1.500		1.200	-5.40	Sq.m.
	Parapet Wall						
	Long Wall	2	13.500		1.115	30.11	Sq.m.
	Shot Wall	2	13.500		1.000	27.00	Sq.m.
		Total Out Side Plaster Qty =				**165.83**	**Sq.m.**

ABSTRACT SHEET

ITEM NO	ITEM DESCRIPTION	QUANTITY		RATE	PER	AMOUNT(RS)
1	EARTH EXCAVATION	97.02		130.000	CU.M	12600.00
2	FOOTING PCC AND RCC	8.48		827.000	CU.M	7000.00
3	EARTH FILLING	178.390		50.000	CU.M	8950.00
4	PLINTH BEAM	16.21		90.000	CU.M	1460.00
5	STEEL	2380		55.000	KG	130900.00
6	BRICK MASONARY	77.68		800.000	CU.M	62144.00
7	SMOOTH PLASTER	165.83		40.000	CU.M	6633.00
8	CEMENT	525		330.000	CU.M	173250.00
9	SAND	63		600.000	TONE	37800.00
10	TOTAL BRICK	77000		6.500	NOS	500500.00
11	GLAZED TILES	53		120.000	SQ.FEET	6360.00
				LUMSUM COST=		947600.00
				CONTRACTOR PROFIT=		94800.00
				EXTRA CHARGES=		47400.00
				TOTAL COST=		1089700.00

SOCIAL DESIGN OF LOCAL POLICE STATION

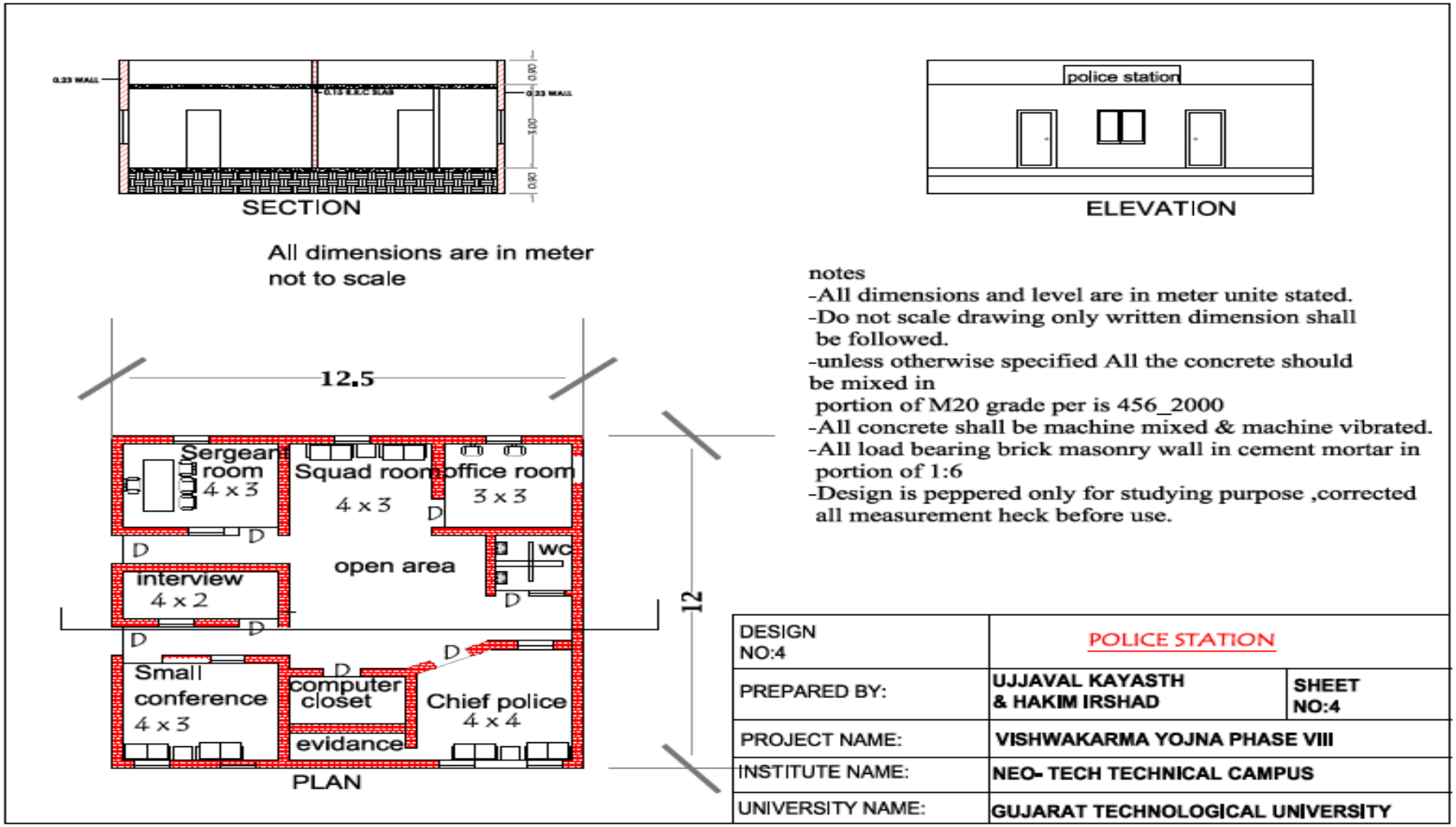


Fig 13.4 Design of police station

Police Station Estimation

QUANTITY SHEET

Sr. No.	Item Description	No.	Length (m)	Width/ Breadth (m)	Height/ Depth (m)	Quantity	Unit
1	**Earthwork in Excavation in Foundation:**						
	Footing (0.9m x 0.9m)	12	2.100	2.100	1.100	**58.21**	**cu m**
	Depth From GL = 0.6 + 0.9 + 0.6						
	0.6 =Extra For working space						
					Total Qty=	**58.21**	**cu m**
2	**Footing PCC**						
	Footing (0.9m x 0.9m)	12	0.900	0.900	0.075	**0.73**	**cu m**
	Thickness = 0.075						
					Total Qty=	**0.73**	**cu m**
3	**Footing RCC**						
	Base(0.9m x 0.9m)	12	0.900	0.900	0.450	**4.37**	**cu m**
	Thickness = 0.450						
					Total Qty=	**4.37**	**cu m**
4	**Column up to Plinth Level RCC**						
	Column	12	0.000	0.000	0.600	**0.00**	cu m
					Total Qty=	**0.00**	**cu m**
5	**Back-filling**						
5.a	**Back-filling In Footing**						
	Excavation Area	12	2.100	2.100	1.100	58.21	cu m
	Deduction						
	Footing P.C.C	-12	0.900	0.900	0.075	-0.73	cu m
	Footing RCC	-12	0.900	0.900	0.450	-4.37	cu m
	Footing Column	-12	0.000	0.000	0.600	0.00	cu m
					5.a Total Qty=	**53.11**	**cu m**
5.b	**Plinth Beam Back filling**						
	Plinth area out to out	1	0.000	0.000	0.600	0.00	cu m
	Deduction						
	L-1	-5	12.500	0.230	0.600	-8.63	cu m
	L-2	-4	12.000	0.230	0.600	-6.62	cu m
	L-3	-2	4.000	0.230	0.600	-1.10	cu m

	L-4	-2	1.500	0.115	0.600	-0.21	cu m
					5.b Total Qty=	**-16.56**	**cu m**
					5.a + 5.b Total Qty=	**36.55**	**cu m**
6	**Plinth Beam RCC**						
	Beam (230 mm x 600 mm)						
	L-1	5	12.500	0.230	0.600	8.63	cu m
	L-2	4	12.000	0.230	0.600	6.62	cu m
	L-3	2	4.000	0.230	0.600	1.10	cu m
	L-4	2	1.500	0.115	0.600	0.21	cu m
					Total Qty=	**0.00**	**cu m**
7	**Grae Slab RCC**						
	Plinth area out to out	1	0.000	0.000	0.100	0.00	cu m
					Total Qty=	**0.00**	**cu m**
8	**Column Up to Slab Level RCC**						
	Column	12	0.000	0.000	2.770	0.00	cu m
					Total Qty=	**0.00**	**cu m**
9	**Brick Masonry**						
	230 mm thick wall Brick Masonry						
	Long Wall	5	12.500	0.230	2.770	39.82	cu m
	Shot wall-1	4	12.000	0.230	2.770	30.58	cu m
	Shot wall-1	2	4.000	0.230	1.200	2.21	cu m
	Shot Wall-2	2	1.500	0.230	2.650	1.83	cu m
	Deduction						
	Column	12	0.230	0.230	2.650	1.68	cu m
	Window W1	-8	1.500	0.230	1.200	-3.31	cu m
	Door D	-8	1.200	0.230	2.100	-4.64	cu m
	Vent	-2	0.900	0.230	0.600	-0.25	cu m
					Total Qty 230 mm Thick Wall=	**67.92**	**cu m**
	115 mm thick wall Brick Masonry						
	Bath Room	1	1.500	0.115	2.650	0.46	cu m
	Passage wall	1	2.315	0.115	2.650	0.71	cu m
	Parapet Wall						
	Long Wall	2	0.000	0.115	0.900	0.00	cu m
	Shot Wall	2	12.000	0.115	0.900	2.48	cu m
					Total Qty 115 mm Thick Wall=	**3.65**	**cu m**

15	**Out Side Plaster**						
	Front Side	2	12.000		4.775	114.60	Sq.m.
		2	12.500		2.180	54.50	Sq.m.
	Deduction						
	Door MS	-1	1.200		1.200	-1.44	Sq.m.
	Deduction						
	Window W 2	-1	1.200		1.000	-1.20	Sq.m.
	Vent V1	-1	0.900		0.600	-0.54	Sq.m.
	Left Side	1	10.240		4.775	48.90	Sq.m.
	Deduction						
	Window W 1	-2	1.500		1.200	-3.60	Sq.m.
	Parapet Wall						
	Long Wall	2	12.500		1.115	27.88	Sq.m.
	Shot Wall	2	12.000		1.000	24.00	Sq.m.
		Total Out Side Plaster Qty =				**263.09**	**Sq.m.**

ABSTRACT SHEET

ITEM NO	ITEM DESCRIPTION	QUANTITY		RATE	PER	AMOUNT(RS)
1	EARTH EXCAVATION	58.21		130.000	CU.M	7670.00
2	FOOTING PCC AND RCC	5.1		827.000	CU.M	4217.00
3	EARTH FILLING	53.11		50.000	CU.M	2655.50
4	PLINTH BEAM	16.56		90.000	CU.M	1490.00
5	STEEL	1879.000		55.000	KG	103345.00
6	BRICK MASONARY	70.340		800.000	CU.M	56800.00
7	SMOOTH PLASTER	263.09		40.000	CU.M	10560.00
8	CEMENT	425		330.000	CU.M	140250.00
9	SAND	44		600.000	TONE	26400.00
10	TOTAL BRICK	62500		6.500	NOS	406250.00
11	GLAZED TILES	43.700		120.000	SQ.FEET	5244.00
			LUMP SUM COST=		764878.000	
			EXTRA CHARGES=		38243.500	
		CONTRACTOR PROFIT=			76487.000	
			TOTAL COST=		879608.000	

SOCIAL DESIGN OF DAIRY PARLOUR

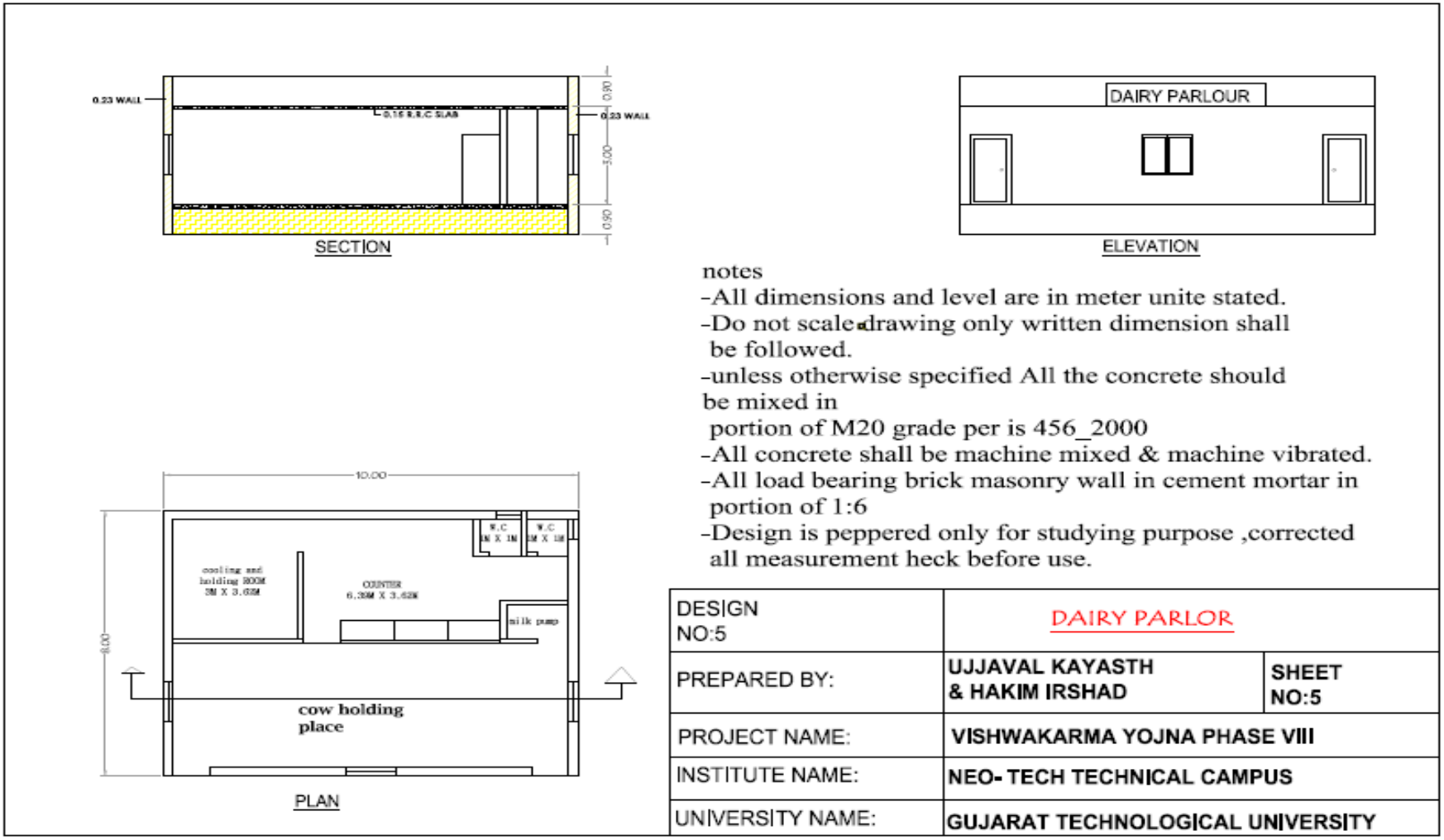


Fig 13.5 Design of dairy

Dairy measurement sheet

QUANTITY SHEET

Sr. No.	Item Description	No.	Length (m)	Width/ Breadth (m)	Height/ Depth (m)	Quantity
1	Earthwork in Excavation in Foundation:					
	Footing (0.9m x 0.9m)	14	2.100	2.100	1.100	67.91
	Depth From GL = 0.6 + 0.9 + 0.6					
	0.6 =Extra For working space					
		Total Qty=				67.91
2	Footing PCC					
	Footing (0.9m x 0.9m)	14	0.900	0.900	0.075	0.85
	Thickness = 0.075					
		Total Qty=				0.85
3	Footing RCC					
	Base(0.9m x 0.9m)	14	0.900	0.900	0.450	5.10
	Thickness = 0.450					
		Total Qty=				5.10
4	Column up to Plinth Level RCC					
	Column	14	0.230	0.230	0.600	0.44
		Total Qty=				0.44
5	Back-filling					
5.a	Back-filling In Footing					
	Excavation Area	14	2.100	2.100	1.100	67.91
	Deduction					
	Footing P.C.C	-14	0.900	0.900	0.075	-0.85
	Footing RCC	-14	0.900	0.900	0.450	-5.10
	Footing Column	-14	0.230	0.230	0.600	-0.44
		5.a Total Qty=				61.52
5.b	Plinth Beam Back filling					
	Plinth area out to out	1	10.000	8.000	0.450	36.00
	Deduction					
	L-1	-3	10.000	0.230	0.450	-3.11
	L-2	-3	8.000	0.230	0.450	-2.48
	L-3	-2	1.000	0.115	0.450	-0.10

		5.b Total Qty=				30.31
		5.a + 5.b Total Qty=				91.82
6	Plinth Beam RCC					
	Beam (230 mm x 450 mm)					
	L-1	3	10.000	0.230	0.450	3.11
	L-2	3	8.000	0.230	0.450	2.48
	L-3	2	1.000	0.115	0.450	0.10
		Total Qty=				0.00
7	Grae Slab RCC					
	Plinth area out to out	1	10.000	8.000	0.100	8.00
		Total Qty=				8.00
8	Column Up to Slab Level RCC					
	Column	14	0.230	0.230	2.850	2.11
		Total Qty=				2.11
9	Brick Masonry					
	230 mm thick wall Brick Masonry					
	Long Wall	3	10.000	0.230	2.850	19.67
	Long Wall	3	8.000	0.230	2.850	15.73
	Deduction					
	Column	14	0.230	0.230	2.850	2.11
	Window W1	-3	1.800	0.230	1.200	-1.49
	Door D	-3	1.200	0.230	2.100	-1.74
	Vent	-2	0.900	0.230	0.600	-0.25
		Total Qty 230 mm Thick Wall=				34.03
	115 mm thick wall Brick Masonry					
	Bath Room	2	1.000	1.000	2.650	5.30
	Parapet Wall					
	Long Wall	2	10.000	0.115	0.900	2.07
	Shot Wall	2	8.000	0.115	0.900	1.66
		Total Qty 115 mm Thick Wall=				9.03
15	Out Side Plaster					
	Front Side	2	10.000		3.600	72.00
		2	8.000		2.180	34.88
	Deduction					
	Door MS	-1	1.200		1.200	-1.44
	Window W 1	-3	1.800		1.000	-5.40
	Door D	-2	2.100		2.100	-8.82
	Vent V1	-2	0.900		0.600	-1.08

	Parapet Wall					
	Long Wall	2	10.000		1.115	22.30
	Shot Wall	2	8.000		1.000	16.00
		Total Out Side Plaster Qty =				128.44

ABSTRACT SHEET

ITEM NO	ITEM DESCRIPTION	QUANTITY		RATE	PER	AMOUNT(RS)
1	EARTH EXCAVATION	67.91		130.000	CU.M	8828.30
2	FOOTING PCC AND RCC	5.95		827.000	CU.M	4920.65
3	EARTH FILLING	61.52		50.000	CU.M	3076.00
4	PLINTH BEAM	91.82		90.000	CU.M	8263.80
5	STEEL	10.11		55.000	KG	556.05
6	BRICK MASONARY	34.03		800.000	CU.M	27224.00
7	SMOOTH PLASTER	9.03		40.000	CU.M	361.20
8	CEMENT	525		330.000	CU.M	173250.00
9	SAND	63		600.000	TONE	37800.00
10	TOTAL BRICK	77000		6.500	NOS	500500.00
11	GLAZED TILES	53		120.000	SQ.FEET	6360.00
				LUMSUM COST=		771140.00
				CONTRACTOR PROFIT=		77114.00
				EXTRA CHARGES=		38557.00
				TOTAL COST=		886811.00

SOCIAL DESIGN OF PRIMARY HEALTH CENTER

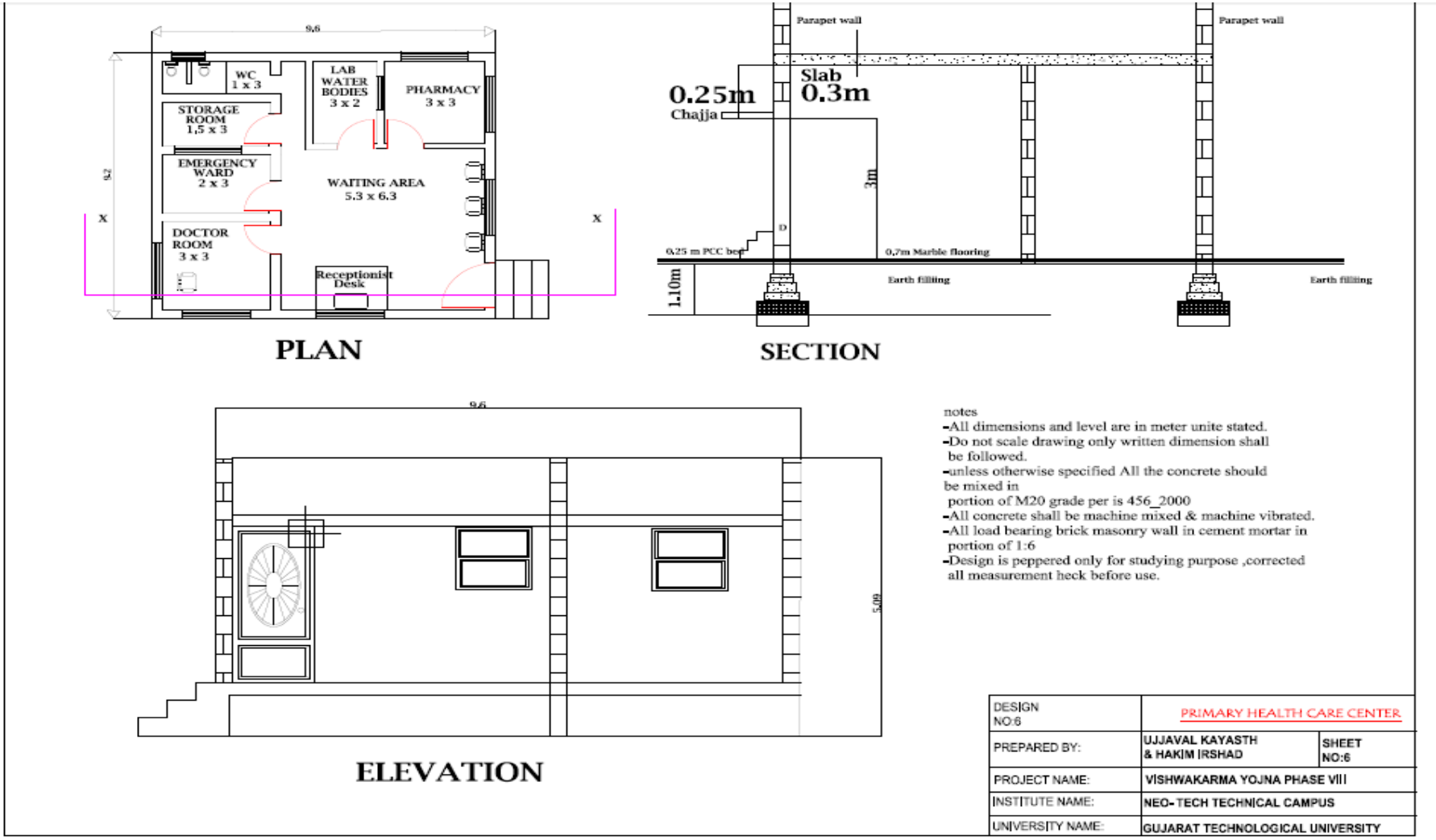


Fig 13.6 primary health center

Primary Health Centre Estimation

QUANTITY SHEET

Sr. No.	Item Description	No.	Length (m)	Width/ Breadth (m)	Height/ Depth (m)	Quantity	Unit
1	**Earthwork in Excavation in Foundation:**						
	Footing (0.9m x 0.9m)	10	2.100	2.100	1.100	**48.51**	**cu m**
	Depth From GL = 0.6 + 0.9 + 0.6						
	0.6 =Extra For working space						
					Total Qty=	**48.51**	**cu m**
2	**Footing PCC**						
	Footing (0.9m x 0.9m)	10	0.900	0.900	0.075	**0.61**	**cu m**
	Thickness = 0.075						
					Total Qty=	**0.61**	**cu m**
3	**Footing RCC**						
	Base(0.9m x 0.9m)	10	0.900	0.900	0.450	**3.65**	**cu m**
	Thickness = 0.450						
					Total Qty=	**3.65**	**cu m**
4	**Column up to Plinth Level RCC**						
	Column	10	0.230	0.230	0.600	**0.32**	cu m
					Total Qty=	**0.32**	**cu m**
5	**Back-filling**						
5.a	**Back-filling In Footing**						
	Excavation Area	10	2.100	2.100	1.100	48.51	cu m
	Deduction						
	Footing P.C.C	-10	0.900	0.900	0.075	-0.61	cu m
	Footing RCC	-10	0.900	0.900	0.450	-3.65	cu m
	Footing Column	-10	0.230	0.230	0.600	-0.32	cu m
					5.a Total Qty=	**43.94**	**cu m**
5.b	**Plinth Beam Back filling**						
	Plinth area out to out	1	9.500	9.200	0.600	52.44	cu m
	Deduction						
	L-1	-4	9.500	0.230	0.600	-5.24	cu m
	L-2	-4	9.200	0.230	0.600	-5.08	cu m
	L-3	-2	1.500	0.115	0.600	-0.21	cu m

					5.b Total Qty=	**41.91**	**cu m**
					5.a + 5.b Total Qty=	**85.85**	**cu m**
6	**Plinth Beam RCC**						
	Beam (230 mm x 600 mm)						
	L-1	4	9.500	0.230	0.600	5.24	cu m
	L-2	4	9.200	0.230	0.600	5.08	cu m
	L-3	2	1.500	0.115	0.600	0.21	cu m
					Total Qty=	**0.00**	**cu m**
7	**Grae Slab RCC**						
	Plinth area out to out	1	9.500	9.200	0.100	8.74	cu m
					Total Qty=	**8.74**	**cu m**
8	**Column Up to Slab Level RCC**						
	Column	12	0.230	0.230	2.770	1.76	cu m
					Total Qty=	**1.76**	**cu m**
9	**Brick Masonry**						
	230 mm thick wall Brick Masonry						
	Long Wall	5	9.500	0.230	2.770	30.26	cu m
	Shot wall-1	4	9.200	0.230	2.770	23.45	cu m
	Deduction						
	Column	10	0.230	0.230	2.770	1.47	cu m
	Window W1	-6	1.800	0.230	1.200	-2.98	cu m
	Window W2	-1	1.500	0.230	1.200	-0.41	cu m
	Door D	-6	1.200	0.230	2.100	-3.48	cu m
	Vent	-2	0.900	0.230	0.600	-0.25	cu m
					Total Qty 230 mm Thick Wall=	**48.05**	**cu m**
	115 mm thick wall Brick Masonry						
	Bath Room	2	1.500	0.115	2.650	0.91	cu m
	Waiting Area wall	1	2.315	0.115	2.650	0.71	cu m
	Parapet Wall						
	Long Wall	2	9.500	0.115	0.900	1.97	cu m
	Shot Wall	2	9.200	0.115	0.900	1.90	cu m
					Total Qty 115 mm Thick Wall=	**5.49**	**cu m**
15	**Out Side Plaster**						
	Front Side	2	9.500		3.600	68.40	Sq.m.
		2	9.200		2.180	40.11	Sq.m.

	Deduction						
	Door MS	-1	1.200		1.200	-1.44	Sq.m.
	Window W 2	-6	1.500		1.000	-9.00	Sq.m.
	Vent V1	-2	0.900		0.600	-1.08	Sq.m.
	Left Side	1	10.240		4.775	48.90	Sq.m.
	Deduction						
	Window W 1	-6	1.800		1.200	-12.96	Sq.m.
	Parapet Wall						
	Long Wall	2	12.500		1.115	27.88	Sq.m.
	Shot Wall	2	12.000		1.000	24.00	Sq.m.
		Total Out Side Plaster Qty =				**184.80**	**Sq.m.**

ABSTRACT SHEET

ITEM NO	ITEM DESCRIPTION	QUANTITY		RATE	PER	AMOUNT(RS)
1	EARTH EXCAVATION	48.51		130.000	CU.M	6306.00
2	FOOTING PCC AND RCC	4.65		827.000	CU.M	3845.55
3	EARTH FILLING	85.850		50.000	CU.M	4292.00
4	PLINTH BEAM	10.53		90.000	CU.M	947.00
5	STEEL	1567		55.000	KG	86185.00
6	BRICK MASONARY	53.43		800.000	CU.M	42744.00
7	SMOOTH PLASTER	184.8		40.000	CU.M	7392.00
8	CEMENT	390		330.000	CU.M	128700.00
9	SAND	36		600.000	TONE	21600.00
10	TOTAL BRICK	48000		6.500	NOS	312000.00
11	GLAZED TILES	28.67		120.000	SQ.FEET	3440.40
				LUMSUM COST=		617451.00
				CONTRACTOR PROFIT=		61745.00
				EXTRA CHARGES=		30870.00
				TOTAL COST=		710000.00

13.2 Reason for students taking this designs: -

DESIGN NAME	REASON
POST-OFFICE	In this village the post-office is not in proper place, very small in comfortable no facilities, etc. so we decided to develop the pot-office.
PUBLIC GARDEN	Public gardens are staffed by professionals trained in their given areas of expertise and maintain active plant records systems.
COMMUNITY HALL	The existing hall is need to be renovate Because the existing structure life if is over.
PUBLIC TOILET	In this village public toilet is not provided so. We design public toilet in village.
GRAM PANCHAYT	G.P it's recommended by their village surpanch.
BUS STOP	The main bus station is nearly 8km from village so we decided to develop the bus stop
POND BEAUTIFICATION	The village has a pond which needs to renovate So we provided lake beautification. It's looking attractive for visitors.
BANK	The village has not proper post service so we decided develop the bank.
SCHOOL BUILDING	The school building existing life is near to over so we decided to reconstruction of school building
POLICE STATION	A police station is a building which serves to accommodate police officers and other members of staff.

DAIRY PARLOR	**This idea can give new business idea and good for basically farmer's life.so we decided to develop the dairy parlor.**
PRIMARY HEALTH CARE CENTRE	**Varsada village have not any primary health center their people have to travel 12km for the any medical emergencies.so we are decided to develop this.**

Table 13.1 reason for students recommending this design

13.2 About Designs and lifestyle of villagers.

- Better lifestyle and good economy of village condition.
- Village looking attractive and increase esthetic view of village.
- The villagers get better facilities and comfort.
- The village get source of income.
- Low in bio-degradable waste.
- Peoples get employment.
- The village has better appearance.
- Fulfillment of water facilities.

CHAPTER: - 14

14. Technical Options with Case Studies

14.1 Civil Engineering

14.1.1 Advanced Earthquake Resistant

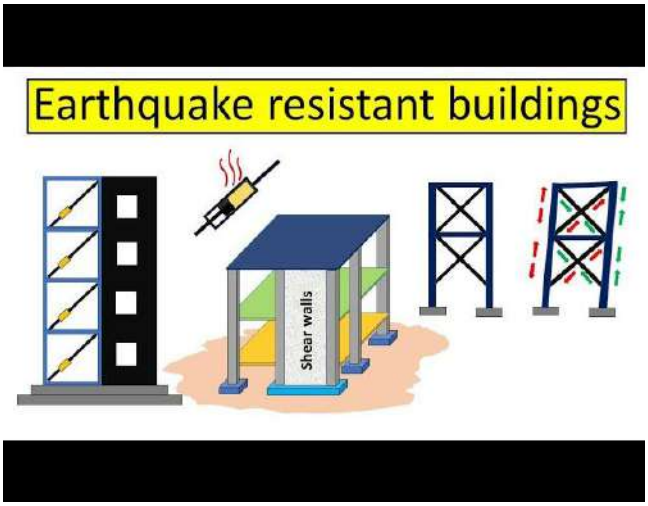


Fig 14.1 Earthquake resistance building

Earthquakes are the indication of transformation in the earth's internal structure. Seismic activity is common in most parts of the world, though the frequency of its occurrence is a function of local tectonic setup. The past earthquake experiences have demonstrated huge loss of life and building stock, affecting the social and economic conditions of a country. Though it is not possible to prevent an earthquake, the least that can be achieved in reducing the damage is to make the buildings earthquake resistant. With the advancement in our understanding of the earthquakes, most of the countries have mandated the incorporation of seismic provisions in building design and architecture.

In the event of an earthquake, the seismic waves originating from the focus is transmitted in all the possible directions. These shock waves propagate in the form of body waves and surface waves through the earth's interior and, are highly random in nature. These ground motions cause structures to vibrate and induce inertia forces in the structural elements. In the absence of seismic design, the building may fail, leading to a catastrophe. The seismic design philosophy aims to primarily ensure life safety and secures the functionality of the building. In conjunction with the design philosophy, it is essential to adopt earthquake-safe construction practices for the efficient seismic performance of a building.

There are some earthquake resistance techniques in details given below.

Floating Foundation:

The levitating or floating foundation separates the substructure of a building from its superstructure. One way of doing this is by floating a building above its foundation on lead-rubber bearings that comprise a solid lead core covered in alternating layers of rubber and steel. The bearings are attached to the building and its foundation with the help of steel plates. So, when an earthquake occurs, the floating foundation can move without moving the structure above it.

Shock Absorption:

Similar to the shock absorbers used in vehicles, buildings also makes use of this technology. This earthquake resistant technology helps buildings slow down and reduces the magnitude of vibratory motions. Ideally shock absorbers should be placed at each level of the building – one end attached to the beam and the other end to the column. Each comprises a piston head that moves inside a cylinder full of silicone oil. During earthquakes, the horizontal motion of building will make the piston push against the oil, transforming mechanical energy from the quake to heat.

Rocking Core-Wall:

Modern high-rise buildings use this technique to improve seismic resistance at a low cost. To make this work, a reinforced concrete core is set through the heart of the structure, surrounded by elevator banks. Many modern high-rise buildings use this technique to increase seismic resistance in an affordable way. It works most effectively when used together with base isolation. For base isolation, elastomeric bearings are built with alternating layers of steel and natural rubber/neoprene. The bearing thus created has low horizontal stiffness and vertical rigidity. The combination is highly effective, cost-friendly and simple to implement.

Pendulum Power:

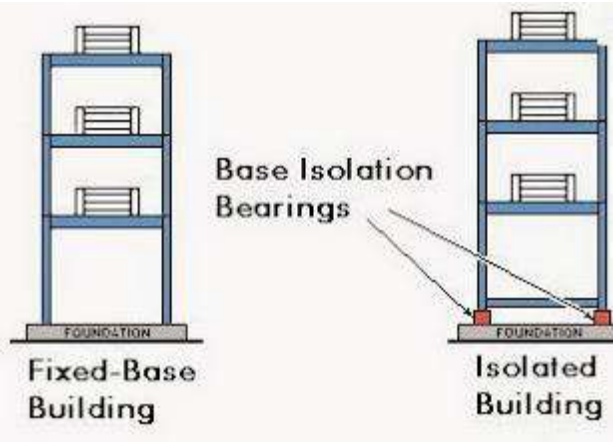


Fig 14.2 Pendulum building

The pendulum power technique works by suspending a huge mass near the top of the structure. This mass is supported by steel cables and viscous fluid dampers are placed between the mass and the building that it protects. In case of any seismic activity, the pendulum moves in the opposite direction to balance the energy. Each of the pendulums are tuned to sync with the natural frequency of the structure and these systems are called tuned mas dampers. Their goal is to counter resonance and reduce the structure's dynamic response.

Symmetry, Diaphragms and Cross-Bracing:

Generally one common criterion for seismic designs is symmetry. Seismic risks of asymmetrical designs are higher. L-Shaped, T-Shaped and split-level structures may be more visually appealing but they are also prone to torsion.

14.1.2 Seismic Retrofitting of Buildings

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

Seismic retrofitting of constructions vulnerable to earthquakes is a current problem of great political and social relevance. Most of the Italian building stock is vulnerable to seismic action even if located in areas that have long been considered of high seismic hazard. During the past thirty years moderate to severe earthquakes have occurred in Italy at intervals of 5 to 10 years. Such events have clearly shown the vulnerability of the building stock in particular and of the built environment in general. The seismic hazard in the areas, where those earthquakes have occurred, has been known for a long time because of similar events that occurred in the past. It is therefore legitimate to ask why constructions vulnerable to earthquakes exist if people and institutions knew of the seismic hazard. Several causes may have contributed to the creation of such a situation. These are associated to historical events, fading memory, greed, avarice, poverty and ignorance.

Fig 14.3 Foundation in IACP building & low friction device

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

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

Every construction project is different, every site is a singular prototype, construction works are located in different places, and involve the constant movement of personnel and machinery. In addition, the weather and other factors can prevent the application of previous experience effectively.

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

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

CONCRETE TECHNOLOGY Cements – Grade of cements - manufacture of cement – concrete chemicals and Applications – Mix design concept – mix design as per BIS & ACI methods – manufacturing of concrete – Batching – mixing – transporting – placing – compaction of concrete – curing and finishing. Testing of fresh and hardened concrete – quality of concrete - Non – destructive testing.

CONSTRUCTION PRACTICES Specifications, details and sequence of activities and construction co-ordination – Site Clearance – Marking – Earthwork - masonry – stone masonry – Bond in masonry - concrete hollow block masonry – flooring – damp proof courses – construction joints – movement and expansion joints – pre cast pavements – Building foundations – basements – temporary shed – centering and shuttering – slip forms – scaffoldings – de-shuttering forms – Fabrication and erection of steel trusses – frames – braced domes – laying brick — weather and water proof – roof finishes – acoustic and fire protection.

SUB STRUCTURE CONSTRUCTION Techniques of Box jacking – Pipe Jacking -under water construction of diaphragm walls and basement-Tunneling techniques – Piling techniques - well and caisson - sinking cofferdam – cable anchoring and grouting-driving diaphragm walls, sheet piles - shoring for deep cutting – well points -Dewatering and stand by Plant equipment for underground open excavation.

SUPER STRUCTURE CONSTRUCTION Launching girders, bridge decks, off shore platforms – special forms for shells - techniques for heavy decks – in-situ pre-stressing in high rise structures, Material handling - erecting light weight components on tall structures - Support structure for heavy Equipment and conveyors – Erection of articulated structures, braced domes and space decks.

CONSTRUCTION EQUIPMENT Selection of equipment for earth work - earth moving operations - types of earthwork equipment - tractors, motor graders, scrapers, front end waders, earth movers – Equipment for foundation and pile driving. Equipment for compaction, batching and mixing and concreting - Equipment for material handling and erection of structures - Equipment for dredging, trenching, tunneling.

14.1.4 Engineering Aspects of Soil mechanics - Environmental Impact Assessment

An Environmental Impact Assessment is a formal method of judging the impact that any new developmental project would have on the environment and its constituents. This can include changes that the project would create in the physical aspects of existing geography, chemical changes to the atmosphere including air and water, biological changes that affect plant, animal and human life, cultural impact of a project on the society in the area, and other socio-economic effects that the project can have.

Such an assessment allows problems to be foreseen, so that the design and planning of the projects is modified to reduce any negative effects. It is now fashionable to build green buildings which have a positive effect on the environment.

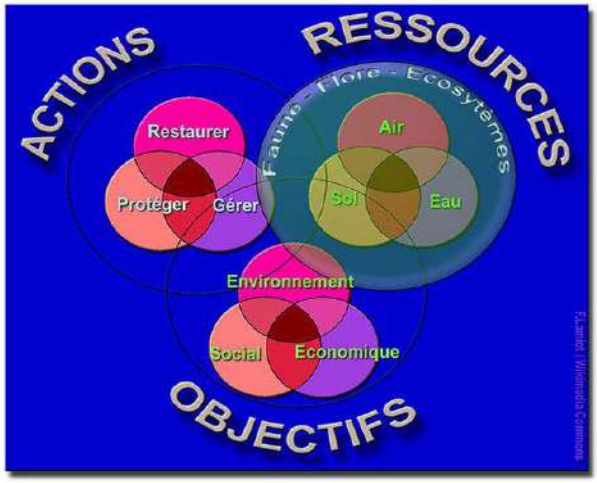


Fig 14.4 Understanding of EIA

There is historical precedent for the now mandatory Environmental Impact Assessments (EIA). Past efforts by governments have resulted in bans on activities that caused noxious odors, garbage dumps were positioned at places far away from habitation, and commercial activities were restricted to town centers.

The objective of an EIA is to predict the environmental impact project would have on all aspects of the environment. Once this is done, a study has to be made to see if the impacts can be reduced in any way.

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

In earlier times and even today, engineers and politicians nearly always use a simple cost/benefit analysis when choosing a wastewater system. This means that, for instance, only the discharge of organic matter (BOD) or phosphorus and the cost is looked upon. However, the quest for sustainability is necessary because we see many problems are coming like global warming, acidification, diminishing ozone layer, micro-organic pollutants and other toxic chemical matters, eutrophication, diminishing important resources like phosphorus, potassium and oil and other threats to mankind, flora and fauna. This shows that many indicators must be used when deciding what type of wastewater systems we should implement. And we should choose the wastewater system that contributes most to an overall sustainable future.

The notion sustainability should include ecology, economy and sociological aspects and the sustainability must also perform on three different stages:

1. Local, where hygienic and health aspects are of concern in time scales of hours or days.
2. Regional, where classic environmental problems operate in time scales of months or years.
3. Global, where sustainability matters in a time scale of decades or centuries.

To compare two wastewater alternatives the following indicators may be considered

Phosphorus, nitrogen and organic matter (BOD)

- The amount of micro-organic pollutants and heavy metals in the sludge going to agriculture.
- Amount of phosphorus, potassium and nitrogen recirculated for plant production.
- Discharge of climate gases like methane and CO2.
- Use of electric energy and fossil energy.
- Use of products with hazardous components.
- Use of finite or critical resources.
- Costs as present value of investments, operation and maintenance.
- The use of area, influence on the landscape, aesthetic- and recreational values.
- The service levels like clogging of sewers and flooding of basements.
- Noise, smell, insects and other disturbances in the operation and construction period.

1. SUSTAINABLE WASTEWATER TREATMENT
2. WASTE WATER Wastewater is any water that has been affected in quality. It can be described as contaminated water or "sick Water".
3. WASTE WATER Sewage is usually treated at a wastewater treatment plant. Wastewater begins from toilets, shower room, laundry room and kitchen sinks. Also, water used for washing and cleaning purposes such as for gardens, swimming pools, washing machine and storm water is included in wastewater but not specifically sewage water.
4. Wastewaters can be categorized as DOMESTIC WASTEWATER: Used water discharged from the residential, commercial and industrial area of a city and collected though the sewage system. INDUSTRIAL WASTEWATER: Generated from medium to large scale industries manufacturing industries produce a large volume of wastewaters
5. WASTEWATER MANAGEMENT Water is one of the most important natural resources that we have on Earth. Water is used for not only homes, but also for businesses, institutions and industries and many more. The increase in human population and boom in industry all over the world means the discharge of wastewater is also increasing at a rapid level therefore the management of wastewater should be more sustainable and efficient.
6. WASTEWATER MANAGEMENT Effective wastewater management means to reduce the level of pollutants in wastewater before it is being discharged into the environment without harming human health or to the natural environment
7. Types of Wastewater collection There are two types: Centralized System: Centralized system is a large scale water collection system that collects water from many types of users for treatment at one or multiple sites. Decentralized System: Decentralized system is an on-site system which collects wastewater from individual users or small groups of users from neighborhoods or residential areas.
8. SUSTAINABILITY A sustainable approach gives many benefits to not only the environment but also improve food security, health and a country's economy as a whole A sustainable way to manage wastewater is to recycle and re-use water. For e.g.: waste water can be used over and over again for a cooling plant, also recycled wastewater can be used for construction and concrete mixing.
9. AWARENESS & PREVENTION Big companies & stakeholders should take initiative to raise awareness for wastewater management. Water is a scarce resource and therefore needs to be used with care; strict rules and regulations need to be put in place by authorities in order for there to be no waste. It is also important to assess, monitor and manage for reuse in order to avoid negative impacts on human health.
10. PROCESS OF SUSTAINABLE WASTEWATER TREATMENT.

Case Study on a Structural Building Subjected to Earthquake Forces Considering Soil Structure Interaction

Abstract— in recent years India has been considered as one of the disaster prone countries in the world. Studies are carried out to study the seismic behavior of the structure when hit by an Earthquake. The course of tremor depends upon the type of soil and varying topographical region which are classified under various seismic zones i.e. II, III, IV, V. Past researchers revealed that the vertically irregular structures are mostly prone to Earthquake damages. In this paper, attempt has been made to study the effects of vertical irregularities on a structural building and seismic behavior of the structural building during an earthquake. The structural model considered has been already constructed in Earthquake prone area: - Sikkim, India, which falls under seismic zone [IV].

In 2011, an earthquake of magnitude 6.9 with depth of 19.7 Km hit the North-East Himalayan state of India-Sikkim. This earthquake was also known as the 2011 Himalayan earthquake. 18th September, 2011 was the "Black Day" for the people of Sikkim and the neighboring countries like Nepal, Bhutan and Tibet. More than 112 people were killed in the earthquake while most of the deaths occurred in Sikkim. After a month of research and study, experts came to conclusion that the collapse of structures were caused mainly due to the irregularities in the structural Building.

The main objective of this study is to analyze already constructed RC structure (vertically irregular) in order to know the seismic behavior of the structure when hit by an earthquake. The structure was modeled and analyzed by Response Spectrum analysis using E-tabs software. Parameters such as time period, displacement, base shear, stiffness were calculated and compared.

stories are increased the lateral displacement increases in both method of analysis. Lateral displacement up to specific floors are similar, but varies on the above floors.

E.Pavan Kumar, A. Naresh, M. Nagajyoti, M. Rajasekhar (2014), investigated on Earthquake Analysis of Multi-storied Residential Buildings- a Case Study. The result of analysis revealed that the static analysis in OMRF & SMRF values is low when comparing to that of dynamic analysis in OMRF & SMRF values. The performance of dynamic analysis SMRF structure is quiet good in resisting the earthquake forces compared to that of the static analysis OMRF & SMRF.

J.H Cassis, E. Cornejo (2013), have investigated on Influence of Vertical Irregularities in the Response of Earthquake Resistance Structure. The result of analysis revealed that Buildings with soft storey, displacement capacity are less. When walls extended to first floor, it provides enough stiffness and strength to the weak and soft stories. The distribution of shear and overturning moment in the vertical substructure possess variations in the zone of irregularities.

Shreya Thusoo, Karan Modi, Rajesh Kumar, Hitesh Madahar (2015) have investigated on "Response of Buildings with Soil Structure Interaction with Varying Soil Types". Their main objective was to determine or check for the extent of variations rooted to foundation stiffness. This paper concluded that deflection in hard or medium soil is less compared to soft soil, for moderate stiff soil, inflation in deflection takes place with increase on number of story's, the spectral acceleration response pattern changes as stiffness of base soil increases and time period of all the response increases as stiffness of the soil increases from soft soil to hard soil.

Vertical Irregularities in Load Path

One of the major causes of vertical irregularities is critical load path. The structure must possess continuous load path for the load transfer. If load transfer is asymmetrical the structure gets severely damaged and even collapse.

Earthquake forces which are produced from the structural element of the building are delivered to vertical members by the help of a diaphragm. The diaphragm is a structural element that transfer loads to columns or shear walls of the structure, so the diaphragm must be of adequate stiffness.

Vertical Irregularities in Strength and Stiffness Irregularities due to strength and stiffness are broadly classified into two types;

Weak storey.

Soft storey.

Weak storey is defined as one whose lateral strength of the store considered is less than 80% of the stories above it. Lateral loads are generally the strength of all the lateral load resisting elements sharing sheer force of the storey based on the direction considered.

Mass Irregularities

Mass irregularities in a structure exist when the effective mass of any storey is more than the 200% of the effective mass of adjacent storey. It can lead to increase in lateral inertial force, decrease in ductility of vertical members and collapse of the structure due to P-delta effect. Mass irregularities can lead to complex dynamics and irregular response of the structure. During earthquake the structure swings due to change in mass in upper and lower floors. Such case, the lateral load is shifted above the base which leads to large bending moment.

SL.NO	MATERIAL PROPERTIES	VALUES	UNIT
1	Characteristic compressive strength of concrete	M 30	kN/m2
2	Characteristic strength of reinforcement	Fe 500	kN/m2
SL. NO	**PROPERTIES**	**DIMENSION**	**UNITS**
1	Beam(B1)	500X400	mm

2	Beam(B2)	600x600	Mm
SL. NO	**PROPERTIES**	**DIMENSION**	**UNITS**
1	Slab(S1)	127	mm
SL. NO	**PROPERTIES**	**DIMENSION**	**UNITS**
1	Column (C1)	400X300	mm
2	Column (C2)	500X450	mm
3	Column (C3)	600X500	mm
4	Column (C4)	300X400	mm
5	Column (C5)	500X400`	mm
SL. NO	**FRAME LOAD**	**VALUES**	**UNITS**
1	Exterior wall load	11.65	kN/m
2	Partition wall load	5.08	kN/m
SL. NO	**SHELL LOAD**	**VALUES**	**UNITS**
1	Dead Load	1	kN/m2
2	Live load	3	kN/m2
3	Live load	4	kN/m2
4	Live load	5	kN/m2
5	Floor Finish	1	kN/m2

Table 14.1 Different types of load acting on building members

SL. NO	**Seismic weight**	**VALUES**	**UNITS**
1	Dead Load	13834.1368	kN
2	Live Load	1506.8116	kN
3	Floor Load	1766.6434	kN
4	Wall Load	12797.0864	kN
SL NO	**BASE SHEAR**	**VALUES**	**UNITS**
1	X direction(VBX)	945.94	kN
2	Y direction(VBY)	952.404	kN

Table 14.2 Seismic weight of building

The results of the RC costs were determined based on the quantity and unit price of works, as seen in Tables 14.1 and 14.2 of Supplementary Materials. The total cost of RC will change significantly with its quantity, as shown in The lowest costs for RC beams appear in Zones 10 to Zone 13 for Ie 1.00, while the highest costs occur in buildings in Zone 16 for Ie 1.50. For RC columns, the lowest cost appears in buildings in Zone 10 for Ie 1.00 and the highest cost occurs in buildings in Zone 16 for Ie 1.25. The increasing costs of these two structural

components show a slightly different form. The consistency of the in- crease in costs is relatively more noticeable in RC beams rather than RC columns.

Sq.mt.	A	B	B1	C	C1	C2	D	D1
1	443,667	443,667	443,667	443,667	464,722	464,722	481,573	481,573
1.25	510,117	510,117	510,605	510,605	518,676	531,758	536,158	519,698
1.5	510,117	519,413	510,605	532,039	562,936	565,603	591,096	563,636

Table no 14.3 zone wise total price per sq. meter in India

Assuming the owner elects to demolish their building and in the absence of any salvage value of materials then the fancily situation of the owner will be as follows.

Land Value $ 1, 00,000

Less costs of demolition $ 135,000 Redevelopment Value of property -$ 45,000 The owner would clearly have a number of challenges not the least being that his capital asset of

$230,000 is now a liability of$45,000. He may now have considerable negative equity in the property but must also attempt to raise the money necessary to build a replacement building. He also has the problem offing tenants for his new building as his existing displaced tenants may be unwilling to wait for the replacement building to be built, They may also be unable or unwilling to pay the higher rent necessary to make a new building financially feasible. The buildings in the study area house a large number of businesses and also contain some residential accommodation. At best these businesses and residents would need to relocate to alternative space while strengthening took place. In the event of demolition, this displacement may become permanent for many of the businesses. The building owner will not replace their demolished building unless they can obtain a reasonable return on the capital invested in their replacement building. This is likely to cause severe affordability issues for the displaced tenants. Current rents appear to be in the order of approximately $100m2 gross rents. If the owner wished to get a return of 10% on a replacement building cost of $2000 per square meter, they would need to get $200 m2 net of expenses. This excludes any allowance for a return on the land value. It is therefore likely that replacement.

Conclusions

&e study indicated that seismic loads are an important factor that must be considered in cost estimation. &e cost estimation process should be carried out

by considering aspects of variations in seismic loads in a building if it is planned to be built at different locations. &is consideration is required to ensure that a building is designed effectively from the aspect of structural resistance to earthquakes, as well as being efficient in terms of its economic aspects. &e total cost required for structural components will increase in line with the increase in seismic loads. In sequence, changes in seismic load will have an impact on the structural dimensions, which are then followed by changes in the quantity of work, and in the end affect the increase in costs. &e relationship of the total cost described the pattern of changes to the seismic potentials, as expressed in the SS parameters.

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CHAPTER: - 15

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

NO.	DESIGN NAME	COST (RS.)	ADVANTAGES
1	POST-OFFICE	373780	**In this village the post-office is not in proper place, very small in comfortable no facilities, etc. for changing village net economy.**
2	PUBLIC GARDEN	303723	**Public gardens are staffed by professionals trained in their given areas of expertise and maintain active plant records systems.**
3	COMMUNITY HALL	4312000	**Any type of function regarding uses.**
4	PUBLIC TOILET	977500	**The village have old public toilet but it is very damaged and small so we design big and better design and having W.C & bath both.**
5	GRAM PANCHAYAT	693450	**The existing structure is damaged totally and structure life is also over so we designed this.**
6	BUS STOP	69615	**Easy and safe journey for the villagers.**

7	POND BEAUTIFICATION	1124081	**Increasing esthetic view of village.**
8	BANK	449000	**Create new self-businesses and provided for that loans.**
9	SCHOOL BUILDING	1089700	**Life of exacting building is nearly over. And for children safety purpose.**
10	POLICE STATION	879608	**Public safety purpose.**
11	DAIRY PARLOR	886811	**The village has lots of agricultural, animals.so we decided.**
12	PRIMARY HEALTH CARE CENTER	710000	**Nearest hospital is 8km far away from the village so we decided.**

Table-15.1 Smart and/or Sustainable features of Chapter 8 & 13 designs, Impact on society.

CHAPTER: - 16

Survey by Interviewing with Talati and/or Sarpanch

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Survey with Interviewing

SURVEY BY INTERVIEWING WITH TALATI AND/OR SARPANCH

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

CHAPTER- 16

Sr.	Questions	Yes/ No	Remarks
1	What are the sources of income in village?	Yes	agricultural
2	What are the chances of employment in village?	Yes	
3	What are the special technical facilities in village?	Yes	electricity
4	Is any debt on village dwellers?	NO	
5	Are village people getting agricultural help?	Yes	pm krishi yojana
6	Is women health awareness Program organized in village?	NO	
7	Are women having opportunity to work and income?	NO	
8	Child girl education is appreciated in village?	Yes	
9	Facility of vaccination to child is available in village?	NO	
10	Are village people aware about child vaccination and done to each and every child as per norms?	Yes	
11	Women help line number information is provided to village people?	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?	—	
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	15 to 18
18	Is village improvement is observed in comparative scenario from past to present?	Yes	Road Renovation
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
વડસાલા ગ્રામ પંચાયત
તા. જી. વડોદરા.

CHAPTER: - 17

Irrigation / Agriculture Activates and Agro Industry, Alternate Technics and Solution

What is Irrigation?

Fig 17.1 Irrigation

Irrigation is the artificial process of applying controlled amounts of water to land to assist in production of crops. Irrigation helps to grow agricultural crops, maintain landscapes, and vegetate disturbed soils in dry areas and during periods of less than average rainfall. Irrigation also has other uses in crop production, including frost protection, suppressing weed growth in grain fields and preventing soil consolidation. In contrast, agriculture that relies only on direct rainfall is referred to as rain-fed. Irrigation systems are also used for cooling livestock, dust suppression, disposal of sewage, and in mining. Irrigation is often studied together with drainage, which is the removal of surface and sub-surface water from a given location.

Advantages of Irrigation:

1. For proper nourishment of crops certain amount of water is required. If rainfall is insufficient there will be deficiency in fulfillment of water requirement. Irrigation tries to remove this deficiency caused due to inadequate rainfall. Thus, irrigation comes to rescue in dry years.
2. Irrigation improves the yield of crops and makes people prosperous. The living standards of the people are thereby improved.
3. Irrigation also adds to the wealth of the country in two ways. Firstly as bumper crops are produced due to irrigation it makes country self-sufficient in food requirements. Secondly as the irrigation water is taxed when it is supplied to the cultivators, it adds to the revenue.
4. Irrigation makes it possible to grow cash crops which give good returns to the cultivators than the ordinary crops they might have grown in absence of irrigation. Fruit gardens, sugarcane, potato, tobacco etc., are the cash crops.
5. Sometimes large irrigation channels can be used as a means of communication.
6. The falls which come across the irrigation channels can be utilized for producing hydroelectric power.

Disadvantages of Irrigation:

1. Excessive seepage and leakage of water forms marshes and ponds all along the channels. The marshes and the ponds in course of time become the colonies of the mosquito, which gives rise to a disease like malaria.
2. Excessive seepage into the ground raises the water-table and this in turn completely saturates the crop root-zone. It causes waterlogging of that area.
3. It lowers the temperature and makes the locality damp due to the presence of irrigation water.
4. Under irrigation canal system valuable residential and industrial land is lost.
5. Initial cost of irrigation project is very high and thereby the cultivators have to pay more taxes in the form of levy.
6. Irrigation works become obstacles in the way of free drainage of water during rainy season and thus results in submerging standing crops and even villages.

Irrigation water

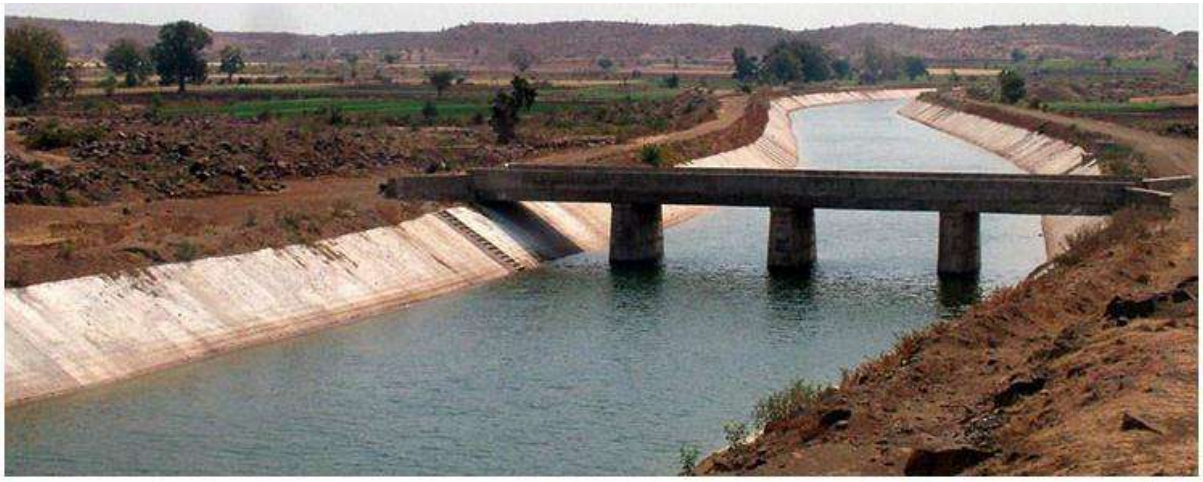

Fig 17.2 Irrigation canal

Water use for irrigation

Agriculture is by far the largest water use at global level. Irrigation of agricultural lands accounted for 70% of the water used worldwide. In several developing countries, irrigation represents up to 95% of all water uses, and plays a major role in food production and food security. Future agricultural development strategies of most of these countries depend on the possibility to maintain, improve and expand irrigated agriculture

On the other hand, the increasing pressure on water resources by agriculture faces competition from other water use sectors and represents a threat to the environment.

Water is a resource that may create tensions among countries down and upstream. Irrigated agriculture is driving much of the competition since it

accounts for 70-90% of water use in May of these regions.
Water used for agriculture comes from natural or other alternative sources.
Natural sources include rainwater and surface water (lakes and rivers).

Types of Irrigation

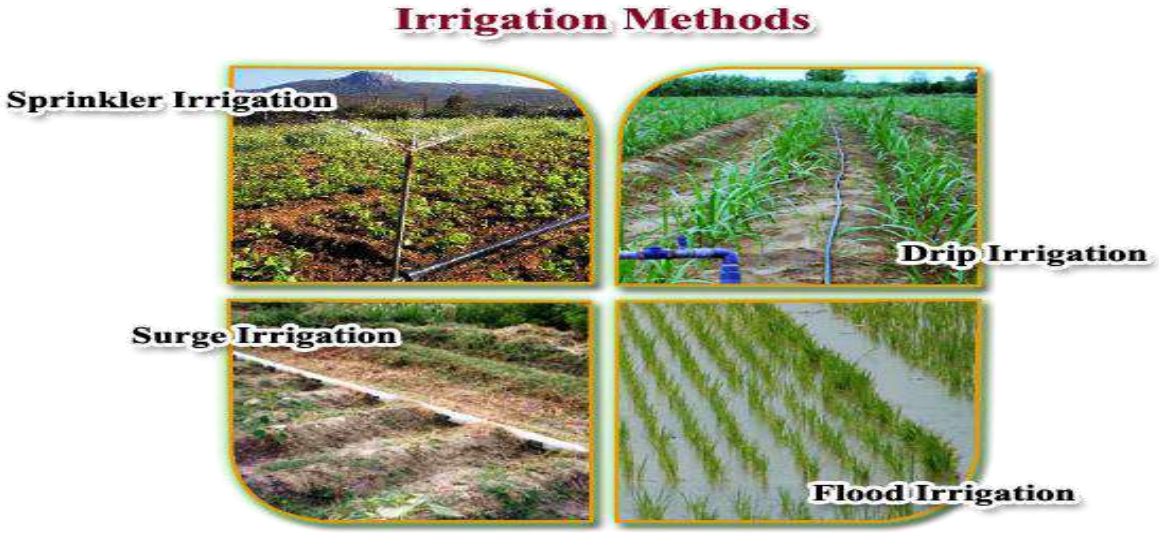

Fig 17.3 Types of Irrigation

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

Surface Irrigation

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

Localized Irrigation

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

Sprinkler Irrigation

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

Drip Irrigation

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

Centre Pivot Irrigation

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

Sub Irrigation

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

Manual Irrigation

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

Methods of Irrigation

Irrigation can be carried out by two different methods:

Traditional Methods

Modern Methods

Traditional Methods of Irrigation

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

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

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

Modern Methods of Irrigation

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

The modern method involves two systems:

Sprinkler system

Drip system

Sprinkler System

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

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

Drip System

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

Agro Industry: -

An agro-industry is an enterprise that processes bio-mass, i.e. agricultural raw materials, which include ground and tree crops as well as livestock and fisheries, to create edible or usable forms, improve storage and shelf life, create easily transportable forms, enhance nutritive value, and extract chemicals for other uses. As the products of agro-industries are both edible and non-edible, the agro-industries can be classified as agro-food industries (or merely food processing industries) and agro-non-food industries. The agro-industry provides the crucial

farm-industry linkage which helps accelerate agricultural development by creating backward linkages (supply of credit, inputs and other production enhancement services) and forward linkages (processing and marketing), adding value to the farmer's produce, generating employment opportunities, and increasing the farmer's net income. This in turn motivates the farmer for better productivity and further opens up possibilities of industrial development. The agro-industry generates new demand on the farm sector for more and different agricultural outputs which are more suitable for processing. An agro-processing plant can open up new crop and livestock opportunities to the farmer and thus increase the farm income and employment. The paper identifies following major issues to be discussed and researched:

Fig 17.4 Agro Industries

1. Organizational Patterns for Agro-Processing.
2. R&D Inputs and Technology Up gradation.
3. Market Development.
4. Need for Confessional Finance and Larger Margin Money for Working Capital.
5. Tax Incidence.
6. Linkage Agro-industry with Planning for Agro-Climate Regions.
7. Strengthening of the Data Base.
8. Need for Further Research.

CHAPTER: - 18

Social Activities – Any Activates Planned by Student.

MASK DISTRIBUTION IN THE VILLAGE & GIVE AWARNESS ABOUT VACCINATION.

In our allocated village (VARSADA) we gave mask and awareness about this virus.
During this pandemic we decided to distribute mask for workers safety because mask is thing which can protect us from this dangerous virus.
Give instruction to the people for the how much percussion they have to follow avoid this virus.

Awareness about COVID 19 transmission and protective measures.

- Clean your hands often.
- Cough or sneeze in your bent elbow not your hands.
- Avoiding touching your eyes, nose and mouth.
- Limit social gathering and time spent in crowded places.
- Avoid close contact with someone ho someone who is sick.
- Clean and disinfect frequently touched objects and surfaces.

CHAPTER: - 19

Varsada village SAGY Questionnaire Survey form with the Surpanch Signature

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: VARSADA Gram Panchayat: VARSADA Ward No. ____

Block: ____ District: VADODARA

State: GUJARAT L S Constituency: ____

1. Family Identity and Size

Name of Head of Household	AMBUBHAI SOLANKI							Male/ Female	M
SECC Survey ID:	—	Family Size		Over 18		6 to 18		Under 6	

2. Category & Entitlement Details (Tick as appropriate)

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

2. Adults (above 18 years)

Name	Age	Sex M/F / O	Disability Status Y/N	Marital Status[3]	Education Status[4]	Adhaar Card (Y/ N)	Bank A/C (Y/N)	Social Security Pension[5]
Ambubhai solanki	42	M	N	Yes	Yes	—	Y	—

3. Children from 6 years and up to 18 years

Name	Age	Sex M/F/O	Disability Y/N	Marital Code*	Level of Education: Code#	Going to School /College (Y/N)	Current Class	Computer Literate Y/N
Amin Ankit	18	M	NO	X	✓	✓	12	✓

4. Children below 6 years

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

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

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

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

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

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

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

5. Hand washing

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

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

7. Do members take Regular Physical Exercise

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

8. Consumption of Tobacco

	Smoking	Chewing
Adults	X	✓
Children	X	X

9. House & Homestead Data

Own House: Yes / ~~No~~	No. of Rooms: 5
Type: Kutcha / Semi Pucca / Pucca	
Toilet: Private / Community / Open Defecation	
Drainage linked to House: Covered / Open / None	
Waste Collection System	Door Step / Common Point / No Collection System
Homestead Land: Yes / No ✓	Kitchen Garden : Yes / No ✓
Compost Pit: Individual/ Group/ None ✓	Biogas Plant: Individual/ Group/ None ✓

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

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

11. Source of Lighting and Power

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

12. Landholding (Acres)

1. Total	1739	2. Cultivable Area	1761.69
3. Irrigated Area	100	4. Uncultivable Area	70

13. Principal Occupations in the Household

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

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

15. Agriculture Inputs

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

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

Name	Unit	Quantity
Rice	Kg	50,000
TUVAR	Kg	50,000
ARANDA	Kg	30,000

17. Livestock Numbers

Cows: 300	Bullocks: 4	Calves: 10
Female Buffalo: 250	Male Buffalo: 5	Buffalo Calves: 50
Goats/ Sheep: 200	Poultry/ Ducks: 70	Pigs: —
Any other: Type NO		No.
Shelter for Livestock: Pucca / Kutcha / None ✓		
Average Daily Production of Milk(Litres): 350		

18. What games do Children Play

19. Do children play musical instrument (mention)

Schedule Filled By: Hakim Arshad, Kuyasth Utkarsh
Principal Respondent:
Date of Survey: 24/5/2021

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

I. Basic Information

a. Gram Panchayat: Varsoda

b. Block: _____

c. District: Vadodara

d. State: Gujarat

e. Lok Sabha Constituency: Chotta Udaipur

f. Number of Wards in the Gram Panchayat: 10

g. Number of Villages in the Gram Panchayat: 40

h. Names of Villages: Varsoda
- Ztola

Demographic Information

Number of Households 758 Total Population 3156 Male 1622 Female 1534

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

I. Access to Infrastructure / Facilities / Services

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

1

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

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

IV. Sports Facilities in the Gram Panchayat

a. Number of Play Grounds in the GP: Total 5 Public ✓ Private _____

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 0

Names of such villages: _____

c. Schools (Number)

Primary Private: ____ Primary Govt.: 1

Middle Private: ____ Middle Govt.: 1

Secondary Private: ____ Secondary Govt.: 2

Higher Secondary Private: _____ Higher Secondary Govt: 1

VI. Public Distribution System

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

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

VII. Coverage of Villages under different Facilities & Services

	Parameter	Villages Status[1]	Names of Villages Covered	Names of Villages not Covered
a.	Piped Water Supply Coverage to Villages	Covered ✓ / Not Covered		
b.	Hand Pump Coverage in Villages:	Covered ✓ / Not Covered		
c.	Coverage under Covered Drains:	Covered ✓ / Not Covered		
d.	Coverage under Open Drains:	Covered ✓ / Not Covered		
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	~~692~~ ~~1161~~	d.	Pasture / Grazing Land	—	g.	Check Dam	0
b.	Irrigated Land	110	e.	Forests/ Plantations	—	h.	Wells/Bore Wells	1
c.	Un-irrigated Land	510	f.	Other Common Land	—	i	Tanks /Ponds	1

[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)	100
b)	Number of Households receiving pension (old age, widow, disability)	120
c)	Number of eligible Households who are not receiving pension	–
d)	Number of Households eligible for Ration Card	700
e)	Number of eligible HHs having ration cards	100
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	0
i)	Number of Job Card holders who completed 100 days of work during 2013-14	0
j)	Number of shops selling alcohol	0
k)	Number of BPL families	–
l)	Number of landless households	–
m)	Number of IAY beneficiaries	–
n)	Number of FRA[2] beneficiaries	–
o)	Number of Community Sanitary Complexes	–
p)	Number of Households headed by single women	49
q)	Number of Households headed by physically handicapped persons	–
r)	Total number of Persons with Disability in the village	–
s)	Number of SHGs	3
t)	Number of active SHGs	0
u)	Number of SHG Federations	~~10~~ 0
v)	Number of Youth Clubs	~~12~~ 0
w)	Number of Bharat Nirman Volunteers	2

Name and Signature of Surveyor and Respondent'

Hakim Irshad Kuyash Ujaval J Surveyor	PRI Respondent (Preferably Gram Panchayat Chairperson)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	24/5/2021 Date of Survey

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

4

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

I. Basic Information

a. Village: Varsada

b. Ward Number: 3

c. Gram Panchayat: Varsada

d. Block: -

e. District: Vadodara

f. State: Gujarat

g. Lok Sabha Constituency: chota Udaipur.

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

i. Names of Habitations / Hamlets: Varsada

Demographic Information

Number of Households 758 Total Population 3156 Male 1622 Female 1534

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	NO	
d.	Kisan Seva Kendra	Yes	
e.	Milk Cooperative /Collection Centre	-	
g.	Health Sub Centre	NO	
h.	Bank	NO	
i.	ATM	Yes	
j.	Bus Stop	Yes	
k.	Railway Station	NO	

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

1

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

ii. Road Connectivity

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

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

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: _____ *(1-All 2-None 3-Some)*

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

iv. Coverage of Habitations under Waste Management System

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

If 3 mention the name of the habitations not covered: None

b. Coverage under Open Drains: Some *(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: Some

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: None

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

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

vi. Sports Facilities in the Village

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

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

vii. Education, ICDS

a. Number of Anganwadi Centres: 2

c. Schools (Number)

Primary Private: 4 Primary Govt.: 1

Middle Private: _____ Middle Govt.: 1

Secondary Private: _____ Secondary Govt.: _____

Higher Secondary Private: _____ Higher Secondary Govt: _____

2

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

viii. Land Category		Area in Acres		Land Category	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	1761	d.	Pasture / Grazing Land	0	g.	Check Dam	—
b.	Irrigated Land	110	e.	Forests/ Plnatations	0	h.	Wells/Bore Wells	1
c.	Un-irrigated Land	500	f.	Other Common Land	6	I	Tanks /Ponds	1

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	—
2	Number of active Job Card holders who have completed 100 days of work	—
3	Number of shops selling alcohol	—
4	Number of BPL families	Yes (Not Counted)
5	Number of landless households	—
6	Number of IAY beneficiaries	0
7	Number of FRA beneficiaries	0
8	Number of common sanitation complexes	15
9	Number of SHGs	0
10	Number of active SHGs	—
11	Existence of SHG Federation in the Village (Yes / No)	10
12	Number of Youth Clubs	—
13	Number of Bharat Nirman Volunteers	1

Name and Signature of Surveyor and Respondent'

Hakim Rashad Kayasth Ujaval Surveyor	PRI Respondent (Preferably a ward member from a ward that is fully or partially covered under the Village)	સરપંચ વડસર્વા ગ્રામ પંચાયત Other Respondent (Preferably senior most Government official in the Gram Panchayat)	24-5-2021 Date of Survey

CHAPTER: - 20

Comprehensive report for the entire village

About 70% of India's population or 750 million, live in its 600,000 villages. More than 85% of these villages are in the plains or on the Deccan plateau. The average village has 200-250 households, and occupies an area of 4 sq.km. Around 65% of the state's population is living in rural areas. Peoples in rural should have the same quality of life as is enjoyed by people living in sub urban and urban areas. Further there are cascading effect of poverty, unemployment, poor and inadequate infrastructure in rural areas on urban centers causing slums and consequential social and economic tensions manifesting in economic deprivation and urban poverty.

Hence rural development which is concerned with economic growth and social justice, improvement in the living standard of the rural people by providing adequate and quality social services and minimum basic needs become essential. So we government had decided to make a Yojana known as "Vishwakarma Yojana". The Yojana consist development of infrastructure in the allocated village.

In this project students have to select their allocated village for development of village. We had selected allocate village named 'Varsada'. The Varsada village located in Vadodara Tehsil of Vadodara district in Gujarat, India. It is situated 14 km away from Vadodara, which is both district headquarter of Varsada village. The total geographical area of village is 692 hectares. The total population according to 2011 census is 3156 peoples which consists 1622 males and 1543 females. There are 758 households.

Firstly we have to survey the allocated, ideal and smart village and compare the smart and ideal village infrastructures and know the utilities and facilities of allocated village. From this we have to design the infrastructures according to survey.

We visit the villages and survey of structures which we have to renovate or give new design, firstly we make plans, elevation, section then we design the structures in AutoCAD and then prepare a excel sheet of quantity sheet and abstract sheet.

And after all survey all conclusion we design public garden, public toilet, community hall, post office, bus stop, renovation of surpanch office, pond

beautification, Bank, School building, police station, dairy & primary health care center.

There for we compare all three types of village with the facilities are there or not there. So Varsada village is basically near the national highway 8 so transportation process of dairy and any other agricultural activities are very near to develop.

The biggest problem we get at Varsada village is a not available of primary and basic health center so there people were travel to the city hospitals via bus transportation. And this pandemic situation we went to the village for the admire and give advice to their villagers to take proper percussion and also do a social activity as a distribution of mask to their villagers and there workers.

After taking first six designs we discuss with the surpanch of Varsada village threw we know what problems facing for the basic good and better life structure where there is not available in the village.

In Varsada village major people are above the poverty line. There is underground type drainage in village. But the condition of the drainage is not well. The drainage pipelines are blocked and water is leaked in nala. And all solid wastage of village is dump around the nala of the drainage. Roads are in good condition in all weather.

Also a per person required 135lit/capita/day and in Varsada village has 50,000litrs capacity water tank which is full filled all the requirement of villagers in all three weathers.

Implementation evaluation

POST-OFFICE
PUBLIC GARDEN
COMMUNITY HALL
GRAM PANCHAYAT
BUS STOP
POND BEAUTIFICATION
BANK
SCHOOL BUILDING
POLICE STATION
DAIRY PARLOR
PRIMARY HEALTH CARE CENTER